



RUNNING #####**EXTRA**

More modeling every month

Rob Spangler on
Modeling running water

► **READ NOW**



ALSO in this issue:

- Prototypically accurate pipe loads
- Modeling a CP Rail chop-nose diesel
- Build a better locomotive fleet
- Getting started: PanPastel weathering
- ... and much more inside!



TABLE OF CONTENTS | RUNNING EXTRA

February 2019

★★★★★
RATE THIS ISSUE

More content than what ads will pay for ...

**RUNNING
EXTRA**

Publisher's Welcome: Getting started with PanPastels

JOE FUGATE



Limited Modeler: Staying motivated

JIM SIX



Getting Real: Developing a realistic loco fleet

TONY THOMPSON



Chopping the nose on an MLW RS-10

PASCAL LATULIPPE



More accurate pipe loads

LEW PHELPS



Building a resin reefer

BILL GILL



Ah-Hah Moment: More realistic painted clouds

JOE FUGATE

TABLE OF CONTENTS | MRH

February 2019



Publisher's Musings: Bad weathering & solving problems

JOE FUGATE



Yes, it's a model

from the MRH STAFF



Modeling water on the WP 8th Subdivision

ROB SPANGLER



Passenger car lighting enhancements

LOU ANGELUCCI



First Look: Decals for modeling an SP&S RS-3

The MRH STAFF



What's Neat: Basement-filling HO_{N3} layout, ...

KEN PATTERSON



MRH QAT: Using an air eraser ...

Compiled by JOE BRUGGER



February 2019 news and events

RICHARD BALE and JEFF SHULTZ



Derailments

Compiled by the MRH STAFF

◀ MRHMAG.COM

✉ [REGISTER](#)
(free)

💰 [SUBSCRIBE](#)

[INDEX](#)

[TABLE OF CONTENTS](#) ▶

PUBLISHER'S WELCOME

introduction



MRH Running Extra | February 2019

JOE FUGATE: GETTING STARTED WITH PANPASTEL WEATHERING ...

★★★★★
RATE THIS ARTICLE

HAVE YOU HEARD OF PAN PASTELS? BY NOW, many modelers have, but they may not know exactly what they are or how they work. And there's that all-important question: if I'd like to try PanPastels, where do I start?

One popular technique for weathering locos and rolling stock involves shaving or sanding some colored chalk off into a pile of powder. Then you dab a brush into the powder and rub it onto the loco or car.

That seemed easy enough, but you needed to apply some kind of fixative because the powder would rub right off with handling. But unfortunately, spraying on a coat of Dullcote would both blow off some of the powder as well as make much of it disappear into the layer of fixative.

Enter PanPastels, a new 21st-century artists' medium!

Pan Pastels have a silky, slightly greasy texture, which makes them stick very well. This also makes them less susceptible to fading when you apply a flat spray fixative. The ideal dry weathering medium!

1. Using PanPastels for weathering is easy enough - just rub the brush onto the color cake in the "pan," then brush it on. Repeat the process for a heavier application.



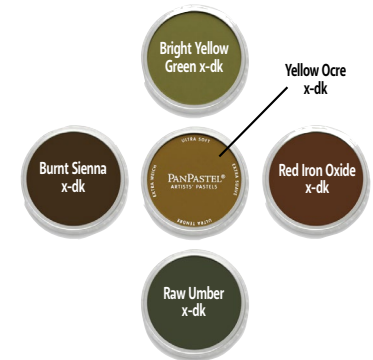
PUBLISHER WELCOME | 2

PanPastels' stickiness does make it more important than ever to clean the model's surface and apply a flat finish before starting with the pastels. Any sticky or greasy spots will pick up fingerprints faster than a crime scene technician, and PanPastel's stickiness makes them difficult to remove.

You can find PanPastels at art and craft stores like Michaels, or online at places like Blick or Amazon. If you're judicious, you can get them for about \$5 per color.

If you want to try out some Pan Pastels, I recommend this earth tones five pack on Amazon (\$20): [amzn.com/B002JKQUTY](https://www.amazon.com/dp/B002JKQUTY)

In this set you get: Red Iron Oxide extra dark, Raw Umber extra dark, Burnt Sienna extra dark, Bright Yellow Green extra dark, and Yellow Ocre extra dark.



2. Earth tones set.

These come in a stack and only the top pan has a lid, the rest screw together. It's easier to find the color you want if they all have lids, so get this set of lids from Amazon (\$9): [amzn.com/B0027AGDMK](https://www.amazon.com/dp/B0027AGDMK)

Beyond the earth tones set, some other helpful weathering sets are:

PanPastel Set, Grays 5-pack (\$20), [amzn.com/B000VTLVTO](https://www.amazon.com/dp/B000VTLVTO)

PanPastel Set, Extra Dark 5-Pack (\$22), [amzn.com/B002JKKKL8](https://www.amazon.com/dp/B002JKKKL8)

PanPastel Set, Pastel Tint 5-pack (\$19), [amzn.com/B001PPGNPA](https://www.amazon.com/dp/B001PPGNPA)

PanPastels come in base colors like Burnt Sienna or Yellow Ocre, as well as extra darks, shades, and tints. For example, from lightest to darkest is Burnt Sienna tint, Burnt Sienna, Burnt Sienna shade, and Burnt Sienna extra dark.

Go ahead and give PanPastels a try. They're my main go-to weathering material now and I highly recommend them! ☑

THE LIMITED MODELER

column



MRH Running Extra | February 2019

JIM SIX LOOKS AT MOTIVATION OR THE LACK THEREOF ...



ONE OF MY GOALS WITH THE *LIMITED MODELER*

column is to encourage people to think about what they are doing (or aren't doing), and to think about what others may be doing. The key word here is "think."

Because this column is about the "limited modeler," I address the subject within the context of our limitations. Let there be no doubt, as human beings we are all limited in various ways though we sometimes feel otherwise.

As I pointed out last month, no two of us are alike. We are individuals with our own strengths and weaknesses or limitations. Human beings are not produced on an assembly line and as such we each have our own unique personalities with our own limitations.

Something I have been mulling over of late is motivation. At present I am decidedly motivated, more than I have been since my heart surgery nearly five years ago. This is noteworthy because I find the older I get, the more I struggle to become motivated to do anything.

► DOING MORE WITH LESS

THE LIMITED MODELER | 2

I go through periods of accomplishing nothing within the hobby as the layout room sits idle – and I struggle to get motivated.

Other than writing my *Limited Modeler* columns and articles for *Model Railroad Hobbyist/Running Extra* – and reading through what others write in their columns, articles, and in the forum – on the typical day little else is achieved.

Reflecting back over the past twenty or so years, I recall attending a presentation about motivation given by Lou Holtz of college football fame. My employer had contracted Mr. Holtz to do a seminar for our company management about motivation. That was a magnificent event!

I believe Lou Holtz could motivate the dead. He is a very talented person. Four of the things Mr. Holtz pointed out as necessary for building motivation have stuck with me. They are *encouragement*, *support*, *knowledge/familiarity*, and *success*.



1. Chart illustrating the ingredients of motivation, inspired by Lou Holtz.

While these all are fundamental, according to Mr. Holtz, he pointed out that none is more important than success. He went on to explain that success is much the same as accomplishment.

When one is successful with what they are doing, motivation levels soar.

KNOWLEDGE AND FAMILIARITY

Let's begin with knowledge and familiarity. I don't think any reader of this column would argue they are not important.

These most often are offered as the reason someone models what they are modeling. "You know, I grew up with the Santa Fe so I model it. It is what I remember and know. It has been a life-long ambition." Sound familiar?

However, this is not so cut-and-dried for me. My family relocated enough that I grew up with different railroads. I am familiar with each and have more than enough knowledge of them to model any one. They are the ACL, B&O, Erie, NKP, NYC, PRR, SAL, and SOU.

So in my case familiarity is more discouraging than motivation because it has been a life-long struggle to pick one road to model!

On the other hand, I dare to say nobody models things they know nothing about. This brings us back to the question of why did this diesel guy change to modeling 1927 steam?

I have no memories of that time since it was twenty-one years before my birth. I have only memories of the last ten years of steam railroading – certainly insufficient for building and operating a 1927 layout.

Bluntly stated, I lack personal knowledge and familiarity of 1927. I had to find my motivation from something other than the familiarity and the knowledge I had.



2. Delaware, Lackawanna & Western scene loaded with fun inspiration for modeling the 1920s.

The driving motivation for change to a time before I was born primarily came from one thing. That is, diesel era modeling was no longer of interest to me. I had modeled diesels for sixty-five years and had become bored with it.

Boxes with little wheels under them were no longer of interest to me! <HUGE GRIN> Then there was the thought that I no longer wanted to model what so many others were doing – diesels. I wanted the challenge of modeling something different for me.

As already pointed out, it is very difficult to model something you are not familiar with, so I set out on a crash course to learn as much as I could about modeling a setting in the 1920s. Photo [2] is a perfect example. There is a lot to be learned in this old photo!

A simplified version of this DL&W scene could easily be modeled and provide a lot of switching. Such helpful scenes like this really motivate me. Look at those old trucks, for instance.

Since I was already a fan of the New York Central and the Pennsylvania, I decided to find a nearby location where both

THE LIMITED MODELER | 5

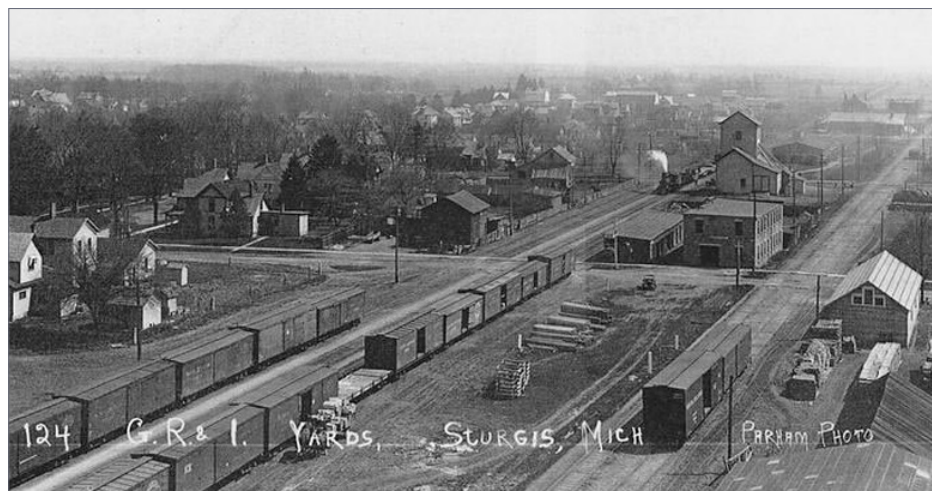
railroads operated. That turned out to be Sturgis, Michigan – a somewhat small industrial town in the midst of a farming area.

Today, my familiarity with Sturgis and railroading there in the 1920s is sufficient to model it. Because of this I am now motivated! At first I was a little frustrated, but when this photo [3] turned up my juices were flowing.

The tracks at the right are Michigan Central (MC/NYC), whereas the tracks at the left are Grand Rapids and Indiana (GR&I/PRR). This one photo has provided me with untold motivation to model Sturgis and know that I can capture the feel of the town.

Many model railroaders just go outside to railfan today's railroads, taking lots of photos. Today's railroading motivates me to want to model the years before the Great Depression even more!

Many model railroaders just go outside to railfan today's railroads, taking lots of photos. Today's railroading motivates me to want to model the years before the Great Depression even more!



3. Photo of Sturgis, Michigan in the early 1900s. This picture inspired me to model Sturgis in 1927.

THE LIMITED MODELER | 6

Railroads today do little to no switching in small town America whereas railroads were a center of life in these same towns a hundred years ago. There is so much for model railroaders that have small or medium size layouts.

In my modeling, I much prefer to roll into town, go about switching an assortment of industries, then roll on to the next town. Modern railroading just rolls through most towns, never stopping. While modern trains themselves are appealing, modern operation has little to offer when compared to pre-WWII years – particularly the decades before the Great Depression.

Over the past few years I have acquired several thousand photos of locomotives, rolling stock, and applicable scenes for my model railroad setting. The internet and email friends are great tools.

Keep in mind that research does not mean visiting the library, thick eyeglasses, and that you will become a nerd! Research today can be done at home at your computer. Go to a model railroad forum and ask questions. Google for topics, or key words and phrases.

Unfortunately, most of us are lazy when it comes to research. Because of my personal laziness with research, I modeled diesels, and more diesels, and still more diesels until I finally lost interest in them a few years ago.

After all, diesels were my *path of least resistance*. Problem was, once I lost interest in modeling the diesel era, I almost lost interest in model railroading altogether.

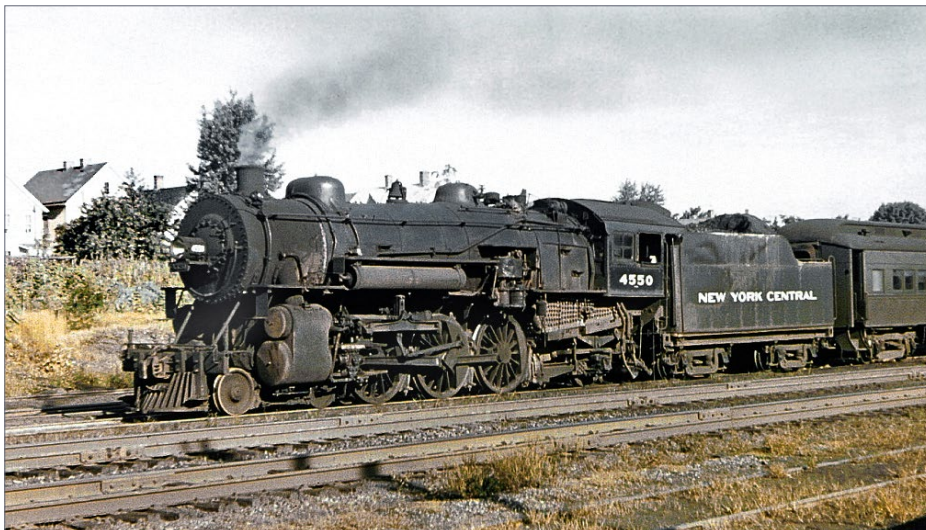
When that happened I pretty much disappeared from the hobby. It was my computer, and my good friend Ray Breyer that kept me from exiting the hobby. Ray with his vast knowledge of steam era railroading and his willingness to share, and my computer that was my window into the past saved the hobby for me.

Ray made it clear that I needed a big change if I was to remain a model railroader. Thinking back on what I learned from Lou Holtz, I realized that I need to become familiar with and gain knowledge about something new – or in my case, something old.

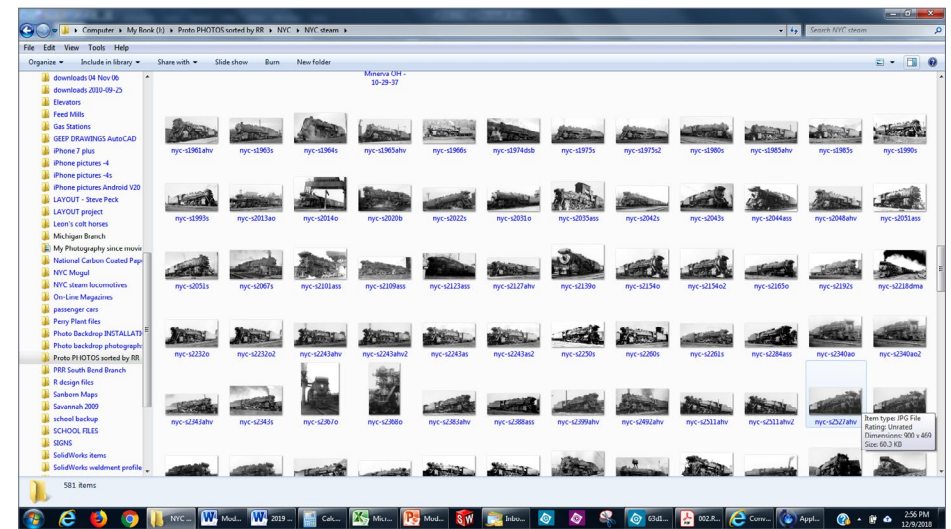
That something turned out to be steam era modeling. In many ways, life was simpler long before the digital age and the complications of modern life.

So I would direct my attention to modeling some time prior to the Second World War. This would be a challenge – the biggest challenge in my hobby life.

This challenge was to learn about railroading during the steam era and to gain familiarity. It has been said that a picture is worth a thousand words. This is so true. With every newfound photograph I became more motivated [4].



4. One of my collection of New York Central steam loco photos that helps motivate me to model the pre-WWII era.



5. My growing collection of NYC steam loco photos.

In fact, I soon became excited as I learned more and more about railroading in the 1920s as more and more photos came to me. Familiarity with the “Roaring Twenties” soon grew and research drove my motivation to new heights.

At first it didn’t seem possible that I was becoming familiar with a time two decades before I was born. Having been at this for a few years now, I am finding research on the computer to be a form of rest and relaxation – you know, R & R.

As with most readers, I like locomotives. Since one of the two railroads I model is the New York Central, I began by accumulating photos of NYC steam locomotives. There is a wealth of digital photos of NYC steam locomotives available on the internet.

The screen grab in picture [5] shows just a small part of my growing collection of New York Central steam locomotive photos.

As a result, over the past couple of years I have become very familiar with NYC steam and am gaining considerable knowledge about them with the help of Ray Breyer – noted steam and freight car historian and modeler. My 32-inch high resolution computer monitor doesn't hurt either!

The more research I do, the more I learn and the more familiar I become with the steam locomotive. Research breeds familiarity as knowledge grows. As you might expect, motivation grows accordingly.

The year 1927 fast became my home in the hobby. I suspect that more model railroaders would model the steam era if they were more familiar with it and knew more about steam railroading.

Having two great-grandfathers who worked for the B&O and the NKP also is a connection to the past for me.

ENCOURAGEMENT

Another Lou Holtz ingredient for motivation is *encouragement*. Kind words directed to you about your modeling, especially what you are working on or have just completed go a long way to increasing your motivation. Lack thereof can be a motivation killer.

Words of praise are encouraging, especially when something specific about the model is called out – like its weathering. On the other hand, silence can be very discouraging.

We all like to be recognized for our modeling. At least I do. People pointing out what they like about my modeling keeps me motivated and wanting to do more. This is one reason that I like to share photos of my modeling on the Model Railroad Hobbyist forum or in the pages of MRH.



6. My model of the Royal Chair factory that I shared on the MRH forum.

Sure, my primary reason is sharing what I am doing, but there is also my need to know what I am doing well or not so well.

When I posted the photo [6] the Royal Chair factory to the MRH forum, there were many encouraging messages. This is especially helpful when you are unsure of how a model build is progressing. The replies were very encouraging to me.

Many replies were questions which allowed me to share details of what I had done and what had yet to be completed. Such sharing is certainly a good way for learning and seriously increases one's motivation. Lou Holtz, you are one smart man!

Update: Unfortunately, water in my basement has curtailed work on this factory and the layout in general. Once I make the repairs, I will get back to reconstructing the layout and will once again get back to my Royal Chair factory to share more with you.

Several months ago I began doubting myself and what I had been accomplishing with my layout. From time to time I go through

such intervals of doubt, and my hobby comes to a standstill. This was one of those times, and I needed help.

The solution was to take a short train and visit Tom Johnson and his awesome layout. We operated his 1980s layout with my 1927 Pennsy train. Even with the era difference, it looked great on Tom's layout [7].

We had a great time. I went home inspired and with my motivation soaring once again. I knew then that I was doing the right thing. Talk about a quick fix!

The only thing I failed at on that day was trying to convince Tom to change his modeling period from 1980 back to the 1920s. *Fat chance!*

Having close hobby friends who know you is a huge benefit. They will recognize when things are not going well for you and will offer encouraging words. They will point out how much they like what is already done.

Really good friends will point out specifics, adding credibility to their words. When this happens with me, my motivation again soars.



7. Running my 1927 Pennsy train on Tom Johnson's layout.

SUPPORT

As a regular reader of the MRH forum, I see many messages pointing out that model railroading is a social hobby.

I will be the first to admit that if I had no model railroading friends and interaction with others, I would not be in the hobby. I love sharing experiences and common interests with others.

While I do not care for large group operating sessions, when I operate the layout with one, two, or three others, I have a great time. For me, this is not only motivating, it is necessary.

So for me, model railroading is indeed a social hobby.

Many of us do not have the space for a layout and belong to a club with a layout or maybe a round robin group to participate and have a place to run our trains. Others are loners and tend to work alone and to operate alone.

While I may like building my models alone for the most part, I do prefer to work with friends when it comes to working on the layout.

The problem with this is that when my friends are not here to work with me, very little gets done. I need their support. It helps to make progress on the layout and it raises my level of motivation.

What can be accomplished with a few friends in a day would take me a month or two working alone. Maybe that is just me. I don't know.

For example, Tom Johnson is my scenery partner. We do scenery together. In doing so, our finished scenery is very similar in method, quality, and appearance.

When it comes to construction and layout benchwork, friend Mark Plank is a godsend. He is a bio-machine when it comes to bench work. Mark and I built the entire layout shelf in two

days! That's my Scottish terrier, Maggie Mae, in photo [8]. She was a great helper.

In photo [9], Tom Johnson shows me how he paints scenery with oil paints. I would never have thought of that had Tom not shown me! The point is that support from good friends is an important factor in maintaining motivation.

Support can be both physical as described above and moral too. Knowing that people who you respect believe in what you are doing goes a long way towards maintaining your motivation.

I have a good friend in Ohio who I share progress photos with. We also talk regularly over the phone. His ideas, suggestions, and



8. Benchwork that went up in two days, thanks to help from my friend Mark Plank.

words of encouragement “keep my juices flowing.” That is, he helps to keep me motivated.

SUCCESS

We finally arrive at what is probably the most important factor in keeping a person motivated – *success*. We all have experienced success in one way or another.

I've had more than a few successes in my life. I remember setting the record for single season home runs while playing high school baseball. The record still stands.

I have a closet full of trophies for drag racing motor cycles back in the 1970s. I have been published repeatedly over the years for my modeling. All of this is inspiring and certainly helps to keep me motivated.

More recently, my motivation has been running high since completing the Broadway Limited New York Central 4-6-2 model



9. My friend Tom Johnson demonstrates painting scenery with oils, on my layout.

featured in the January issue of *Model Railroad Hobbyist* [10]. I had not really detailed and painted a locomotive in almost fifteen years.

It really felt good to once again complete a loco – particularly since it is a steam locomotive! When I started work on the model, I wondered if I still had it in me to take on such a project – a classic case of self-doubt.

At one time I was somewhat “expert” on diesels of the 1950s, ’60s, and ’70s, but I knew little about steam locomotives other than I liked them.

As the 4-6-2 model approached completion, I became increasingly inspired by what I saw taking place before my eyes. “Wow. I can still do this.” When the model was finally ready to be placed into service I was ecstatic. As some would say, I was “pumped” by what I had created.



10. Prototypically detailed Broadway Limited New York Central 4-6-2 model featured in the January issue of *MRH*.

My motivation to build more soared to heights I have not felt in years. This all resulted from the “success” that Lou Holtz talked about in his seminar on motivation.

Successful completion of most any project will grow your motivation. The greater the success, the greater the resulting motivation.

With motivation running high, I am now preparing an article about USRA light Mikado steam locomotives and how to model them. This project includes three USRA light Mikes – two NYC and one PRR.

The USRA light Mikado was one of the most successful steam locomotives in American railroad history. One way to measure the success of these locomotives is by how many railroads rostered them. Another is by how long they remained in service.

Yet another measure of success is how many railroads built copies of them. With respect to these measures, the USRA light Mikado was an extraordinary achievement especially considering it was one hundred years ago.

As you may sense, my motivation at this time is high. On the other hand, when I experience a period of diminished motivation, I go to the computer, log onto the internet and do some research to improve my familiarity and knowledge about my subject. I look for photos and for information. One can never have too many reference photos!

Since I switched my modeling era from the diesels of early Conrail to the New York Central of the mid-1950s and finally, all the way back to New York Central and the Pennsylvania of 1927, I find myself spending a lot of time on the internet looking for photos and other information.

After all, I recollect little of 1927 since it was twenty-one years before I was born! I look for photos of steam locomotives, particularly those that fit my Sturgis, Michigan setting.

Research can be rewarding and is a necessary ingredient for preparing a realistic model railroad, be it prototype-based or freelanced. As I come across needed information and photos my motivation rises.

I remember another big success that I experienced more than ten years ago. That success was the completion of several New York Central GP7 models. That was several years before the Athearn Genesis GP7 models were offered.

At the time I did not know what was in the works at Athearn, so I built mine using Life-Like Proto 2000 GP7 models [11]. There will be an article by me in *MRH Running Extra* soon about modeling NYC GP7 diesels, so watch for it!

Success is infectious. One can say that success breeds motivation and even more success.

Wrap success with knowledge, encouraging words, and support from others and you can experience some serious motivation for your goals in the hobby.



11. Some of my NYC GP7 locos made using Life-Like Proto 2000 models.

Whether it be encouraging words, support, knowledge, or success, a combination of these will drive your motivation. We all are powered by motivation.

Keep in mind, like so many things in life, motivation ebbs and flows. Take advantage of it while it's high! ☒



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

CLICK TO FIND OUT MORE

GETTING REAL

column



MRH Running Extra | February 2019

TONY THOMPSON ON HOW TO CHOOSE A MODEL LOCOMOTIVE FLEET ...



FOR MOST KINDS OF MODEL RAILROADING, locomotives are vitally important parts of our hobby. These of course can be whatever we want. But in keeping with the “Getting Real” theme of this column series, I want to discuss some factors involved in choosing a realistic locomotive fleet.

Whether one’s modeling choices are strictly prototype, prototype-based, prototype-flavored, or entirely freelance, the choices in one sense are all constrained by reality. For example, flatland railroads didn’t roster much heavy articulated power, and mountain railroads didn’t own many high-speed locomotives.

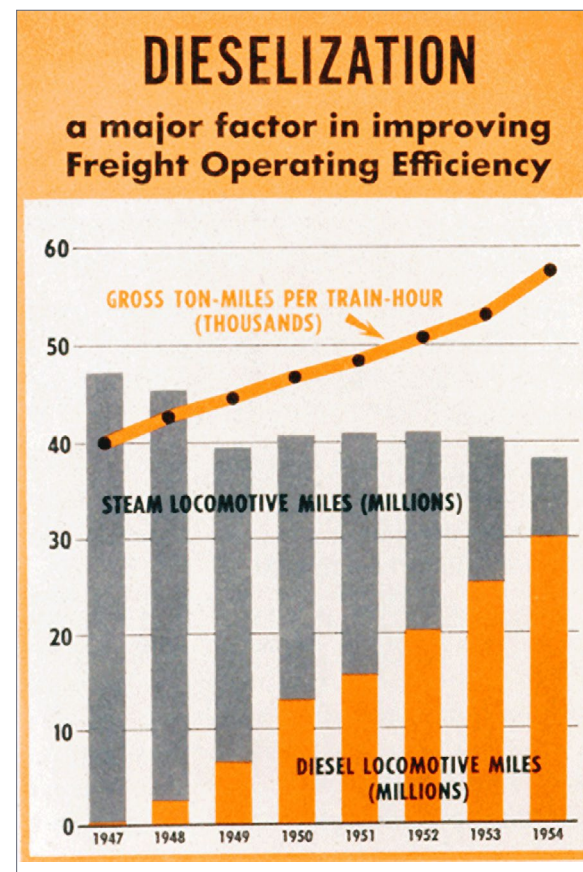
The same kinds of thoughts apply to the year that is modeled, if one wants to model the transition era. Each prototype railroad dieselized in its own way, and did so over a span of specific years distinctive to that railroad. (Dieselization tends to be amply documented for nearly every railroad.) If your goal is a prototype locomotive roster, you wouldn’t want to model diesels too early or steam too late.

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

GETTING REAL | 2

This column presents a personal example of the kind of decisions about a locomotive fleet that can be made, in an effort to show a particular set of ways it can be done, and to illustrate the kinds of resources that can be sought for guidance and information.

As a person who was born in and (mostly) grew up in California, and who watched and came to admire the Southern Pacific, I wanted to model the SP in California when I finally had the opportunity to build a layout. But the character of the layout makes a difference, too. Mine is not large and emphasizes branch-line railroading.



1. This diagram from the 1954 Southern Pacific *Annual Report* shows how diesel locomotive miles increased from the beginning of SP mainline dieselization in 1947. Diesel miles were 49% of the total in 1952 but had reached 62% by 1953. These data, of course, are for the entire SP, from Portland, Oregon through Los Angeles to El Paso or Tucumcari, New Mexico, and from San Francisco to Ogden, Utah. *Southern Pacific*

I wanted to have a balance of steam and diesel power on my layout, and in particular, wanted steam to have an essential role, not merely as backup power. As is shown in [1], Southern Pacific dieselized steadily during the early 1950s, and diesel power was dominant by 1953. However, these statistics are for the entire railroad. I needed to find out how the area I wanted to model was treated.

Like many railroads, SP dieselized first where it would do the most good: on the most demanding grades and in the areas with the worst water quality for steam use. That meant that mainline freight diesels were primarily assigned at first across the Nevada and Utah deserts, and over the long, heavy grades of Donner, Tehachapi, Dragoon and Beaumont passes.

-1-

LOCOMOTIVES ASSIGNED
SOUTHERN PACIFIC COMPANY
March 31, 1950

Division	D.E. Steam	D.E. Switch	D.E. Rd. Switch	D.E. Pass.	D.E. Frt.
Western	219	35	1	6	
Sacramento	110	15	1		28
Salt Lake	69	10			19
Shasta	102	-			
Portland	153	9	24		
Coast	143	13			5
San Joaquin	84	13			8
Los Angeles	131	41	5	7	27
Tucson	105	14	8		
Rio Grande	77	13	1		
TOTAL	1193	163	40	13	87

LOCOMOTIVES LEASED TO OUTSIDE COMPANIES
Included in above TOTALS

Salt Lake	OUR&D COMPANY	1265
"	"	1360
"	"	1363
"	"	1364
"	"	1365
"	"	1370
"	"	1387
Rio Grande	Nacozari R.R.	3418

2. Locomotive assignments, March 31, 1950. Note that "D.E. Rd. Switch." meaning road switchers, is separated from "D.E. Frt." meaning EMD diesel F units, defined as four-unit sets, i.e. A-B-B-A, so 87 sets is 348 units.

Meanwhile, steam was concentrated into less-demanding areas and into areas near major shops still doing steam maintenance. That meant mostly the West Coast.

Other information, including locomotive assignment sheets issued by SP in the transition era, showed steam was still the predominant power on the Coast Route through 1953, but continuing diesel deliveries (primarily the EMD GP9) eroded that significantly in 1954. That was why I chose 1953 as my modeling year.

Nevertheless, diesel power was very significant on SP's Coast Route in 1953, and my locomotive roster needed to include the right diesel units as well as the right steam locomotives. At the same time, a further constraint on my choices was the character of my relatively small branchline layout.

LOCOMOTIVES ASSIGNED COAST DIVISION
March 31, 1950

1019 1331 1339 1343 1351 1356 1361 1362 1367
1368 1389 1408 1409
1112 1116 1121 1124 1177 1194 1201 1204 1207
1211 1212 1220 1221 1228 1234 1235 1242 1249
1253 1257 1261 1277 1278 1285 1287 1288
* 1809 2525 2563 2642 2646 2652 2665 2669
2677 2702
1829
2315 2345 2353 2374 2375 2381 SD&AE-26
2401 2410 2424 2447 2453 2454 2458 2462 2466
2468 2471 2472 2474 2476 2477 2478 2479 2480
2487 2489 2491
2532 2542 2566 2581 2592 2625 27C1 27C7 2712
2733 2740 2752 2756 2777 2781 2786 2791 2803
2804 2808 2815 2829 2837 SD&AE 103 104
2915 2920 2921 2923
3218 3224
3636 3654 3655 3657 3663 3664 3672 3675 3677
3678 3680 3683 3691 3693 3699 3703 3711 3717
3727
4146 4150 4165 4179 4181 4183 4237 4256 4288
4305 4307 4311 4324 4325 4333 4342 4343 4355
4368 4369

* Assigned to yard service

3. Coast Division assignments, from the booklet shown in [2], 1950, page 11.

-12-

LOCOMOTIVES ASSIGNED COAST DIVISION
March 31, 1950
(Continued)

4430 4432 4435 4437 4439 4454 4455 4457
6160-8060-8061-6161 6162-8062-8063-6163
6164-8064-8065-6165 6166-8066-8067-6167
6168-8068-8069-6169

4. Coast Division
assignments, 1950,
page 12, continued
from page 11 [3].

	Steam Engines	Diesel switchers	Diesel freight	Diesel passenger	Diesel 6000 hp
System	1149	193	54	15	107
Coast	147	18	—	—	6
Western	228	45	2	8	—
Los Angeles	154	50	5	7	33
Salt Lake	72	12	1	—	25
Sacramento	77	14	3	—	14
Shasta	71	3	1	—	16
Tucson + Rio Grande	171	25	12	—	—

5. Summary table for mid-1951, drawn from a cover page of *Locomotives Assigned* similar to [2].

This column shows the resources I used for information, and the results of using that information for my locomotive fleet, subject to all the factors I have mentioned.

Locomotive assignments

Southern Pacific steam power is very well documented, from Guy Dunscomb's pioneering volume about the entire fleet, to Diebert and Strapac's canonical collection of actual data on individual locomotives, supplemented by the additions and corrections from Arnold Menke (for all these documents, see the Bibliography).

These core references are supplemented by very many photographic collections and detailed studies of parts of the topic, particularly the masterful works of Bob Church, such as his book *Cab-Forward*. The same is true for SP diesel power, as I will describe below.

But all these works are for the entire railroad, and most cover a very broad stretch of years. The serious modeler will have chosen a much narrower range of time, possibly even a specific year, and likewise a small region of the vast territory of the SP. How are these aspects to be addressed?

The geographical challenge is readily met in SP's case, because in the late steam era the railroad issued quarterly a small booklet of locomotive assignments. Many of these survive in various archives and in private collections. For example, a cover of one such booklet is in [2], for the second quarter of 1950.

On the front page [2], there is a summary of the entire system's assignments (note that there were 1193 steam locomotives at the time of this document, against 564 diesel units). Note also that eight locomotives were leased to companies outside SP.

Following pages in the assignment booklet show assignments to each division of the railroad. My own modeling is a part of the

Coast Division. Assignments for that division are on pages 11 and 12 of this issue [3, 4].

As may be evident, these listings are still not sufficient to be certain of locomotives assigned to a specific terminal within the division, because the Coast Division included San Francisco, San Jose, and Watsonville Junction, in addition to the nearest terminal to my modeled area, San Luis Obispo. But at least there is a narrowed list of locomotives. For example, there were only five A-B-B-A sets of F units assigned to the entire division in this booklet [4].

About a year later, in mid-1951, the picture had changed slightly for the entire SP, with 20 more F units on the property (shown in a summary table [5] as “6000-hp” freight locomotives, meaning A-B-B-A sets).

LOCOMOTIVES ASSIGNED COAST DIVISION
July 1, 1952

1019	1028	1029	1030	1031	1331	1339	1351	1356	1361
1362	1367	1388	1389	1392	1444	1447	1448	1451	1452
1453	1454	1459	1461						
1171	1211	1212	1220	1221	1228	1234	1242	1243	1249
1253	1256	1257	1261	1265	1268	1271	1277	1278	1284
1285	1287	1288							
1772									
2315	2338	2353	2374	2375	2381				
2410	2453	2454	2458	2462	2466	2468	2471	2472	2474
2476	2477	2478	2479	2480	2487	2489	2491		
2525	2533	2554	2556	2558	2586	2581	2592	2598	2642
2702	2706	2709	2733	2740	2752	2758	2760	2777	2781
2786	2788	2791	2803	2815	2823	2826	2829	2833	2834
2837	2847	SD&AE	103	104					
2918	2923								
3227									
3634	3654	3655	3657	3658	3663	3664	3669	3672	3679
3688	3699	3703	3711	3713	3715	3727			
4162	4181	4185	4222	4256	4262	4275	4281	4285	4288
4305	4307	4311	4320	4324	4325	4333	4342	4343	4355
4360	4368	4369							
4448	4449	4452	4453	4454	4455	4456	4457		
5239	5247	5276							
6314 - 6325	8214 - 8225								

6. The Coast Division page of *Locomotives Assigned for the end of the second quarter of 1952.*

Note that these “6000 hp” locomotives, now increased to 428 individual units, are separated from road-switcher types, shown here as “Diesel freight,” a change from 1950 booklet nomenclature (see caption for [2]). Steam in total has only decreased from 1193 to 1149 engines, but of course utilization would have fallen sharply, as reflected in ton-miles [1].

As a last example, the July 1952 page for Coast Division is included here [6], depicting a substantial amount of steam power still assigned. Of course, the 18 Pacific types and 13 Mountain types (2400s and 4300s) were primarily in use in the Peninsula commute pool.

There are only three road-switchers, all Baldwin model AS-616 (5200s), in the list, and 12 F7-A units, with 12 F7-B units. These are in heavy freight service along with 10 cab-forwards, with 17 2-10-2s (the 3600 and 3700s) sharing that work along with Cuesta helper duty out of San Luis Obispo.

Perhaps more remarkably, there are 34 Consolidations (2500 to 2800s). These Harriman-design locomotives obviously were successful in their various light duties (including yard switching), because they remained in service in substantial numbers to the end of steam on the SP.

Also interesting is that the switchers (1000s through 1400s) are evenly divided between diesel (24 in all, 15 Alco and 9 Baldwin, the 1000s and 1400s) and steam (23 engines, all 0-6-0, the 1100s and 1200s).

Most of these switchers were used in Bay Area yards.

But as stated above, just as data for the entire SP include all divisions, these assignment data for an entire division also provide too big a picture for model use. Knowing which individual locomotives in these lists worked out of which roundhouses on the division requires additional information.

An important kind of that information can be obtained by study of appropriate period photographs. Of greatest value are roundhouse photographs, since these often show an array of stored power. Naturally the best such photos would be from dates very close to a chosen modeling date or span of dates.

An interesting complication is that photos often illustrate the fact that locomotives moved from place to place on the division, not only in the obvious example of road engines moving through trains across the division, but also for smaller power given varying assignments over time.

Thus the *Locomotives Assigned* booklets are just as much of a snapshot in time as are photographs.

An illustrative example is shown in [7], just part of the roundhouse at San Luis Obispo in the spring of 1953. We see a number



7. This view shows the lower-numbered stalls of the San Luis Obispo roundhouse during spring 1953, depicting the smaller power that usually occupied those stalls. From right, we see Consolidations SP 2592, 2836, 2752, 2791, 2581, leased SD&AE 103, and SP 2829 in stalls 2 through 8. Stall 10 next to the machine shop holds 2-10-2 no. 3686. *Malcolm Gaddis photo*

of the individual locomotive numbers listed in *Locomotive Assignments*, but we also see several individual engines not shown in the relevant booklet.

These are no doubt changed assignments, though there is no way to know if that was temporary or a new permanent assignment.

The best way to deal with these uncertainties is to examine multiple photographs.

Here is a list of steam locomotives seen again and again in photos taken at San Luis Obispo, some of which are visible in [7]: Ten-wheeler SP 2344; Consolidations SP 2534, 2592, 2762, 2791, 2803, 2829, 2836, and SD&AE 103; Mikados SP 3251 and 3264; and 2-10-2 “Decks” 3661, 3666, 3672, 3679, 3688, 3699, 3703, 3711, 3715.

Omitted from this list is power which often operated on through trains, arriving at San Luis directly from Los Angeles or the Bay Area and then returning, particularly Mountains, cab-forwards, and GS 4-8-4 engines, since a wide variety of locomotive numbers of these types were seen in photos at San Luis Obispo.

My own layout models an area about 20 miles south of San Luis Obispo, and doubtless power working in that area would be drawn from the locomotives assigned at San Luis. I have tried to do exactly that in my choices of both steam and diesel locomotives. I will begin with steam.

Smaller steam power

As noted above, the dominant small steam power (other than switchers) on the Coast Division was the Consolidation. It is interesting that despite the dominance of the Vanderbilt tender on Southern Pacific steam, that at least two other tender types were familiar at San Luis Obispo; both can be seen in [7].

These are the rectangular tender on SP 2829, and the “whaleback” or semi-cylindrical tender on SP 2592. As followers of SP steam

know, tenders were often swapped and changed among various engines when they were shopped, so these tenders are certainly not the ones delivered with these two engines.

The prototype of one of these engines, Class C-9 Consolidation 2592, was photographed from the rear during switching, showing the tender very well [8].

This is one of SP's 7300-gallon semi-cylindrical tenders, widely used on smaller power. My model [9] is a Key Imports Class C-9 brass engine, with a Westside spare whaleback tender. The original Key Vanderbilt tender was moved to other duties.

The other locomotive with a somewhat different tender is another Class C-9, SP 2829. Its rectangular tender is a so-called "clear vision" design, intended to provide better rear vision during switching. These tenders were applied to a number of small



8. In this view, we see Consolidation 2592 switching in what was known as the "upper yard" at San Luis Obispo, near the depot (the landmark water tower is in the distance). The 7300-gallon semi-cylindrical tender, as SP called it, is depicted well here. This image dates from January 29, 1954.

Rod Crossley photo



9. My model of SP 2592 is a brass locomotive of Class C-9 from Key Imports, with a substituted Westside tender. It is shown switching the Santa Rosalia local, on my layout in the town of Ballard. I discussed this type of tender at some length in a blog post (see Bibliography).



10. The prototype SP 2829, another C-9 class engine, with its rectangular tender at San Luis Obispo in 1954. These tenders were often added to engines that primarily worked in yard or local switching, for better visibility. *Alden Armstrong photo*

SP steam power classes when assigned to switching duties, particularly Twelve-wheelers.

I had acquired a Max Gray brass SP Twelve-wheeler way back when, and it came with one of these rectangular tenders. I swapped it with the original Key tender to create my model. The locomotive itself is another brass Class C-9 model from Key Imports.

I also roster two other Consolidations, both known from photographs to be regulars at San Luis Obispo, but both with conventional Vanderbilt tenders. These are SP 2752 and 2836, classes C-9 and C-10, respectively.

The problem in upgrading these decades-old models, unlike the previous two engines described, is that a DCC decoder and



11. My model of SP 2829, a Key Imports Class C-9 Consolidation with a Max Gray rectangular tender, is shown here on the Santa Rosalia local in my layout town of Ballard, picking up a Union Oil Company tank car.

speaker for sound have to be installed inside a Vanderbilt tender. I called on Alan Massi to do these installations for me.

I will just show one of the locomotives. SP 2752 served for years in San Luis Obispo and environs [12] My model of this engine is not distinctive as a model, as it is simply a Key brass model with some added detail [13]. But of course it provides variety among the SP Consolidations I operate.



12. This interesting view of SP 2752 was taken near Schuman, with the train climbing Casmalia Hill in July 1952. It is operating tender-first, as outbound crews often chose to do out of San Luis Obispo, so that they could return in the afternoon with the locomotive leading; there were no turning facilities at Guadalupe. This is probably the Surf Turn, but might be the Guadalupe Local, which occasionally worked south of Guadalupe if only a car or two were involved, as shown here. *Dallas Gilbertson photo, Tom Dill collection*

GETTING REAL | 15

Finally, I do operate a Ten-wheeler, another of the Harriman-era designs that served to the very end of steam. The long-familiar member of this type at San Luis Obispo was SP 2344 [14].

I have modeled this locomotive with a Precision Scale brass engine [15], actually a model of Class T-31, though SP 2344 was a member of Class T-28. Both these classes were built by Baldwin, the former in 1912, the latter in 1909, and were very similar in both appearance and mechanical details, so numbering this model for Class T-28 is acceptable. The model has a 10,000-gallon Vanderbilt tender, as did most Ten-wheelers on the SP in later years.



13. My model of SP 2752 is shown here on the inbound track at the engine service facilities in my layout town of Shumala. Here a locomotive coming off duty will have fuel and water topped-off before going into the roundhouse. This is an essentially stock Key Imports Consolidation of Class C-9, though with added details and a DCC decoder.

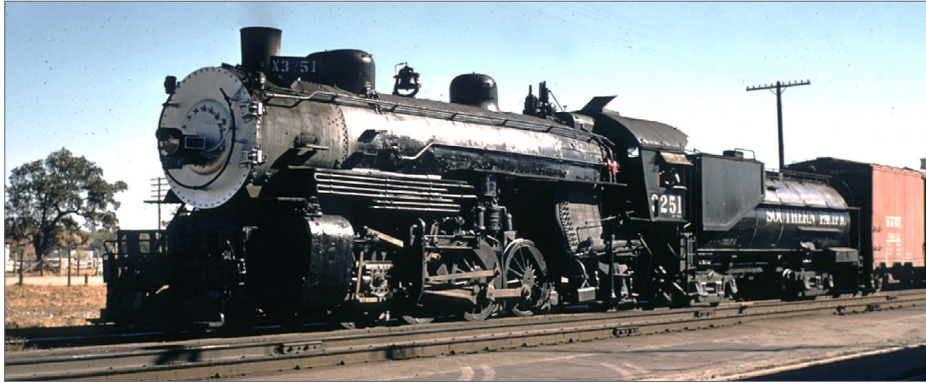
GETTING REAL | 16



14. Ten-wheeler SP 2344 remained in service for years at San Luis Obispo, often called up for light yard work. It is shown here in late 1954 near the depot in the "upper yard," with morning coastal fog overhead, suggesting it has been assigned to today's "morning goat" job in the yard. Note the footboards front and rear for switchmen's use. *Alden Armstrong photo*



15. The model of Ten-wheeler 2344 is shown here switching in front of the CS 22 depot (an American Model Builders kit) in my layout's branchline town of Santa Rosalia, as today's power on the Santa Rosalia Local. This is a Precision Scale brass model, not represented as being quite as dirty as 2344 in [14].



16. This portrait of SP 3251 depicts the large, forward sand box characteristic of Pacific Lines engines in Class Mk-6. The photo here shows the engine at Paso Robles on October 28, 1955, handling the King City Turn, which ran from San Luis Obispo to King City and return. The engine usually operated with a 12,000-gallon tender, as here. *Harold Stewart photo, courtesy Stan Kistler*



17. The model of SP 3251 on my layout, here shown passing the ice deck at Shumala with the Guadalupe Local, was converted from a Hallmark Models brass T&NO Class Mk-5 locomotive, into a model detailed to represent an SP Pacific Lines Class Mk-6. The work was done by Alan Massi.

Larger steam

Here there are several engines to describe. I will begin with a Mikado. Southern Pacific was not particularly enthused about the 2-8-2 wheel arrangement, and ended up owning proportionally fewer of them than many major railroads.

Nevertheless, there were two of them assigned for years at San Luis Obispo, engines 3251 and 3264.

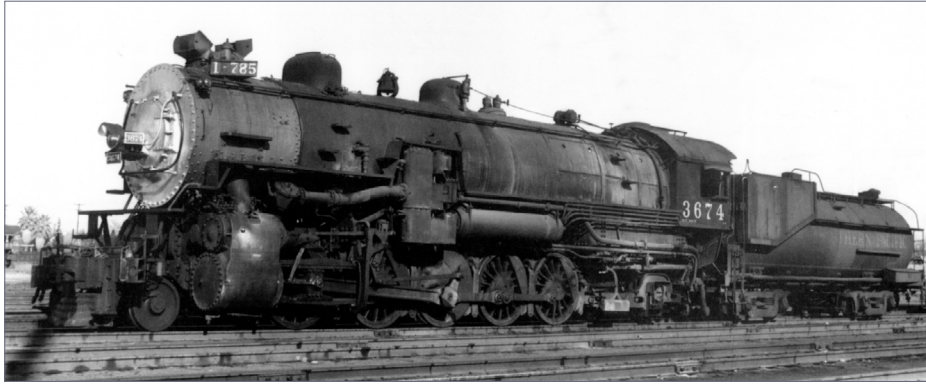
The one I chose for my layout was SP 3251. This locomotive was part of Pacific Lines Class Mk-6. It was used for turns and locals that were a little too heavy for a Consolidation on a particular day. A fine photo of it doing just that work, is included here as [16].

My model started out as a Hallmark Models version of a T&NO Mikado, Class Mk-5, which was fairly different from SP's Pacific Lines Mk-6 engines. Following T&NO practice, it had a Worthington Type SA feedwater heater, a small sand box, and a brakeman's doghouse on the tender.

The engine was re-detailed with addition of a larger, farther-forward sand box, removal of the feedwater heater, and correcting the tender, ending up as a good representation of a Pacific Lines Class Mk-6 [17]. The engine was also re-powered, making it run far better than was originally the case.

As mentioned in connection with the 1952 *Locomotives Assigned Coast Division* [6], there were a lot of 2-10-2 engines assigned. These were handsome locomotives, in my opinion [18]. I like to run through freights with this power, and chose one of these engines from the San Luis Obispo pool, SP 3688.

SP 3688 was from Class F-4. A photo of it late in its life shows an interesting perspective of the locomotive [19]. Note that it has a 12,000-gallon tender, though many of its classmates acquired 16,000-gallon tenders later in their lives.



18. An example of one of SP's Class F-4 locomotives, a 2-10-2, photographed at Bakersfield on February 2, 1952. The locomotive has a "clamshell" stack and a 12,000-gallon tender. *Allan Youell photo, Arnold Menke collection*



19. Among the many 2-10-2 helpers stationed at San Luis Obispo was Class F-4 3688. This image shows it being serviced after returning light from Santa Margarita. Here the tender oil bunker is being filled from a Rose oil column just south of the turntable; the overhead sand tower is just beyond the locomotive. The date is 1955. *Alden Armstrong photo*

The starting point for modeling was a Sunset brass engine, which had to be repowered and regearred. Here again, repowering and installation of DCC and sound was by Alan Massi, as was the upgrading of a number of details and addition of a "clamshell" stack, which is an SP design of exhaust blast deflector for use in tunnel territory like Cuesta. Since I don't model helper operations, I use this locomotive for through freights, just as SP did in the middle 1950s [20].

Another locomotive that can be classified as heavier steam power is a Pacific. Though most Pacifics by the 1950s had been scrapped or were in the San Francisco commute pool, occasional extra trains that were not too heavy did receive a Pacific as power. I decided to include one in my model fleet.

An interesting detail about this engine type is that during the 1920s, SP began to rebuild and modernize the oldest Pacifics



20. My model of SP 3688, a 2-10-2 of Class F-4, is shown here on an eastward freight, just passing milepost 270 as it approaches Shumala. The model has a 12,000-gallon tender, as did the prototype late in its life [19]. The starting point for this locomotive was a Sunset Models brass engine.

on the roster, mostly Class P-1 engines that had been built from 1904 to 1907. Eventually 10 engines were so modernized and reclassified as Class P-4.

New one-piece cylinder castings with larger valve and cylinder diameters were added, along with Walschaert valve gear, “sport” cabs and Delta trailing trucks, along with larger tenders [21].

I have a Westside brass model of the P-4 class, and this locomotive was upgraded with some details and given a DCC decoder. It serves occasionally on my layout for light passenger duties [22].

Passenger power on the Coast Route after World War II was dominated by 4-8-4 *Daylight* locomotives and sometimes a 4-8-2 Mountain (outside the commute pools). My layout is small enough that I can’t really operate full-size passenger trains, so most operating sessions would not contain such consists. But I do have power for them, and occasionally operate a second section or an extra movement such as a convention special.



21. This fine portrait of SP 2410, one of the nine locomotives originally classed as P-1 but rebuilt in the 1920s to Class P-4, was taken at the Mission Bay roundhouse in San Francisco in 1946. This engine has received a corrugated-steel pilot, though not all P-4 engines were so equipped. *Doug Richter photo*



22. This model of a Class P-4 Pacific started out as a Westside brass model. It reflects all the rebuilt characteristics of this class. It is shown with a passenger extra, stopping at the depot in Shumala on my layout. The depot was the subject of an MRH article, as listed in the Bibliography.

Of particular interest is the mail train, numbers 71 and 72 in my modeling era, because this train varied widely in size by season. That means that occasionally it would be small enough for me to include in a session, and I in turn can choose the corresponding segment of the prototype timetable in which the session’s time span would be conducted. As an example of this operation is a view from about 1950, shown as [23].

Modeling the distinctive SP Mountain classes used to require brass, but in recent years Athearn Genesis has offered a superb rendition of these locomotives with a plastic body. I have simply added flat finish and some light weathering to the model as it came from the box [24].

On the Southern Pacific, heavy steam power culminates in cab-forward locomotives. Prior to the arrival of diesel power, these

powerful engines were mostly assigned on SP's long mountain grades, but as dieselization proceeded, more and more of the big AC-class engines moved to areas where they had been scarce, such as Coast Division [25].

I have a couple of models of these distinctive engines, and sometimes operate them on through freights. The biggest problem with such an assignment is that my staging tracks are limited to short trains, which would look a little foolish with big power.

It's true that in late steam days, power was used in all sorts of ways, but a cab-forward on an eight- or 10-car freight is improbable. I sometimes move them during an operating session as a cab-hop, representing power-balancing from one division point



23. This interesting view was exposed just south of Paso Robles on the Coast Route, with eastward Train 72 depicted. The power is SP 4340, a Mountain with a skyline casing, as all SP Mountains had by 1950. This particular engine has a 16,000-gallon tender, though many Mountains served out their lives with 12,000-gallon tenders. The date was not noted on the negative sleeve, but the photographer believed it was 1951. *Wilbur C. Whittaker photo*



24. This mail train behind Athearn Genesis Mt-4 no. 4349 is approaching the depot at Shumala on my layout, but will not stop here. This model accurately reproduces the prototype 4349, as I pointed out in a blog post (Bibliography).



25. In this excellent photo, cab-forward 4274 is passing the depot at Edna, just south of San Luis Obispo, with an extra westward freight. The date is July 1954. *Dallas Gilbertson photo, Tom Dill collection*

to another, accomplished by moving an engine with a caboose only. My favorites are the InterMountain models, and I do occasionally insert them into some sessions [26].

Diesel power

Southern Pacific dieselization has been covered in print in considerable detail, from Garmany's book through the several series of authoritative publications by Joe Strapac (see Bibliography).

These resources, both textual and photographic, make research easy on this topic. Supplementing these sources, I compiled a chronology of SP diesel acquisitions, to aid the transition era modeler (Bibliography).

For my own modeling, I can start with diesel switchers. I operate both an Alco S-2, widely used on the Coast Division, and an EMD (Electro Motive Division of General Motors) type NW-2. Here I show the Alco, a model I described in a magazine article years ago (see Bibliography).



26. This is an InterMountain cab-forward model, little changed from stock other than flat finish and some light weathering. It's shown approaching Shumala on my layout, operating eastward as a cab-hop, likely as a power-balancing move.



27. This prototype Alco S-2 shows the full "Tiger Stripe" scheme used by SP until the middle 1950s. Note the white handrails at steps and the tan canvas sun shade, typical SP practice. Coast Division switchers did not get the "radio equipped" stencil until the middle 1950s. This image was captured in San Francisco on June 20, 1957. *Dave Sweetland photo, Al Chione collection*

The prototypes were mostly assigned in northern and central California by my modeling year of 1953, and remained in the "Tiger Stripe" paint scheme SP introduced in 1944 for better visibility of its diesel switchers [27].

To model one of the familiar S-2 units, I added some details to an Atlas model [28] and applied the decals, as I described at some length in a magazine article for *Railroad Model Craftsman* (see Bibliography). Recently I added a DCC decoder to this model.

In the earliest days of SP dieselization, management repeatedly purchased the Baldwin six-axle designs, culminating in the AS-616, partly because Baldwin could deliver units in a timely manner.

The Baldwins were tough engines and performed well in service, though their prime movers required frequent maintenance. The biggest issues with them were their slow speed and long rigid trucks, which tended to “rearrange” trackwork.

In the spring of 1952, demonstrator units of new six-axle designs of road switchers from EMD, Alco, and Baldwin-Lima-Hamilton were evaluated on SP. The results can be clearly seen in subsequent SP order for road switchers: they never bought another B-L-H road switcher. From that time forward, SP purchased Alco and EMD road switchers only.

It was not until the late fall of 1952 that SP received any of the EMD design, the SD7, and those engines all were sent to the Northwestern Pacific to relieve the Baldwin units there. In



28. This Atlas model of an Alco S-2 was upgraded in details and decal-lettered, including all those stripes. The locomotive number was chosen from the 1952 *Locomotive Assignments Coast Division* [7]. The model work was described in a magazine article by the author (see Bibliography). The engine is shown doing yard work in my layout town of Shumala.



29. One of this photographer’s many fine photos shows us Alco RSD-5 no. 5301, less than a year old on December 27, 1953, descending Tehachapi with the Mountain Local. The train is passing milepost 357 and the siding at Cable.
Stan Kistler photo

the spring of 1953, SP began to receive an order of Alco RSD-5 locomotives, SP Class DF-115, intended primarily for Tehachapi helper service [29].

But as Strapac points out in his book about these locomotives (see Bibliography), “During their early years, the Pacific Lines DF-115 locomotives could be seen all over California.” There was obviously a desire to test these locomotives in a wide variety of assignments. Accordingly, I occasionally operate a model RSD-5 as power on the Guadalupe Local or Surf Turn [30].

As is obvious from the *Locomotives Assigned information*, by the early 1950s SP had acquired the bulk of what would be a fleet of more than 750 EMD F units. Though steam continued in considerable use on Coast Division through freights, F unit power also is a must for a 1953 layout.

Most F-unit consists on the Coast Route in the transition era were A-B-A or A-B sets, rather than the mountain power traditionally as A-B-B-A. Numerous photographs attest to this; see



30. The model version of Alco RSD-5 no. 5301 is shown here with the Surf Turn, returning past the Shumala roundhouse (a Banta Models kit) on the way to San Luis Obispo. The model is a Stewart locomotive, with several modifications for SP service, including the spark arrester on the stack and replacement of hood-side louvers with filter surfaces. All striping was applied with decals.



31. This view shows A-B-A power, a customary lash-up on the Coast Route, on a through freight, eastward Train 920. All three locomotives are F7 models from EMD, led by no. 6320. The location is Welby, a short distance south of King City, and the date is January 2, 1954; next stop, San Luis Obispo.
Charles Givens photo

[31]. These shorter consists are convenient for the owner of a smaller layout.

Partly because of the size of the SP fleet of F units, there is considerable variation among them, including changes after entering service, so it is vital to research these changes and achieve a correct combination of locomotive appearances for a chosen modeling year. The fine Strapac publications provide most of what is known, along with the modeling notes written by me (see Bibliography).

To simplify, SP received a few locomotives of the F3 model, easily distinguished by the rooftop “slots” for the dynamic brake grid

exhaust. Thereafter, the great majority were the standard F7 design, with a 36-inch fan in place of the slots. Until about 1956, units continued to have diaphragms between units.

Other post-1953 changes include features such as nose lifting lugs, multiple-chime horns, larger fuel tanks (along with skirt-ing removal), and snowplow pilots being applied to all new SP F units, but that was after my modeling period.

A detail often overlooked with model F units, but quite evident on the prototype, is the array of MU cables between units operating together. An example from a prototype photo [32] shows the set of four cables looped below floor level (there are four on each side).

These are not hard to model in a way that permits units to be uncoupled, and mixed and matched as desired, as well as to



32. This pair of F7 units, shown entering Colton on February 18, 1956, have the usual multiple-unit (MU) jumper-cable connections between the A and B units. *Detail of Robert E. Smith photo, Clark Bauer collection*

remain free to swivel on curves. I represent the cables with curved wires [33], which are attached only to the front or dynamic-brake end of B units.

Then when a B unit with these cables represented is coupled to an A or another B unit, these wires are in the right place to resemble the prototype's jumper cables. This can be seen in the pair of model F3 units shown in [34].

These cables are included in the mixed consist of F3 and F7 units, shown here as [35], SP nos. 6311 leading 8065. These jumper representations are not too evident at the angle of this view [35]. As a locomotive consist passes the observer, however, they are quite evident.

This consist is very much in the spirit of SP use of F units by 1953, my modeling year. I emphasize this because other years would call for quite different appearances of model F units for SP



33. To represent MU cables, I use wires bent to an appropriate curved shape, with glue blobs at the bottom of the arc. They are attached only to the B unit.



34. Here is how a pair of HO scale F units look with MU cable connections in place.



35. Models SP 6311 and 8065, shown passing Shumala on my layout, are both Athearn, but decades different in age; they are also, respectively, an F7-A and an F3-B. The units have a diaphragm between them, as was usually the case in 1953. The F3's dynamic brake exhaust slots are just visible, as are the MU cables between units.

modelers. But at least there is plenty of information to make such choices easy, based on, but certainly not limited to, the publications in the Bibliography.

Concluding remarks

The intent of this description of my own model locomotive fleet has been to show the kinds of locomotive choices that can be made if the modeler desires to conform to a particular location and era of a prototype.

Southern Pacific modelers happen to be blessed with extensive documentation, but most other railroads enjoy considerable material of the same kind. It is part of the modeler's challenge to find it, and use it.

Though my own layout is small, and emphasizes operation of an SP branch, it nevertheless touches on various aspects of SP mainline operation. My own choices to have a sizable fleet of small steam power reflect the place and time I have decided to model, and again illustrate how this kind of specialization can be approached. Heavier power for mainline trains was chosen in the same way, and operates in accord with known Coast Division practice. ☒

Bibliography

Church, Robert J., *Cab-Forward* (Revised Edition), Central Valley Railroad Publications, Wilton, CA, 1982.

Church, Robert J., *The 4300 4-8-2's* (Revised Edition), Signature Press, Wilton, CA, 1996.

Diebert, Timothy S., and Strapac, Joseph A. *Southern Pacific Company Steam Locomotive Compendium*, Shade Tree Books, Huntington Beach, CA, 1987.

Dill, Tom, *Southern Pacific's Scenic Coast Line*, Four Ways West Publications, La Mirada, CA, 2003.

Dunscorn, Guy L., *A Century of Southern Pacific Steam Locomotives*, 2nd Edition, Guy L. Dunscorn and Sons, Modesto, CA, 1972.

Garmany, John Bonds, *Southern Pacific Dieselization*, Pacific Fast Mail Publications, Edmonds, WA, 1985.

Gilbertson, Dallas, *California Rails 1950*, Four Ways West Publications, La Mirada, CA, 2008.

Menke, Arnold, "The Compendium Companion," A. Menke, Bisbee, AZ, various editions.

Southern Pacific, *Annual Report*, San Francisco, 1954.

Strapac, Joe, "Three Decades of Southern Pacific F Units," *Trainline* (magazine of the SP Historical & Technical Society), issue 66, Winter 2001, pp. 8–25.

Strapac, Joseph A., *Southern Pacific Historic Diesels*, Vol. 4, "SD7 and SD9 Locomotives," Shade Tree Books, Bellflower, CA, 1997

Strapac, Joseph A., *Southern Pacific Historic Diesels*, Vol. 8, "Alco Roadswitcher Locomotives," Shade Tree Books, Bellflower, CA, 2001.

Strapac, Joseph A., *Southern Pacific Historic Diesels*, Vol. 10, "EMD Freight F Locomotives," Shade Tree Books, Bellflower, CA, 2003.

Strapac, Joseph A., *Southern Pacific Historic Diesels*, Vol. 11, "Baldwin Switchers and Roadswitchers," Shade Tree Books, Bellflower, CA, 2005.

Strapac, Joseph A., *Southern Pacific Historic Diesels*, Vol. 18, "Alco and GE Diesel Switchers," Shade Tree Books, Bellflower, CA, 2013.

Strapac, Joseph A. *Southern Pacific Diesel Locomotive Compendium*, Vol. 1, Pre-1965, Shade Tree Books, Bellflower, CA, 2004.

Thompson, Anthony, "Modeling a Southern Pacific Alco S2 with tiger stripes," *Railroad Model Craftsman*, Vol. 56, No. 12, May 1988, pp. 54–57.

Thompson, Anthony W., and Signor, John R., *Coast Line Pictorial*, Signature Press, Wilton, CA, 2000.

Thompson, Tony, "Southern Pacific Diesel Locomotive Chronology," *Trainline* (magazine of SP Historical & Technical Society), issue 29, 1992, pp. 18–23.

On-live version available, Google Drive, at:

drive.google.com/file/d/0Bz_ctrHrDz4wallIS2ZaTFpxYIE/view?usp=sharing

Thompson, Tony, "Notes on Modeling Espee F Units," *Trainline* (magazine of the SP Historical & Technical Society), issue 66, Winter 2001, pp. 25–29.

Thompson, Tony, "A New Depot," Getting Real column, *Model Railroad Hobbyist*, November 2012.

Thompson, Tony, "SP's Whaleback Tenders," blog post, 10 July 2018, available at: modelingthesp.blogspot.com/2018/07/sps-whaleback-tenders.html

Thompson, Tony, "The SP 4-8-2 from Athearn," blog post, 20 December 2018, available at: modelingthesp.blogspot.com/2018/12/the-sp-4-8-2-from-athearn.html ■

★★★★★
RATE THIS ARTICLE

1. Pascal Latulippe modeled this somewhat unusual Alco. His techniques can be applied to many other diesel modeling projects.

★★★★★
RATE THIS ARTICLE

The 8470 was built by Montreal Locomotive Works in 1955, was converted to a chop nose in December 1979, then removed from the roster in December 1982. It's the only RS-10 ever converted to a chop nose and I wanted to have this interesting and unusual loco in my roster.

GETTING STARTED WITH THE NOSE

I started with an HO Atlas RS-11 from Proto 1000 Hobbycraft Canada, by Life-Like.

After removing the paint as mentioned, I took off all the hand-rails, handles, and grab irons, then dismantled the body shell and cleaned it with dish detergent and a soft brush. I sanded it in water with #600 sandpaper. Before starting to cut the nose of the locomotive, I carefully measured to get everything to scale.

You must cut the nose in two places and keep track of which pieces you keep and which you eliminate.

I was careful to put an X where I wanted to eliminate the center part and keep the top and bottom [3]. It's not necessary to keep the number board.

I used a miniature saw because I find the cuts are easier to control. The most difficult step is cutting the top. Take your time because you won't get a second chance! After cutting it all, I used #400 sandpaper to smooth and square the cuts and finished with 600 grit.

MLW RS-10 CP RAIL CHOP NOSE

Running Extra | February 2019

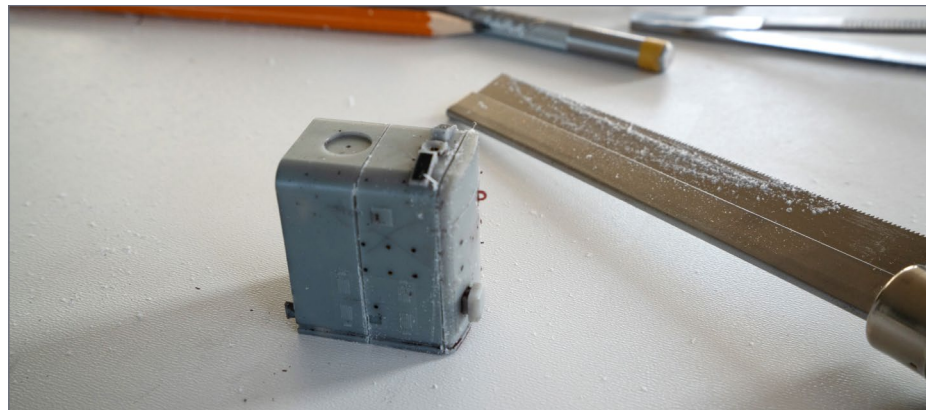
PASCAL LATULIPPE models this unique Canadian Pacific loco ...

IT WASN'T EASY TO PUT THIS MODEL IN A CONTAINER filled with rubbing alcohol. In the past, it was a Canadian Pacific engine with script lettering, painted in maroon and gray. Some of my friends thought I was crazy to undertake this project, especially a chop nose that no one was dying to see.

CP RAIL CHOP NOSE | 3

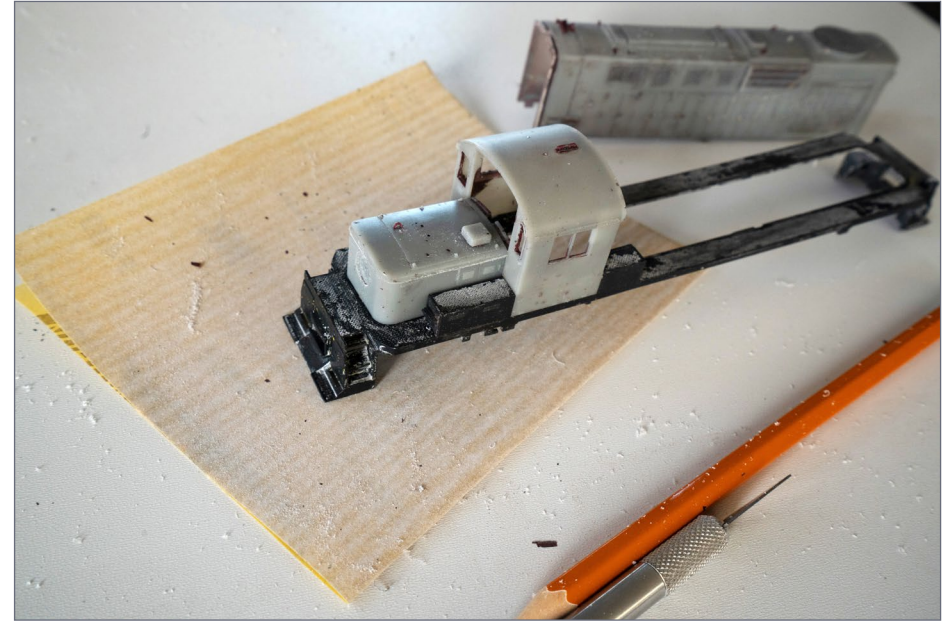


2. After removing all the paint from the shell, Pascal disassembled it in preparation for chopping down the nose.



3. Pascal marked and cut out the middle of the nose with a razor saw. The middle part marked with a faint penciled X will be discarded – only the top and bottom portions will be kept.

CP RAIL CHOP NOSE | 4



4. He test-fit the new cut-down nose on the cab and running boards.



5. (Left) Pascal likes to use LePage's superglue on his models.

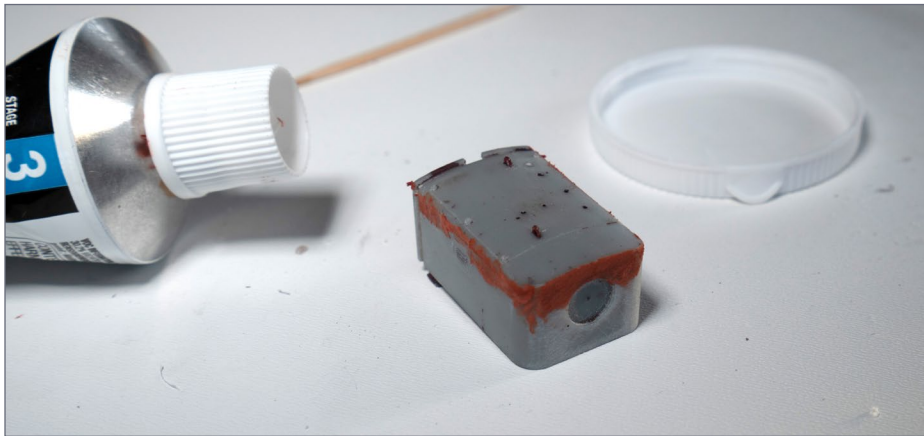
6. (Right) For smoothing and disguising joints, he uses Bondo glazing and spot putty.

CP RAIL CHOP NOSE | 5

I used LePage's superglue [5] for the joint. Bondo finish [6] fills and disguises the joint – two or three thin coats may need to be applied and sanded for a smooth finish. Sand with #400 sandpaper and finish with #600 in water [7, 8].

MODIFYING THE CAB

For the cab, I used the window piece from a Hi-Tech Details HO 5007 GE Diesel Thinwall Cab Kit, 4-Window High Hood Version.



7, 8. Pascal applied Bondo to the nose seam. After careful sanding, the seam is very difficult to detect.

CP RAIL CHOP NOSE | 6



9. For the cab front, he added window pieces from a Hi-Tech Details 5007 GE cab kit along with some styrene modifications.

I cut out the two windows and modified the top with a matching thickness of styrene.

For the center beam between the windows, I used Evergreen #271 0.060-inch I-beam. This step is a very delicate one to realize. To fill the joints, I again used Bondo for its hard, smooth finish.

After completing the cab, I had to order the number board. I first tried to make my own number board, but found it difficult to create the contour where the numbers are placed.

I asked John Whitmore from Kaslo Shops if he could get me the number board from an RS-18v model that he makes. No problem. He sent my parts by mail the same day. Thanks again, John!

After receiving the pieces, I modified the Kaslo number board by lengthening it by 24 inches in HO scale. I then cut a piece of round styrene to create the contour of the class light.



10. Things are starting to come together as Pascal fits the modified cab, nose, and rear hood to the running boards, and adds number boards and hatches.

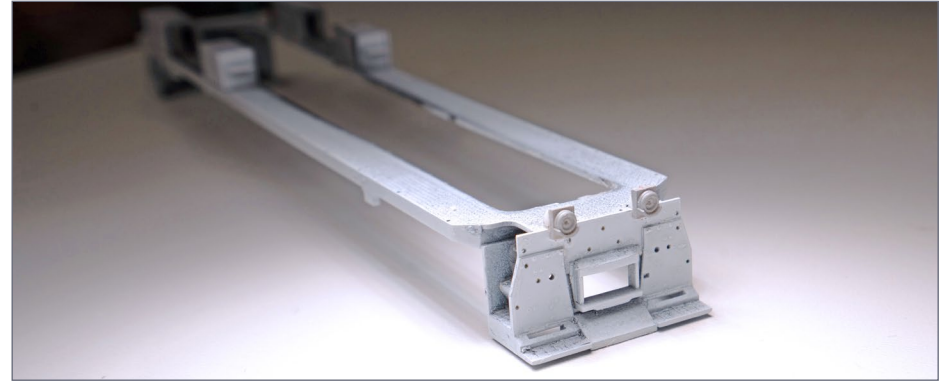
For the headlights, I used Kaslo Shops pieces that he also sent. That's it for the cab: the modifications are finished.

ADDING DETAILS

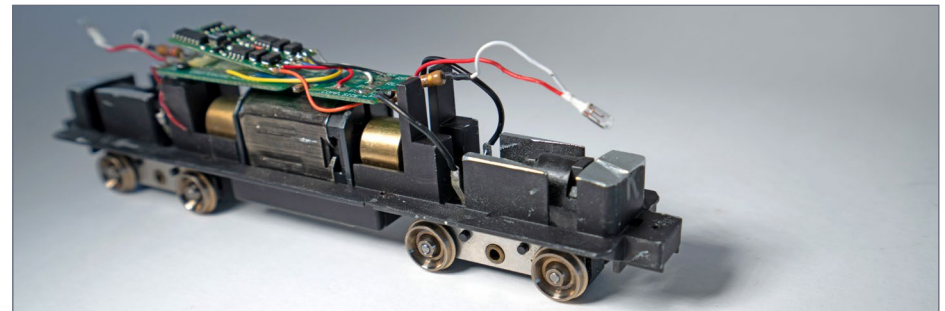
After that, I started working on details for the cut nose. I placed the two sand hatches with added handles from Kaslo Shops. The sand hatches are made with very thin styrene carefully cut out and glued with super glue. Then I sanded the sides of the nose to remove the old access door. That's all for the nose.

I should have added some details to the cabin, like the ventilator on the right side of the locomotive. I covered it with a piece of styrene, then filled the two holes on either side of the cabin. I added roof visors and placed the wind deflectors.

What's unusual about this locomotive is that the new ditch lights are placed in the "rear" because the long hood is the front of the RS-10. I used ditch lights from Kaslo Shops. I modified the back of the ditch lights with styrene.



11. On this loco, the ditch lights go on the long hood end of the frame.



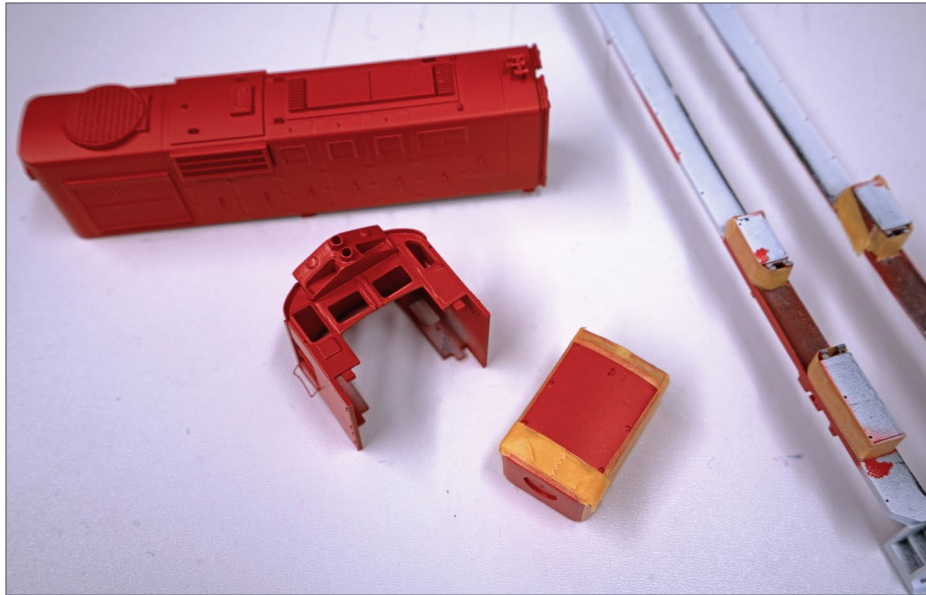
12, 13. The frame is masked and the cab end is ground down with a Dremel to make room for the low nose. The other end is ground down to make room for the speaker.

After that, I eliminated the ladder box on the rear left side of the locomotive. I cut it out with the saw and filled it with Bondo.

MODIFYING THE FRAME

Before cutting on the metal frame, I was careful to wrap the motor with some masking tape. I cut the both the front and rear to make room for the speaker and to make sure the newly chopped nose fits onto the chassis.

I used a Dremel rotary tool for this operation. I was careful to use protective glasses, gloves, and a mask. It took about 10-15 minutes to mill each side. I prefer to take my time and not get hurt or damage the model. I finished by filing it a bit to remove any sharp edges.



14. Pascal painted his locomotive with a combination of solvent and acrylic paints. See the text for details.



15. Pascal applied Microscale decals on this loco with some fancy masking to get the striped end paint scheme.

PAINTING THE LOCO

For the oil-based paint you have Tru-Color, Accupaint, Model Master (Chevrolet engine red, recommended by Pierre Dion, an acquaintance of mine), and Scalecoat II as recommended by Neil Schofield. Neil mixes CP Red and orange 50/50 and gets satisfactory results.

For water-based paints, I tried different companies, George's Trains, Rapido and True Line Trains. I was very pleased with the color of True Line. I prefer oil-based paint, but for this project I used both acrylics and oil-base.

From True Line Trains, I tried CP Action Red. For the black I went with True Line Trains again, and for the silver chassis I used Testors Model Master. I found the CP Action Red too dark, so I blended it with a few drops of yellow.

I feel it very important to start with a coat of primer. For this project I used Tamiya white. If you use gray the Action Red will be too dark. I gave two coats with my airbrush at 35-40 psi pressure.

I finished with a clear gloss from the Alclad II Lacquer company (ALC 310, 4 oz.) for the last coat. Where necessary I used Klear Kote Flat ALC 314 from the same company.

DECALING THE LOCO

I used Microscale decals. In some places I used masking and a special sticky mask on the side that I cut out, assisted by my friend Luc Comtois. I like the marvelous results.

For the DCC sound card, after I heard the ESU Loksound Alco 244 in a Mike Confalone video, I went with that. I used the 11 x 15mm square 8-ohm cellphone speaker from ESU Loksound.



16. Close-up of the final model.



17. Close-up of the cab.



18. The front truck.



19. The completed model on Pascal's diorama. Next up: weathering, he says.

I completed the model by adding 1.5-volt incandescent bulbs from Miniaturics (model 18-001-20).

That's it for this MLW RS-10 chop nose model. Next, give it a nice weathering job! ☒

PASCAL LATULIPPE



Pascal Latulippe is 38 years old, and lives in Rosemere, QC Canada.

Besides modeling, he also enjoys his other hobbies, road biking, and wine

tasting. He owns a business (Platre artefact) that creates plaster moulding, dome, fireplace, column and architectural items. ■





MORE ACCURATE PIPE LOADS

Running Extra | February 2019

LEW PHELPS on how to model better-looking flatcar pipe loads ...

IT'S EASY TO MODEL LOADS OF PIPE. IT'S HARDER TO model them accurately.

Many pre-made “pipe loads” offered to model railroaders are nothing more than bundles of tubing that bear little resemblance to real-world pipe. A scale railroad modeler who cares about proper detail will want to conduct their own research and identify pipe loads appropriate for a setting. Such research needs to consider geography, local industries, and pipe manufacturing technology used in different eras.

Common problems with pipe load models include unrealistic pipe segment lengths, unrealistic wall thicknesses, inappropriate or inaccurate colors or end fittings, anachronistic pipe structure, and inappropriate pipe type for industries in each region.

Examples of pipe loads that are anachronistic (wrong period) or otherwise inappropriate abound, such as:

- 80-foot pipe loads in almost any situation, especially before 1970, when pipe of that length was first manufactured. Most pipe is shipped in sections of 40 feet or less. Loads with pipe of 60-foot sections are uncommon before the 1970s. Pipe loads of 80-foot sections are uncommon even today.
- Cast iron pipe for water transmission with black interior walls, after about 1920 (when iron pipe manufacturers began using white cement lining).
- Iron pipe longer than 20 feet.
- Flanged pipe shipped to regions that don't have petrochemical industries, or between regions that have metal pipe manufacturing (e.g. Pittsburgh PA and Birmingham AL areas), and regions that have chemical facilities.
- Aluminum pipe larger than 24 inches scale diameter, or segments longer than 20 feet.
- Metal pipe loads made from Schedule 40 PVC plumbing pipe, whose wall are 10 inches thick at HO scale, (20 times too thick).
- Metal pipe made from cardboard tubes used as core for rolls of small plastic bags (wall 20 times too thick).

I am modeling my freelanced Ottawa & Northern Railway in HO scale. It's a fictional midwestern railroad operating in Illinois and Wisconsin in the 1953-55 period. In researching appropriate pipe loads for flatcars on the O&N, I focused on large diameter iron pipe used in municipal water systems.

My rationale is that the Upper Midwest doesn't have much petrochemical industry, but iron pipe is used everywhere, and would have been shipped throughout the region at that time for expanding suburbs. This article shares some of my research into large diameter cast iron pipe.

Cast iron pipe has proved to be an efficient and durable material to move large amounts of water. In 1664, King Louis XIV of France ordered the construction of a 15-mile cast iron pipe line to supply water to the gardens and fountains of his palace at Versailles. That pipe carried water to the gardens without problems for more than 300 years. The water mains in many cities in the US are made from 150-year-old iron pipe that is still sound.

Since it has been in use even prior to the dawn of railroads, iron pipe is an appropriate load to model for any era from the time of the Tom Thumb to the newest Tier 4 diesels. However, the design and methods of making of iron pipe have changed over time, almost as much as the changes in motive power. Understanding those changes can help a modeler achieve authenticity.

The traditional method of manufacturing iron pipe was to pour molten iron into a mold made with sand. Beginning in the 1950s, manufacturers began using centrifugal molds, which spin rapidly to distribute molten metal evenly within the mold. Both methods are normally limited to 20 feet pipe length, no matter what diameter, which ranges from 3 inches to 64 inches in the U.S.

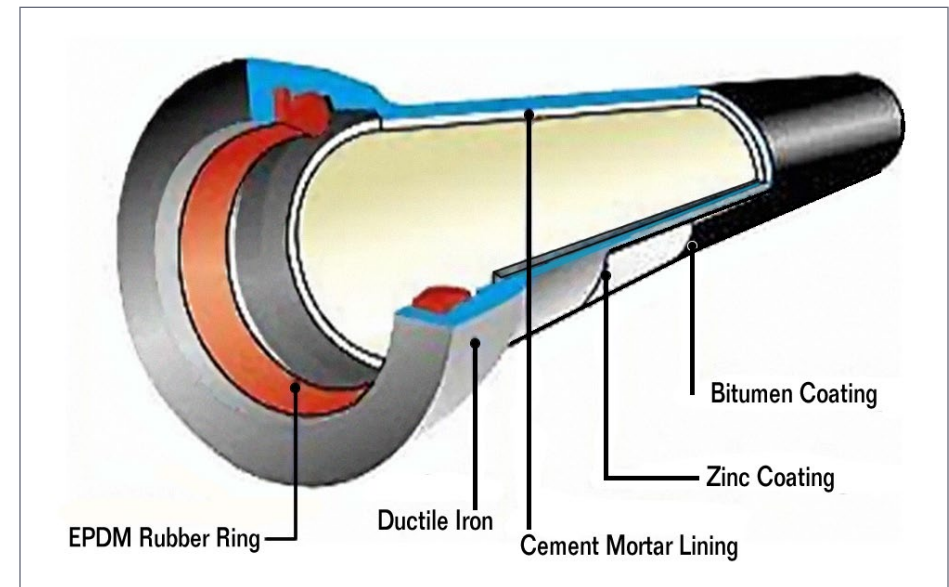
JOINT TECHNOLOGY

Techniques to join pipe sections vary depending on the pipe metal and pipe use.

Cast Iron Pipe: Cast iron pipe is made with two different types of joints.

1. "Bell and spigot" joints are used to connect pipe segments used for underground runs. They have one flared end, into which the adjoining section of pipe is inserted. The joint is easy to assemble in trenches and can tolerate up to a 15° change of angle, making it easier to route pipelines in undulating trenches.

Joints in early bell and spigot pipes were sealed by filling the socket with a mixture of water, sand, iron filings, and ammonium



1. Construction of cast iron pipe since the 1950s.

chloride. Another widely used method was to pound oakum (a mixture of hemp rope fiber and tar) into the joint and then pouring in molten lead. Since the 1950s, these methods have largely been supplanted by rubber rings [1].

2. While bell and spigot joints get used for underground iron pipe systems – above-ground pipe, valves, check valves, fire hydrants and other fittings typically connect using flanged joints. A flanged joint consists of two flat-machined lips that hold together with bolts, often with a gasket between the flanges to ensure a pressure-tight seal. Flange joints almost never get used for buried pipeline strings. Flanged pipe is generally specified for above ground service for water, wastewater, air, oil, and other liquids where rigid, restrained joints are needed.

Flanged joints get widely used in water and wastewater treatment plants, in industrial piping systems, and for other interior piping as well as for exterior applications such as bridge and other elevated crossings. Flanged pipe would be appropriate not only for rail car loads, but also for modeling pipeline crossings of rivers, etc. The accompanying photo [2] shows a variety of flanged joints on pipe and valves.

To protect iron pipe against rust, manufacturers have long applied bituminous coatings (tar-like mixtures) to the exterior and/or interior of iron pipe. Bituminous coatings are black and shiny although not quite high gloss.

Since about 1920, the interior of iron pipe in the sizes used for municipal water distribution systems and industrial plants has been lined with cement to reduce the friction of flowing fluids and inhibit rust. The cement lining is 1/4 inch to 1 inch thick, depending on pipe size.



2. Example of flanged pipe joints.

Cement is not applied to the interior of bell fittings. Since about 1990, some iron pipe has been manufactured with a black textured polymer coating on the outside, and a smooth black polymer coating on the inside.

As noted above, since the 1950s bell fittings have been designed to be used with a rubber gasket rather than the more primitive methods described above. Each manufacturer has its own proprietary gasket design, so gasket products are not interchangeable.

Pipe manufacturers paint the inside of the bell surfaces with a product-specific and unique color, such as bright blue or bright yellow, to guide installers as to which gasket to use. Such color treatment would be appropriate for railroads modeled in the 1970s or later, but in earlier times the interior of the bell joint would be coated with bitumen.

Also beginning in 1955, pipe manufacturers transitioned from traditional cast iron (also called “grey iron”) to “ductile iron,”

which is more than twice as strong as conventional cast iron. It's made by adding small amounts of magnesium to molten iron.

Differences in the two types of iron are imperceptible to the naked eye, but since ductile iron is stronger, walls are thinner in pipe made with the newer process. Even at maximum pressure ratings, pipe walls for ductile iron pipe are only 1 inch thick for the largest pipe sizes.

Walls of older "grey iron" pipe range from 1/4-inch to 2-inch thickness, depending on pipe size and pressure rating.

Iron pipe is manufactured in nominal diameters ranging from 3 inches to 64 inches. Some manufacturers ship pipe 18.5 feet long for pipe up to 24 inches diameter, 19 feet for 25 to 36 inch diameters, and 22 feet for larger diameters.

Other manufacturers standardize on two lengths for ductile pipe — 18 feet for smaller sizes and 20 feet for diameters of 24 inches



VIDEO: An interesting video on YouTube showing the modern ductile iron pipe manufacturing process.



3. American Cast (Ductile) Iron Pipe Company logo stenciled on their pipe.

and larger. Older grey iron pipe made until the 1960s was always 18 feet or 20 feet maximum. In any era, segments of iron pipe should never be longer than 20 feet.

Iron pipe is sometimes shipped with the manufacturer's logo stenciled on the side. The accompanying image shows the contemporary logo of American Cast Iron Pipe Company, founded in 1905 in Birmingham, AL. It is one of the nation's largest and most respected ductile iron pipe makers. Other logos would include Charlotte Pipe, US Steel and MCWane Ductile.

Pipe manufacturers ship their products in lifts. They can be either strapped bundles of smaller sized pipe stacked pipe-on-pipe (used only for smaller sizes); or stacks that are stabilized with blocking timbers.



4. Example of a ductile iron pipe load on a flatcar.

For very large pipe, a single pipe sits on a flat car in a wood cradle. Lifts are typically held together with metal or fabric straps, and lifts and individual large pipes are tied down to the flatcar with chains or straps.

When bell-and-spigot pipes are stacked, the bell fittings go at opposite ends of the stack on adjacent pipes. Bundles and stacks should not exceed 12 feet in height. Pipe of different dimensions can be shipped in one load or lift, with the larger pipe on the bottom and the smaller sizes on top, separated by blocking.

Here are a “real world” examples of pipe loads [4, 5]. *I strongly suggest modelers seek out photos of prototype loads, rather than relying on photos of scale model loads, since they often*



5. Another example of a ductile iron pipe load on a flatcar.

are not prototypically accurate. Google is a good place to search for such photos.

One exception is the ductile pipe loads sold by ProtoLoads [6], which appear highly and accurately detailed; their pipe interior is black (modern polymer lining).

MODELING PIPE MORE ACCURATELY

Pipe can be modeled from tubing made with several different materials. I have seen realistic examples using paper and plastic drinking straws, metal tubing, rolled-and-glued paper, old aluminum arrow shafts, and other materials. Anything that will provide a prototypically thin wall is fair game.

A challenge for precision-oriented modelers is finding tubing stock that is sufficiently thin-walled. At HO scale, a half-inch thick pipe wall is less than 0.006 inch thick, which is hard to find.

Most brass tubing commonly available at model supply stores has 0.014 inch walls, or 1.21 inches in HO scale. Aluminum arrow shafts have walls 0.014 inch or thicker. K&S Metals' Special Shapes division does offer brass tubing with 0.006 inch walls, but only up to 3/16 inch diameter, which is certainly appropriate for modeling smaller pipe diameters.

I have tested numerous methods to model the bell fitting at one end of cast iron pipe. My best results come from the following process:

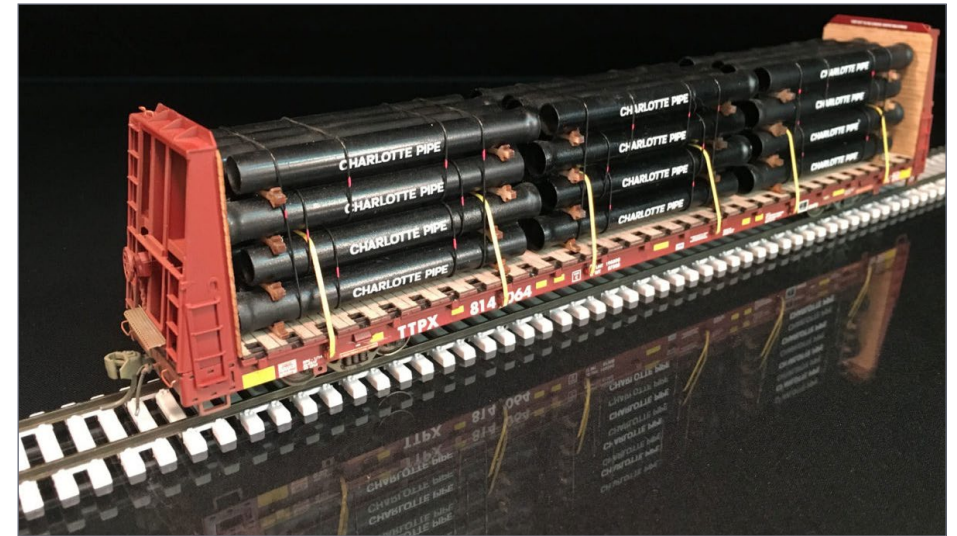
1. Cut brass tubing, 0.014 wall thickness, to appropriate length (18 or 20 scale feet).
2. Flare one end of the pipe segment using plumber's pipe flaring tool.
3. Mold Durham's Rock Hard Putty around end of pipe, roughly shaping the pipe bell fitting; let the putty dry.

4. Chuck pipe segment into drill press, flared end down.
5. Turn on the drill press and shape the hardened putty with a medium-tooth file, and then a fine tooth file to finish. The putty is quite hard, so you will need to use considerable pressure on the file.

After fabrication, each pipe segment can be painted. Use a gloss, semi-gloss, or near-black paint for the bituminous coating on the pipe's exterior and the bell fitting interior.

Then, using cotton swabs or a small brush, apply a slightly grayed white matte finish paint to the pipe interior to simulate the cement lining. Use flat black paint if modeling either pre-1920s pipe or modern polymer-lined pipe.

If modeling modern ductile iron pipe that has a rubber ring, paint the inside of the bell a bright color, matching that of your chosen



6. ProtoLoads ductile iron pipe load. Photo by ProtoLoads [protoloads.com]

manufacturer if modeling prototype pipe. Optionally, apply decals with a manufacturer's logo to the outside of the pipe.

Prototypical loads are usually blocked with chocks and supporting timbers fabricated from 4 x 4 and larger timbers. I made the supporting blocking for my 44 inch pipe (17/32" K&S brass tubing) by cutting strips of 1/8 inch basswood, drilling half-inch holes through the pieces, then cutting the pieces in half and trimming away excess wood.

I slightly enlarged the remaining semi-circular cutouts with a round file to match the pipe's diameter. Basswood is a bit lighter color than the hardwoods that would typically be used for blocking, so I darkened the timbers by soaking them in my wife's leftover tea.

A bit of glue holds the load together. I cut thin strips of black electrical tape for strapping and tie the load to the flat car with scale chain (27 links/inch). You can see my load example in [7].

I hope this article will encourage modelers to research carefully before putting fabricated pipe loads onto their flatcars. We work hard to make our rolling stock technically accurate. We should do the same with the loads. ☒

For more, see the sidebar: "A historical review of metal piping" on the follow pages >> [READ NOW](#)

LEW PHELPS



Lew Phelps is a retired public relations executive living in Pasadena CA. During his 55-year career, he was head of the public relations department for Norfolk & Western Railway from 1975 to 1984, and for Southern Pacific Co. from 1983 to 1987.

Lew was with N&W during the first restoration to steam excursion duty of N&W 611, working with Robert Claytor, and was responsible for arranging the operation of a special excursion train headed by SP 4449 from Portland OR to New Orleans LA for the 1984 Louisiana World Exposition -- thus being able to ride in the cabs of two of the most beautiful steam engines ever made.

With his wife, Cathy, Lew is modeling the freelanced Ottawa & Northern Railway in HO scale. It is set in the upper Midwest (Illinois and Wisconsin) in 1953. ■





A historical review of metal piping

Two types of metal pipe have been widely used for the last century and longer. Cast iron pipe is typically used for water and sewage transmission. Steel pipe is used for high-pressure pipelines in the petroleum industry, and in petrochemical plants.

Although the two metals have similar appearance, the two types of pipe use different technologies to join pipe sections together, and thus are modeled differently.

For more recent layouts (post World War II), one might also want to consider stainless steel pipe, which is largely restricted to specialized uses such as food processing and handling of corrosive chemical compounds, or aluminum pipe, mostly used for handling compressed air.

Five fundamental properties must be addressed for accurate modeling of any metal pipe: length, diameter, wall thickness, joint technology, and finish.

LENGTH

Cast iron pipe in “industrial” sizes (larger than for residential use) has been manufactured since the dawn of railroading almost

entirely in standard lengths of 18 feet (smaller diameters) or 20 feet (24” and larger diameters).

In recent decades, 20 feet has been standard for all diameters. Steel pipe, which is made from flat sheets that are rolled and then welded, was made in 20 foot lengths from the 1850s until the mid-1920s, when new manufacturing techniques were developed that allowed 40 foot steel pipe segments to become standard.

In the 1940s, lengths grew to 60 feet. I have not been able to identify a specific time when 80 foot steel pipe was first used, but it was not common before the 1980s.

For example, the gigantic Trans-Alaska Pipeline, built during 1974-76, used 40 foot and 60 foot pipe segments. 80-foot segments would not be appropriate before 85 foot flatcars (originally built in the late 1950s) were displaced from TOFC service by 89-foot flatcars and re-purposed for long-load transport in the 1970s.

DIAMETER

Cast iron pipe is made in diameters ranging from 3 inches to 60 inches (commonly) and 84 inches (rarely). Those sizes have been available since the late 1800s, although pipe larger than 24 inches was uncommon before 1900.

Beginning in the 1850s, steel pipe was made in diameters up to 4 inches. By around 1900, welding techniques allowed manufacturing of steel pipe up to 30 inches in diameter.

In 1948, a new technology, the “double submerged-arc process,” provided stronger longitudinal welds and allowed pipe makers to increase the size of steel pipe to 48 inches, with a few mills capable of making steel pipe as large as 144 inches diameter.

Aluminum pipe commonly available only to 16 inches diameter, and very rarely up to 24 inches. Stainless steel pipe is made today

in sizes from 1/8 inch (inside diameter) to a maximum of 42 inches, mostly in sizes 24 inches and smaller.

WALL THICKNESS

It's hard to accurately model pipe wall thickness in HO and smaller scales, but modelers should strive for accuracy. The thickest walls in cast iron pipe are 1 inch, but that's seen only for the largest pipe sizes.

For example, 36-inch ductile iron pipe typically has 1/2 inch walls. Steel pipe walls are about half the thickness of cast iron pipe, for any given pipe diameter (1/2 inch walls only for largest pipe diameters).

FINISH/COATING

From the earliest days, cast iron pipe has been made and shipped with a bituminous coating (that is, coal tar) to protect against corrosion. Since the 1920s, cast iron pipe also has been manufactured with a thin cement lining to reduce the "friction" of fluid flowing through the pipe; such pipe should be modeled with semi-gloss black paint for the coal tar exterior and matte finish off-white for the interior of the pipe (except for the bell fitting, which is not cement coated).

Beginning in the 1990s, cast iron pipe has mostly been made with a black polymer coating overlaid on the inside of the cement coating, and thus should be painted flat black or very dark grey on the inside rather than white.

Until the late 1950s, bell fittings were coated with coal tar. Since then, they have been designed to be used with a rubber gasket [8] rather than these more primitive sealing methods. Each pipe manufacturer has its own proprietary gasket design, so gaskets are not interchangeable between different manufacturers.

Pipe makers paint the inside of the bell joint surface with their own brand-specific color, such as bright blue, red or orange, to guide installers as to whose gasket should be used. Such color treatment would be appropriate for railroads modeled in the late 1950s or more recently; in earlier times the interior of the bell joint would be coated with coal tar and should be painted black.

Steel pipe is often shipped coated inside and out with coal tar to inhibit rust. Sometimes it's uncoated and then would be rust colored. Some pipe sections are shipped with a specific color coating. For instance, a medium green is often used for natural gas pipelines. Other colors should be used cautiously, and only if the color can be verified from a photo of a prototype load.

Beginning in 2007, a national standard (ASME A13.1) was established for color coding different types of pipe. See pipemarker.com/help-asme.php for details. ■



8. Small diameter ductile iron pipe with rubber gasket bell fittings.



BUILDING A **Resin reefer**

Running Extra | February 2019

BILL GILL learns to “chill” and get comfortable working with resin kits ...

JUST THINKING ABOUT RESIN KITS USED TO MAKE ME sweat. I didn't want to deal with supposedly warped, brittle pieces, lots of flash, and so-called “matching” parts that didn't line up.

That fear kept a gondola gift kit from my son tucked away on the back of a shelf to avoid ruining it until there was no other option but to simply chill out and jump in.

My jump start came as another project sent by the Rensselaer Model Railroad Society. The club would gain needed rolling stock while I gained experience to tackle my gondola kit. That seemed

RESIN REEFER | 2

1. NYC express reefer #5905, a Sunshine Models resin kit, destined for the NEB&W.

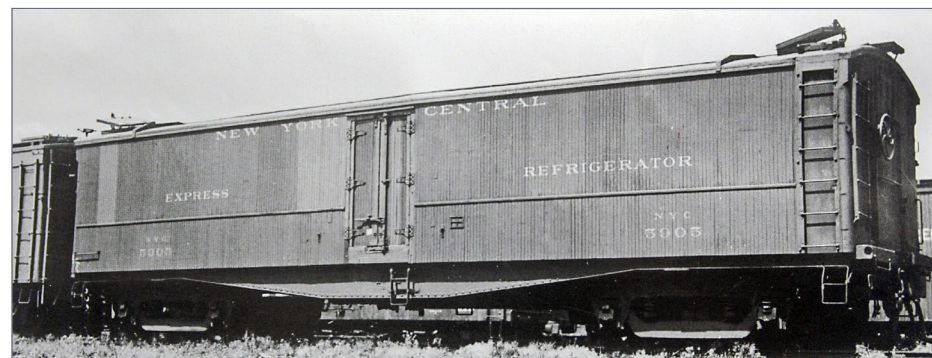
★★★★★
RATE THIS ARTICLE

like an even exchange until the highly detailed Sunshine Models HO scale NYC express reefer kit arrived!

It was not a simple beginner's kit as anticipated. Advice from the club and Ted Culotta's great series “Essential Freight Cars” (RMC Apr 2003, Jul 2009, Feb 2013) provided nudges to keep me going.

This kit has none of the shortcomings I'd heard about resin kits. It is very accurate and extremely well made. I changed a few minor details only to strengthen them because rolling stock sees heavy use during club operating sessions. My only regret is that Martin Lofton, founder and owner of Sunshine Models (and who graciously helped with advice), passed away before he could see photos of the completed kit.

Despite the hesitation to begin, my first HO resin kit went together much better than expected. I used two different types



2. Prototype photo of NYC 5905. Notice the lighter and darker patches on the weathered car siding. Photo courtesy Sunshine Models

RESIN REEFER | 3

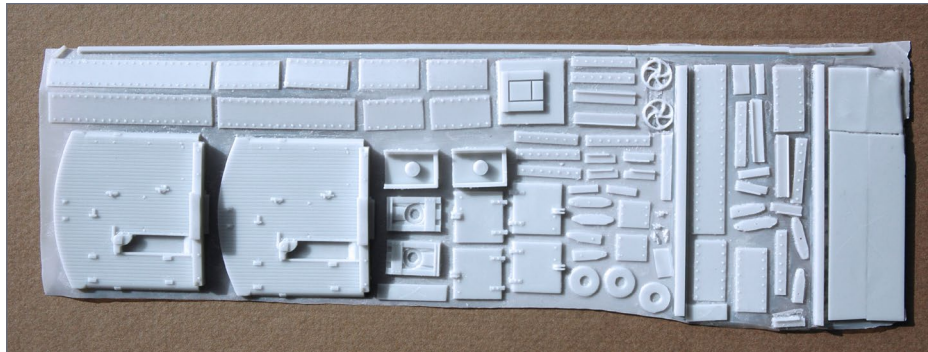
of superglue (CA) – thin and thick. And since epoxy is frequently recommended for resin kits, I also tried a five-minute epoxy but personally had poor results.

I washed the urethane parts in warm water and the Dawn dish detergent (no lotion additives), then gave them a final rinse with methanol to remove residual hand oils and mold release. I tacked one side and end together with a few dots of thin CA, then dragged more along the inside of the seam with a small wire.

When I picked up the pieces they flopped apart – probably not enough CA. After breaking that same fragile joint three times, I reinforced the inside corners with five-minute epoxy and thick styrene strips.

I spread leftover epoxy as fillets around the edges for additional strength. Hiding corner reinforcements inside a closed car like this was not a problem. This step did leave me wondering what I'd do for my gondola that would usually run empty to showcase its weathered, detailed interior.

The next morning the pondering ended. The cured epoxy pulled off the urethane and styrene like peeling white glue off glass. I



3. Sample of resin parts still attached to carrier sheet. Parts can be sanded or cut from the resin carrier. I used a combination of both methods.

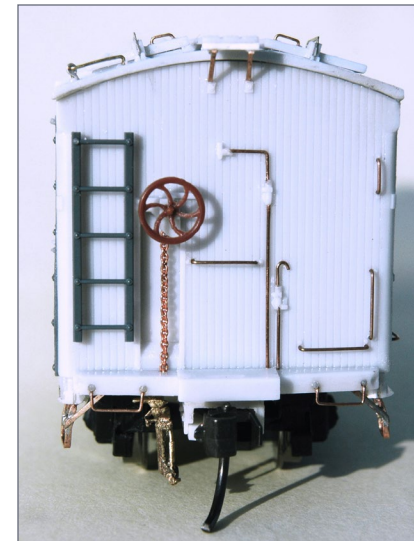
RESIN REEFER | 4

don't know what my problem was, but for the rest of the assembly I stuck with CA.

After cleaning away the epoxy fillets, I spread dry baking soda (sodium bicarbonate, not *baking powder*) beside each styrene reinforcing strip and dripped thin CA into it. The glue set instantly, making a strong, solid bond. The same combination also filled a small divot I inattentively chipped into the edge of the roof.

In other places I used Gorilla Super Glue (not regular Gorilla Glue) to reinforce the joints. It is a thicker CA that includes rubber – company representatives say it forms more resilient bonds. (I agree – I have standardized on flexible superglue – *ed.*)

Loctite also offers a rubber-toughened super glue, Ultra Gel Control. Sometimes I thinned the Gorilla Super Glue a little with thin CA. That worked well too. But for bulletproof bonding, like securing 2-56 nuts inside the underframe for the truck mounting screws, baking soda and thin CA did the job.



The kit is designed for Walther's 8' Pullman four-wheel trucks # 933-1077. The leaf springs needed

4. The bronze wire piping is glued into holes drilled in the ends of the cast-on fittings rather than the car siding as shown in instructions. Notice the flattened bronze wire supporting both the running board end and bracing the outside of the corner stirrup steps.

RESIN REEFER | 5

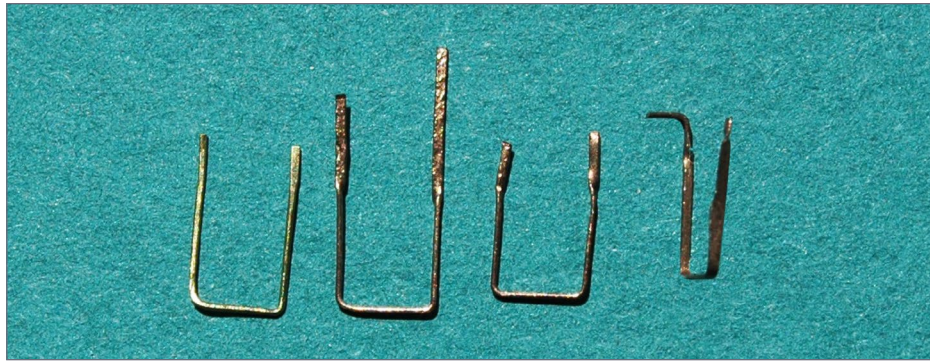
to be removed to more closely match the prototype. Simple cuts using a single-edge razor blade took care of that.

Soft brass wire came in the kit for forming the steps and the plumbing on the ends of the car. I substituted phosphor bronze wire because I prefer stiffer wire.

Instead of just butting the wire ends next to the cast-on fittings as they appeared in instruction photos, I drilled directly into the ends of the parts, so the wires plugged into them for more secure attachment.

While doing that I discovered that at least one #80 drill bit could flex a little without snapping! Later that same surprisingly tough little bit worked like a jeweler's saw to elongate mounting holes for steps and the running board end brackets.

I made the steps and brackets from bronze wire flattened by tapping it between two small pieces of flat steel bar and whacking the

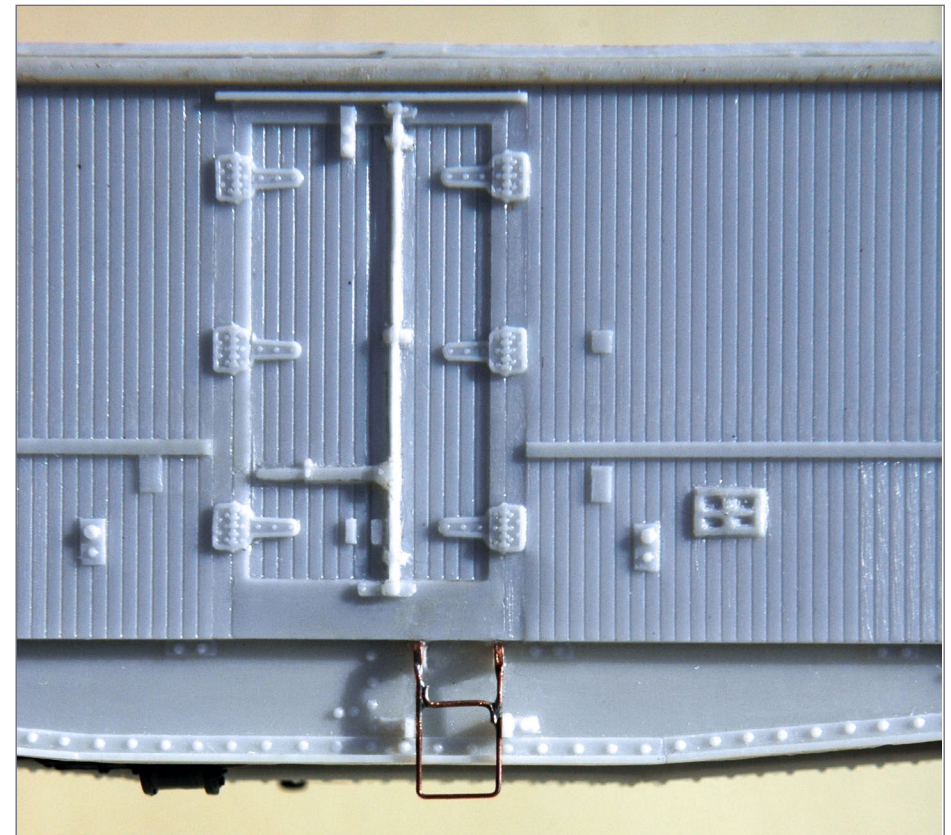


5. First attempts at making the center steps. The brass step supplied with kit is at the far left. The far-right step (standing on edge) shows a right-angle bend made at the top of one side to mount into slots cut under door (the other angle broke off this unused work-hardened piece).

RESIN REEFER | 6

bar with a hammer until the wire was a suitable width and thickness of bar. The pounding over-hardened the first batch making it brittle and break easy, but the second attempt hammered out usable pieces.

I bent and twisted those to form the center rungs and then bent back a short right angle at the top of each leg. I glued the angled ends into elongated holes cut right below the doors.

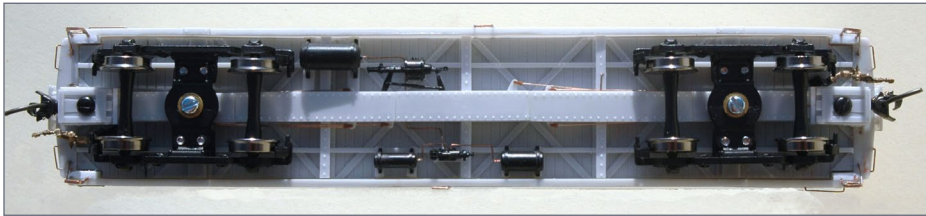


6. The right-angle bends at the top of the center steps mounted into elongated holes drilled and sawed at top edge of the underframe. This holds the steps securely.

RESIN REEFER | 7



7. Close-up shows corner step with middle rung and other details including nut, bolt & washers added to ladder to match prototype photo.



8. Underframe details, bronze wire was used for plumbing and brake rods.



9. The subtly embossed grain on some weathered siding areas and patches shows up well in this photo of the unpainted car but disappeared under a light coat of paint. Something to experiment with further.

RESIN REEFER | 8

That created a sturdier attachment than just gluing the kit's wire steps between two small angle brackets cast on the fish belly frame. The same technique worked well for attaching the lower ends of the running board brackets.

The kit included A-Line stirrup steps for the corners. The prototype steps had a slightly convex profile. I gripped each step in smooth-tipped needle nose pliers and eyeballed a gentle outward bend.

Each corner and door step needed a middle rung. That called for soldering. I chopped tiny bits of solder as small as I thought I could handle, then cut them in half again (less than half a small pinhead). I positioned the pieces on masking tape, sticky side up. A toothpick dabbed a dot of rosin flux on each joint and I



10. Painted patches on NYC express reefer #6066 wood siding similar to patches on #5905. *Photo courtesy of the Rensselaer Model Railroad Society*

“tweezed” a solder granule in place. The solder melted instantly and formed good joints requiring very little cleanup. (Solder paste would work great for this as well – *ed.*)

I substituted more flattened wire in place of the styrene 1x2 strip supplied for the diagonal brace on the outside of each corner step. I could not come up with a simple jig to hold each brace aligned against its step, so soldered them together in place on the frame.

I tinned the brace on one end and pressed the opposite end into an angled slot which that same sturdy #80 bit had drilled and sawed into the undercarriage. I pressed the tinned brace against the step's side.

A dot of flux kept them together until a quick touch of the iron soldered them without warming the resin. Thick CA secured the other end in the slot.

One more experiment looked successful at first. I chose NYC express reefer # 5905 to model, based on several prototype



11. NYC express reefer # 5982 repainted and with newer Gothic lettering. Photo courtesy of the Rensselaer Model Railroad Society

photocopies provided with the kit's background information. Patches of siding on that weathered car had been repainted at different times.

The grain and color of those boards varied from the rest of the car. Instead of dragging all boards with the edge of a razor saw, I embossed some of them with the blunt tip of a very fine needle. After practicing on scrap resin, each selected board got a dozen or more light passes down its length, being careful not to scratch the urethane surface.

In the photo of the unpainted side, that subtle graining reflects light differently than the rest of the car, and it looked good. Club member Tom Amrine did an excellent job painting the car, but even his light touch filled the very shallow embossing. We think the idea merits further experimentation.

By the time the reefer was finished I was hot to build the gondola that started all of this. Gorilla Superglue worked well on the inside corners without adding any braces and my gondola now runs on my layout instead of hiding in a box! ☒



12. There was no photo of the other side of the prototype, so this side of the model is a complete guess.



13, 14, 15. Other views of the completed model.

BILL GILL



Bill Gill is a member of the Rensselaer Model Railroad Society, builders of the New England Berkshire & Western RR. He is also working on a tiny HO scale home layout, the Connecticut & Vermont RR. Both layouts are set in approximately the same locale and time period, yet they are vastly different in size and scope. Each layout

provides interesting projects and challenges that compliment one another. ■



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

CLICK TO FIND OUT MORE

THE AH-HAH MOMENT

column



MRH Running Extra | February 2019

JOE FUGATE: THE SECRET TO MORE REALISTIC PAINTED BACKDROP CLOUDS ...



RATE THIS ARTICLE

If you have tried painting clouds on your layout backdrop, have you wondered why they don't look particularly realistic?

Why not use photos instead of painting a backdrop?

Sometimes less is more — a *painted* backdrop that suggests some distant hills and clouds can actually complement the layout. The focus remains on the trains, not the backdrop.

Okay, assuming we want to do a painted backdrop, how do we get more realistic painted clouds?

Take a look at [1] and compare it to [2]. Both are painted cloud backdrops, but [2] looks much better. Why?

That's because the clouds in [2] keep in mind the real sky is a three-dimensional space that curves up overhead — it's not a flat wall. *Ah-hah moment!*

Herein lies the secret to getting a better painted backdrop sky. Let's assume a fair blue sky dotted with cumulous clouds.

Looking at the backdrop and painting clouds on it:

- Clouds near the bottom tend to be farther away and smaller.
- Proceeding up from the horizon, clouds generally get larger.
- Clouds farther away at the bottom tend to be viewed from the side.

THE AH-HAH MOMENT | 2

- As you move up the sky, you're viewing the clouds more and more from the underside.
- Clouds may be ethereal, but they're still objects with shape and light gray shadows around the billows, giving them a sense of shape. Clouds especially have shadow *on the underside*.
- To make a cloud appear to have more underside showing, increase the percentage of the cloud that's underside gray shadow. Clouds viewed from directly underneath will be almost totally shadow.
- The sky itself gets lighter as you move toward the horizon. Likewise, the clouds closer to the horizon get lighter.

So taking these guidelines, plus some photo reference [3], study and see if you can't also get better looking clouds on your painted backdrop! ☑



1. Many painted sky backdrops look like this, which for some reason, doesn't look all that real.



2. Using the suggestions in this article, here is how a painted sky backdrop can look. Much better!



←3. By referencing a real life sky photo, you can see the recommendations in this article demonstrated. The real sky is more of a big blue overhead bowl than a flat blue canvas. Keep that in mind and a painted backdrop will look much better.

Here are all the pages
from the February
issue of
*Model Railroad
Hobbyist* magazine
as well! ➡



ALSO:

- Basement-filling HOn3 layout
- Passenger car lighting enhancements
- SP&S first run RS-3
- Finding answers on the MRH forum
- ... and more inside!



Rob Spangler on
Modeling running water
▶ READ NOW

Now Available from



N SCALE 1973 FORD® F-100 PICKUP TRUCKS

After hitting record production numbers with the 1972 F-100, 1973 kicked off the 6th Generation of Ford F-Series pickups. In addition to introducing a longer wheelbase compared to previous models, these larger "new generation" trucks featured roomier cabs and were advertised as the most "comfortable and carlike of any conventional pickup ever built" by Ford. In calendar year 1973, 429,664 F-100s were produced in plants across the United States, Mexico, Canada and Argentina. "Pickup" a few of these to increase the traffic on your layout!



RAVEN BLACK



SEQUOIA BROWN



CANDYAPPLE RED/ WIMBLEDON WHITE



WIMBLEDON WHITE



MOW YELLOW



WIMBLEDON WHITE/WINTER GREEN

FEATURES:

- Side view mirrors
- Headlight glazing
- Interior detail
- Under carriage detail
- Moveable tailgate hatch
- Two trucks per pack



FORD TRADEMARKS AND TRADE DRESS USED UNDER
LICENSE TO ATLAS MODEL RAILROAD CO., INC.

CLICK HERE!

FOR MORE INFORMATION OR TO LOCATE A DEALER, PLEASE VISIT WWW.ATLASRR.COM
ATLAS MODEL RAILROAD CO., INC. • 378 Florence Ave., Hillside, NJ 07205

STAFF

HAVING FUN WITH TRAINS

MRH

MODEL RAILROAD HOBBYIST

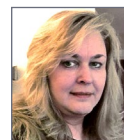
Model Railroad Hobbyist February 2019 | #108

(Updated 02/01/19)

Editorial Staff



Joe D. Fugate, Publisher and
Editor



Patty Fugate, Pasteup and
Layout



Richard Bale, News and
events



Jeff Shultz, News and
events, Tech Assistant



Joe Brugger, Copy Editing



Mike Dodd, Copy Editing



RATE THIS ISSUE

ISSN 2152-7423

Advertising

Les Halmos, Account Manager
Jean-François Delisle, Marketing Assistant

Columnists

Larry Smith, Narrow Gauge/Shortlines
Jim Six, Limited Modeler column
Ken Patterson, Reporter at large

Rotating Columnists

Jack Burgess, Getting Real column
Nick Muff, Getting Real column
Mike Rose, Getting Real column
Tony Thompson, Getting Real column

Rob Clark, Imagineering
Dave Meek, Imagineering
Ray Dunakin, Imagineering

Issue password: Feb2019

Published for the glory of God. [What's this?](#)

MRH SPONSORS



Model Railroad Hobbyist | February 2019 | #108

A - F



acculites.com



railroadhobbyshow.com



archertransfers.com



athearn.com



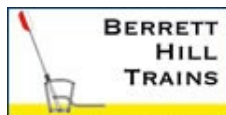
www.atlasrr.com



bachmanntrains.com



backdropjunction.com



berretthill.com/trains



blairline.com



bowser-trains.com



mycaboose.com



coffmaneng.com



(youtube channel)



www.digitrax.com



decalprofx.com



trackplanning.com



roometteslighting.com



esu.eu/en



handlaidtrack.com

MRH SPONSORS | 2

G - Z



iascaled.com



lights4models.com



litchfieldstation.com



micro-trains.com



store.mrhmag.com



modeltechstudios.com



handlaidtrack.com/mt-albert-scale-lumber



ncedcc.com



nwhs.org



www.pwrs.ca/main.php



rapidotrains.com



ringengineering.com



scaletrains.com



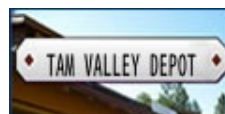
soundtraxx.com



sodigi.com



sbs4dcc.com



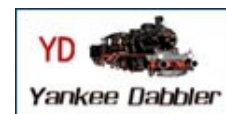
tamvalleydepot.com



traintekllc.com



walthers.com



yankeedabbler.com

Looking for something? Check the MRH Marketplace!



Take me there!

[Vendors: Get your clickable logo here ...](#)

MRHMAG.COM

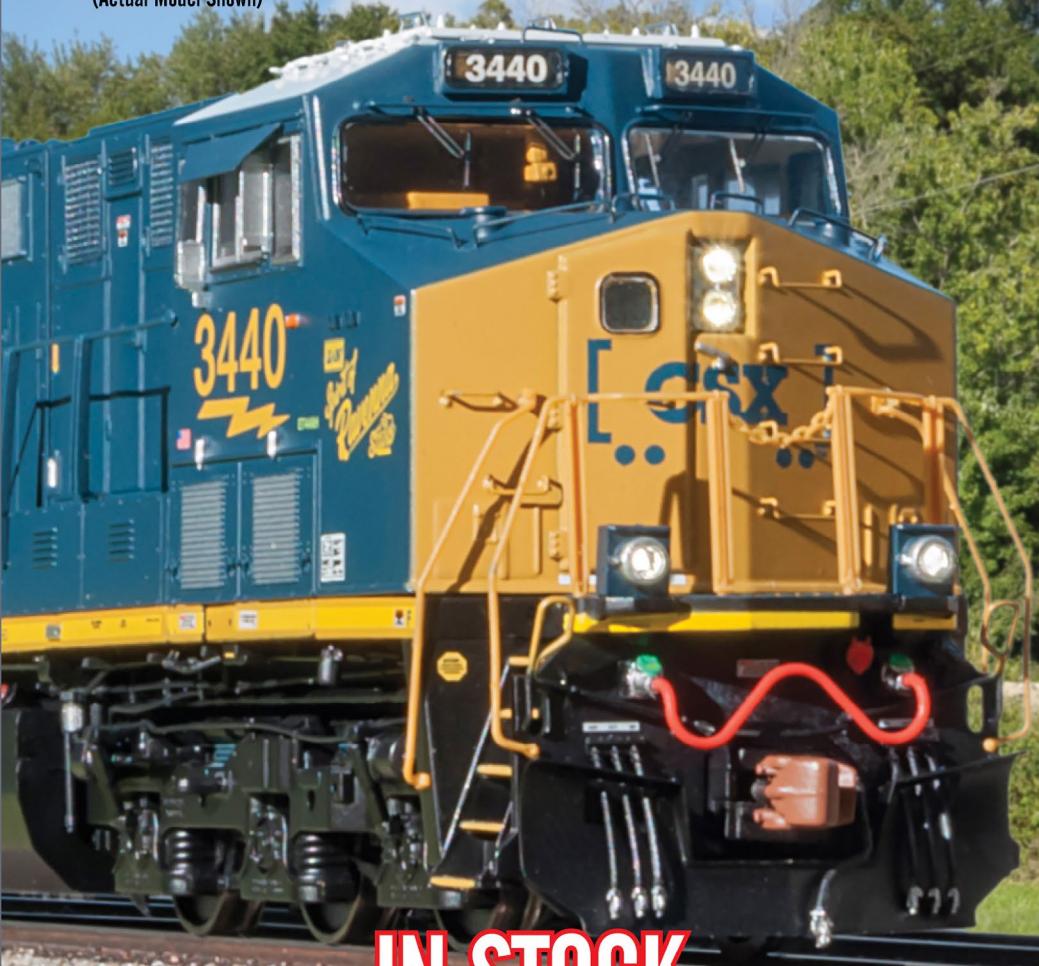
REGISTER
(free)

[INDEX](#)

[TABLE OF CONTENTS](#)

"TIERS" FROM HEAVEN

With railroad and road number specific accuracy, lighting effects, and prototypical sound, our HO Scale Tier 4 GEVo locomotives are truly "Tiers" from heaven.
(Actual Model Shown)



IN STOCK

Order Now

This product is made under trademark license from General Electric (GE).

© 2019 ScaleTrains.com, Inc. ScaleTrains.com, Rivet Counter, and
respective logos are trademarks of ScaleTrains.com, Inc.

ScaleTrains.com, Inc. 7598 Highway 411 Benton, TN 37307
844-9TRAINS 844-987-2467 International 423-299-3689

Scene and photography
by Ken J Johnson
Production model shown



HO
1:87 SCALE

PUBLISHER'S MUSINGS



Model Railroad Hobbyist | February 2019 | #108

JOE FUGATE: A BAD WEATHERING JOB AND A GREAT RESOURCE FOR SOLVING THORNY HOBBY PROBLEMS!



RATE THIS ARTICLE

RECENTLY I WAS REVIEWING SOME ONLINE COMMENTS saying a modeler's "weathering job" didn't look very good. I thought the weathering looked pretty good, actually.

The modeler used a reference photo, which is one big point in their favor. Fantasy weathering is almost always poorly done unless you really know what you're doing.

In comparing the model's weathering to the photo, the model's weathering was heavier. But it wasn't that much heavier, just a slight bit heavier. Looked fine to me, even if it was a little heavier.

My point about reference photos is a very important one, but I find more than a few modelers don't weather from reference photos. That's a shame too, when in the Internet Age, a quick Google search often can get you a plethora of photos to pick from.

Even if you're modeling a bygone period or a prototype that doesn't have many if any photos online, weathering is weathering. Just find something representative and adapt it to your model.

Speaking of bad weathering jobs and reference photos, what do you think of this reference photo [1] I found of an SP bay window caboose?

T. McAdams Photo
SP 1764 C-40-7



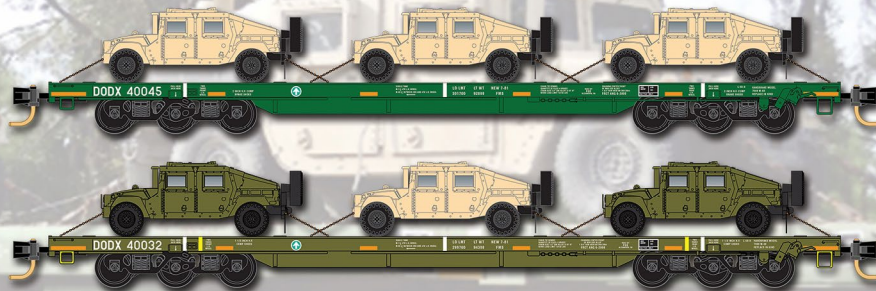
1. Look at how poor this paint and decaling job is! They didn't even bother covering up the decal film. *Prototype photo by T. McAdams* [espee.railfan.net/nonindex/caboose_photos/1764_sp-c-40-7-caboose-thom_mcadams.jpg]

ADVERTISEMENT

DODX FLAT CAR 3-PACKS WITH HUMVEES

**EACH PACK INCLUDES
3 FLAT CARS WITH 9 HUMVEES!**

**NEW INJECTION-MOLDED
MULTI-PIECE HUMVEE WITH
ETCHED-METAL DETAILS!**



**MICRO-
TRAINS®
LINE**

CLICK HERE FOR MORE INFO

**N
SCALE 1:160**

MRHMAG.COM

REGISTER
(free)

ADVERTISEMENT

**HO
SCALE**



BACHMANN'S EXCLUSIVE TEST WEIGHT CAR REALLY MEASURES UP

Test Weight Cars had known weights so track scales could be precisely calibrated. Vital for ensuring accurate railroad operations, the scales were used to check axle load limits and to determine the billing of customers for cargo loads. Bachmann's exclusive HO model features a die-cast body, prototypical graphics, metal wheels, and *E-Z Mate*® Mark II couplers. Offered in four popular roadnames, there is also a Painted, Unlettered - Black version that comes with customizable detail parts. Visit your favorite hobby dealer to see how this new Test Weight Car measures up for your railroad operations.



BALTIMORE & OHIO®
Item No. 74401



BURLINGTON NORTHERN
Item No. 74402



CANADIAN NATIONAL
Item No. 74403



UNION PACIFIC®
Item No. 74404



PAINTED UNLETTERED - BLACK
(with customizable detail parts)
Item No. 74405

SHIPPING NOW!
MSRP \$39.00 each

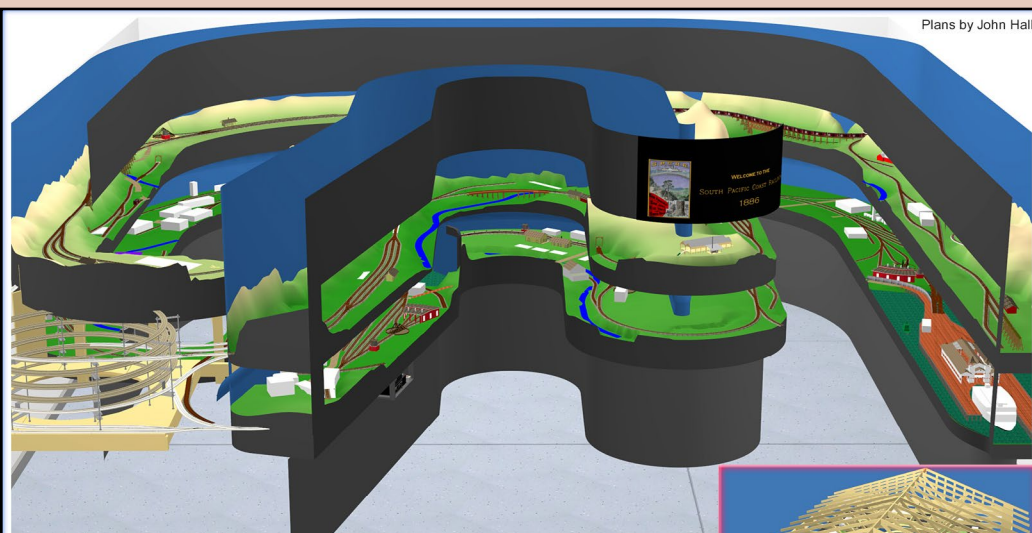


Bachmann Industries, Inc. • 1400 East Erie Avenue • Philadelphia, PA 19124 USA • www.bachmanntrains.com

Click for more information.

[INDEX](#)

[TABLE OF CONTENTS](#)



How will you plan your layout?

3rd Plant 3D CAD
The ultimate track planning software

El Dorado
SOFTWARE



PUBLISHER'S MUSINGS | 3

Do you see how this prototype looks like a bad decal finishing job? That's why you need reference photos!

If a modeler was to duplicate this prototype finish on a model, they would be chided for having a poor model finish, yet the prototype photo proves it's completely accurate.

Resource for solving thorny hobby problems

Last month, I was on the road doing layout stories. At one of the layouts, the wonderful steamer with sound and lights suddenly went dead and refused to respond to the throttle.

Now I had a problem. I had been videoing a sequence of runbys with this loco and it had gone totally non-responsive on us. What to do!

CORNERSTONE

THERE'S A WALTHERS CORNERSTONE KIT FOR EVERY HO & N SCALE LAYOUT

MORE THAN 400 KITS CURRENTLY AVAILABLE, AND MORE ON THE WAY!

Designed for easy construction, every kit features detailed plastic parts plus illustrated, step-by-step instructions. Many also include extra parts for easy customizing.

INDUSTRIAL



N Central Beverage Distributors

COMMERCIAL



HO Modern Shopping Center I

RESIDENTIAL



HO Split Level House

RAILROAD



N Single-Track Arched Pratt Truss Bridge

CLICK HERE TO SEE THE ENTIRE CORNERSTONE LINE!

WALTHERS

Support your local hobby shop • visit walters.com • call 1-800-4-TRAINS

©2019 Wm. K. Walther, Inc.

This layout used DCC, so I asked the layout owner if he as familiar with JMRI (Java Model Railroad Interface), because JMRI lets you quickly look at decoder settings and debug them.

He said yes, so he set up his laptop and fired up JMRI. We spent 15 minutes or so looking at the settings, and tried changing a few settings but nothing was working.

The owner threw up his hands and finally announced he was stumped. He asked me if I had any ideas.

I thought for a moment, then said, "Let's search the *MRH* forum and see if anyone has had this problem, and what they did to solve it."

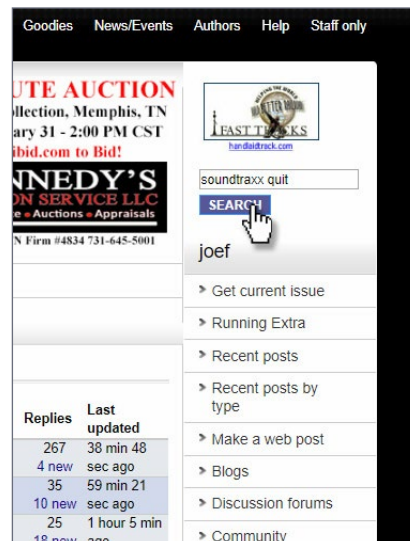
This loco used a Tsunami2 SoundTraxx decoder. I've seen other brands of decoder go non-responsive as well, so this is no indictment of SoundTraxx. Happens to the best of them, you could say.

So I use the searchbox in the upper right on the *MRH* website page [2], and typed **soundtraxx quit** into the search box.

Immediately in the first search result entry [3], this came up: *New Tsunami2 stopped working ... help?*

As I scrolled down through the posts, I quickly found this one [4]:

"If you confirm that the decoder is powered. try doing a reset on the main. Set CV8 = 8. Cycle the power off for at least 1-2 minutes, (I would personally remove the locomotive from the track), then power the



2. To solve a problem I encountered on a layout visit, I searched for a solution to "soundtraxx quit."



RAILFAN FAVORITES RECREATED FOR YOUR LAYOUT

An introduction of interesting paint schemes came from both the Norfolk Southern and Union Pacific during the early and mid 2000s. These colorful and unique locomotives have been seen from coast to coast in a variety of service. Athearn™ brings these Legendary Locomotives to you, in HO scale as Genesis™.



IN STORES!

SPIRIT OF UNION PACIFIC FEATURES:

- 2nd Run!
- PTC antenna array roof
- Headlights and ditchlights lit with LEDs
- Late handrails

Without Sound
ATHG19430 \$249.98
With Sound
ATHG01943 \$339.98



IN STORES!

NS 6920 FEATURES:

- 4000 gallon rebuilt fuel tank
- Cab mounted PTC antenna array
- NS designed snow plow
- Slotted style blower duct kick plate
- Prototypical cab panel louver arrangement

Without Sound
ATHG65204 \$249.98
With Sound
ATHG65254 \$339.98



2nd Run!

NS 9-1-1 FEATURES:

- 3900 gallon EMD fuel tank
- Cab mounted PTC antenna array
- NS designed snow plow
- Horse head style blower duct kick plate
- Prototypical cab panel louver arrangement

Without Sound
ATHG65200 \$249.98
With Sound
ATHG65250 \$339.98

ATHEARN.COM FOR MORE INFO



HORIZON
H O B B Y

VISIT
Your Local Retailer

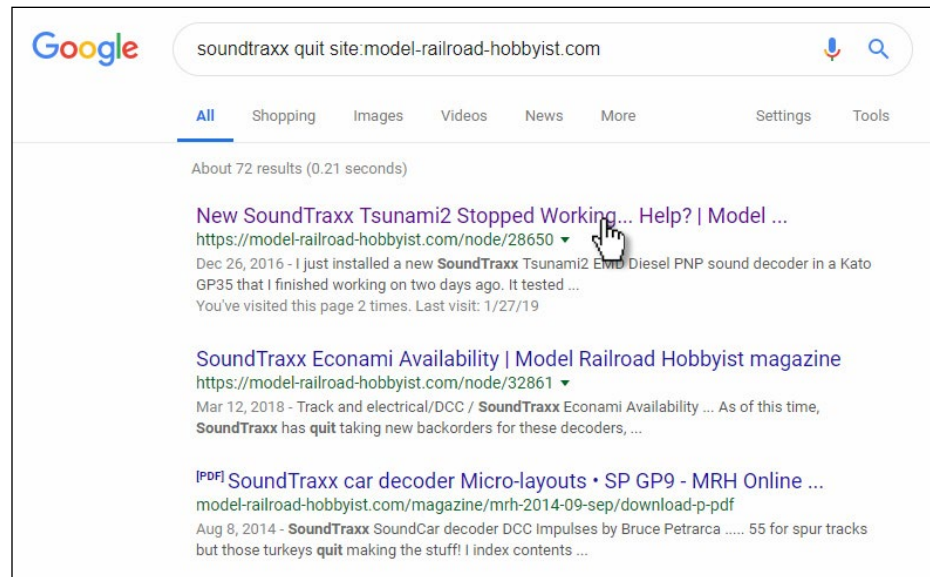
CLICK
Athearn.com

CALL
1.800.338.4639

SERIOUS FUN™

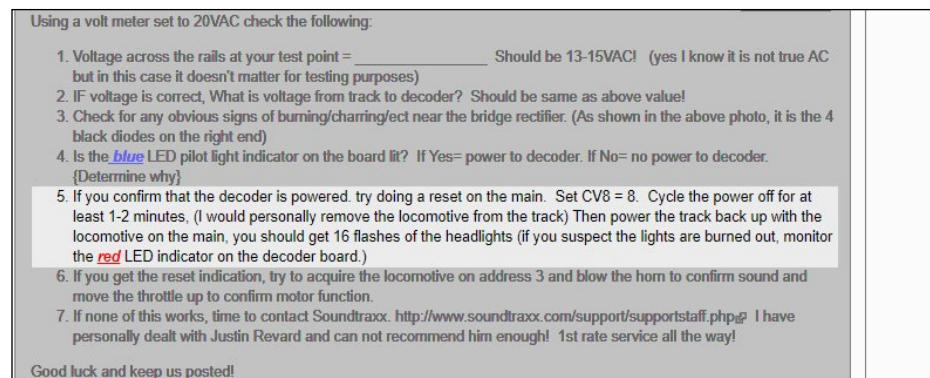
©2017 Horizon Hobby, LLC. Athearn, Genesis, Ready To Roll, Trains in Miniature, Serious Fun and the Horizon Hobby logo are trademarks or registered trademarks of Horizon Hobby, LLC. The Union Pacific mark and other marks owned by Union Pacific are made under trademark license from Union Pacific Railroad Company. All other trademarks, service marks and logos are property of their respective owners. Final models may vary slightly from photos shown. 60869

track back up with the locomotive on the main. You should get 16 flashes of the headlights (if you suspect the lights are burned out, monitor the red LED indicator on the decoder board.)”



Google search results for "soundtraxx quit site:model-railroad-hobbyist.com". The search returned about 72 results in 0.21 seconds. The top result is "New SoundTraxx Tsunami2 Stopped Working... Help? | Model ..." with a URL pointing to a forum post. The second result is "SoundTraxx Econami Availability | Model Railroad Hobbyist magazine" with a URL pointing to a magazine article. The third result is a PDF titled "SoundTraxx car decoder Micro-layouts • SP GP9 - MRH Online ...".

3. The search in [2] returned this result, with the very first entry being most promising. I clicked into the thread and started reading through it.

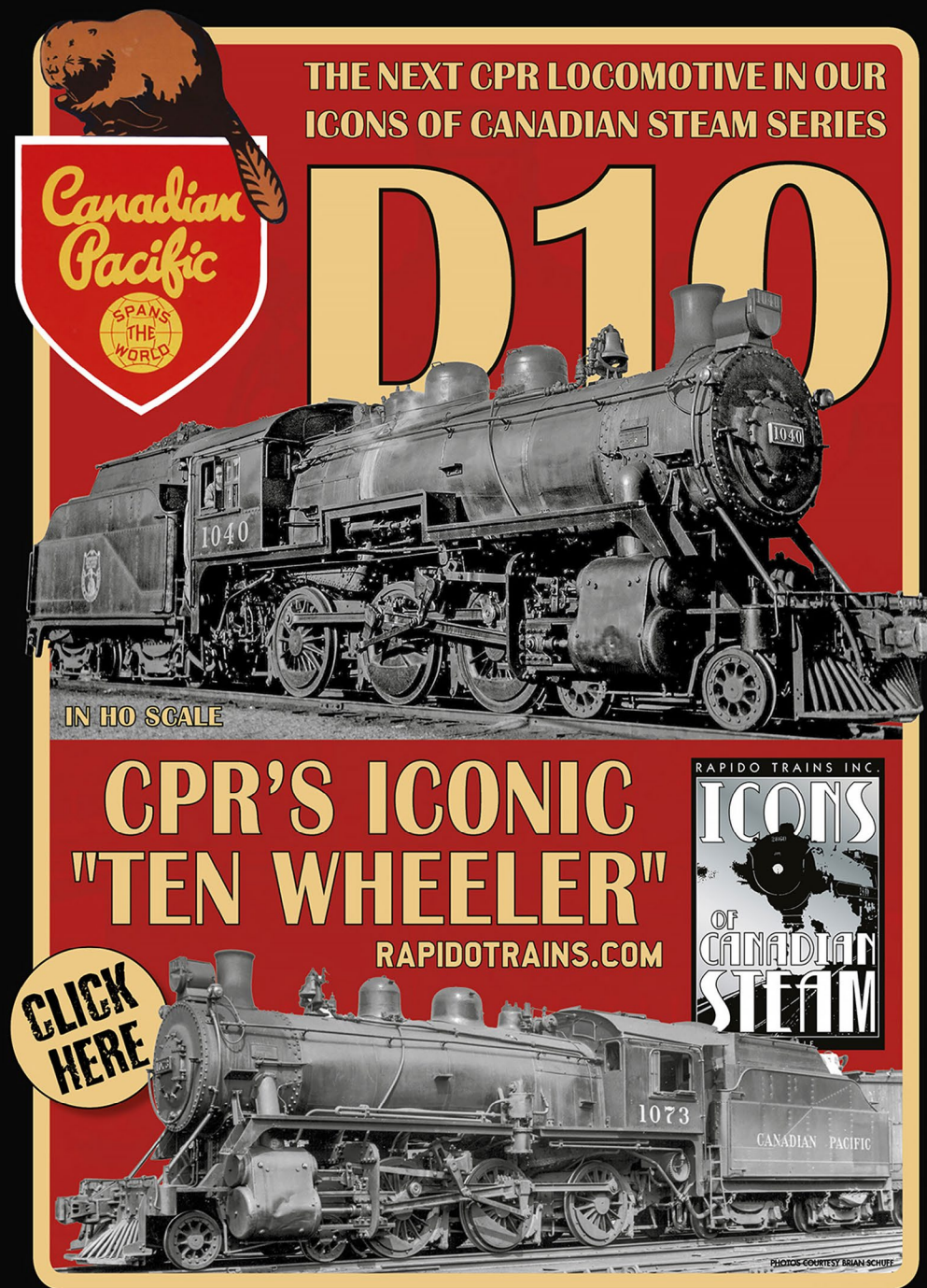


Using a volt meter set to 20VAC check the following:

1. Voltage across the rails at your test point = _____ Should be 13-15VAC! (yes I know it is not true AC but in this case it doesn't matter for testing purposes)
2. IF voltage is correct, What is voltage from track to decoder? Should be same as above value!
3. Check for any obvious signs of burning/charring/ect near the bridge rectifier. (As shown in the above photo, it is the 4 black diodes on the right end)
4. Is the **blue** LED pilot light indicator on the board lit? If Yes= power to decoder. If No= no power to decoder. {Determine why}
5. If you confirm that the decoder is powered, try doing a reset on the main. Set CV8 = 8. Cycle the power off for at least 1-2 minutes, (I would personally remove the locomotive from the track) Then power the track back up with the locomotive on the main, you should get 16 flashes of the headlights (if you suspect the lights are burned out, monitor the **red** LED indicator on the decoder board.)
6. If you get the reset indication, try to acquire the locomotive on address 3 and blow the horn to confirm sound and move the throttle up to confirm motor function.
7. If none of this works, time to contact Soundtraxx. <http://www.soundtraxx.com/support/supportstaff.php> I have personally dealt with Justin Revard and can not recommend him enough! 1st rate service all the way!

Good luck and keep us posted!

4. Drilling down into the thread in [3] lead to finding this post with a recommended course of action. We followed this and voila – it worked!



THE NEXT CPR LOCOMOTIVE IN OUR ICONS OF CANADIAN STEAM SERIES

D10

IN HO SCALE

CPR'S ICONIC "TEN WHEELER"

RAPIDOTRAINS.COM

CLICK HERE

ICONS OF CANADIAN STEAM

RAPIDO TRAINS INC.

CANADIAN PACIFIC

PHOTOS COURTESY BRIAN SCHIFF

CABOOSE

Sharing Our Passion for Trains Since 1938



CLICK HERE
for the
Serious Modeler's
Resource!

More than 148,721 items,
over 567 manufacturers,
**most at a discount from
full retail – all at
a fair price.**

**As always, in-stock orders of
\$100.00 or more ship free
within the Continental U.S.!**
*surcharges may apply for oversized items.

**10800 West Alameda Ave.
Lakewood, CO 80226
(303) 777-6766**

PUBLISHER'S MUSINGS | 6

So we tried exactly that, following the precise instructions as written, and guess what – it worked! What a relief.

What a great testimony to the wonderful resource the *MRH* forums can be. Hooray, we were back in business again, and I went on to complete the day's video shooting without any further issues.

So if you are having some frustrating issues, don't overlook the *MRH* forum. You will find a lot of great answers there.

If you're not a registered forum member already, you can sign up here (it's free):
mrhmag.com/user/register

Once you get signed up, you can post questions on the forum and get some great answers. We have a lot of very helpful, experienced modelers.

Once you post your question(s) do give it a bit of time. After a day or two, you should start to see some good answers show up.

PWRS 
PACIFIC WESTERN RAIL SYSTEMS
SPECIAL RUN CAR

NEW, LIMITED-RUN MICRO-TRAINS CARS

Trinity Rail (TILX) Green Tank Car 4-Pack

N
SCALE 1:160



**CLICK HERE FOR
TILX TANK CARS**

**AVAILABLE
AUGUST/19**

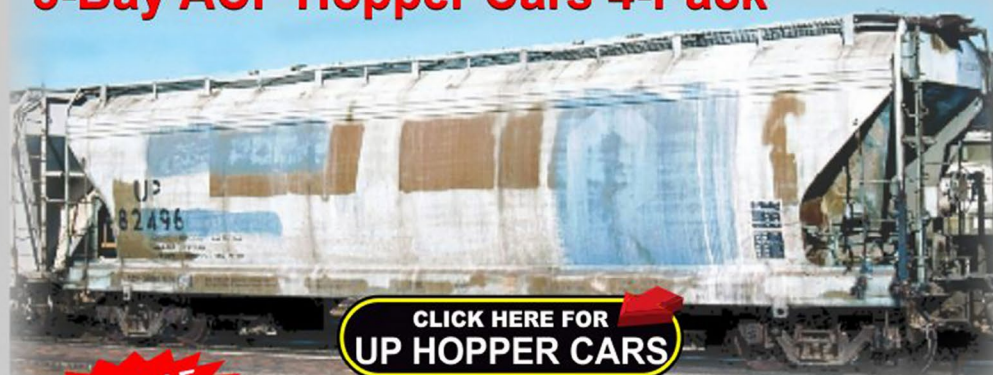
Two different packages,
with 6 or 8 bar reflectors

Green area on top
with reporting marks

Weathered
appearance

Union Pacific (UP ex Rock Island) 3-Bay ACF Hopper Cars 4-Pack

N
SCALE 1:160



**CLICK HERE FOR
UP HOPPER CARS**

**AVAILABLE
AUGUST/19**

Rock Island Blue colour
whitewashed by UP

4 different UP cars
in this series

Weathered,
paint effects

Pacific Western Rail Systems

**LIMITED RUN OF MINIMUM 50 SETS-MADE
EXCLUSIVELY FOR PWRS BY MICRO-TRAINS**

**MICRO-
TRAINS®
LINE**

MRHMAG.COM

 **REGISTER**
(free)

[INDEX](#)

[TABLE OF CONTENTS](#)

MRH CONTEST: "California Basement" Challenge

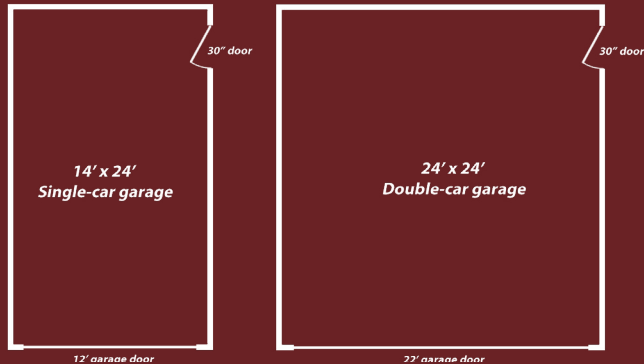
**\$1000 GRAND PRIZE • \$500 FIRST PRIZE
\$250 - Honorable mentions (two chosen)**

**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")

PUBLISHER'S MUSINGS | 7

Reminder: Contest entries

Just want to remind you that the clock is ticking toward the deadline for getting your track plan into our layout contest!

On the opposite page, you will find the details of the contest and how to submit your entry. We look forward to seeing your entries and sharing them with your fellow modelers! ☒



THE Ah-HAH MOMENT
**Joe Fugate: More realistic
painted backdrop clouds**

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA



THE LIMITED MODELER
**Jim Six: The secret to
staying motivated**

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA

★ LAST ISSUE'S RATINGS

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

- 4.8 January 2019 News
- 4.6 Publishers Musings: Post-Floquil painting answers ...
- 4.5 Modeling a New York Central K3q Pacific

Issue overall: **3.0**

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! ■

Get the latest Model Railroading News, Tips, Reviews & Opinions

**CHECK
IT OUT!**



Our iTunes feed has changed search for
"Mike And Scotty Live" to receive the latest episodes!

www.themodelrailroadpodcast.com

Hosts:

Scott Mason: www.scottymason.com

Mike Rose: www.mrhobby.com

Don't Miss our Monthly Interviews
& Product Announcements

Are you being
penny wise and
pound foolish
with your hobby?



The February issue of *Running Extra* has tips that can save you hundreds of dollars and hundreds of hours – and that's just **one** issue!

~350 pages, \$1.99 ea.
1 year sub: \$19.99

All the free MRH content with
ads plus another ~150 pages of
ad-free in-depth articles and
columns.

You can buy and download single issues
or get a 12-issue subscription.

**Subscribe to
Running Extra**

[click here](#)



More in-depth articles than ads can pay for ...

Paper mags: 8 cents per page
Running Extra: 1/2 cent per page!



WHAT'S NEW on TMTV!



Crew Call



STYRENE FABRICATION

Using styrene to make great models of just about anything.



PAN PASTEL WEATHERING

The tricks for getting your rolling stock fleet all weathered in short order.



FUNCTION MAPPING DECODERS

Master the intricacies of function-mapping your decoders.

Become a member >>



www.trainmasters.tv

Registered MRH reader? Get your 10% off coupon code here:



Get Subscriber
10% off code

YES ... IT'S A MODEL



Model Railroad Hobbyist | February 2019 | #108

compiled by JOE FUGATE

★★★★★
RATE THIS ARTICLE



1. Rick Sutton continues to work on his Visalia Electric layout based on a small short line on the eastern side of the San Joaquin Valley in California. Agriculture makes up the bulk of the work for the VE and here we see the Exeter Cold Storage facility in the distance on a very warm August late afternoon with a reefer that has just been spotted.

► MRH'S MONTHLY PHOTO ALBUM



2. A Denver & Rio Grande Western class L97 4-6-6-4 Challenger charges up the stiff westbound grade near the summit of the Southgate Mountains on the North American Prototype Modelers HO scale layout in Milwaukee, Wisconsin.

The locomotive is an Athearn Genesis model that Alan Houtz weathered on an episode of Trainmasters TV. Mark Mathu took the photo by combining 11 shots taken at different focus distances and combining them into a single fully focused image using Helicon Focus software.



GET PAID FOR YOUR PHOTO

We pay \$40 per photo we publish. If you would like to get your modeling in our photo feature, just start posting your photos on the *MRH* website, especially in the Weekly Photo Fun thread created each week.

See mrhmag.com/help for more on how to post an image. You need to be an *MRH* subscriber to post photos to our website, and becoming a subscriber is free, [just fill out this form here.](#) ■



UPGRADE YOUR LOCO FLEET

Tony Thompson on getting a more realistic loco fleet

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA



MRH MARKETPLACE



MAIN STREET AMERICA HISTORIC ARCHITECTURE



**MAIN STREET
HERITAGE**
www.mainstreet-heritage.com

CLICK
HERE
for all
our HO
& O kits

LOOK
at what's new at
Black Cat this month

Click here for
our website

**Grand Trunk Railway
(CN predecessor)
numbered Passenger
car decals
in Gold Leaf**

Black Cat Publishing
(204)489-5005
ajfergus@mymts.net
blackcatdecals.com



Jelsma
AMERICA'S NUMBER ONE RAILROAD PRINT SOURCE
Graphics
America's Railroad Embroiderer
SERVICE SINCE 1985

HOME OF THE

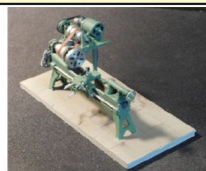
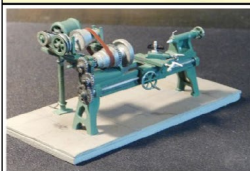
\$79.95

RAILROAD JACKET

HATS and SHIRTS

www.jelsma.com

CROW RIVER PRODUCTS



O Scale Kit 335-D
Motor Conversion for Machine Tools
Shown adapted to our 335-A Engine Lathe

Our Machine Tool kits are of the overhead belt type. This kit, allows for attaching an electric motor directly to the machine. The Kit includes a new style electric motor, A base and various pulleys and hardware.
Made in USA \$12.00

HO & O Scale Machinery, Derricks,
Engines, Hardware & Waterfront Models
Pawtucket, RI 02861 Tel 401-723-0065
www.crowriverproducts.com

MRH MARKETPLACE | 2



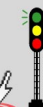
P.O. Box 6 Paonia, CO 81428
Ph. 970 527 4586
Made in The USA

Cast resin items for All Scales.
Tunnel portals, bridge piers, abutments,
culverts, and retaining walls.
Trackside details and sage brush tree
armatures.
"FREE SHIPPING see website for details"



LOGIC RAIL
TECHNOLOGIES

"Sophisticated
Model Railroad
Electronics"



Please visit our website and online store!

21175 Tomball Pkwy
Suite 287
Houston, TX 77070

Phone: (281)251-5813
<http://www.logicrailtech.com>
info@logicrailtech.com



Yarmouth Model Works
HO scale resin kits and detail parts

U.S.A. MAILING ADDRESS
2014 Holland Ave Unit 617
Port Huron, MI 48060
Tel. 519-633-7574
pierre.oliver@elgincars.com
www.yarmouthmodelworks.com

CANADIAN MAILING ADDRESS
263 Sunset Dr.
St. Thomas, ON N5R 3C4

HO DIESEL SUPPLY

CUSTOM SOUND LOCO'S-REPAIRS-UPGRADES
Weathered New and Rebuilt Locomotives
Powered Chassis-Trucks-Motors-Handrails-Electronics
Parts Inventory Always Changing
www.hodieselsupply.com
email:germy@hodieselsupply.com

**HOBBY
MARKETPLACE**
ads are economical
and effective.

Click [HERE](#) to learn more.

MasterpieceModules.com
T-trak Module Kits & more
CNC machined precision finger joints
parts are self-locating & self-clamping
All hardware is included

ITLA Scale Models Inc.
www.ITLASCALEMODELS.com



Fine Scale Wood Kits

CLICK HERE FOR MORE INFORMATION
www.itlascalemodels.com



**HAPPY VALENTINES DAY
FROM MRH MEDIA!**

MRHMAG.COM

REGISTER
(free)

[INDEX](#)

[TABLE OF CONTENTS](#)



USRA DS Express Box
NWP Redwood Empire



westerfieldmodels.com

MOUNTAIN SUBDIVISION HOBBIES
www.modelrrsupply.com
FREE USA SHIPPING OVER \$39.00

NCE - SOUNDTRAXX - DIGITRIX - ESU LOKSOUND
SPROG - DCC SPECIALTIES - INTERMOUNTAIN - CMX
BAR MILLS - BOWSER - ATLAS - CIRCUITRON - PECO
RIX - PIKESTUFF - CENTRAL VALLEY AND MORE!!!

PRECISION DESIGN CO.
LASERCUT KITS - CUSTOM DECALS
PDC.CA

Authorized **RailPro** Dealer

FREE SHIPPING in the US and CANADA

Great Decals!TM

FEC, Interstate, Virginian
Railway, & L&N Titles
After Hours Graphics Line
Coupler Gages and More
In O, S, HO, and N Scales

Your ad could be in
this space for as low
as \$88 a month.

Click to learn more ...

MONASHEE
LASER
ENGINEERING

COME VISIT
US HERE

MANUFACTURERS OF FINE RAILROAD
STRUCTURES AND ROLLING STOCK MODEL KITS

IF WE CAN DRAW IT ...

Model Railroad Control Systems

Geoff Bunza Project Boards
DCC Occupancy Detectors
CMRInet Compatible Nodes
Layout Telephone Systems
RFID Switchlist Generator
Switch Machines and Drivers



Waiting a
MONTH
just too long?

Check out Ken Patterson's
**WEEKLY VIDEO
PODCAST!**



Watch on

**You
Tube**

Get your weekly
What's Neat
fix on YouTube!

Check it out >>

Watch Ken's What's Neat This
Week video podcast on
YouTube each week!

Norfolk and Western Historical Society



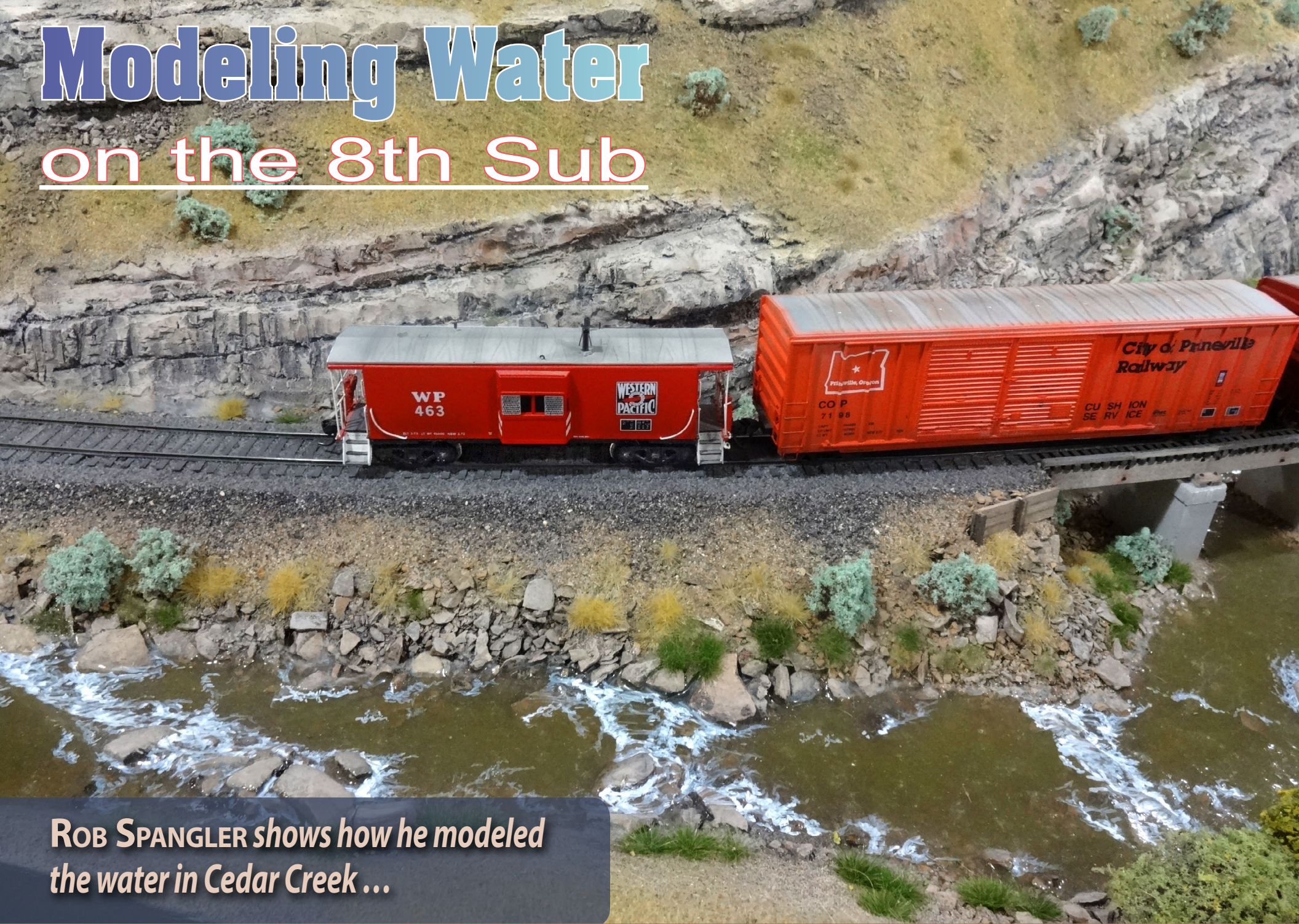
Looking for N&W or
Virginian models,
books or videos?
Check out the
N&WHS Commissary
for the best selection
anywhere!



Researching an N&W or VGN
project? Our Archives
probably has what you need.
We have well over 150,000
items already cataloged with
more added all the time.
Drawings, photos, diagrams
are just a few of the many
items in our collection.
Consider joining for \$45 per
year. You get 4 high quality
magazines and members save
on items from the archive!

Click Here!

Modeling Water on the 8th Sub



ROB SPANGLER *shows how he modeled
the water in Cedar Creek ...*



RATE THIS ARTICLE

I WANTED A PROJECT OF LIMITED SCOPE THAT

would still provide evidence of progress. Modeling some water sounded like a plan, so I got to work on the Cedar Creek scene from last year's *MRH* Forum Challenge. For construction of this scene before adding the water, see mrhmag.com/node/8540.

Site Prep

The scene was almost ready for water, but there were a few additional tasks to be done.



1. Preparing for the first resin pour.

To help impart some apparent depth to the future stream, I air-brushed Floquil Railroad Tie Brown into the creek bed [1]. I did this while painting some nearby flex track.

Darker colors can give the appearance of deeper water when viewed from above. It's important to avoid hard edges, so an airbrush is ideal.



J. Fugate

ALTERNATIVES TO FLOQUIL

MRH provides a free eBook on new paints you can use in place of Floquil or PollyScale, but you do need to be an MRH registered reader (free) to access: mrhmag.com/subscribers-only/painting/acrylics ... this book is also available from the MRH Store in paperback for \$17 plus shipping. This book also has formulas for matching the Floquil and PollyScale colors with these new paints.

Also, the creek bed slopes somewhat, and the intended water material tends to flow downhill if not restrained. Adding "dams" at the location of future rapids helps to hold the "water" so it doesn't migrate too far downstream before setting. I've tried several ways to do this, but here I used some acrylic gel medium [1]. I have also used clear caulk (Powergrab clear adhesive caulk; other types should work, although I'm not sure I'd trust pure silicone, since later materials may not stick to it well). Acrylic gel medium is pretty much like acrylic caulk to work with in this application, but is more expensive.

Note that so far I've kept most of the vegetation away from the future stream banks until after the water has been added. The reason for that will become obvious later.

First Pour

For water, I used tried-and-true epoxy resin. I've tried several brands that all work interchangeably, including Enviro Tex, Crystal Sheen, and this one, "Amazing Clear Cast." It was the brand available at Hobby Lobby where I had 40%-off coupons handy.

One thing I've done for ensuring epoxy resin sets up is to make sure to use a bit more (like one-half percent more) "part b"/hardener than "part a"/resin. All the instructions seem to say to mix 50/50, but if you look at the containers you'll probably see more in the part b – I'm assuming this isn't an accident.

I've never had a batch fail to set properly with extra hardener. Try for a precise 50/50 mix, and you may find yourself with something that won't set up. I know I did when learning to use this stuff. If temperatures are warm enough (see the directions) and you use extra hardener, every batch should set up perfectly within a couple days. Make sure you reference the note on adding more hardener, however!



R. Spangler

ADDING MORE HARDENER

Subject matter experts on the chemistry of these products advise we can't automatically assume extra hardener should be used with a two-part resin. Only add more hardener if a test batch on some scrap scenery fails to set when mixed per manufacturer recommendations.

For mixing, I used the rigid plastic containers from some Hillshire Farms lunch meat, cleaned in the dishwasher first. Any



2. Here is the first resin pour.

disposable plastic container should work, provided it's tough enough not to melt from heat as the resin in it starts to set. There's just enough heat to affect flimsy plastic.

The track was taped as a precaution [2]. Resin that drips into the ground elsewhere can be readily covered up, but I didn't want any stray drops ruining the track weathering or ballast. Also note the newspapers on the floor to protect the carpet. Resin will find a way to leak through every available hole in your scenery, so take care to cover everything below it. Fortunately I had no leaks.

Since I wanted the creek to look greenish and somewhat muddy, I added some Testors Olive Drab enamel military paint. A few drops are plenty. Clear resin is rarely realistic, so look at

prototype photos for examples of color. Other Testors paints of use include Dark Tan and Dark Green, and Floquil Pullman Green works great for other parts of my region.

I taped off the ends of the water course, then backed up the tape with some Homasote scraps clamped in place [3]. Homasote is soft enough to deform over irregularities in the fascia and prevent stray resin from going anywhere.

If you get resin on the carpet or your clothes, Goo Gone will take it out as long as the resin hasn't cured.

Second Pour

I allowed the initial batch of resin to set up for about three days before applying the next. I mixed both batches the same, including



3. This is the opposite end of the watercourse scene.



4. Upstream end of the second pour.

color. Preventing too much color in the first batch keeps the finished creek from getting too opaque later, as the opacity builds up. The first layer was about 1/8" deep, and the second came out somewhat less.

After the first pour set up, I noted a few places where I could anticipate the next pour flowing too much over some elevation changes, so I built up some taller dams with the caulk as I did before the first pour. I let the caulk dry for a full day before pouring more resin.

Compare to the previous photos for how much more intense the color looks with the additional thickness of resin [4, 5]. Things are starting to look good and muddy.

One annoying characteristic of the resin is how it creeps around the edges. It can get into surrounding scenery materials, and soak into something like sand for quite some distance.

You can see where it's oozed in these photos. Not to worry; we take care of that next.

Rapids and Touch Up

Whenever water flows sharply downhill, or encounters an obstacle, the resulting turbulence can create a need for modeling white water. Cedar Creek has some rapids, but no large waterfalls. The major rapids are just a buildup of caulk and the resin that flowed over it, plus some paint.



5. Here is the downstream end again.



J. Fugate

REFERENCE PHOTOS: GOOGLE IS YOUR FRIEND

When doing scenery, if you want more realistic results, I recommend always using reference photos. And thanks to Google, scenery reference photos are a few key-strokes, mouse clicks, or screen taps away.

Ironically, modelers would never think of modeling a locomotive or a piece of rolling stock without reference photos – the same should be true for scenery modeling as well. Don't rely on your mind's eye or imagination unless you are already a very experienced modeler of realistic scenery. Study the reference photos and practice first on some scraps before working on your layout's actual scenery!

Using a pile of reference photos, I applied acrylic paint to add whitewater as appropriate [6, 7]. Acrylic builds up in semi-translucent layers, which is just what we want. Some areas get very little paint, almost a wash, others get more, and still more until the white covers everything. Study real whitewater photos closely if you want to get the look correct.

Work slowly, building the whitewater up in layers. Don't try to paint it all with one coat – it won't look right. Practice on scraps first to refine your technique and make your mistakes there, not on the layout

Also at this stage, I dry-brushed rock and dirt colors onto any areas where the resin crept out of bounds. As part of my normal scenery finishing, I already used such paint on the rocks anyway, so the new coat blended things right in.

I eliminated shine around the banks, and also removed any resin-creep on large rocks emerging above the water surface in mid-stream.

Catch Some Waves

As it sets up naturally, epoxy produces a glassy, smooth surface that doesn't represent moving water well. I don't think it looks quite right for anything but truly stagnant places. Trying to texture the resin as it sets is a losing proposition in most circumstances. Fortunately, there are easier ways to handle it.

I like using gloss Mod Podge for ripples. Acrylic gloss medium will also work, but it's less viscous and more prone to filling with



6. Adding some white water to the stream.



7. Some additional whitewater areas.



bubbles as it's applied. Whichever you like is probably fine. A disposable brush works great as an applicator.

I cover nearly the entire surface of the resin with Mod Podge [9]. Ripple patterns can vary depending on stream flow, and brush marks look appropriate around rapids, so adapt the application technique as you go.

8. Gloss Mod Podge, used to add ripples to the stream.

Reflecting on the Progress

Given that I'm modeling the '70s, I was unsure if there wasn't another Love Canal situation brewing in the train room from all the chemical processes at work, so I re-entered to check on the Mod Podge only with great trepidation.

In the first work session, I completed Mod Podge only as far as the bridge [10]. I intentionally left the remainder of the surface as-is to illustrate the contrast. The section with the ripples to the right of the bridge looks to me like moving water, while the rest of the mirror-smooth water to the left of the bridge just doesn't look like moving water.



9. Modge Podge ripples added over the entire stream (will dry clear).



10. Modge Podge ripples the next day (dries clear) to the right, the water to the left of the bridge is resin-only.

Also note how the glassy plain resin can reflect hard edges of room features, like the top of a backdrop, light fixtures, and so on. The ripples diffuse such unrealistic reflections so they don't intrude on the scene. ☑



THE Ah-HAH MOMENT
Joe Fugate: More realistic painted backdrop clouds

Buy Issue: \$1.99 >>

In **MRH** **RUNNING** **EXTRA**



ROB SPANGLER



Rob has been active in model railroad-ing since he was six years old, and started modeling the Western Pacific in 1989. Rob and his wife Talene have two daughters, and live near Ogden, Utah. In addition to trains, Rob likes gardening, travel, reading (mostly about nature and history), and fol-lowing Utah Jazz basketball. ■



CHOP NOSE RS-10

Pascal Latulippe kitbashes this unique CPRail loco from an Atlas RS-11

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA



ACCURATE PIPE LOADS

Lew Phelps shows how to make our model pipe loads more realistic

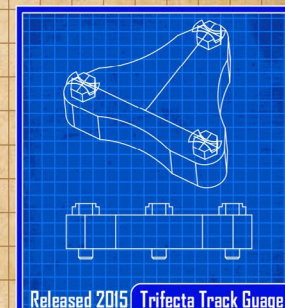
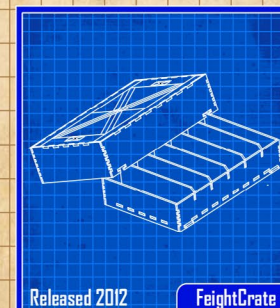
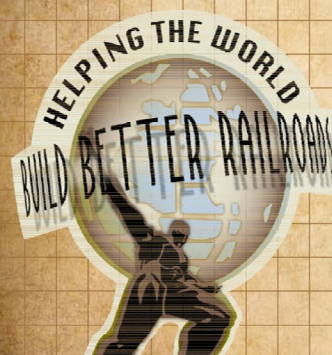
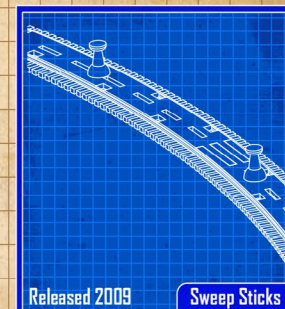
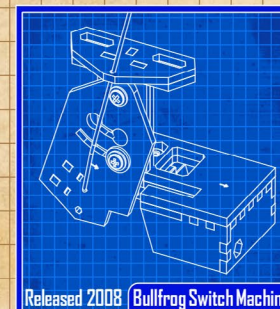
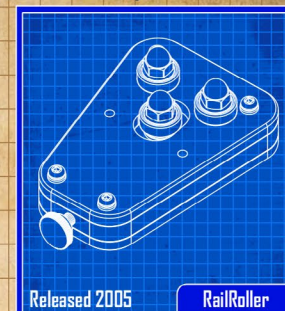
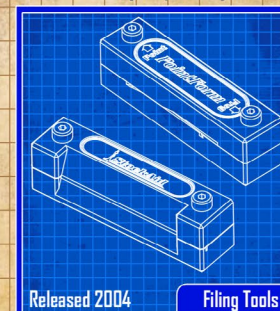
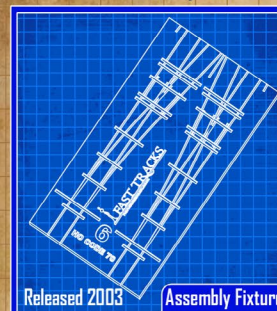
Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA

2003 Celebrating 15 Years! 2018
OF TRACK BUILDING INNOVATION

FAST TRACKS

Build your own trackwork easily, quickly, and affordably.



Easy ordering • Live online support • Earn Waypoints with every purchase

shop online 24/7

handlaidtrack.com

1-888-252-3895

service@fast-tracks.net



Zephyr Express, the Fast Track to Digitrax Complete Train Control

- 3.0 Amp LocoNet Command Station, Booster, & Throttle
- Color 2.4" LCD Screen
- Large Backlit Keypad
- Runs up to 20 Loco addresses and throttles
- Integrated USB Computer Interface
- Control lights and sound with 29 functions
- Simple Set-Up with Easy to read display

Introducing

ZEPHYR *express*™



Find out more @ www.digitrax.com/dcs52

\$235.00 MSRP



Passenger car lighting enhancements

Model Railroad Hobbyist | February 2019 | #108

LOU ANGELUCCI adds better lighting to his N scale passenger cars ...

PASSENGER CAR LIGHTING FOR N SCALE HAS ALWAYS been an issue, and there have not been easy solutions for the situation. Typically, many of us use the Kato N scale after-market passenger car sets and lighting kits for our cars.

PASSENGER CAR LIGHTING | 2

1. One of my passenger trains using my Type 1 build lighting. In this article, I present three different kinds of lighting upgrades for both Kato and non-Kato passenger cars.



YouTube has many videos showing how to install these lighting kits, and the Kato lighting system works well enough.

But for those who want better passenger car lighting or who crave perfection, I've found some shortcomings.

■ Expense

Kato engines and passenger car sets can get expensive – well into the \$200+ range. In addition, an add-on lighting kit must be purchased for each passenger car. The alternative lighting system presented here isn't any cheaper than the Kato system but it does provide more uniform lighting in the car. I did the Type 1 build with non-Kato passenger cars – so with this in mind, it is cheaper than buying the Kato passenger car sets.

■ Ability to assemble the light kit into the car

There must be a willingness and required skill level to install and maintain the Kato lighting system in the Kato passenger cars.

■ Light flickering during train transit

This might seem at first to be just an alignment or connection issue. But when it happens continuously, it gets quite frustrating. Correcting the issue requires disassembling and re-aligning the Kato kit copper slides each time.

■ Uneven lighting in the car

Although a plastic light diffuser is provided with each Kato lighting kit, light distribution is not even throughout the passenger car. I see this happen with passenger cars using the Kato lighting system (Kato 11-212 LED Interior Lighting Kit [version 2] six-piece set). This is probably the biggest drawback of the Kato lighting system.

■ The limitation of running just Kato rolling stock

Because of mismatches in couplers, you are limited to running only Kato rolling stock and train sets with the Kato passenger car lighting system.

Kato is a great company and they make excellent model trains in N and HO Scale. By all means use their rolling stock and passenger car lighting system if this is what you prefer. In [1] I'm using Kato track, too. The engine is a Kato FP40 Amtrak, and is an excellent runner.

The Kato lighting kit has a small slip-in assembly with a single LED light source. Installation includes properly placing a plastic diffuser in the roof of the car to spread the light to the remainder of the car.

When you peer into a Kato kit-lighted car, you will see a bright light at one end (the LED) and very dim lighting at the other end. Also, if the electrical copper slide connections on the base of the car are not tight or are misaligned in any way, the light flickers as the car travels down the track.

With this article, I present three passenger car lighting alternatives.



J. Fugate

WORKS IN OTHER SCALES TOO!

The circuits and the techniques in this article apply just as well to the larger scales, even though the focus here is N scale passenger car lighting. *Learn to extrapolate articles such as this to your own scale and situation – and you will discover a lot of treasure you may otherwise miss!*

ADVERTISEMENT

Make LocoNet wiring extremely simple!



Dealer Inquiries Accepted

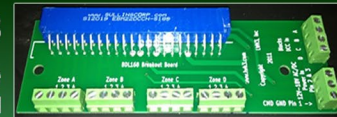
PM42
breakout
board



SE8C
breakout
board



BDL168
Multi-zone
breakout board



BDL168
Single-zone
breakout board



Now Offering SNAPS! in packs of 6 or 12 pieces! [CLICK TO LEARN MORE ...](#)

PASSENGER CAR LIGHTING | 5



L. Angelucci

CAVEATS

This article discusses alternate N scale passenger car lighting solutions, and requires some familiarity with electronics and soldering.

I wrote this article with DC layout control in mind, but the digikdeijs DR100 White LED circuit board will work with DCC systems as well. The Type 3 build uses an alternate light strip that should also function with DCC systems and is adaptable to almost any scale.



TYPE 1 BUILD: This uses non-Kato passenger cars but with Kato conductive pickup trucks. It can be adapted to many non-Kato passenger cars.

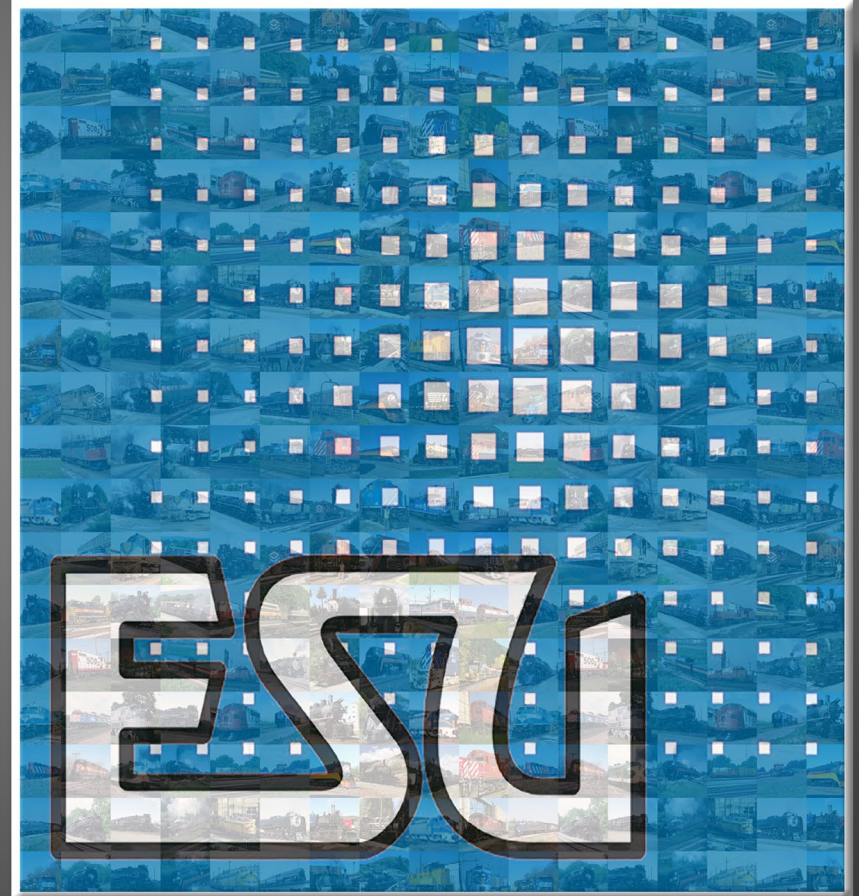
TYPE 2 BUILD: This uses Kato passenger cars and Kato conductive trucks, but provides an alternative to lighting the interior of Kato N scale passenger cars. It does not use the Kato lighting system.

TYPE 3 BUILD: This uses the build recommendations of Type 1 or Type 2, but with more universally available LED light source

2. DT100 lighting kit used in Type 1 and Type 2 builds.

Don't settle for all your locos sounding the same!

ESU now has **OVER 100** "LokSound" files to choose from!



Because "Close Enough" is no longer "Good Enough"

LokSound.com



Southern Digital

WWW.SODIGI.COM

Celebrating 25 Years of serving you !

Complete wireless **Wi-Fi** Smart Phone Interface **Digitrax Zephyr Set** *Supports up to 5 phone throttles at a time!*

Software Downloads for both Android (Engine Driver)
or Apple (WiThrottle) cell phones. Free Lite version or
Advanced paid versions available.



\$336.95 Value
\$265.00 Your Price
\$71.95 You Save

DCC Conversions, Service & Support

E-mail: sales@sodigi.com (770) 929-1888



MRHMAG.COM

✉ REGISTER
(free)

PASSENGER CAR LIGHTING | 6



3. Non-Kato passenger cars used for the Type 1 build.

that can be used in any scale. With Type 3, the DR100 kit is not required – but a separately purchased LED light reel is required.

All three builds require additional parts, extra wiring, and a basic understanding of electronics and soldering electronic components.

Both Type 1 and Type 2 make use of a separately purchased lighting kit, namely digikdeijs DR100 white LED kit sold by Iron Planet Hobbies [2].

Type 1 Build

(DR100 LED Light board with non-Kato Passenger Cars)

This first lighting solution uses the pre-packaged lighting kit DR100 white light, by Digikdeijs, with modifications.

This kit is all-inclusive. The kit includes two SMD (surface-mount device) LED light boards, two 100uF capacitors, two axle wheel truck forks, double-sided mounting tape strips, and a package of 20 seated people figures.

[INDEX](#)

[TABLE OF CONTENTS](#)

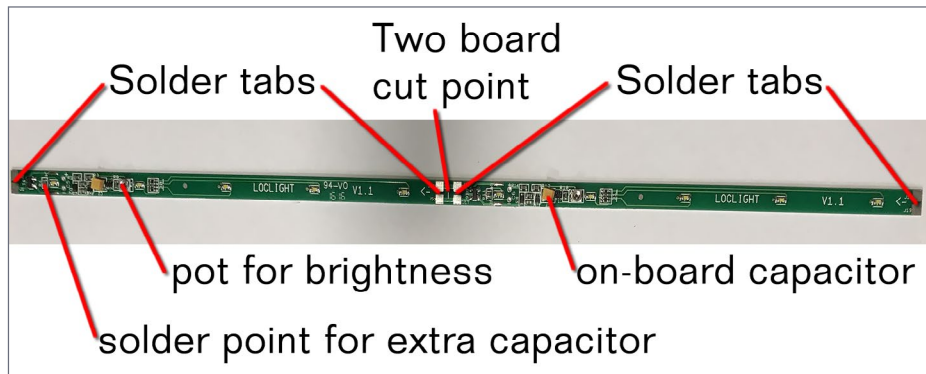
My collection includes many older trains and passenger cars which are not lighted and use the Rapido-type couplers. These are not compatible with Kato or knuckle-type couplers. Of course, the Kato / knuckle couplers do a superior job of coupling cars in N scale.

For this build, I chose Arnold Rivarossi Amtrak-type/Phase 1 fleet passenger car sets [3]. I like Arnold Rivarossi Amtrak decorated sets 0512 and 0528 even though they are somewhat older products now.

Type 1 Build steps

Lighting kit DR100 provides an excellent LED SMD circuit board [4]. #30 wire can easily be soldered onto the tabs provided. There are actually *two* circuit boards provided as a single larger board. For this build I cut the single board in two at the middle.

The DR100 kit includes under-wheel forks (electrical pickup via the trucks), capacitors, and double-sided tape strips – I did not use these.



4. Lighting board in the digikdeijs lighting kit.

I do not recommend the fork option – they do not provide reliable electrical continuity. If not placed correctly or if they are too long for the wheelbase, they can get caught in the track ties. They also increase drag on the wheels. When multiplied by the number of cars to be pulled, the engine may not even move!

Instead, I used Kato trucks with conductive wheels (see parts list) with manufacturer-installed electrical pickups and a modified passenger car underbody to accommodate them.



5. Altering the underside of the passenger cars to allow for Kato lighting contact tabs around the trucks.



6. Copper foil applied to the smoothed-out area over the trucks.



***Don't miss out on our full line
of DCC Products at GREAT Prices!***

***Digitrax, NCE, SoundTraxx,
ESU LokSound, TCS, TVD, Speakers***

Click here to visit our website:

**www.LitchfieldStation.com
sales@litchfieldstation.com | 623-298-7355**

PASSENGER CAR LIGHTING | 9

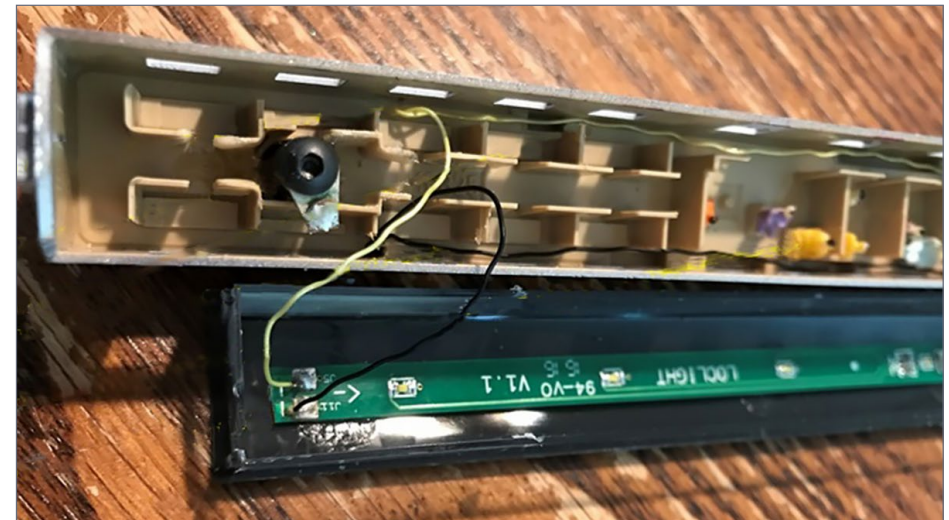
Two 100uF capacitors also come with the lighting kit. These certainly could be used, but to better reduce flickering, I recommend a higher capacitance – I used a 470uF 25V SMD electrolytic capacitor. I use capacitors rated for at least 25V as extra protection.

Though the kit double-sided tape could be used to affix the circuit board to the underside of the car roof, I instead glued the LED circuit board in place using E600 glue.

I like that this kit includes a set of 20 seated people. Seeing seated people through the windows of passenger cars adds realism.

Due to the low seat profiles, I had to cut away the legs of the seated people. This works fine since the legs can't be easily seen through the windows.

With non-Kato passenger cars, the underside of the car just above the trucks may need to be shaped to clear away any obstructions [5]. Keep the screw hole and mount for attaching the trucks.



7. Wiring inside the car.

PASSENGER CAR LIGHTING | 10

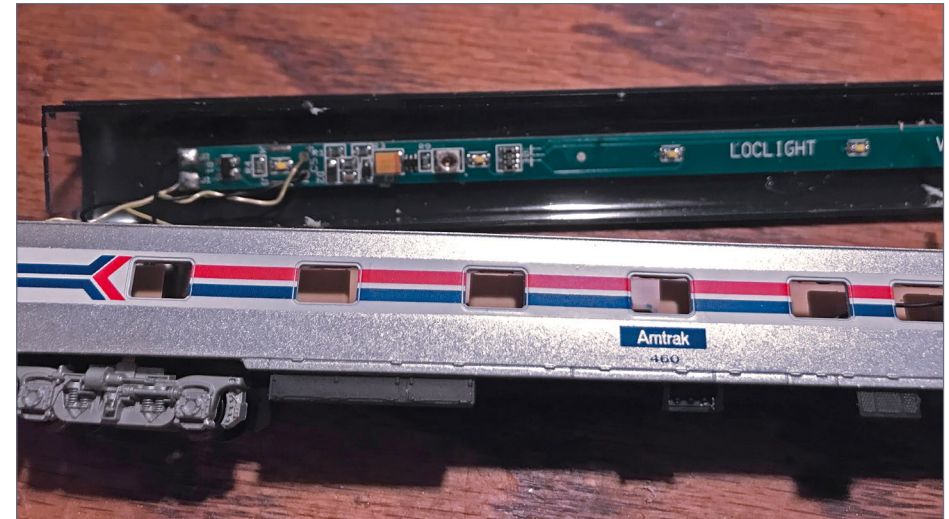


Video: The finished passenger cars in action.

PASSENGER CAR LIGHTING | 11

The reason for clearing away this undercarriage is to allow the Kato conductive tabs on the top of the trucks to move freely.

I shave the car underside clean and flat with a Dremel burr attachment, and clear debris from the flattened area afterward.



8. Circuit board mounted in the roof.



9. The lighted car.

ADVERTISEMENT

ADVERTISEMENT

www.SBS4DCC.com

ESU TCS WOW Sound ZIMO SOUNDTRAXX NCE The Power of DCC DiGiTrax DCC Specialties INNOVATION FOR DCC MRC Model Rectifier Corporation ACCUTRACK II SPEEDOMETER SPROG DCC the DCC Programmer and Control Family Digital plus by Lenz TAM VALLEY DEPOT Great Electronics for Great Model Railroads TEAM DIGITAL, LLC Improving the world of DCC

N - HO - HO_{N3} Scale Trains

LET'S GET LIT!

ASHBY AUTO PARTS

Find us on [f](https://www.facebook.com/Roomettes)

Roomettes
Bring Your Structures to Light

I cut a self-adhesive copper foil strip to fit into the space [6]. This can be purchased in a roll.

I cut the foil to an appropriate length and trimmed it to curve it around truck screw mount. I use tweezers to pull the foil from the backing.

I flatten the copper foil onto the smoothed area on the underside of the passenger car. I drill 5/64" holes through body bottom just outside of foil area.

I solder 1.5 inches of #30 wire to the LED circuit board [7]. I also solder this to copper foil on the underside of the car.

Soldering

When soldering #30 wire to the copper foil, Take care so the plastic underneath does not melt. The best way to solder the wires is to first place a bit of flux on the bare wire and the copper foil.



J. Fugate

LOW TEMP SOLDER

Lou discusses techniques to minimize the chance you're going to melt the plastic underframe of your cars when soldering, but the real secret is low-temp non-lead solder – available either in sticks or paste form. Today we have low-temp solder that melts at ~275° F, well below the 400° F melting temp of plastic. You can also find temperature-controlled soldering irons for under \$50. See the January issue of MRH Running Extra for full details.

WEB: mrhmag.com/magazine/running-extra/2019-01/publishers-welcome

A soldering iron of 20 watts or less is recommended. Others transmit too much heat and will melt the plastic body for sure. After fluxing the surfaces allow the soldering iron to heat up. Using rosin-core solder, first melt a small bead on the copper foil, then tin the end of the wire.

Place the tinned wire onto the solder on the copper foil. Allow the solder bead on the foil to liquefy and merge with the wire. Then remove soldering iron and gently blow on the solder to cool it.

Repeat the process for all four foil pieces. Foil pieces on a side are to be soldered together and then to a separate wire to be attached from them to the Led circuit board [5, 6, 7, 8].

Capacitors

For these builds, I chose a 470uF 25V electrolytic capacitor [10]. Many capacitors are too large for N scale. But a larger capacitance reduces flickering, so use the largest capacitor that will fit in your space.

I said earlier I prefer a capacitor rated at 25V. Some may think this excessive, but applying higher than the rated voltage can cause a capacitor to fail or explode.

The 100uF capacitors provided with the DR100 kit are OK but I prefer a higher capacitance. I like a 220uF @ 25V (Type E SMD 7343).

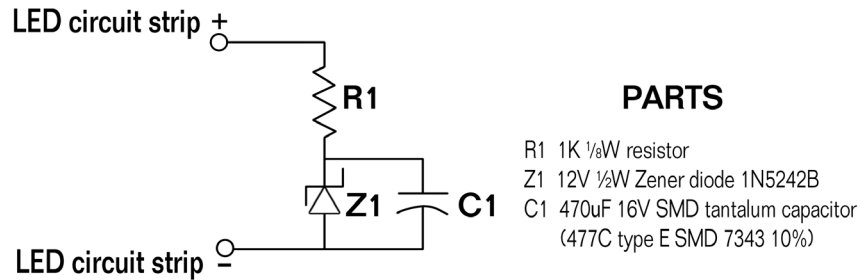


10. Capacitor placement in the car.

This capacitor is smaller with a low profile that is easy to conceal.

An alternate solution is to use this capacitor circuit [11].

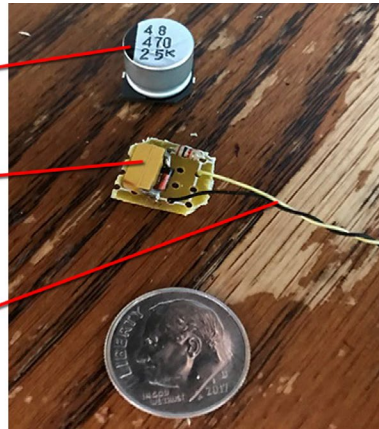
Why this circuit? The goal is to reduce flickering, but with SMD components, it can be difficult to get a small enough capacitor with a high capacitance value and rated at 25V. This circuit gives a higher capacitance in a smaller capacitor because it's rated at less than 25V. The 12V Zener diode and resistor limit the voltage on the capacitor to 12V, thereby protecting it.



470uF 25V SMD electrolytic capacitor

Capacitor and circuit board using 470uF 16V SMD, 12V Zener, and 1K resistor

#30 wire connecting to DK100 circuit board (yellow is positive)



11. Capacitor circuit diagram and assembled circuit comparison to 25v capacitor.

This circuit can be assembled onto experimenter's perf board or soldered directly onto the capacitor. The different colored band on the outside of the SMD capacitor indicates the positive terminal. Solder this circuit assembly to the same capacitor solder pads of the DR100 LED light strip shown in [4].

Final assembly

With your multimeter, check for continuity of the copper foil pieces that were soldered together. Each side should have its own separate #30 wire lead to be soldered to the DR100 LED circuit board.



ADVERTISEMENT

"I'm having
more fun
with trains
now than
I have
in years."

TO SEE WHY
CLICK HERE



ADVERTISEMENT

TamValleyDepot.com



Celebrating 10 Years
of Serving the Hobby
2008 - 2018

**Dual
Frog Juicer**

Automatic DCC Polarity
Reverser

Power Two Frogs

Crossovers

Crossings

Automatic Reverser for

Turntables

Wyes, Loops

Circuit Breaker

Use with 2-10 Amp Systems



MRH

Supporter
since 2009

PASSENGER CAR LIGHTING | 16

Once I have soldered the separate leads to the circuit board, I solder leads to the capacitor and corresponding polarity holes on the LED circuit board [8].

Using the small AC/DC wall adapter and alligator clips, I apply 12V to the copper foil strips to ensure that the LEDs light up. The small potentiometer on the circuit board can be adjusted to brighten the LEDs [4].

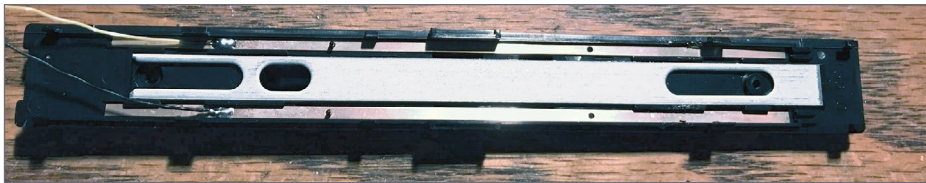
Don't turn the potentiometer too much or the entire board will be damaged and useless.

I used Kato replacement conductive trucks, purchased on the Kato parts website. I selected Kato Excursion Pullman trucks part number 800102 (see parts list).

These trucks have conductive tabs along the top of trucks. These touch the copper foil of the car body.



12. Kato passenger cars using the Type 2 build for lighting.

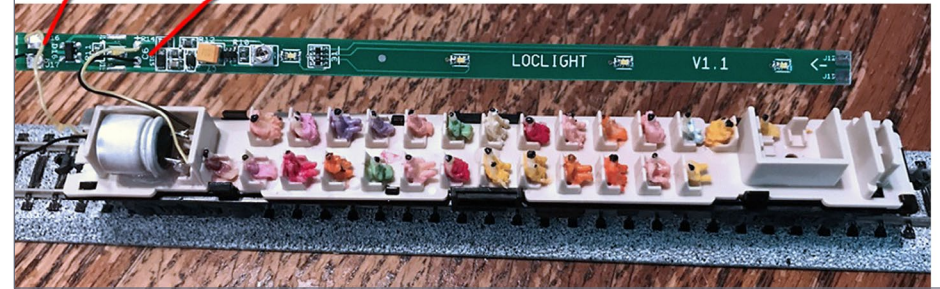


13. Solder points for the #30 wires in Kato passenger cars (seats removed).

PASSENGER CAR LIGHTING | 17

Chassis wires soldered to board

Capacitor wires soldered to board



14. DR100 light board car wiring.



15. Finished car running on the layout.



16. LED strip reel, available in bright white or warm white.

In this build, I cemented the original internal standoff screw holder in place in the car compartment. I also used the original truck screws. The screws need to be loose so the truck swivels freely.

This is probably the weakest part of the build and, the one that involves trial and error. You want the trucks loose enough to maintain electrical contact but not so loose the car derails [6, 9].

Type 2 Build

(DR100 LED Light board with Kato Passenger Cars)

With this second build, I used a set plus one (5 cars total) of Kato corrugated Pennsylvania N scale passenger cars.

As with Build 1, I used the DR100 white LED light board instead of the separately purchased Kato light kit (Kato 11-212 LED Interior Lighting Kit [Ver. 2] 6 pcs.). Once again, I discarded the conductive forks, capacitor, and mounting tape.

However, the 470uF capacitor may be a bit large for Kato passenger cars. While you can try the 100uF capacitor provided with the DR100 kit, I recommend the capacitor circuit [11].

The capacitors are soldered to +/- holes on the circuit board.

To make an electrical connection for the light board, the seat section of the passenger car must be removed, allowing accessing the underlying copper contact strip and exposing the internal weight – just be careful to not jostle the weight out of place [13].

Gently solder two #30 wire leads separately to each side without overheating the strip or plastic floor. If necessary, remove the copper strips and solder the leads on separately. Route these wires toward the center line, and gently replace the seat section [13].

As with build 1, seated people can be glued into place onto the seats of the passenger car – the legs of the individual seated people need to be removed for them to fit.

Solder the wire leads from the copper contact strip to the tabs of the DR100 LED circuit board. Then solder the #30 wires from the capacitor to the component + and - holes located on the LED circuit board [14].

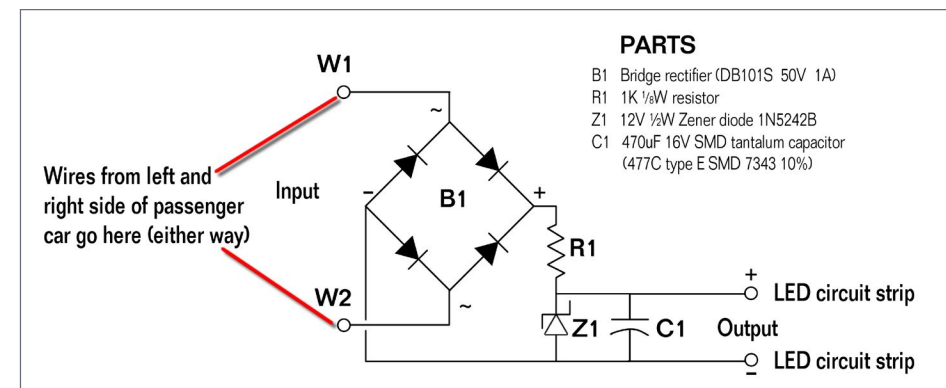
Once done, glue the LED circuit board to the inside of the roof of the passenger car and snap the body into place over the seat and chassis assembly. Run your finished and lighted car on the layout [15].

Tabs can be used as solder points for power or components



Cuttable every 3 LEDs without damage

17. LED strip can be cut and soldered to, as shown here. Note the + sign indicating the positive copper pad.



18. LED lighting circuit with bridge rectifier for DCC.

Type 3 Build

(Alternate LED Light strip with either Kato or non-Kato passenger cars)

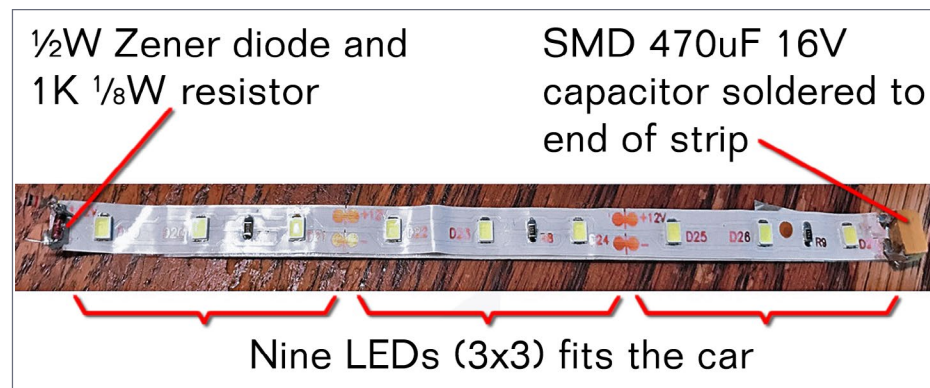
This build uses the recommendations from Type 1 or Type 2, but with a completely different LED light source.

For non-Kato passenger cars, follow the car preparation steps as described in Build 1 through all the wiring steps, except for the DR100 LED SMD circuit light board.

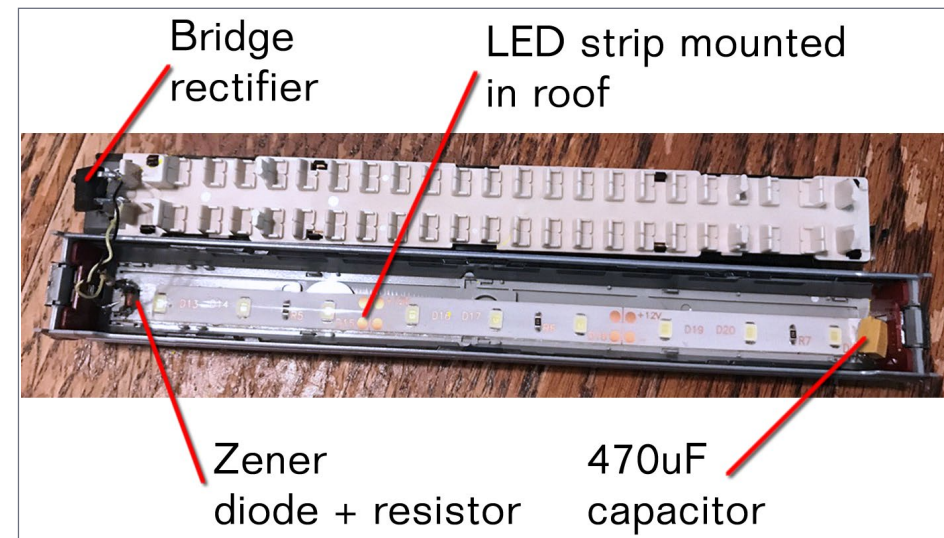
For Kato passenger cars, follow the car preparation and wiring steps as described in Build 2 through all the wiring but again not using the DR100 LED SMD circuit light board.

Instead, purchase a reel of LED lights that can be cut to length. These come in bright white or warm white [16].

I got the strip I used on Ebay as “5M 3528SMD 12VDC LED light strip (non-waterproof)” that can be cut to any length as needed. As a minimum, a strip needs three LEDs per segment, but the overall length can be as long as you desire.



19. Components wired to LED strip.



20. All the components mounted in the car.

In other words, don't use just one or two LEDs. The three LED minimum forms a circuit unto itself. You can solder multiple segments together.

For most N scale passenger cars, a length of nine LEDs (three segments of three) will fit nicely into the roof of the car. For shorter cars such as a baggage car, a set of 6 LEDs (two segments of three) will do just fine. The strips are marked with the proper polarity and where the strip can be cut [17].

When buying an LED strip, choose the color you prefer (bright white or warm white). With this build, I went with bright white LEDs.

For LED size, be sure to purchase the 5M 3528SMD 12V strip. Also choose the non-waterproof variety. The waterproof variety has a continuous plastic coating on the light side. (This waterproof strip can yellow over time, changing the color of the lights, so avoid the waterproof strips. – ed.)

The lead wires at the beginning of the strip can be removed by cutting away the first three-LED segment. Reel LEDs come with a self-stick backing to attach the completed strip to the interior roof of the car.

This install requires a circuit with a bridge rectifier so it works with DCC as well as with DC [18].

All components, except for the bridge rectifier (DB101S Bridge rectifier 50V 1A), can be soldered onto the tabs of the nine or six LED light strip [19]. Because the circuit uses a bridge rectifier, the AC input tabs can be soldered to the #30 wires connecting the left and right conductive sides of the passenger car/truck assemblies.

The resistor-capacitor arrangement limits the voltage to no more than 12V DC regardless of the track voltage. If the voltage is below 12V, the LEDs will still light at the minimum threshold voltage of around 7 volts DC.

This circuit can be used for both Kato and non-Kato passenger cars. Follow Build 1 for non-Kato cars and Build 2 for Kato cars as to wiring. This light strip assembly replaces using the DK100 LED light circuit board.

For Build 3, I used a Kato passenger car as the example [20].

There is no dimming option with this build other than to change the value of R1. You could also add a small 5 meg-ohm trim pot to the circuit shown in [18] in series with R1.

Conclusion

I am hoping these examples show what can be done to light Kato and non-Kato N scale passenger cars.

My goal was to establish a more uniform, constant lighting in passenger cars. [The video on page 10](#) shows the finished cars being pulled by Kato engines on an N scale layout.

Cars lighted with these build methods have no flickering, and the light remains uniform and constant throughout the trip around the N scale layout.

In terms of cost, there is not any cost savings with these builds or the use of the Digikdeijs kit DR100. Cost was not the main consideration however. My goal was to achieve a better more uniform lighting system.

If you are an N scale enthusiast, now you can have uniformly lighted and flicker-free passenger cars for running on your railroad. ☒



ADVERTISEMENT

Great control in a tiny package



**Original
Touch Toggles**

- **Touch Toggle™** plug in controls
- **Bright clear indication**
- **Easy setup**
- **Flexible system**

Stall Motors, Twin-coils,
Power, and Servos

*Now for Tam Valley Depot
and MRservo too!*



**BERRETT
HILL
TRAINS**

Made in the USA 

What will they think of next?

www.berretthillshop.com

TOOLS

The tools required for this project are as follows:

- A Dremel, appropriate collets and small carving bit
- Dremel 2-Count Steel Carving/cutting Bit
- Small needle nose pliers
- Small diagonal wire cutters
- Small tweezers
- 20 Watt soldering iron
- rosin-core solder and separate flux paste
- Small slotted and Philips screw drivers
- #30 wire stripper
- 5/64-inch drill bit
- 3 to 12 VDC adjustable wall adapter
- Small alligator test leads (4)
- Small volt/Ohm meter
- E600 cement and glue X-Acto knife with fresh blades



PARTS

Part 1 Parts (For one car only)

- 2 Kato Excursion Pullman trucks part number 800102 (2/package)
- 1 Digikdeijs DR100 N scale white light passenger car lighting kit, (source Iron Planet Hobbies, ironplanethobbies.com)
- 2 ft #30 insulated twisted pair solid wire, source eBay
- 1 470uF 25Volt SMD capacitor, alternate 220uF 25volt Type E SMD 7343
- 1 Copper self-stick foil ½ inch diameter 6 inches long (Foil Tape Single-Sided Conductive Self-Adhesive Copper Heat Insulation 6mm x10m, source eBay)
- 2 4-40 screws and nut (only needed if car screw and nut provided do not work)

Part 2 Parts (For one car only)

- 1 Any Kato passenger car
- 1 Digikdeijs DR100 white light N scale passenger car lighting kit (Iron Planet Hobbies)
- 2 ft. #30 insulated twisted pair solid wire
- 1 470uF 25Volt SMD Electrolytic capacitor or alternate (see article)

Part 3 Parts (For one car only)

- 1 Kato or non-Kato passenger car following the build recommendations of parts 1 and 2
- 1 Reel of 300 5M 3528SMD 12Vdc LED light strip, pure white or warm white as an alternative

PARTS

CONTINUED...

Pure white 6000k - 6500k Lumens or warm white 3000k - 3500k Lumens

2 ft. #30 insulated twisted pair solid wire (Ebay)

1 Bridge rectifier rated 50 volt 1 amp DB101S

1 470uF 16Volt Tantalum Capacitor, SMD 477C Type E SMD 7343

1 ½ Watt Zener Diode (1N5242B)

1 1k Ohm 1/8Watt resistor ■

LOU ANGELUCCI



Lou Angelucci is an N scale hobbyist who has been modeling in N scale for over 20 years. Lou designs, builds and electrifies his own rolling stock and layout operations. Lou has designed and built his own N scale layout in his basement. Lou runs mainly Kato but also other makes such as Model Power, Con-Cor, and Fleischmann N scale engines and cars. No particular era or road name is modeled although there is a preference for Union Pacific. ■

ADVERTISEMENT

made in AMERICA

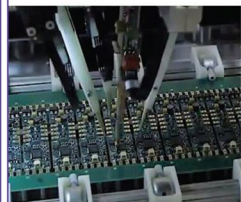
Did you know that all SoundTraxx decoders are made in Durango, Colorado? Since 1990, we have been committed to crafting quality products, strengthening our national economy and creating local jobs.

When you buy SoundTraxx decoders, you support building American-made goods. And our products aren't just good—they're excellent!



Help contribute to a brighter and more stable future for the entire country by purchasing SoundTraxx decoders from your local retailer.

SOUNDTRAXX™
www.soundtraxx.com



ADVERTISEMENT

RailPro™ NEW TECHNOLOGY **RE RING™ ENGINEERING**

DCC + RADIO CONTROL
HO Scale Locomotive Module

**ULTIMATE
SERIES
SOUNDS**

**TRUE
MOTION
TECHNOLOGY**

**LIGHT
EFFECT
EDITOR**

**DIRECT™
RADIO
+NET**

New Sound Technology and Mathematical Model Motion Control + more!!!



+



Equals
"DUAL MODE"
Control by DCC +
Radio Control

**Click Here to
Watch Video**

For more information visit our Internet site: www.RingEngineering.com

From first train set to railroad empire...

Our complete line of DCC products grows with you. Discover the fun!

- Designed and manufactured in the U.S.A.
- Preferred for ease of use and ergonomic design
- Unlimited scalability for any size model railroad
- Plug-and-play means more time running trains
- Great customer service and excellent support



Visit our new and improved web site for all your DCC needs!

- Get the latest new product announcements
- Watch our detailed how-to videos
- Browse the all-new Information Station
- Enjoy secure online sales, day or night!



See your dealer

Visit **ncedcc.com**



THE MRH STAFF looks at using Microscale 60-196 SP&S decals to model an early SP&S RS-3 in N scale ...

MICROSCALE HAS N SCALE DECALS FOR SPOKANE, Portland & Seattle Alco RS-3 diesels you can use to model the as-delivered tiger stripe maroon and olive green scheme.



1. Microscale decal set 60-196 can be used to model the SP&S as-delivered paint scheme on the N scale Atlas RS-3. See [2, 3].



The 1600 hp RS-3 was a true multipurpose road switcher, and the SP&S acquired a total of 29. Numbers 65-82 were Phase I units delivered from 1950 to 1953. 83 and 84 were the former GN 231 and 232, acquired in 1959, and 90 through 98 were in Phase III bodies, bought in 1955.

Almost all survived into the 1970 Burlington Northern merger, and several received four-digit BN numbers without being repainted. They were routinely operated with other EMD and Alco locomotives on the SP&S and also often appeared with Great Northern units.

The 95 was the last SP&S engine to be repainted into the broad stripe scheme introduced in the summer of 1964.

Atlas makes this locomotive in N scale, although does not and has never offered this paint scheme. More recent Atlas N scale models of the RS-3 come with body-mounted couplers,



2. Engineer's side view of an N scale Atlas RS-3 painted and lettered to represent an early SP&S loco.

FIRST LOOK | 3

directional lighting, low-friction drive and are DCC-ready. The photos here show an Atlas RS-3 painted and lettered for this paint scheme [2, 3].

Well over 1,300 RS-3 road-switcher locomotives were built by ALCO between 1950 and 1956. These locomotives were powered by an ALCO 244 V-12 engine which was complemented by rugged GE electrical components. Nationwide, the RS-3 could be found in virtually every type of service from passenger and commuter runs to heavy-haul and local freight assignments.

Microscale SP&S switcher decals

Use this google search to find these decals – type in: microscale 60-196

LINK: [google.com/search?q=microscale%2060-196](https://www.google.com/search?q=microscale%2060-196)



3. Fireman's side view of the SP&S RS-3 in the as-delivered scheme.

FIRST LOOK | 4

Atlas N scale RS-3

Use this Google search to find models for sale – type in: atlas N RS-3 for sale

LINK: [google.com/search?q=atlas%20N%20RS-3%20for%20sale](https://www.google.com/search?q=atlas%20N%20RS-3%20for%20sale)

N Scale MSRP: \$119.95 ☒



UPGRADE YOUR LOCO FLEET
Tony Thompson on getting a more realistic loco fleet

Buy Issue: \$1.99 >>

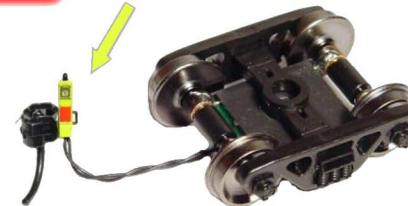
In **MRH** **RUNNING** **EXTRA**



ADVERTISEMENT

END OF TRAIN DEVICE

NEW SAFETY GREEN



Patented Technology - US Patent 7,549,609

Does not affect Load!

↓ Car without Load ↓



↓ Car with Load ↓



Bright Red Flashing Light!

Installs in minutes!
No freight car modification required!

Click Here to Learn More

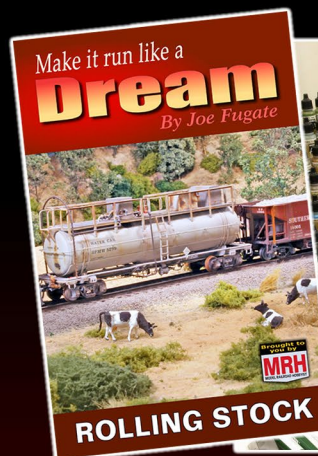
RE RING
ENGINEERING

Make it run like a

Dream ROLLING STOCK

102 pages

By Joe Fugate

SPECIAL
PRICING ENDS SOON!

TOPICS INCLUDE: Setting standards • Building a test track • Wheelset/truck issues • Coupler issues • Carbody issues • Car weight considerations • Better maintenance procedures • Performance diagnosis & debugging • Special considerations

Click me to
Get eBook NOW >>
~~\$12.99~~ **\$11.49**

Format: Landscape and
Portrait PDF

Other books in this series: **TRACKWORK** (available now) and **LOCOS** (End 2019)

Click me to
ORDER PAPERBACK >>
~~\$29.99~~ **\$28.49**

FREE shipping in US!
Foreign shipping 50%

WHAT'S NEAT

 column

Model Railroad Hobbyist | February 2019 | #108

**RATE THIS ARTICLE**

KEN PATTERSON VISITS A BASEMENT-FILLING HON3

RAILROAD, LEARNS ABOUT MANUFACTURING MODELS AT INTERMOUNTAIN RAILWAY COMPANY, AND CHECKS OUT THE BEHIND-THE-SCENES CONTROL SYSTEM AT THE COLORADO MODEL RAILROAD MUSEUM ...

THIS MONTH WE VISIT INTERMOUNTAIN RAILWAY Company. We look at Art Lort's HON3 layout and we visit again at the Colorado Model Railroad Museum's 5000 sq. ft. layout to see how it is powered and controlled. There are 19 NCE power districts and an automatic computer control system. There are a lot of great modeled outdoor and indoor runbys in this month's video. ☒



THE LIMITED MODELER
Jim Six: The secret to
staying motivated

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA



► **PHOTOS AND VIDEO OF SUPERB MODELING**

InterMountain Railway



1. I visited Ron Angstead at InterMountain Railway Company in Longmont, CO a few weeks ago to see what was new. Ron said he had been to China in the past few weeks and has secured manufacturing for all their new products in 2019.

Ron was very enthusiastic about InterMountain's future. Newer computer technology will allow the production of detailed models like we have never seen before. The Longmont facility is clean with high-tech computer controlled milling machines for die production. The computer design rooms are alive with developers designing the new models for the next three years and the shipping department is busy with in-stock products being shipped hourly. It was wonderful to feel the positive atmosphere of InterMountain Railway Company during my visit.



ADVERTISEMENT



Introducing
THE
LUMBER STORE




ROTATING STORAGE RACK
On its own, or fully loaded with Mt. Albert Scale Lumber!

handlaidtrack.com **1-888-252-3895**

Art Lort's Colorado narrow gauge



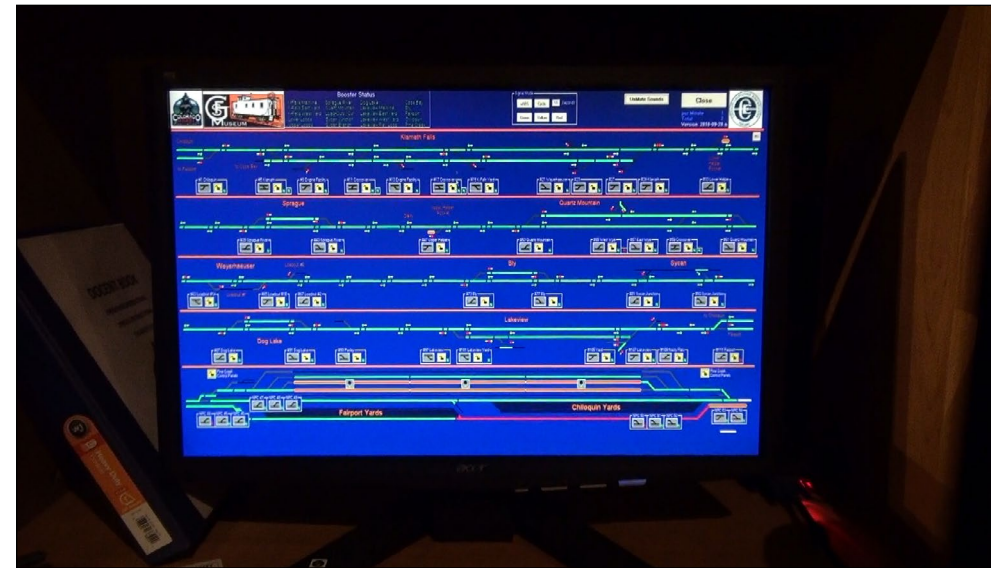
2-4. (Top left, top and bottom right) Art Lort's big and amazing HO_{N3} railroad occupies his entire basement. The layout is standard gauge in some areas and HO_{N3} on the remaining 75%. Scenery climbs from waist level to way above head height as the consists traverse 4% grades, just like the prototype of the era 1887 – Art's favorite modeling period. His favorite place, Marshall Pass on the Denver & Rio Grande Western, inspired the entire concept of his layout. The railroad took 20 years to build while Art moved from one house to another. Sections of the layout moved as he added new scenes. Art operates the layout with a car card system and a time clock. He says it takes eight operators to run a three-hour session replicating an eight to 10 hour working shift. The scenery looks just like the prototype. Art used real dirt from the modeled locations and studied photographs and drawings to model the Colorado mountains and his incredible bridge and river scenes.



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



Colorado Model Railroad Museum: Control system



5-7. (Top left, top and bottom right) The Colorado Model Railroad Museum has been covered in previous "What's Neat" videos as of late, but we have only scratched the surface with the scenery and esthetics of the overall museum. Today we dive in to the electronics that run the layout. Systems are custom-built with code written specifically for the layout, considering the amount of trains, the length of the passing sidings, and the necessary signals.

What am I saying? This layout can automatically run nine trains at one time on the single track mainline using the passing sidings, signals, timing, scale speed and so on, all day long with no derailments or collisions. That's amazing. The layout is controlled by multiple computers with one in control and the remainder running as a live back-up in the event the first one skips a beat. Randy Palmer designed the system and wrote the code. He shows in this month's video how the system starts, selects seven trains, pulls them out on to the main line in a pre-planned sequence, and then runs them along the main line all day until it is time to shut down.

WHAT'S NEAT | 8

When the museum closes, the trains then park themselves in the switch yard ready for the next day's run.

Randy designed the program in Microsoft Visual Basic 6 to show all the track patterns on the screen. In Play/Run mode, the CTC machine in the museum is not used to control the trains but still lights up and operates as if a dispatcher is running it. Randy says the program in fact is named "Dispatcher."

He took over six months to write the program, drawing the track pattern of the layout exactly, and matching everything switch by switch, and foot by mainline foot while translating all these numbers into the computer program.

Randy says his "AH-HAH" moment was when he figured he could program the trains to see the red and green signals just as a person operating the layout would do with their eyes. That was the moment when he figured out how the system would work with model trains, timing things exactly for successful running all day long. There are 19 NCE DCC systems running the layouts with hundreds of individual signal controllers feeding information to the computer. You must watch this month's video to in real time on how exactly the system works. ☑



BUILD A RESIN REEFER

Bill Gill builds a resin express reefer kit, upgrading it as he goes.

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA



**WATCH
NOW >>**



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

Have you seen this?



**CHECK IT
OUT!**

kenpatterson.com

click here to ...

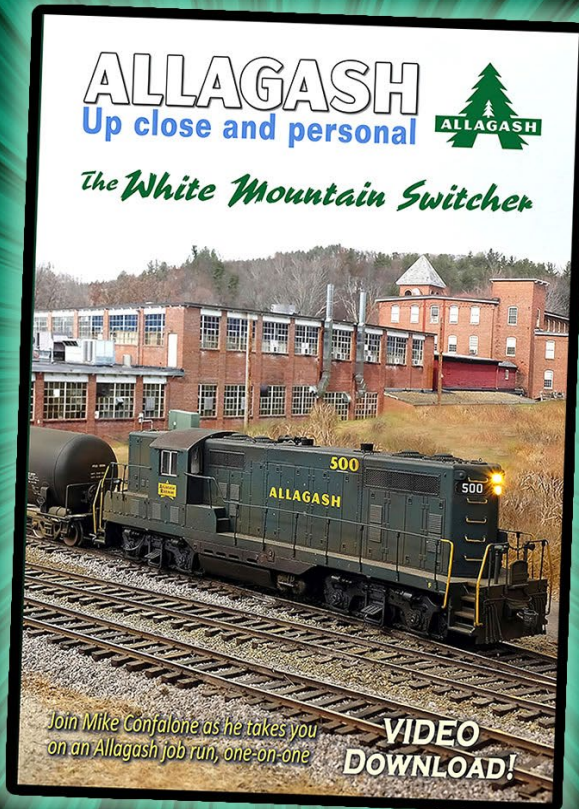
Visit Ken's website

Ken Patterson reveals his modeling secrets on video!

Ultimate switching tutorial

Up close and personal ...

with Mike Confalone



Now
Available!

DVD media
~~\$29.99~~
\$24.99
FREE shipping US
50% off shipping foreign

Video download
~~\$14.99~~
\$9.99

HD
format

Running time: 2 hours (sale ends soon!)

Get White Mtn Switcher video

from the
**Model Railroad
Hobbyist Store**

MRH ...

QUESTIONS, ANSWERS, TIPS



Conversations from the MRH
online forums

Model Railroad Hobbyist | February 2019 | #108

compiled by **JOE BRUGGER**

★★★★★
RATE THIS ARTICLE

Air eraser

Q. I pulled out my Harbor Freight air eraser (model #69277) to start weathering a few cars. It's a cool tool EXCEPT the tip clogs on average every 5-10 seconds, so I spend more time removing it and blowing it out than erasing. Despite that, it gives a nice effect on lettering. I've been using HF air eraser compound with decent results and would like to try baking soda. Air is from a small DeWalt compressor with the integrated regulator set to 25-30 psi and a cheapy inline air dryer. I'm in SE Louisiana where humidity occasionally gets high. And by occasionally I mean ALL THE TIME.

—Jeff

A. Steve Kleszyk: Try different dryers and add several inline. You can also "bake" the medium before, but not too much and don't run it through the blaster when it's hot.

► MRH QUESTIONS, ANSWERS, AND TIPS

Peter F.: You need a filter for humidity. In compressed air, humidity would make beads wet and would get the material to stick together. How does that work on decals ... or not?

Jeff: I am running a disposable inline filter but it's probably inadequate. Have not tried the air eraser on decals like Microscale, but it works well on factory lettering as shown.

Rick Sutton: My guess is that it would tend to tear the edges of the decal film and be somewhat random in effect. On the other hand, I may get my old Paasche unit out and give it a try. Could be interesting.



1. Harbor Freight's air eraser. Paasche and other companies also market air erasers designed to spray fine abrasives. Check air pressure requirements to see how powerful a compressor is needed.



2, 3. A few passes with the air eraser will take the shine off the factory finish and fade the lettering. Check the work frequently because the process is not reversible. Mask areas to protect them.

My favorite application for the air eraser was to apply two or more layers of different colors to boxcar and Central Valley cattle car roofs and "burn" through the layers to simulate wear patterns. The mess without a dedicated booth, plus the cost of the blasting material have deterred me from using it on my recent projects.

Jeff: You are spot-on, it can make a mess. I do it outside with a respirator mask on, and blast over a big plastic Rubbermaid bin which catches most of the media for reuse. The technique you used on the roofs is interesting. I'd like to try that. I am using the blasting media from HF which came with the air eraser. Not sure if it's available separately. Shooting over/in a big Rubbermaid bin allows me to reclaim most of it.

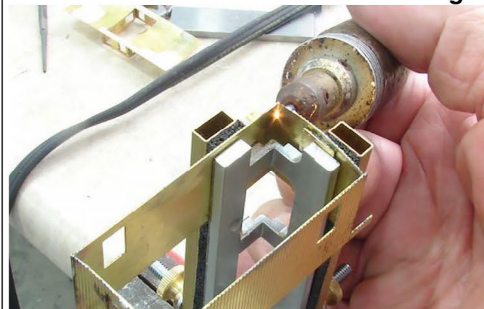
Rick Sutton: I used aluminum oxide ordered through Amazon.com. Search for "Paasche+aluminum+oxide" to find it.

BC Barney: I use this same air eraser with baking soda and it is wonderful! If I don't sift the baking soda, I get clogs every so often. Sifting dramatically reduces clogs. Sometimes I don't think

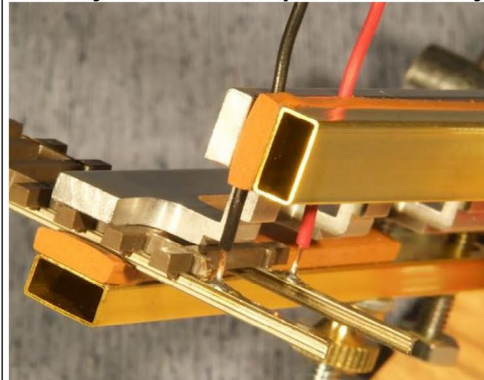


4. A finished patch-out and weathering project by Jeff, with faded lettering and added rust marks. The car is a Walthers Mainline. Similar ones are frequently available from the Walthers website for \$10-12 when they discontinue a paint scheme.

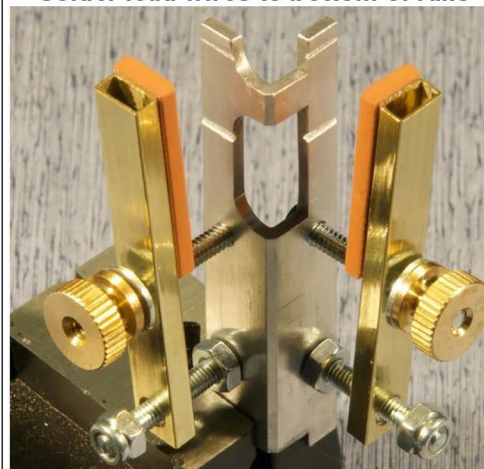
Essential Tools for Great Modeling!



Quality Tools with Superior Versatility



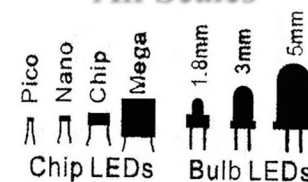
Solder lead wires to bottom of rails



"Combo Right Clamps"™ by
Coffman Graphic Solutions
1500 River Circle, Richmond KY 40475
Visit our new Website:
www.coffmaneng.com

LIGHTS4MODELS

LED's, Signs, and Sounds for
All Scales



Miller Signs | Evan Designs
Iron Penguin | Ring Engineering
EZ Line | Tomar | ITT Sound Boards
www.lights4models.com 614-296-8691

Lasercut structures. Highway,
storefront and billboard signs.

Neat ag customer for your railroad:
Farmers Fertilizer Supply



WHAT'S
NEW?
Established 1993...
Blair Line

it is really spraying but just one spray over the back of my hand tells me it is. The process with this tool is slow – there's not much volume at any given time. For stripping, I use baking soda with a sand blaster I got off eBay. This works great! Go to www.ebay.com/itm/Sand-Blaster-Gravity-Feed-Abrasive-Handheld-Air.

Steve Kleszyk: I have tried different media but found baking soda was best for me. Does some cool stuff on glass too!

Read more about air erasers at mrhmag.com/node/35335.

Operating a small layout

Q. This question is born out of a recent *MRH Forum* thread. The focus of this discussion is how you operate your small layout. I'm classifying a small layout as one that fits into 120 square feet or less, so if you have a 4 x 8, an Inglenook, shelf layout, hollow-core door layout, or an around-the-wall layout in a room of 120 square feet or less, and operate your layout in a prototype manner, please tell us how you operate.

—Rich S.

A. Rich S.: Welcome to my Long Valley Industrial Railroad. In 1980 Conrail applied to the ICC to abandon the Midland Secondary and the Long Valley Branch. The local industries purchased the Long Valley Branch and enough of the Midland Secondary to maintain rail service. When the contract was signed, an MP15DC was leased from a local short line and a second-hand caboose was bought.

Even though this layout looks like a simple loop on a hollow core door, I operate the layout as if the track is out of service beyond the highway crossing located beside the Vulcan Steel Fabricating Plant. The layout is operated with car cards and waybills created using Ship It! by www.albionsoftware.com. A dispatcher grants verbal authority to the Long Valley crew to occupy the industrial track.

ADVERTISEMENT

Must have Details
NEW DESIGNS NOT
MADE ANYWHERE ELSE

OVER 1000 DESIGNS

WWW.MODELTECHSTUDIOS.COM

N H O S O SCALE

Vehicles **Detailing** **Figures** **Lighting**

ADVERTISEMENT

Backdrop Junction
Your Stop for Railroad Backdrops

Click Here →

**For the Finest in Custom
Designed backdrop**

www.backdropjunction.com

ADVERTISEMENT

**Make REAL
Dry Transfer
Graphics**

... in less than 10 minutes!

**Color
White
Metallic**

DECALPROfx
(850) 926-2009 (9-5 MST)

ADVERTISEMENT

Archer
FINE TRANSFERS
PROUDLY SERVING MODEL BUILDERS SINCE 1989

THE ORIGINAL
SURFACE DETAILS™

WE NOW HAVE MORE
THAN 130 SHEETS OF
RIVETS, LOUVERS,
TREADPLATE, WELD
SEAMS AND MORE
CAST ONTO
MICROSCALE CLEAR
DECAL FILM

LOW SHIPPING:
DOMESTIC USA ORDERS
\$2.80
INTERNATIONAL ORDERS
\$9.95

CLICK HERE TO
VISIT OUR WEBSITE!

Joe Fugate,
Publisher/Editor
Model Railroad
Hobbyist

MADE IN THE USA

Archer Fine Transfers • PO Box 1277 • Youngsville, NC 27596 • USA
(919) 570-1026 • info@archertransfers.com • archertransfers.com

The day begins with Conrail delivering inbound cars to the LV's interchange yard, my open staging yard. The crew then places its caboose on the end of the train, runs around the cars, and pushes the train out past the Long Valley Junction switch. The train then proceeds to Long Valley to service the local industries. When finished, the crew moves the caboose to the other end of the train and the locomotive will lead the outbound cars back to the junction switch. The outbound cars are placed on the interchange track and the locomotive and caboose are tied down at the yard office. This ends the operating session.

Bremner: My Playa Desnuda is a fictional branch of the Pacific Electric set around 1953 in Los Angeles County, based on the Santa Monica Air Line. Just like the prototype, the overhead wire came down after the end of passenger service.

The layout is N scale. My only motive power lettered for the Pacific Electric is an Arnold SW1. I hope to add a pair of Baldwin VO1000s



5. The Long Valley Industrial Railroad may look like an oval, but Rich S. operates it as a point-to-point industrial lead.



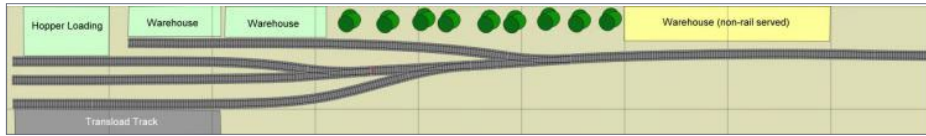
6. Bremner has imagineered an early-1950s Pacific Electric branch with freight service, based on the Santa Monica, CA area. *Pacific Electric Railway Historical Society (PERyHS.org) photo*

and am waiting on some custom decals to finish a model of a PE C-30-2 caboose.

The west half of the layout is getting closer to being finished. I scratchbuilt a freight station based on Santa Monica's, and am modeling D'Amato Lumber, based on Fisher Lumber, the last business the Southern Pacific/PE served on the Air Line.

Alcanman: The Marlborough Branch measures 9 x 1.25 feet. The track plan is a three-switch inglenook arrangement.

At the start of operations, two covered hopper cars are spotted at the hopper loading spur, two empty gondolas are on the transload track, and a boxcar is spotted at each of the warehouses. Three cars are staged at the right side of the layout. A loco shoves the three cars and switches them for three cars at the industries before the loco departs with three outbound new cars. The process is then



7. Alcanman's compact Marlborough Branch shelf design serves two warehouses, a transload track, a bulk hopper loading area, and a transload facility.

repeated with three other cars. A total of 12 cars are required to switch the layout.

TJ R.: Ooh, I like that Marlborough Branch! I could use that plan and modify it slightly for a 4 x 6 foot corner shelf. I also would like to see more photos of it, as an overall layout, not just the beautiful "scale" photo.

Jim Dixon: I really like that too. And all I would need is one more right-hand switch.

Alcanman: The sky background was done in Photoshop. I use the track in front of the non-rail-served warehouse as a staging track. I have now also built a small one-story warehouse in front of the staging track to provide a view block.

Deemiorgos: Stonehammer is a fictional place that depicts a coastal branch line terminus somewhere in the Canadian Maritimes circa 1956. It covers 26 square foot made up of two modules. Trains arrive from a staging area.

The layout consists of:

- a platform track and runaround track that can hold a locomotive and two passenger cars
- a warehouse/stock siding, and a fuel dealer siding with a loco lead track sized for a 2-8-2 or an RDC
- a team track that can hold four to five cars
- a turntable to turn the locos around.



8. Small layouts give the modeler who is pressed for time, space, and money a chance to do some model-building and operating, as described by Alcanman on his Marlborough Branch.

Before completing the scenery on the layout, I tried some sessions by myself and posted them here:

mrhmag.com/node/31118

mrhmag.com/node/31876?page=4

Rocket Jones: Weaver Junction is my switching layout. As it stands right now, it's an interchange and industrial cluster, set on a 5' x 1.5' base. I made a few minor changes when track was put down. The food processing company in the back is scratchbuilt, and the warehouse is a kitbashed version of Gripp's Luggage. The back wall is solid sheet styrene, with all the detail panels moved to the front and sides to create a bigger building.

For operations, I use Boyd's Simple Switchlist System (www.potomac-nmra.org/Clinics/CNPJunction2013/Boyd-SimpleSwitchlistSystem.pdf). You start off with a set of cars on the

layout and a destination list showing where everything should end up. For now, it's enough complexity for me, and I've found running these switch lists to be an excellent way of testing track-work because everything gets repeatedly exercised both forward and backward.

For more examples of small layout operations, discussion of track planning software, and the definition of a secondary main line, go to mrhmag.com/node/32014.

9. (Left) Stonehammer's passenger platform, station, and runaround track.

10. (Bottom) Rocket Jones' Weaver Junction plan.



\$ GET PAID FOR YOUR TIP

We pay \$25 per tip we publish, or \$40 each if the tip also includes a photo or finished drawing.

[Click here and select article type TIP.](#) ■

★★★★★
RATE THIS ARTICLE

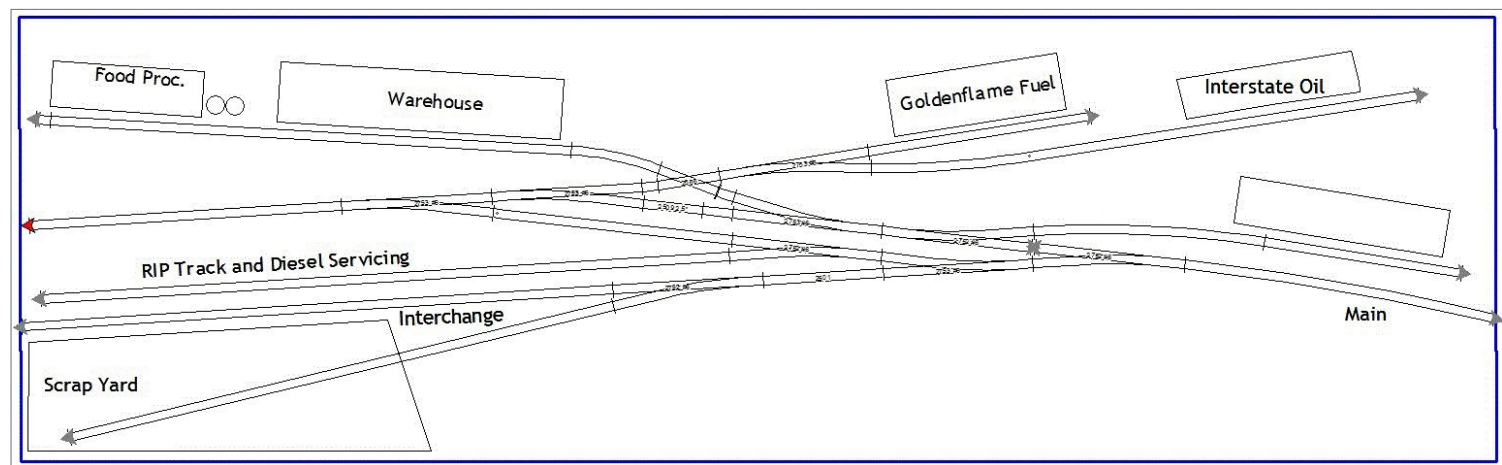


ACCURATE PIPE LOADS

Lew Phelps shows how to make our model pipe loads more realistic

Buy Issue: \$1.99 >>

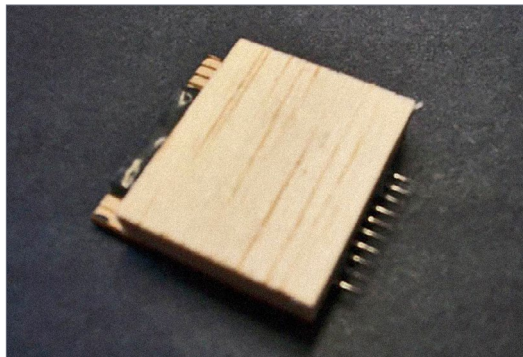
In **MRH** **RUNNING**
EXTRA





TIPS

Nail holer



11. Straight pins and scraps of scribed siding combined make an easy-to-use "nail holer." Either wood or plastic siding will work. *Michael Anson photo*

Now, using a straightedge as a guide, I can poke holes pretty fast. It seems a line of 10 to 15 pins work best for me, with perfect spacing for any situation.

—Michael Anson

I got really bored poking rows of nail holes into wood siding for structures. My parts and junk drawer didn't contain a pounce wheel or a gear that had the right spacing to make the process quicker.

Using a scrap of the siding, I epoxied straight pins along each clapboard indent. I then sandwiched them with another piece of wood and clamped the assembly to embed them. I made sure all points were in line.



CHOP NOSE RS-10

Pascal Latulippe kitbashes this unique CPrail loco from an Atlas RS-11

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA



Bowser

EXECUTIVE LINE

HO & N Scale In Stock!!

Ready to Run. Features: Crisp details and sharp painting and printing, metal wheels and knuckle couplers.



HO 40' Boxcars



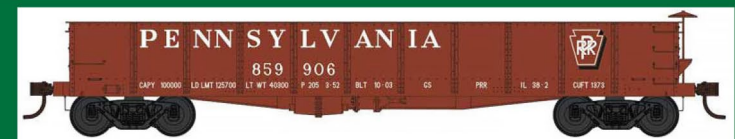
HO 70 Ton 14 Panel Hopper Cars



HO & N Scale GLa 2 Bay Hopper Cars



HO 50' Flat Cars



HO GS Gondolas

Click here to check out the details for these and other great Bowser products!

Freight Car super-detailing

**NEW
VIDEO!**



PREORDER
DVD media

~~\$29.99~~
\$24.99

FREE shipping US
50% off shipping foreign

Available now
VIDEO download

~~\$14.99~~
\$9.99

HD format

from the
**Model Railroad
Hobbyist Store**

**Get
Video**



MRHMAG.COM

✉ REGISTER
(free)

FEBRUARY NEWS

column



Model Railroad Hobbyist | February 2019 | #108

RICHARD BALE and
JEFF SHULTZ report the
latest hobby industry news



RATE THIS ARTICLE

ScaleTrains addition



Stephen Priest has joined ScaleTrains.com as the marketing manager. The company was established in 2014 by former Horizon/Athearn executives Shane Wilson, Mike Hopkin, Joe Olvera, and Paul Ellis. Priest has been active in the model railroad industry for many years, most recently as editor of *Railroad Model Craftsman* magazine. He has been an active model railroad

hobbyist for more than 45 years and earned the distinction of Master Model Railroader from the National Model Railroad Association. Priest has served on the NMRA Board of Directors and has twice received the NMRA President's Award ...

NEB&W Forced to Move

The Rensselaer Model Railroad Society at Rensselaer Polytechnic Institute, Troy, NY is in need of a new home.

► THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

[INDEX](#)

[TABLE OF CONTENTS](#)

Guided since 1989 by John Nehrich, the student club built the New England Berkshire & Western Railroad, a historically based, exceptionally well executed HO scale layout. In addition to introducing the hobby to the next generation, NEB&W has also presented both local and general history to non-modelers. The exposure throughout the past 30 years has been far reaching. More than 100 articles about the NEB&W have appeared in various hobby magazines. In 1989 Nehrich and the layout were featured on the NBC Today Show. The NEB&W layout was featured in an article in the Los Angeles Times that was syndicated to 600 other newspapers. The club appeared in *Invention & Technology Magazine* in 1995, and on several local PBS documentary programs. The layout and local historical research by the club was an important part of developing the 2008 film *Sittin' On A Million*. RPI has recently announced plans to renovate Davison Hall dormitory where the NEB&W layout has been housed for some 40 years. At press time, the future of NEB&W remained uncertain. For a virtual tour of NEB&W visit my.matterport.com/show/?m=e6d8iA5vGQ5 ...

Joe Ambrose 1957-2019



Joseph M. Ambrose, president and chief executive officer of Horizon Hobby, died suddenly January 4, 2019. He was 61 years of age. A native of Illinois, Ambrose earned a BS in finance at the University of Illinois, an MBA at Northwestern, and a law degree from Indiana University. He joined Horizon Hobby in 2005 as vice president of distribution. In 2008, he was named president and CEO. In addition to his wife Julie, Joe Ambrose is survived by four children and eight grandchildren ...

Shirlee English 1920-2018



Shirlee C. English, co-founder of English's Model Railroad Supply, has died at the age of 98. The name of the family business was changed to Bowser Manufacturing following the acquisition of Bowser of Riverside in 1961. Until recent years, Mrs. English remained active in the Montoursville, PA business, waving to neighbors as she commuted to work on her large yellow tricycle. She is survived by four children, including her son Lee who has managed Bowser for more than a decade ...

NEW CLUB CARS



The Chicago North Western Historical Society is selling HO scale kits for a C&NW yellow PS-2 4750 cu. ft. covered hopper car. Beginning in 1984, C&NW began applying yellow safety paint to various freight cars including a group of 50 4750 cu. ft. covered hoppers built by Pullman-Standard. A distinguishing feature of the new decoration was the use of the black system herald rather than the road's traditional multicolored scheme. CNWHS is offering HO versions of the PS-2 cars in three road numbers: No. 182324 (built 5/1981, repainted 10/4/1984), No. 753667 (built 12/1975, repainted 10/26/1984), and No. 173819 (built 12/1975, repainted in 12/26/1984). The custom models were prepared for CNWHS by Accurail. For ordering information go to cnwhs.org and click on CNWHS Store.

NEW PRODUCTS FOR ALL SCALES



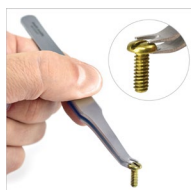
Crow River Products offers a wide selection of cast pewter and resin detail items including this clam-shell bucket that can be positioned either closed or open. Also available is a vertical boiler that measures 2.25-inches high. It is suitable for HO or S scale scenes or as a small O scale

boiler. For a complete list of available details visit crowriver-products.com.

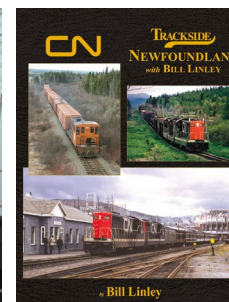
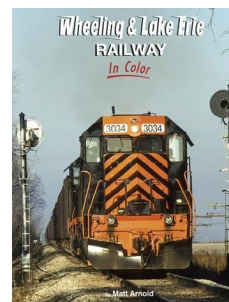


The East Penn Traction Club is selling a 2019 calendar that features a full-color cover photo and 13 high quality B&W photos of trolley lines. To order a calendar send a check or money order for \$12 payable to East Penn Traction Club to East

Penn Traction Club, c/o Charles Long, 227 Locust Road, Fort Washington, PA 19034-1425.



Micro-Mark is selling a specialized tweezer for holding small screws. The tweezer incorporates a notched, angled V-end that securely grips ultra-small screws. It is designed to work with fillister, pan, flat, hex, oval, button, and round head screws. For details visit micromark.com.



New hard cover books coming from **Morning Sun Publications** include *Wheeling & Lake Erie Railway in Color* by Matt Arnold. W&LE rostered EMD-built locomotives exclusively with the majority painted in a

Rio-Grande-inspired scheme. Scheduled for release next month is *Trackside Around Newfoundland* by life-long Canadian railway photographer Bill Linley. In addition to both standard and narrow gauge locomotives and rolling stock, Linley records the railway ferries and coastal boats of the Canadian province. For additional information contact a dealer or visit morningsunbooks.com.

O SCALE PRODUCT NEWS



Atlas O has scheduled the release of a new production run of 5161 cu. ft. triple-bay covered

hoppers during the second quarter of this year. Introduced by Trinity Industries in 1995, more than 27,000 prototype have been built and it is still being produced today. The Atlas Master series O scale model features metal grab irons and corner steps, etched-metal roof walk and safety platforms, and appropriate roller-bearing trucks with rotating axle caps. Road names for the Atlas O ready-to-run model will be Alaska Railroad, Chessie System, Chicago Freight, Conrail, and Southern Pacific.

New products coming from Atlas O during the third quarter of 2019 include this 40-foot 1937 AAR boxcar. The



ready-to-run model will have wire grab irons, an etched-metal running board, and Bettendorf solid-bearing trucks. In addition to the

Southern Pacific scheme shown above, road names will be Chesapeake & Ohio, Great Northern, Ontario Northland, Pittsburgh & Lake Erie, Monon, and Santa Fe (The Scout). An undecorated model will also be available.



Also scheduled for release during the third quarter of this year is a 36-foot wood ice refrigerator car. The Atlas O Master series model is based on cars

built in 1925 for Cudahy Packing Co. by General American Car Co. The model will have separately-applied grab irons, ladders, stirrup steps, and door hardware. Additional features include 40-ton Bettendorf-style solid-bearing trucks, and doors and hatches that can be positioned open or closed.



Road names will be New York Despatch, Agar Packing, Dold Packing, Lange Creamery, Pittsburgh Provision, Rex Canned Meats (Cudahy),

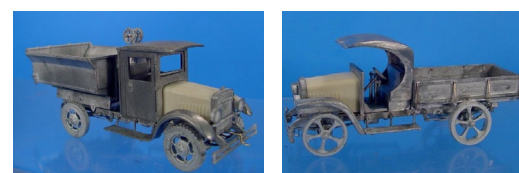
Schwarzschild & Sutzberger Lard, Nuckoll's Refrigerator Line, and undecorated. The application of truss-rods will be road name specific. Atlas O body-mounted couplers are suitable for both 2-rail and 3-rail equipment. For additional information contact a dealer or visit atlaso.com.

Foothill Model Works has O scale 26-inch wheels cast in high-strength Celcon, a wear resistant acetal copolymer similar to



Delrin. The wheelsets are available gauged for On2, On30, and On3. These are very accurate copies of the single-plate, chilled iron wheels used on the West Side Lumber Co. They are not recom-

mended for use in any truck that uses pointed axles. For details contact info@foothillmodelworks.com.



Wiseman Model Services has several different O scale kits for Kleiber trucks. In addition to a dump truck with a closed cab (above

left), kits are available for a station jitney, and kerosene tank truck. Open-type cabs are available for a pickup (above right), wrecker, stake body, oval tank, flat bed, and semi-truck. The kits are composed of cast white metal and resin parts, assembly drawings and detailed instructions. For additional information visit wisemanmodelservices.com.

HO SCALE PRODUCT NEWS



New HO scale kits released by **Accurail** include two cars decorated for Georgia Railroad. The GR cars are a 36-foot Fowler 2473 cu. ft. boxcar built in 1914 (above), and a USRA twin-bay hopper car built in 1923 and rebuilt in 1952 (below).



Also new are 40-foot single-sheathed wood boxcars decorated for Nashville, Chattanooga & St. Louis



is also new from Accurail.



(left); and Fort Dodge, Des Moines & Southern. A three-car set of USRA twin-bay hopper cars decorated for Buffalo & Susquehanna

Additional new releases include a Chicago Great Western 40-foot insulated steel plug-door boxcar, an Ann Arbor 36-foot double-sheathed wood boxcar with wood ends, a steel roof, and a fishbelly

underframe; a Kansas City Southern Pullman-Standard triple-bay covered hopper, and a Western Maryland 50-foot riveted steel boxcar with double Youngstown sliding doors. All Accurail kits include appropriate trucks and Accumate knuckle couplers. For information contact a dealer or visit accurail.com.



Arrowhead Models has introduced precision machined HO scale wheelsets that feature prototypically contoured inner and outer wheel surfaces. The taper of the axle also follows the prototype. Both wheels and axles are

machined from nickel silver stock. The wheelsets are electrically insulated and meet NMRA standards for Code 88 tread profiles and gauge. Both 33 and 36-inch wheelsets are available. Arrowhead has designed special packaging that protects the axle tips. The wheelsets are sold in 24 packs. For additional information contact a dealer or visit arrowheadmodels.com.

Athearn's newest version of the EMD SD70 series locomotives is the SD70AH. The H suffix designates "heavy" with this series being



ballasted with an additional 8,000 lbs. over the 420,000 lbs. of

standard SD70ACe locomotives. Athearn's HO scale version will be available decorated as Union Pacific 9069 and 9096. Features of the Genesis series SD70AH include PTC antenna array, nose-mount headlight, illuminated ditch lights, and late handrails. Delivery is planned for December.



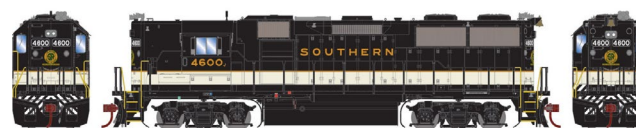
Also scheduled for release late next year is a group of Genesis SD45-2

diesel locomotives. Road names will include locomotives decorated in the Kodachrome scheme of the failed merger of Southern Pacific and Santa Fe, ATSF Bicentennial, Erie Lackawanna, Conrail (ex-EL), Clinchfield, and two versions of CSX; solid gray, and as an ex-CRR in Athearn's Primed for Grime.



Completing the SD45-2 road names is HATX-Helm Leasing

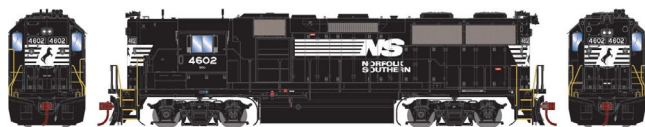
which supplied locomotives during peak periods to several eastern roads including CSX and Grand Trunk Western.



Athearn's December production schedule of Genesis loco-

motives includes GP39X/GP49 models decorated for Southern Railway and Norfolk Southern. Adhering to Southern Railway practice, these units were equipped with 81-inch tall short hoods, control stands set up in the cab for long-hood forward

operation, dynamic brake housing, dual Nathan 5-chime horns, safety lights on the long hood walkway, snowplows fore and aft, and a bell mounted on the long hood. Athearn will produce the same six road numbers decorated for Southern Railway and in the subsequent Norfolk Southern scheme.



All of the Athearn Genesis locomotives mentioned in this report will

be available for DC operation with a DCC-ready 21-pin NEM socket, and with factory installed Tsunami2 sound and decoder.



R. Bale

GP39X vs GP49

EMD built these six GP39X 2,600 hp units in 1980 as test beds (hence the "X" in their designation) for future medium horsepower locomotives. In 1982, Southern returned them to EMD's La Grange, Illinois plant for mechanical modifications and upgrades that essentially made them true GP49s. The upgrade increased their rating to 2,800 hp, and their designation was officially changed to GP49.



Athearn Ready-to-Roll Husky Stack well cars are scheduled for release next December. The cars will be available in



three-car sets with drawbars included. Like the prototype, the 48-foot well cars can handle 20-foot or 48-foot containers on the bottom, and containers up to 53- feet long on top.



Road names will be BNSF in red and in Primed-for Grime, CSX Intermodal, TrailerTrain, and Southern Pacific.



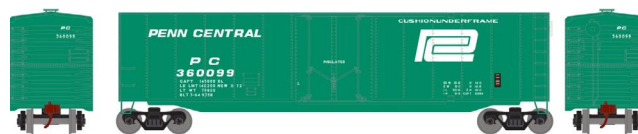
Athearn's December 2019 release will include three-packs of 40-foot low-cube containers. This is a new model for Athearn that features individual door

locking rods. Carrier names will be China Shipping, CMA/CGM, Maersk Matson, OOCL, and Xines.



HO scale 53-foot reefer trailers are included on Athearn's late

2019 production schedule. The fully assembled models feature separately applied mud flaps and rubber tires. Additional features, depending on the practice of the prototype carrier, include a spare tire rack and three different fuel tank sizes. Carrier names will be Marten, Prime Inc., Motor Cargo, Burlington Northern Santa Fe, Central, KLM, and Stevens. An unlettered owner-operator version will also be available.



Roundhouse brand models coming from

Athearn next December include a 50-foot smooth side boxcar with plug doors. Identifying features include smooth sides and Dreadnaught ends. In addition to the PC car (lettering diagram shown), road names will be Lehigh Valley, Chesapeake & Ohio, Milwaukee Road, Texas & Pacific, and Western Pacific.



The release includes a car decorated for ATSF Rail-O-Gram, a

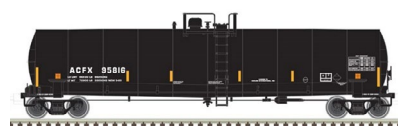
unique prototype prepared by Santa Fe that was subsequently signed by many people in support of the SPSF merger proposal. Despite the lobbying effort by many factions, the merger was subsequently denied by the ICC. For information on all Athearn and Roundhouse products contact a dealer or visit athearn.com.

.....



Atlas has announced a new release of the Alco C424/C425 in their Classic line. Part of Alco's Century

series of locomotives, the C424/C425 featured the 16-251 prime mover at 2400 and 2500hp respectively. Phase 1 C424 road names include Erie Lackawanna, Green Bay & Western, and undecorated. Phase 2 C424 road names are Delaware-Lackawanna, Green Bay & Western, Minnesota Commercial, Morristown & Erie, and undecorated. Phase 2 C425 road names are BC Rail, Delaware-Lackawanna, and undecorated. Both DC with an 8-pin DCC plug and DCC sound with an ESU Loksound Select Dual-mode decoder will be available.



Atlas is planning to release an HO scale ACF 23,500 gallon tank car during the third quarter of this

year. The ready-to-run model is based on a general-purpose, single-compartment, insulated, non-pressurized tank car built by ACF Industries. The prototype cars are used to transport a wide range of commodities including asphalt, ethanol, fuel oil, metal sodium, molten phenol, paraffin wax, tallow, urethane polyol, and vegetable oil. Like the prototype, Atlas's Master series model rides on 100-ton roller-bearing trucks. Road names on this release will be ACFX-Asphalt, ACFX- Edible Lard, ACFX-Inedible Tallow (above), AMOX-Amoco, CHVX-Chevron, PTLX-Pullman Transport, SCMX-Shell, and TILX-Trinity Industries. An undecorated car will also be available.



Atlas's third quarter release will include

this Master series ACF 89-foot 4-inch flat car. Atlas's HO scale model is based on a 1973 prototype designed to carry two trailers or combinations with containers. The cars were used in intermodal service by several railroads including Trailer Train. Many of the cars were modified to handle longer trailers. Most that remain in service today have received three hitches to accommodate up to three shorter package trailers. Road names on Atlas's ready-to-run model will be HTTX (Pennsy Heritage scheme), and Florida East Coast. Undecorated models equipped for containers, and with middle and end hitches will also be in the third quarter release. For more information contact a dealer or visit atlasrr.com.

.....



Bowser has scheduled a mid-summer release for a group of HO scale 40-foot Pennsylvania X31 boxcars.

The ready-to-run models will be available in several combinations of door and round roof configurations. X31 cars with double doors and roofs with flush eaves will be available decorated for Northern Pacific, Detroit, Toledo & Ironton, PRR (shadow keystone), and Seaboard (Orange Blossom Special). A flush roof car with single doors will be available decorated for Seaboard with a Silver Meteor herald.



PRR X31b boxcars with inset roof eaves and double doors for automobile service will be available with a circle keystone herald. The same car will also be available with a "Buy War Bonds" slogan.



Bowser's production schedule includes two PRR X31 boxcars with single doors and inset eaves. One will show a circle keystone herald while the other car, assigned to stores service, will display a framed S on the left side of the car and a large plain keystone herald on the right.



Two PRR X31f boxcars with turtle roofs and double doors are included in the release. One will have a circle keystone with the second car decorated with a large shadow keystone herald.



Completing the summer release are two K11 series PRR stock cars with one having a silver roof and doors.

All Bowser HO scale ready-to-run models come with knuckle couplers and appropriate cast Delrin trucks fitted with metal wheelsets. For additional information contact a dealer or visit bowser-trains.com.



R. Bale

THE PENNSYLVANIA RAILROAD

The Pennsylvania Railroad developed the round-roof X-31 to increase the cubic capacity of standard 40-foot boxcars. Other than some difficulties with the eaves that prompted several different designs, the X-31 was considered a great success with the "P" Company eventually acquiring more than 12,500 of them between 1932 and the late 1930s. Production included 50-foot X-31 boxcars with the same round roof.



Funaro & Camerlengo has an HO scale resin kit for a Seley twin-bay composite hopper car. The craftsman kit features a one-piece body with interior detail. Accurate

Delaware & Hudson 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 accepting advance reservations until February 28 for a new production run of HO scale drop bottom gondolas. Several versions of the

ready-to-run model will be available including steel and composite sides and extended sides for beet or wood chip service. A car with steel sides will be available decorated for Denver & Rio Grande Western, Northern Pacific, Great Northern, Union Pacific, and Southern Pacific with Roman lettering (above) and in a 1958 repaint scheme with block lettering (below).



A Southern Pacific beet service car that combines Roman lettering on the composite body and block lettering on the steel extended sides is included in the run.



A composite car with wood extensions for chip service will be available for Southern Pacific, Western Pacific, and Spokane,

Portland & Seattle. Delivery is planned for late this year. For information on all InterMountain Railway products contact a dealer or visit intermountain-railway.com.



Broadway Limited Imports has a new production run of Union Pacific 4-8-8-4 Big Boy steam

locomotives. The HO scale die cast model is equipped with traction tires. It comes with Paragon3 Rolling Thunder sound that functions in both DC and DCC environments. Two versions of the prototype with 25-C-100 coal tenders are available; a 1941 version and a 1944 version with a Wilson aftercooler. Also available is No. 4014, a modern excursion version equipped with an oil tender. For more information contact a dealer or visit broadway-limited.com.



The Electric Wallpaper Co. will introduce its first product, Roomettes interiors,

at the Amherst Railway Society Railway Hobby Show in West Springfield, MA on January 26. The initial offering of 10 different kits sized to fit Woodland Scenics and DPM HO scale structures assemble into 3D interiors and include LEDs that are plug compatible with Woodland Scenics Just-Plug and NCE lighting systems. Roomettes will be available through www.roomettes-lighting.com in early February 2019.



Kadee plans to release an HO scale model of this 40-foot Southern Railway boxcar this month. The ready-to-run model replicates 1948 Pullman

Standard production with 10-panel welded sides fitted with seven panel six-foot Superior doors.



Also due from Kadee later this month is a 50-foot Grand Trunk Western PS-1 boxcar with 10-foot Youngstown sliding doors.

Kadee's HO scale model represents a 1970-era car that received a cushion underframe when it was rebuilt and repainted in November 1990.



New Kadee models scheduled for release in March include an HO scale version of this 40-foot Seaboard Air Line PS-1 boxcar. The 10-panel welded sides,

narrow bolster tabs, and 8-foot Youngstown sliding doors match a prototype built in 1951.



Completing Kadee's March release of new HO scale ready-to-run models is an ACF 11,000 gallon insulated tank car decorated for PBGX-Protane Bottled Gas.

The model is based on a prototype built in 1947 with a full loading platform. All Kadee HO models come with Kadee couplers and two-piece self-centering trucks. For additional information contact a dealer or visit kadee.com.



Owl Mountain Models is selling a kit (OMM #10002) to create a Pyle Gyalite Tailgate Marker. The easily-assembled kit is designed to fit most HO scale passenger cars. It will function on layouts using either DC or

DCC power. The kit provides material for two cars. Components include two tailgates, two Gyalite housings, two small red LEDs, and two ¼ watt 1000 ohm dropping resistors. For additional information, including notes on prototypical use and suggestions for adapting the kit to various brands of passenger cars, visit owlmt-models.com.



Rapido Trains has announced plans to produce three new HO scale locomotives, including two steam engines. Tentatively scheduled for release in 2020 is a Canadian National class H-6-d/g 4-6-0 Ten Wheeler. The light, general-purpose locomotive handled both freight and passenger assignments across the entire CNR system. They lasted in regular service into the late 1950s with several being preserved after the end of steam.



Through their years of service, the prototype locomotives received numerous alterations.

Rapido will offer these variations which include oil or coal tenders (with and without extended bunker), wood or steel cabs, manual or power reversers, vertical or horizontal slat pilots, and variations in headlight sizes and bell location.



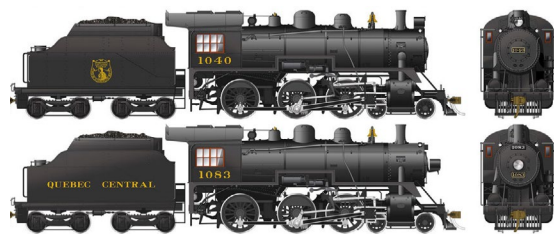
The CNR H-6 will be available with a level or tilted herald on the tender, plus two painted

but unlettered variations.



being built between 1905 and 1913. Many lasted until the end of steam service in 1961.

Rapido will offer variations in detail to cover the changes applied to CPR D10s over the course of their long life. These include coal or oil tenders, raised or straight walkways, angled or straight front number boards, two styles of power reversers, and variations in the location of headlights and bells.



Central, and painted but unlettered. A custom paint scheme will be available exclusively through Credit Valley Railway Co.

Both of Rapido's new HO scale steam locomotive models will feature special lighting effects for the headlight, marker lights, number boards and a flickering firebox. They will be available for standard DC operation without sound, and with DCC sound and decoder. The order deadline is October 14, 2019, with delivery planned for 2020.

For Canadian Pacific modelers, Rapido will offer a D10 Class 4-6-0 Ten Wheeler. CPR's D10 was the most numerous class of steam locomotive in Canada with 502

Decorating schemes for Rapido's D10 will be Canadian Pacific, Canadian Pacific (passenger), Dominion Atlantic, Quebec



Following the strong sales of their HO scale GMD (Canadian built) SW1200RS diesel locomotive, Rapido has decided to offer an EMD (American built) SW1200.

Introduced in early 1954, the SW1200 provided railroads with a compact, lightweight locomotive to replace steam power on branch lines that did not require the muscle of a full-fledged main-line road engine.



Rapido will offer the SW1200 in a variety of road-specific details including Type A and Flexicoil trucks, different fuel tanks, spark arrestors, MU cables, folding end platform, step configurations and different lighting options.



The SW1200 will be available in the following road names plus three undecorated versions: Baltimore & Ohio, Burlington Northern (ex-GN), Chicago, Burlington & Quincy; Chicago, Rock Island & Pacific; Conrail (ex-PRR), Denver & Rio Grande Western, Grand Trunk Western, Great Northern, Milwaukee Road, Missouri Pacific, New Haven, Northern Pacific, Pennsylvania, Penn Central (ex-NH), Soo Line, and Southern Pacific.



Rapido's HO scale SW1200 will be available for standard DC operation without sound, and with an ESU LokSound decoder utilizing recording from a prototype 567 prime mover. The

order deadline is October 14, 2019, with delivery planned for 2020. For additional information contact a dealer or visit rapidotrains.com.



Resin Car Works has released an HO scale kit for a 1937 Great Northern wood-sheathed boxcar. This is an updated one-piece body version of a similar kit offered many years ago by Sunshine Models. The RCW update

includes a correct underframe, a new roof, and a pair of Tahoe Buckeye ARA 50-ton truck side frames. Ted Culotta created the artwork for the GN decals included with this kit. For additional information visit resincarworks.com.



As mentioned last month in our Briefly Noted report, **Walthers** has announced plans to produce an SD70ACe diesel decorated for Union Pacific No. 4141

George H.W. Bush. The Mainline series model is scheduled for release in December. Features include directional LED lighting, working ditch lights, and the same drive system as WalthersProto models. Drill starter points are molded in the body to indicate where grab irons can be added using the Walthers SD70ACe detail kit which is sold separately. No. 4141 will be available for DC operation as well as with ESU Sound and DCC decoder. Walthers states the HO scale locomotive will operate on an 18-inch radius but recommends a 22-inch or larger radius.



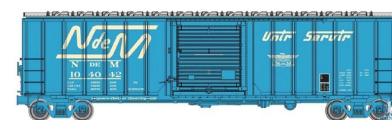
Yellow and gray Heritage Fleet scheme. They include a baggage car displaying an American flag, a dome diner, and a 48-seat diner (below).



is scheduled for release in late April. Walthers HO scale Mainline series model is based on prototypes in service from late 1960s to the present. Matching racks and bulkheads to convert the open car to coil steel or pulpwood service are included. The model comes with metal knuckle couplers and 36-inch machined metal wheelsets.



Southern, Penn Central, Wisconsin Central, and Milwaukee Road.



The release of UP No. 4141 will be accompanied by six 85-foot ACF smooth-side passenger cars decorated in Union Pacific's Armour

Completing this release of Union Pacific Heritage Fleet equipment are three dome lounge cars decorated for City of San Francisco (above), Harriman, and Walter Dean.

A new production run of a 53-foot Thrall gondola with smooth side panels

Road names will be Denver & Rio Grande Western, Conrail, Norfolk

Walthers is quoting an August release date for a group of 50-foot ACF exterior-post boxcars. The Mainline series model is based on

a 1970s-era Plate B prototype that is 15-feet 2-inches tall and 10-feet 8-inches wide. In addition to the National Railways of Mexico car shown above, road names will be Burlington Northern, CSX Transportation, Railbox, and Boston & Maine.



The ready-to-run model comes with metal knuckle couplers and appropriate trucks with 33-inch machined metal wheelsets.



New Walther's Cornerstone items include a kit for an

ornate wrought iron fence. Sufficient material is included to build an HO scale fence 25.5-inches long. A matching gate, cut-stone supports, and 12 each of three sizes of nonworking lamps are included. For additional information on Walther's products contact a dealer or visit walthers.com.

N SCALE PRODUCT NEWS



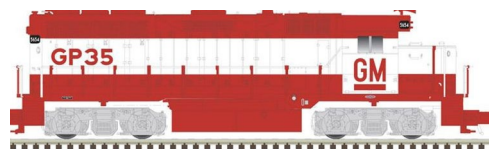
Athearn's
December 2019
production sched-
ule for N scale

products includes 50-foot PS-1 boxcars with plug doors, Pullman-Standard corrugated steel ends and a bow-tie patterned metal roof. In addition to the Milwaukee Road car shown, road names will be Penn Central, Lehigh Valley, Chesapeake & Ohio, Texas & Pacific, and Western Pacific.



The N scale release includes a car decorated for

ATSF Rail-O-Gram, a unique prototype prepared by Santa Fe that was subsequently signed by many people in support of the proposed SPSF merger proposal. Despite the lobbying effort by many factions, the merger was subsequently denied by the ICC. For information on all Athearn products contact a dealer or visit athearn.com.



Atlas has announced a new release of the EMD GP35 locomotive in the Classic line. The ultimate 4-axle locomotive in the 567 prime

mover line, the GP 35 introduced a new squared-off cab style. Roadnames in this release include ATSF, Canadian Pacific, EMD Demonstrator, Gulf Mobile & Ohio, Illinois Central Gulf, Penn Central, Seaboard Coast Line, and Union Pacific. The models will be available both in DC only and DCC with sound from ESU.

Atlas plans to introduce a new N scale model of a 4180 cu. ft. Airslide covered hopper during the third quarter of 2019. The new ready-to-run model will be available decorated for Frisco, Gulf, Mobile & Ohio; Rock Island, Southern Railway, and Westvaco. An undecorated model will also be released.



A second new N scale covered hopper is also scheduled for release by Atlas during the third quarter. The Atlas Master series model

is based on a low-side 4427 cu. ft. triple-bay covered hopper introduced by Pullman-Standard in the mid-1950s. Road names on this initial release will be Illinois Central Gulf, Chessie, Canadian National, Santa Fe (Q herald), and Union Pacific. Atlas will also release an undecorated version.



Completing the list of new N scale models Atlas has set for release during the third quarter is a GSI bulkhead flat car with an interior length of 48-feet. General Steel Industries developed the prototype for this model in the 1960s. Atlas's N scale version has a heavy die-cast body and intricate detail on the bulkhead lattices.



Road names for the Master series model will include Burlington Northern, Frisco, Northern Pacific, Soo Line, Union Pacific, and an undecorated model. For additional information contact a dealer or visit atlasrr.com.



Jacksonville Terminal Company has released more 40-foot HC corrugated-side containers. The shipping companies included in this release include Gateway Container, Zim, MAERSK and GE SEACO. For more information see your dealer or jtcmodeltrains.com.



KatoUSA plans to release N scale models of Amtrak's new single-level Viewliner II in June. The cars will feature all metal wheel pickup as well as interior lighting capability using Kato's 11-211 or 11-212 Version 2 Interior Lighting Kits.



In conjunction with Kato's re-issue of Union Pacific SD70ACe No. 4141 George Bush (see MRH January 2019 for details), the company will also re-release its seven-car UP Excursion Train.



The seven car consist includes power car No. 207, Budd 10-6 sleeper No. 202, museum car Promontory (above), dome coach Columbine, coach Portland Rose,

dome diner City of Portland (below), and business car No. 119 Kenefick. Availability is planned for July.



The excursion train set will also be available with factory installed interior lighting.



KatoUSA has several N scale freight train starter sets that include an F7 locomotive plus an assortment of freight cars. The sets include an AT&SF red and silver Warbonnet locomotive with two 70-ton covered hopper cars, a UTLX tank car, and a caboose. Similar sets are available with a Santa Fe Bluebonnet F7 (above) and a Union Pacific F7 diesel locomotive. The sets are available with locomotives ready for DC operation, DCC or ESU LokSound DCC. Track

and power are not included in these sets. For additional information contact a dealer or visit katousa.com.



Micro-Trains has released several new N scale ready-to-run cars that are available now through authorized M-T dealers. Heading the list of new

cars is a 56-foot general service frame-less tank car decorated for Procor. The model rides on Barber roller-bearing trucks.



Also new is a 50-foot Chesapeake & Ohio boxcar with double 8-foot sliding doors that are equipped with a Slidewell rack and pinion door

opening mechanism manufactured by Hennesy Company. The N scale model follows a prototype built in 1955 by American Car and Foundry. The model features a new lowered underframe and body-mount couplers.



Micro-Trains is selling a wood sided ice reefer from the truss-rod era that is decorated for Heinz 57 Varieties. The Heinz Company introduced the “57 Varieties”

slogan in 1896 and applied it to its entire fleet of 700 billboard reefers. Each car featured different products, in this case pickles, figs and onions. This is the first in a series of Heinz cars Micro-Trains plans to release.



A 40-foot ATSF class Bx-78 boxcar completes this month's list of new N scale models from Micro-Trains.

The model is based on a 1944 prototype that was rebuilt in the 1950s with a cushioned underframe that Santa Fe's marketing department called “Shock Control.” The eye-catching paint scheme includes black ends and roof, and red sides with a large circle cross Santa Fe herald. For additional information on Micro-Trains models contact a dealer or visit micro-trains.com.



ScaleTrains.com has released an N scale version of a Gunderson 5188 cu. ft. triple-bay covered hopper car. The ready-to-run model features photo-

etched stainless steel see-through roof walk and end platforms, metal grab irons, plastic semi-scale Type E lower knuckle couplers, uncoupling levers, trainline hoses, and ASF Ride Control trucks.



The Rivet Counter series model is available decorated for Kansas City Southern, AOK, BNSF, CMO/Building America, and Union Pacific. For additional

information visit scaletrains.com.



THE LIMITED MODELER
Jim Six: The secret to
staying motivated

Buy Issue: \$1.99 >>

In **MRH** **RUNNING**
EXTRA





R. Bale

GUNDERSON 5188 COVERED HOPPER

One of the more popular designs of cars to emerge in recent years is the Gunderson-GIMSA/Concarril 5188 cubic foot covered hopper. Introduced in 2007, the Gunderson 5188 measures 58 feet over the coupler centers and is built to operate within the Plate C clearance diagram. These all-steel cars are equipped with trough-style loading hatches that can be made of metal or non-metal materials depending upon customer specifications. Each of its three unloading bays has a 30 x 30-inch hopper opening that can be fitted with a variety of outlet types depending on the kind of commodity to be handled.

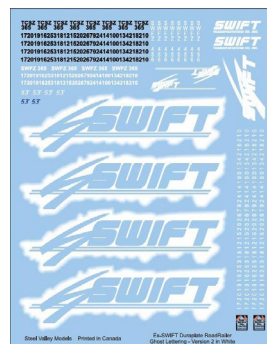
NEW DECALS, SIGNS AND FINISHING PRODUCTS



New water slide decals from **Microscale Industries** include an O scale lettering set for Lehigh Valley cabooses. The material is suitable for decorating equipment in use from 1932 to 1976. The set is also available in HO and N scales. Microscale has also

released Contemporary Graffiti #2 in both HO and N scale. For additional information contact a dealer or visit microscale.com.

Steel Valley Models and Precision Design Co. have combined to create HO scale decals of the Triple Crown x-Swift



Roadrailers that were purchased by TCS. For more information go to Steel Valley Models's Facebook page at www.facebook.com/pg/SVMHopperTopper/photos/?tab=album&album_id=2130981513590635.



SEND US YOUR PRODUCT ANNOUNCEMENTS

If you are a hobby manufacturer with a product announcement, just [click here](#) and submit your announcement to us. Our web site and free magazine reach continues to grow, so get on board this new media train! ■



RATE THIS ARTICLE

DISCLAIMER

The opinions expressed in this column are those of the writer and do not necessarily reflect the opinion of *Model Railroad Hobbyist* or its sponsors. Every effort is made to provide our readers with accurate and responsible news and information, however, neither *Model Railroad Hobbyist* or the writer of this column can be held responsible for any inaccuracies or typographical errors that may inadvertently appear in this column.

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

Click to find out more

DOWNLOAD ISSUE



DOWNLOAD PORTRAIT



DOWNLOAD LANDSCAPE



UPGRADE YOUR LOCO FLEET
Tony Thompson on getting a
more realistic loco fleet

Buy Issue: \$1.99 >>

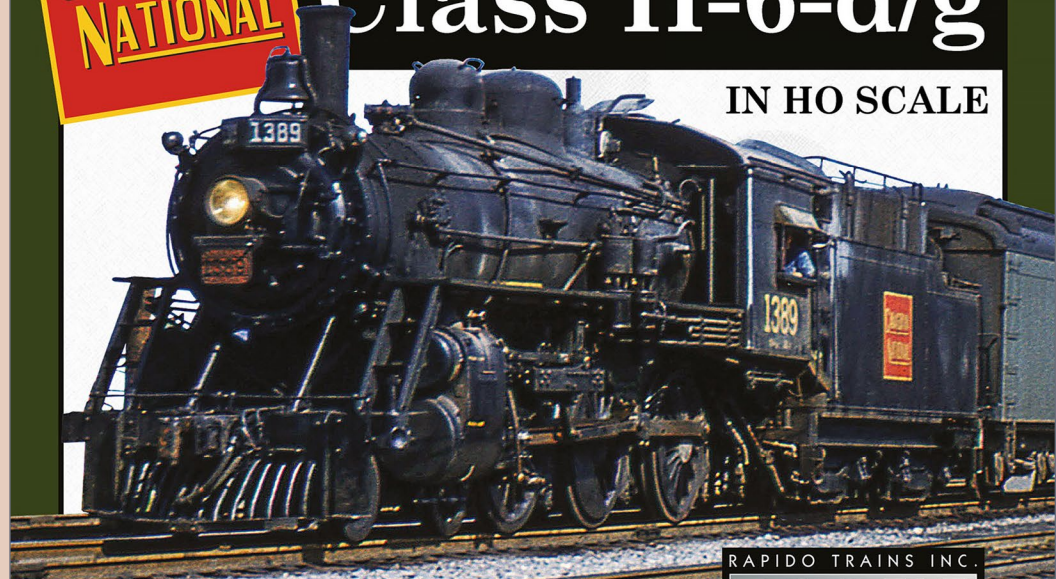
In **MRH** **RUNNING**
EXTRA



**CANADIAN
NATIONAL**

CANADIAN NATIONAL RAILWAYS
Class H-6-d/g

IN HO SCALE



**INTRODUCING THE FIRST CNR
LOCOMOTIVE IN THE ICONS
OF CANADIAN STEAM SERIES**

WITH THREE TENDER STYLES

STANDARD COAL

EXTENDED
COAL

OIL

**CLICK
HERE**



RAPIDOTRAINS.COM

RAPIDO TRAINS INC.
ICONS
OF
**CANADIAN
STEAM**
HO SCALE



PHOTOS COURTESY JOHN RIDDLE

! BRIEFLY NOTED AT PRESS TIME ...

Accurail's next release of new HO scale kits will include a 36-foot Fowler wood boxcar decorated for Chicago, South Shore & South Bend. ...

Bowser has reintroduced HO scale Kiesel rigid tender trucks and Buckeye 3-axle tender trucks with 36-inch wheelsets. Retainers and retainer mounting screws are included...

Following a series of successful field tests, **Eastern Seaboard Models expects** to have production quantities of N scale ASF Ride-Control 70-ton trucks with 33-inch fine scale metal wheels sometime in April ...

Walthers will introduce a new line of HO scale track in April. Code 83 and code 100 36-inch track sections, and DCC friendly #4, #5, and # 6 turnouts will be available. The new track is said to be compatible with Shinohara and Walthers original track ...

Exact Rail has HO scale Platinum Series Thrall 3564 cu. ft. gondolas decorated for MHFX, Canadian Pacific, LW, and Southern Pacific ...

Morning Sun Books has released Volume 4 of *Erie Railroad Official Photography* by Daniel G. Biernacki ...



You're the kid.



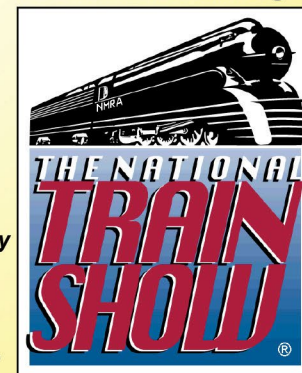
Welcome to the candy store.

July 12-14, 2019

**Mountain America
Exposition Center
Salt Lake City, Utah**

**CLICK HERE
FOR ALL THE
DETAILS!**

www.nationaltrainshow.org



For more information,
click here to visit:

NationalTrainShow.org

Sponsored by



SELECTED EVENTS



Model Railroad Hobbyist | February 2019 | #108

FEBRUARY 2019

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

CALIFORNIA, BUENA PARK, February 10, California Express Railroadiana Show, at Buena Park Holiday Inn. Info at www.facebook.com/calexpressbuenapark.

KANSAS, WICHITA, February 2-3, The BEST Train Show, sponsored by NMRA Chisholm Train Division at Cessna Activity Center 2744 George Washington Blvd. Info at besttrainshow.com.

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 Railroad Prototype Modelers Meet, Shilo Inn & Suites, 11707 NE Airport Way. Info at www.brpmm.com.

SOUTH CAROLINA, EASLEY, February 8-9, Model Train Expo, sponsored by Central Railway Model and Historical Association, at Rock Springs Church, 207 Rock Spring Road. Info at crmha.org.

TEXAS, STAFFORD (Metro Houston), February 16, 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.

SELECTED EVENTS | 2

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 jimb67@gmail.com.

March 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, 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.

CANADA, ONTARIO, TORONTO, March 16, Railway Prototype Modellers Meet, at Humber College, 205 Humber College Blvd, North Campus, Building B, Rooms B201 & B202. Info at torontoprototypemodellers.wordpress.com.

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

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.

NEW YORK, BATAVIA, March 31, Great Batavia Train Show, sponsored by Genesee Society of Model Engineers, at Richard C. Call Arena, Genesee Community College. Info at www.gsme.org.

SELECTED EVENTS | 3

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 at 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. Info at www.facebook.com/events/1303189686489326.

PENNSYLVANIA, GREENSBURG (Metro Pittsburgh), March 22-23, 2019 RPM East, sponsored by NMRA Division Two, at Ramada Greensburg Hotel and Conference Center, 100 Sheraton Drive. Info at hansmanns.org/rpm_east/index.htm.

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 nwvrrailroad.org.

Future 2019, by location

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

CALIFORNIA, SAN BERNARDINO, April 27, Western Prototype Modelers Meet, at San Bernardino Train Depot, 1170 West 3rd Street. Info at ppw-aline.com/pages/railroad-prototype-modelers.

SELECTED EVENTS | 4

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.

INDIANA, INDIANAPOLIS, April 13, Indianapolis Spring Train Show sponsored by NMRA Central Indiana Division at Manual High School Gym, 2405 S. Madison Avenue. Info at cidnmra.org.

MICHIGAN, WYOMING, April 13, Spring Train Show, sponsored by Grand River Valley Railroad Club at 5625 Burlingame Ave SW. Info at grvrrc.org.

OREGON, PORTLAND, August 27-31, 35th National Garden Railway Convention, hosted by Rose City Garden Railway Society, at DoubleTree by Hilton Hotel, 1000 NE Multnomah Street. Info at www.ngrc2019.org.

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 www.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.

Beyond 2019, by location

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



RATE THIS ARTICLE

Model Railroad Hobbyist | February 2019 | #108



Jack the Baboon railroad signalman

It was in the late 1800s when travellers to Cape Town in South Africa encountered a most unusual worker at Uitenhage train station! Operating the levers in the interlocking tower was a baboon named Jack. You read right, he worked as the local signal baboon – and apparently was quite good at it. ■



► BIZARRE FACTS AND HUMOR (SUPPOSEDLY)

CLICKABLE ADVERTISER INDEX

Accu-Lites	MRH Store (1)
Archer Fine Transfers	MRH Store (2)
Athearn	MRH Store (3)
Atlas Model Railroad Co.	Mt. Albert Scale Lumber
Bachmann	National Train Show (Salt Lake City)
Backdrop Junction	NCE (2 page spread)
Berrett Hill Trains	Norfolk & Western Historical Society
Black Cat Publishing	North American Railcars
Blair Line	Pre-Size Model Specialities
Bowser	Precision Design Co.
Caboose	Rapido (1)
Canyon Creek Scenics	Rapido (2)
Coffman Graphics	Ring Engineering (1)
Crow River Products	Ring Engineering (2)
Decal Pro FX	Scale Trains
Digitrax (2 page spread)	Soundtraxx (Blackstone)
El Dorado 3rd PlanIt	Southern Digital
Electric Wallpaper (Roomettes)	Streamlined Backshop Services
ESU LokSound	TAM Valley Depot
Fast Tracks	TrainMasters TV
Great Decals	Walthers
HO Diesel Supply	Westerfield Models
Iowa Scaled Engineering (ISE)	Yarmouth Model Works
Jelsma	
ITLA Scale Models	
Kenpatterson.com	
Lights 4 Models	
Litchfield Station	
Logic Rail Technologies	
Main Street Heritage Models	
Masterpiece Modules	
Micro-Trains Line	
Mike & Scotty Live	
Model Railroad Control Systems	
Modeltech Studios	
Monashee Laser Engineering	
Mountain Subdivision Hobbies	

Clickable "other" index

[Other – Contents](#)

[Other – Cover](#)

[Other – Derailments](#)

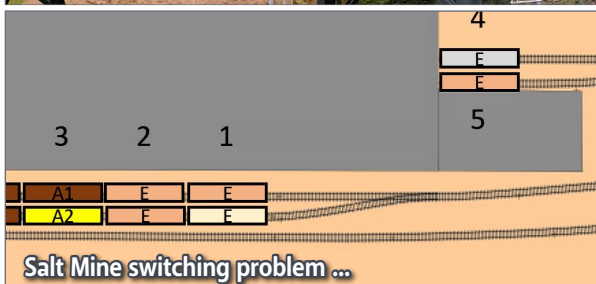
[Other – MRH Marketplace](#)

[Other – MRH Sponsors](#)

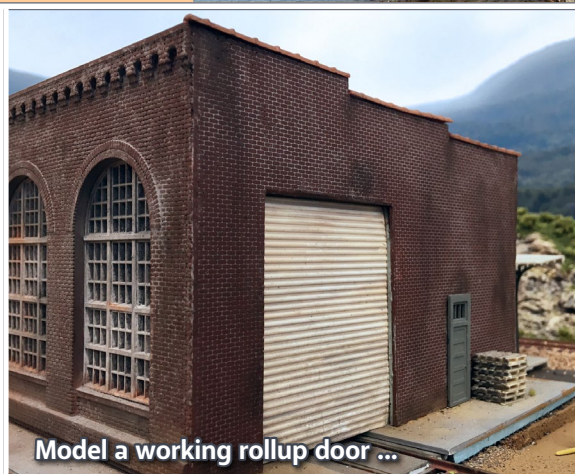
COMING NEXT MONTH IN MRH ...



Lee Nicholas' Utah Colorado Western ...



Salt Mine switching problem ...



Model a working rollup door ...

... coming in the
March MRH

COMING NEXT MONTH IN *RUNNING EXTRA* ...

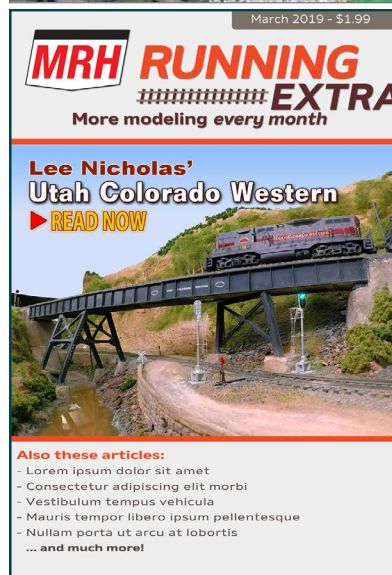
... all the MRH articles and ads, *PLUS:*



Greg Baker on painting figures more realistically ...



Kitbashing two versions of a Southern bay window caboose ...



Also these articles:

- Lorem ipsum dolor sit amet
- Consectetur adipiscing elit morbi
- Vestibulum tempus vehicula
- Mauris tempor libero ipsum pellentesque
- Nullam porta ut arcu at lobortis
- ... and much more!



Build / weather styrene as wood...

... all this and much more!

SUBSCRIBE: 1YR \$19.99