

MRH **RUNNING** ##### **EXTRA** Apprentice with savvy modelers

Peter Hall demonstrates

Remotoring a brass 4-8-2

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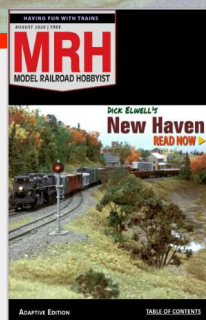


ALSO in this month's edition:

- Hard music wire flush cutters
- More early 20th century boxcars
- Yosemite Valley boxcar modeling
- Animating an enginehouse door

... and much more inside!

**Full
August
MRH
inside!**



WIDE EDITION
Hard-coded facing pages PDF

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August 2020



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EXTRA**

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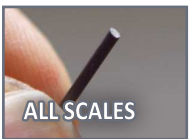
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RICHARD BALE and JEFF SHULTZ



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PUBLISHER'S WELCOME

introduction



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JOE FUGATE LOVES THESE GREAT PLASTIC SQUEEZE BOTTLES ...



RATE THIS ARTICLE

IN THE APRIL 2019 ISSUE OF *RUNNING EXTRA*, I LISTED SOME GREAT needle tips you can get for plastic squeeze bottles. I focused mainly on the tips in that piece, but it's time for a deeper dive into all the great plastic squeeze bottles you can get and what you can do with them.

This time I'm covering bottles that work specifically with the blunt needle tips I discussed back in April 2019. Next month, I'll delve into other types of plastic squeeze bottles.

Not all squeeze bottles are created equal! Only certain bottle nozzles accept the needle tips, so I'm being extra careful in my shopping list to include just the bottles that work properly with the needle tips. Here are the three bottle sets I find most useful.

The first set [2] has two small 20ml bottles with extra long needles that include a full length needle cap. Of course, you can replace the needle with any size you want if you have the needle set in [1]. I find these bottles work great to hold graphite powder, ethyl acetate as styrene cement, custom glue mixes, solder flux, or various lubricants.

The second set [3] comes with three 30ml bottles and three 50ml bottles. It includes angled needles and some very cool needle tip caps! The larger bottles hold more of the material you want to dispense.

The third set [4] includes oval bottles instead of round ones. It also comes with full length needle caps. Depending on what you're

To get a shopping list for this article, visit the *MRH* website at this link: mrhmag.com/magazine/running-extra/2020-08/publishers-welcome

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1. The bottles in this article all accept these handy blunt needle tips that run from 14 gauge (0.083" / 2.11mm) to 30 gauge (0.012" / 0.31mm). See the article shopping list for details.



2. You get two 20ml bottles in this set with extra long needles and caps. I like the small 20ml size and the needle caps come in very handy. Cost ~\$7.



3. This set includes three 30ml bottles and three 50ml bottles. It also includes some angled needles and some superb needle end caps. Cost ~\$10.



4. This set has six handy 35ml oval bottles with some excellent full-length needle caps. The oval bottles do cost a bit more, selling for just over \$20 as a set.

using these bottles for, the oval shaped bottles may be preferable to the round ones. But they do cost double the round bottle price.

CORNERSTONE KITBASHING ARTICLE RETRACTED

We were planning to publish an article in this issue on kitbashing a Cornerstone office building into a hospital, but when we contacted the author to have them proof the pasteup, they retracted the submission and asked that we not publish it. This was too last minute for us to replace it, so this issue of *Running Extra* is one article short.

Don't worry, next issue we will publish an extra article, making next issue one article longer than usual, balancing things out! ☑



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THE LIMITED MODELER

column

Images are from the author's collection, except as noted.

MRH Running Extra | August 2020



JIM SIX REVIEWS MORE EARLY
20TH CENTURY BOXCARS ...

★★★★★
RATE THIS ARTICLE

Many of us love every aspect of the hobby from building a layout, and operating it, to building the models for the layout. Others are more specialized. Some of my best hobby friends are all about model railroad operation, traveling from layout to layout to operate. A few friends collect models but do nothing with them. I know modelers who are all about diesel locomotives, detailing and weathering them to the nth degree. A Florida friend loves modeling grain elevators set in Indiana. He focuses on the finer details for the ultimate in realism. Most readers know a fellow among us who loves running really, really long coal trains of the late 1950s on a club layout! There is a lot of diversity among model railroaders.

Some folks specialize in freight cars. They give new definition to "serious." They love researching and modeling freight cars that were common before the Great Depression, and view themselves as prototype modelers.

For me, there are three questions that arise when building models. Simply stated, they are: what, why, and how. I believe most model railroaders are into the how of model building but don't give a lot of thought to what and why. These two



DOING MORE WITH LESS

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questions call for research and learning railroad history. An objective for me writing this column is to help readers see and appreciate the value of research.

For me, 2020 has been the year of awakening to the Pennsylvania Railroad. This month I want to discuss a couple of Pennsy boxcars; the X23 and X26 classes. I have not abandoned New York Central modeling. I have a serious number of NYC family freight cars in the lineup to be built and weathered.

PENNSY X23 SINGLE-SHEATHED BOXCARS

Let's begin with the Pennsylvania Railroad's X23 boxcar [2, 3]. It is certainly an ugly duckling in my mind, one that nobody will call a pretty boxcar. However, it was an important prototype since it was the Pennsy's first standard 40' boxcar to use a steel frame and steel bracing.

The first X23 was PRR 40001, built at the Altoona, Pennsylvania, car shops in November 1912. The remainder of the class was built between November 1912 and December 1915 for a class of 6,911 cars. They were built by the PRR, the Pressed Steel Car Company, the Western Steel Car & Foundry Company, the American Car & Foundry Company, and the Standard Steel Car Company. The cars rode on arch bar trucks and had K brake hardware.

In 1912, the Pennsylvania adopted the X23 design as its standard 40' boxcar, and their first built with a combination of a steel underframe, steel truss side framing, and wood-sheathed sides [7]. According to one steam era freight car group, the X23 was also the first PRR boxcar design that used a combined alpha-numeric designation for the car class – X23. Previous PRR box car classes had been classified using only alphabetical characters (XA through XL). The X23 had a light weight of 48,000-pounds, capacity of 100,000 pounds, and a cubic capacity of 2,682 cu-ft.



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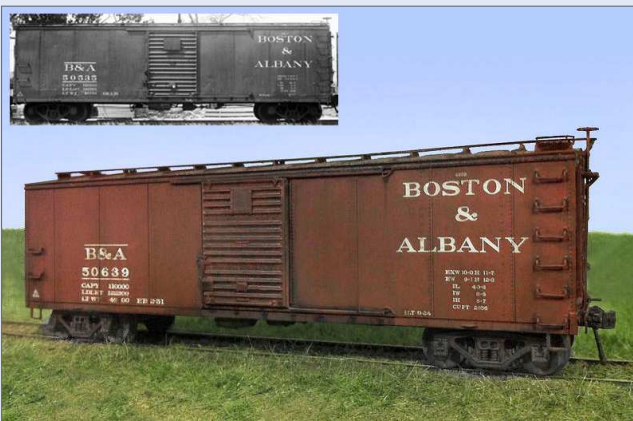
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USRA-DESIGN NYC STEEL-SHEATHED BOXCARS

I thought I'd throw this in to prove I'm not a total SPF (Slobbering Pennsy Freak). This car represents a huge number of the New York Central boxcar fleet. It followed a steel-sheathed design developed by the United States Railway Administration (USRA), but not built during USRA control of the railroads. The NYC started adding thousands of these cars to their fleet in 1922.

This factory painted Boston & Albany car is one of my several Broadway Limited boxcars. It is part of a group of early NYC steel boxcars I am working on. I recently upgraded it with detail changes and new weathering.

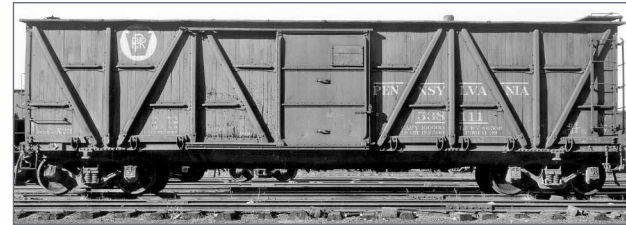
These ready-to-run BLI boxcars represent 1936 and later paint schemes. I model the mid-1920s and need to re-detail and/or re-letter many of them. This B&A model is the only one that can pass for pre-1936. The updated models will be featured in a future Limited Modeler column.



1. Boston & Albany 50639.

As the X23 boxcars aged, many were assigned to work equipment service [4]. Most of the X23 cars converted to work equipment service were designated as Tool and Supply, Tool and Material, or Supply cars. The conversion from revenue to work equipment service included the installation of end doors and four rectangular windows on each side of the car. This was the most typical configuration. These tool, material, and supply cars were a general-purpose car designed to be used for a variety of maintenance related tasks. Many of these cars lasted well into the 1960s and 1970s in their work equipment status.

Several cars were pressed into service during World War II as cabin cars (caboosees), becoming the NX23 class.



2. The X23 car design makes a case that the Pennsylvania Railroad was a non-conformist. Their

locomotives, freight cars, and cabooses were among the most different designs in the railroad industry. The X23 was certainly no exception. It was not a pretty boxcar in my mind but it does make a great model. *MRH forum* model-railroad-hobbyist.com/node/37471



3. PRR 42302 X23 boxcar has been upgraded with a Youngstown corrugated metal door. The vertical wood sheathing is

different from many single-sheathed boxcars. Most other designs employed horizontal side sheathing. *protocraft.com*





4. This 1974 Ed Martin photo captures a work equipment variation of an X23 car, which retains the original door. These long-lived boxcars were

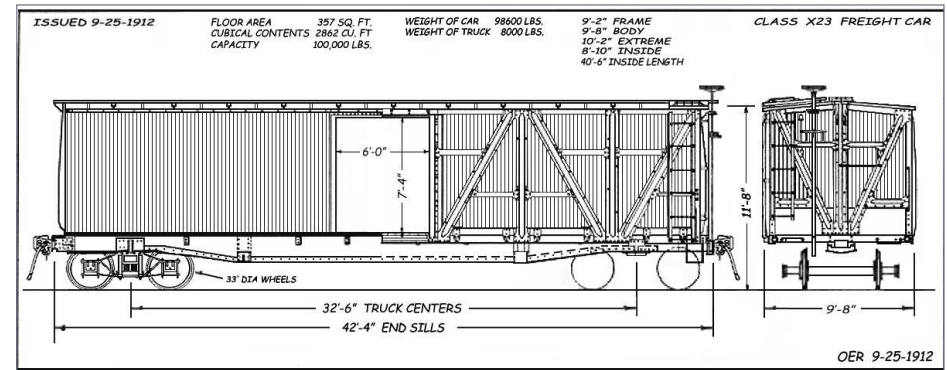
built from late 1912 through 1915. *Ed Martin photo*



5. This is a great view of a car roof we normally don't get to see. The hand brake wheel and brake platform equipment stand out in the sunlight.



6. Another view of the 538111 car end shows the steel components which were similar to the car sides.



7. This scale drawing was created based on official Pennsylvania Railroad diagrams and data. *Jim Six drawing*



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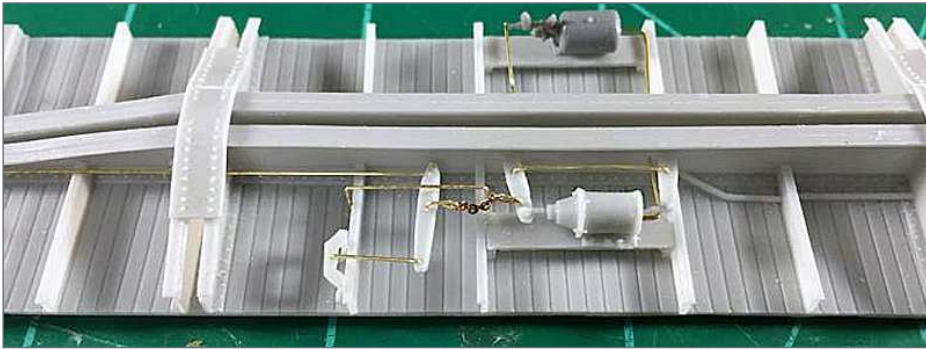
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8. Eric Hansmann has built the Westerfield Models kit. The resin casting quality and details are very fine. The running board, brake wheel, grab irons, ladders, doors, and sill steps are all separate details. Eric models 1926 and arch bar trucks are appropriate for that time.

Eric Hansmann photo



9. Here is the car underframe with the KD brake hardware, levers, and rods installed. Each of the cross members are separate parts. Eric says this is not difficult work but it can be tedious. He often installs a few parts, then takes a break before returning to the project.

Eric Hansmann photo



RATE THIS ARTICLE



10. Eric's model is fully assembled and painted, just waiting on decals.

Eric Hansmann photo



11. Eric's model was not yet complete when I wrote this, so I switched to Dave Parker's finished X23 boxcar. Dave models the early 1930s, but this car is wearing the pre-circle keystone lettering and data presentation.

Dave Parker photo



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12. Here's the busy-looking end view with all the bracing, ladder, grab irons, and brake shaft details. Note the Carmer uncoupling hardware, a common component on many Pennsy freight cars. Dave also installed the train line air hose. *Dave Parker photo*

X23 MODELS

If you are a Pennsy modeler set in the pre-WWII era, you will need to consider adding these to your fleet. No ready-to-roll models of the X23 exist nor are there any HO scale plastic kits X23. I assume there won't be any in the foreseeable future.

Brass models of the X23 have been offered over the years but they are hard to find and expensive. Westerfield Models produces a nice X23 resin kit. It consists of a one-piece body along with the floor/frame and other detail items. A couple of these Westerfield models are featured here [8-12]. The Westerfield kit is available in several variations and includes appropriate decal lettering matching the version of the kit. The Westerfield kits represent the different versions of the prototype during its lifetime.

MODELING THE PENNSY X26 USRA SINGLE-SHEATHED BOXCAR

Before World War I there had been no attempt to standardize freight car design from railroad to railroad. Each railroad's freight car builders felt their wants and needs were unique. Many freight cars built for subsidiaries of larger lines followed the designs of parent railroads, but that was the extent of standardization. The New York Central 36' double-sheathed boxcars were somewhat of an exception because several railroads built cars based on that design.

With 9,760 X26 boxcars, the Pennsylvania Railroad had more USRA single-sheathed boxcars than any other railroad [15-17]. This was nearly 40% of the cars built. By 1950, the X26 roster dropped to 5,909, with a further decline to 953 cars in 1953

The 40' long, 50-ton boxcars featured seven panels, 5/5/5 Murphy ends, Murphy XLT metal roofs, and wood doors. Throughout the 1920s these boxcars remained as-built, though some changes were made when they were shopped for repairs. Many cars received replacement Superior or Youngstown steel doors. Starting in the 1930's the X26 boxcars received more upgrades, including new roofs. By the late 1940s most had been upgraded with AB brake systems, while 3,500 cars were rebuilt with new metal side sheathing, doors, and roofs.

The X26 boxcars were relatively long-lived in spite of having wood sheathing. They were a simple design and easy to maintain. Boards were easily replaced as needed [18]. Many lasted into the Penn Central and Conrail years on maintenance-of-way duty.

I belong to a group of serious folks who model the pre-Great Depression years. Most everyone in the group is a relative expert on freight cars before 1930. Among them there is disagreement about the Pennsylvania Railroad freight car color



UNITED STATES RAILWAY ADMINISTRATION



13. This is my favorite photo of a Pennsy X26 boxcar. Except for the lack of color, it's a perfect photo to use for modeling. The Tichy kit is a match for the prototype. This car has a corrugated steel door that has been spliced from two other

doors. A May 1938 weigh date stencil is above the side sill and just left of the door. The car was last-painted before the circle keystone emblems became standard on Pennsy boxcars. *Ray Breyer collection*

When the United States entered the First World War in April 1917, railroads were not prepared for coordinated efforts to move the country's needs. At midnight, December 31, 1917, the federal government took control of the U.S. railroad system and the United States Railway Administration (USRA) was born. Acting under wartime powers, President Woodrow Wilson nationalized the railroads when they proved unequal to moving massive amounts of men and materiel for the Great War

The USRA found that many rail lines lacked enough freight cars and locomotives to meet the demands. Several freight cars were designed by the United States Railroad Administration. 100,000 cars were built to five different designs over a couple of years. The USRA was dissolved in March 1920 and railroads returned to private ownership.

The USRA produced two boxcar designs: single-sheathed and double-sheathed cars. When these boxcars were being designed, there was no industry consensus about which was better. Freight car design was in flux before the War.

Most cars were a composite design, not completely wood or steel. Steel components had come to replace wooden underframes, but wood remained as the internal carbody structure and sheathing.

USRA double-sheathed boxcars had a fish belly center sill. The single-sheathed cars had a straight steel center sill. Single-sheathed cars are like truss bridges, with the steel components acting as the structural support to bridge between the trucks. Some design engineers did not trust these steel components to support a loaded car. The double-sheathed version with fish belly center sills was developed for added strength. Railroads would eventually value the savings in weight and would order cars with underframes similar to the single-sheathed design.

The USRA built 25,000 of each boxcar design. The single-sheathed cars were assigned to 22 railroads, while the double-sheathed cars were assigned to 25 lines. Some railroads received quantities of both car designs. Additional USRA details and tables for the final car assignments of all five designs are available on Eric Hansmann's blog.

designbuildop.hansmanns.org/usra-freight-car-assignments



14. Compare this USRA double-sheathed boxcar with the single-sheathed cars. Note the fish belly center sill compared to the straight center sills on PRR 45927 [15].

The steel car ends were also slightly different as the double-sheathed boxcars were a few inches wider. The Pennsy was not assigned any USRA double-sheathed boxcars. *Ray Breyer collection*



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used in those years. Pre-1930 color photos are not available. Over the years, manufacturers have frequently produced Pennsy freight cars in a shade of brown. This might be good for early 1960s Pennsy cars, but not those used before 1930

Our Pre-Depression modeling bunch agree that the Pennsy freight car color was much more of an orange-oxide color



15. This is the inspiration for my model of PRR 564282. The lettering scheme matches my model, except for the circle keystone. The scheme on PRR 45927 became the standard Pennsy lettering in January 1930 when the circle keystone was added. Otherwise it is a match for the earlier scheme of May 1926. *Ray Breyer collection*

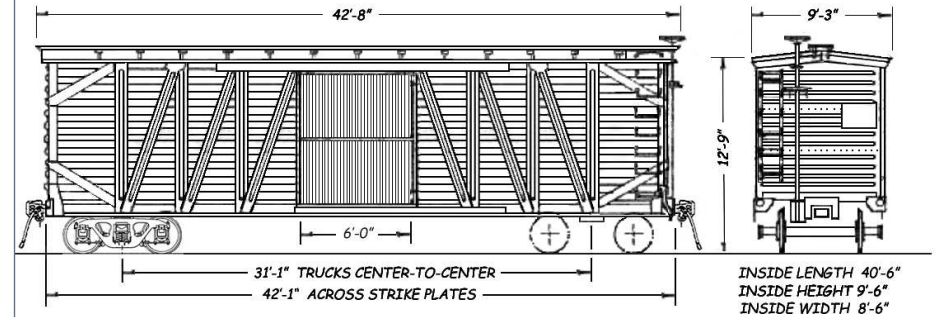


16. As-built PRR 38810 photographed in 1942 during WWII. This X26 is at the PRR car shops awaiting its turn for repair. Note the circle keystone at the right end of the car. The "circle keystone" became the standard Pennsy paint scheme in January of 1930. *Ray Breyer collection*

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CAPACITY 100,000 LBS.
WEIGHT 47,300 LBS.

U.S.R.A. DESIGN
CLASS X26 FREIGHT CAR
CUBIC CAPACITY 3098 CU.FT.



17. Drawing created based on official diagrams and data implemented by the Pennsylvania RR in 1919. *Jim Six drawing*



18. Here is PRR 38810 again, after upper and lower side boards were replaced. A new roof was also installed. Also note the car doors have been changed. Repairs are complete, but the car hasn't yet been repainted yet. *Ray Breyer collection*



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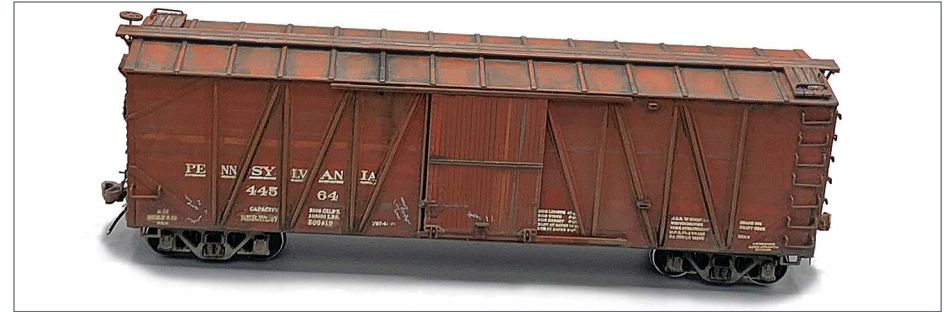
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19. Eric Hansmann built, painted, and lettered his Tichy model to follow a 1926 vintage X26. The prototype originally was lettered PENNSYLVANIA LINES but the "LINES" was painted out after a corporate reorganization in 1924. Otherwise, the model lettering represents the as-built appearance. Note the orange shade of car color. *Eric Hansmann photo*



20. Eric weathered his X26 to appear like it had traveled a few thousand miles. Dust, dirt, and soot have toned down the original paint color. I love all those chalk marks. *Eric Hansmann photo*



21. Jeremy Dummler built this Tichy USRA boxcar kit. Jeremy is a true artist at weathering his freight cars. Note the chalk markings. The lettering follows the original 1919 presentation, except for updated weigh stencils. *David Bott photo*



22. A deal was struck between Jeremy and Dave Bott when Jeremy switched scales. This model landed in Dave's freight car collection. Lucky Dave! Again, note the chalk markings. *David Bott photo*



23. Here is my Intermountain/Tichy factory-painted model. I only added three sets of chalk marks, applied the weathering, and installed Kadee #153 short-shank scale couplers. I like the color that InterMountain painted this model. Out of the box it was a brighter color, closer to Eric's model. However, the weathering I applied toned it down.



before the Great Depression. Disagreements are usually about the intensity of the orange hue.

Presented this month are three Pennsy X26 boxcar models built by Eric Hansmann [19, 20], Jeremy Dummmler [21, 22], and me [23, 24, 25]. All are Tichy/InterMountain HO scale models. I think you will agree that these three models are good representations of the prototype.

A detail our group likes to add is chalk markings. Eric's model has plenty of them. Jeremy's model has them too. Mine has markings, but not as many as Eric's or Jeremy's. Keep in mind that not all cars had chalk marks. The number of chalk marks and the locations varied from car to car. Chalk marks are a point of realism that most model railroaders don't bother with. I view these markings as part of weathering and add them at the time I apply weathering.

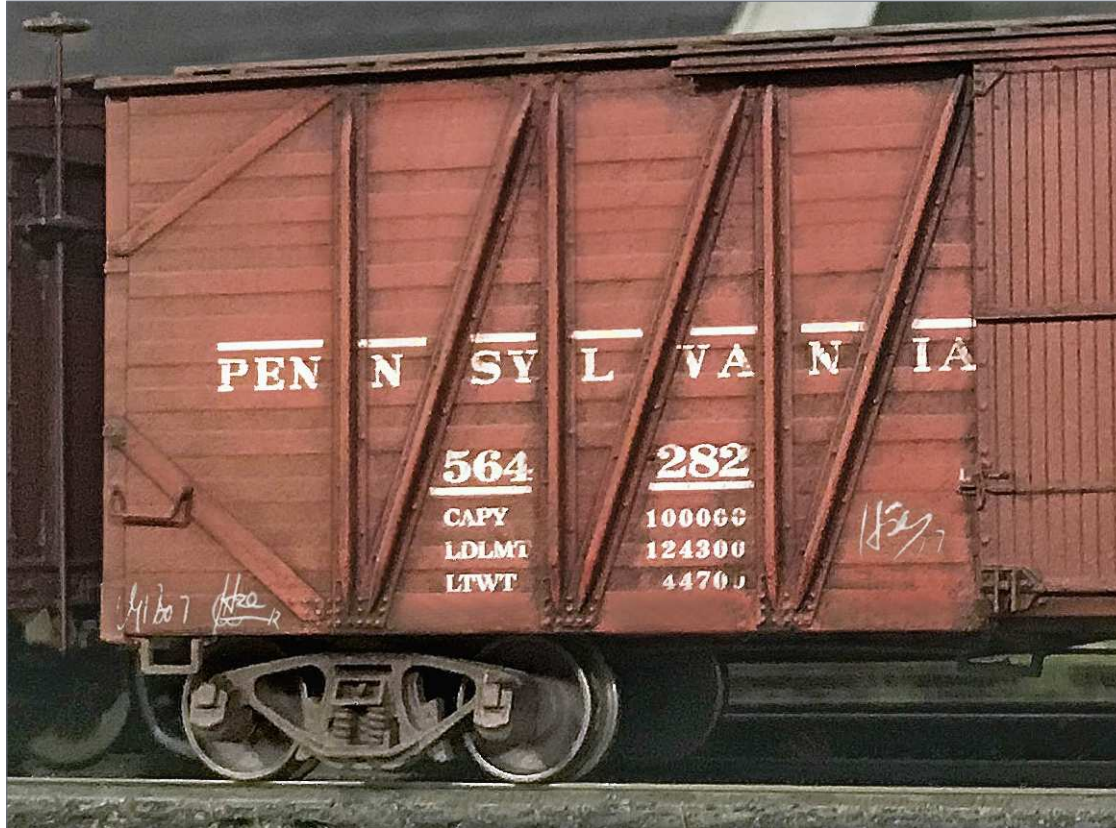
Many people think freight car chalk marks are graffiti. These marks have an important purpose. The markings were written

24. My model represents one painted after this scheme came into use in May 1926. It was the last scheme before the addition of the circle keystone emblem in January. In fact, this model had the circle keystone, but I removed it since I model 1927.



in chalk by railroad workers as notes for classification, repair needs, or other information for the benefit of their colleagues. Chalk marks were important to yard operations for more efficient freight car switching.

Railway chalk came in large one-inch-diameter sticks, four inches long. These were much bigger than classroom chalk. How do you apply chalk markings on your model freight cars? Decals are one method. Speedwitch Media offers decal set D135 – Freight Car Chalk Markings (speedwitchmedia.com/product/d135-freight-car-chalk-markings). Eric Hansmann uses fine-tipped light gray color pencils and a steady hand to scrawl them onto his models



As somewhat of a prototype modeler, I take reasonable care that my freight cars fit my 1927 railroad setting. This includes freight cars representing prototypes used in 1927, and the paint and lettering on these cars

For example, my model of PRR 564282 has a lettering scheme that first appeared in 1926. It would not work for a setting before 1926. Dave Bott's model (built by Jeremy Dummier) is lettered from a scheme that was used before 1926. It would also work for my 1927 setting because it probably would not have been repainted until 1930 when the circle keystone was applied. Eric's model represents the as-built paint scheme but with the word "LINES" painted out. It was delivered as a

PENNSYLVANIA LINES X26 boxcar. All of this prototype stuff certainly drives some of you batty, but for others it is important in establishing model credibility. I fall into this latter category.

The InterMountain/Tichy USRA single-sheathed 40-foot boxcar is an excellent model that represents a prototype that should have widespread appeal in the model railroader community. It comes as an assembled and painted model from InterMountain. All you ready-to-roll folks should be pleased. Anyone modeling in the steam era or early diesel era should be pleased to add a couple of these fine models to your freight car fleet. ☑

25. While I really think chalk marks add to freight models, I try not to overdo it by adding too many. I only added three to this X26.



GETTING REAL

column

MRH Running Extra | August 2020

JACK BURGESS
SCRATCHBUILDS A HALF-DOZEN
YVRR BOXCARS ...

★★★★★
RATE THIS ARTICLE



UNLIKE SOME OTHER SHORTLINE RAILROADS, the Yosemite Valley Railroad listed all of their freight cars in the quarterly publication entitled *The Official Railway Equipment Register* (ORER) [1].

This publication provided the dimensions of all freight cars owned by the railroads used in interchange service including inside dimensions, outside dimensions, door sizes, and capacity. This information allowed freight agents and car

MODELING REAL RAILROADS AND WHAT THEY DO

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clerks to find an empty car in their freight yards which might fulfill the needs of an online shipper.

Over the years by using ORERs and other resources, I have been able to develop a complete roster of every freight car owned by the YV, when it was acquired, and when it was removed from service.

THE OFFICIAL RAILWAY EQUIPMENT REGISTER.																						
YOSEMITE VALLEY RAILWAY CO.																						
Gauge, 4 ft. 8½ in. Railway Express Agency, Inc., operates over this line. Limit of load allowed to pass over this line in excess of marked capacity, 10 per cent, but not to exceed maximum weight of car and lading of 170,000 lbs. Tank cars with a gallonage capacity exceeding 8,500 gallons will not be accepted for movement to points between Merced Falls and El Portal on this line.																						
FREIGHT EQUIPMENT.																						
The freight cars of this Company are marked "Yosemite Valley" and numbered and classified as follows:																						
A.R.E. Mark Designation.	MARKINGS AND KIND OF CARS.	NUMBERS.	DIMENSIONS.																	Number of Cars.		
			INSIDE.			OUTSIDE.						DOORS.				CAPACITY.						
						LENGTH.		WIDTH.		HEIGHT FROM RAIL.				SIDE.		END.		Cubics Feet Level Full.	Pounds or Gallons.			
			Length	Width	Height	At Ends or Top of Platform	At Ends or Top of Platform	To Bayes or Top of Platform	To Bayes or Top of Platform	To Bayes or Top of Platform	To Bayes or Top of Platform	Width of Open	Height of Open	Width of Open	Height of Open							
ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.	ft.	in.			
1	Flat	501 to 505	35	5	9	4	...	35	6	9	4	...	4	8	...	6	8	...	50000 lb.			
2	"	507, 508	35	5	9	4	...	35	6	9	4	...	4	8	...	6	8	...	50000 lb.			
3	"	509	36	...	9	3	...	36	...	9	4	...	4	...	...	6	7	...	50000 lb.			
4	"	510	36	...	9	3	...	36	...	9	4	...	4	...	...	6	10	...	50000 lb.			
5	Box	602, 603	36	2	8	6½	8	...	36	10	0	6	...	12	4	13	14	1	2	2448 60000 lb.		
6	"	605, 606, 607, 609	36	2	8	6½	8	...	36	10	0	6	...	12	4	13	14	1	2	2448 60000 lb.		
7	"	610, 611	40	...	8	6	8	...	41	...	9	4½	...	12	2	13	13	9	2	2730 100000 lb.		
8	"	612	40	...	8	5	8	...	42	...	0	3	10	8	5	12	5	13	13	6	2730 100000 lb.	
9	"	613	40	...	9	1	9	2	42	...	9	11	10	7	4	13	8	14	2	14	9	3370 100000 lb.
10	Stock	701 to 703	35	5	8	8½	7	...	36	1	9	6	...	11	10	12	6½	14	1½	15	6	1838 60000 lb.
11	Gondola, Steel, Twin Hopper	1200 to 1250	20	6½	7	6	5	11½	23	10½	8	1½	...	9	6	...	10	1½	...	660 80000 lb.		
Total																						
PASSENGER EQUIPMENT.																						
A.R.E. Mark Design.	KIND.	SERIES OF NUMBERS.	SEATING CAP'CTY	LENGTH OF CAR.	No. of Cars.																	
...	Coach	302 to 305	70	70 feet.	4																	
...	Parlor	330	60	70 feet.	1																	
...	Comb. Pass. & Bag.	106	28	62 feet.	1																	
...	Comb. Mail & Bag.	107	...	43 feet.	1																	
Total					7																	
Freight cars owned are not used in interchange service.																						
Address embargo notices, etc., under Per Diem Rules 13 and 15 to W. L. White, General Manager, Merced, Cal.																						
For application of embargoes under Per Diem Rule 16 see Embargo Regulations and Instructions issued by Association of American Railroads																						
Address embargo notices, embargo reclaims and notices of cars held under Per Diem Rules to W. L. White, Gen. Mgr., Merced, Cal. July, 1943.																						
FREIGHT CONNECTIONS AND JUNCTION POINTS.																						
Atchison, Topeka & Santa Fe—										Southern Pacific—												
Merced, Cal.										Merced, Cal.												

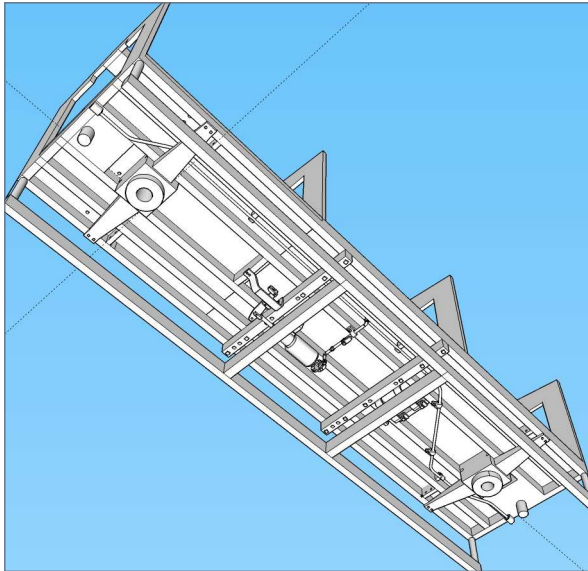
1. This is a page from the July 1943 ORER that shows the freight cars owned by the Yosemite Valley Railroad Co. as of that date (which were the same cars in 1939). The listing provides dimensions of the cars as well as a statement in the box at bottom right which reads "Freight cars owned are not used in interchange service." The register even lists the passenger cars.

With that information, I have been working toward modeling all of the equipment owned by the YV in 1939. My current project is to build the 10 boxcars in operation in 1939.

Fortunately, three of those 10 cars were ex-Harriman B-50-1/2/4 boxcars. Westerfield Models has a resin kit for these cars and I finished building them several years ago. Another was an ex-Harriman B-50-5 boxcar. I am planning to use parts of the Harriman B-50-1/2/4 boxcar kits to build that car.

That left six boxcars to scratchbuild. The railroad acquired four of these 36'-10" cars in 1907 after being rebuilt. It purchased the other two new in 1914, constructed by the Seattle Car and Foundry Company. Fortunately, I have all the dimensions of these six cars from the ORERs.

Three years ago, I started on a similar project to build all the flat cars owned by the YV in 1939. For that project, I drew up 3D plans for the underbody for these cars. My drawing included all the inside sills (but not the outside sills), the bolsters, and all the brake components including brake piping.



2. This screen grab shows the 3D printer drawing for these boxcars. Along with the side sills it includes supports for the sides and roof. The "sprues" below the car prevent damage when removing the model from the Shapeways 3D printer and when packaging it for shipment.



3. One of the boxcars under construction is shown resting on a pair of car supports. The two supports in front of the car show their simple design.

Finishing these flat cars only required adding the side sills, end sills, stake pockets, and the deck for them to be ready to paint.

So for this project, I used the drawing of that 3D frame and added the side sills and inside floor, along with some supports for the end walls, side walls, and roof [2]. I then ordered six 3D prints from Shapeways.

Even before ordering those prints, I developed a list of everything I needed to build these boxcars. That included not only trucks and couplers, but also detail parts such as grab



irons, styrene for the sides and roofs, air hoses, roof walk supports, and even eye bolts for the cut levers.

For every part, I determined the number of those items per car and the total items needed for all of the cars, how many of those items I already had on hand, and the total number of each item I needed.

I then ordered everything for the construction of these six boxcars. I've been doing this for years when planning any project. I always want to avoid stopping construction to order parts that I do not have on hand!

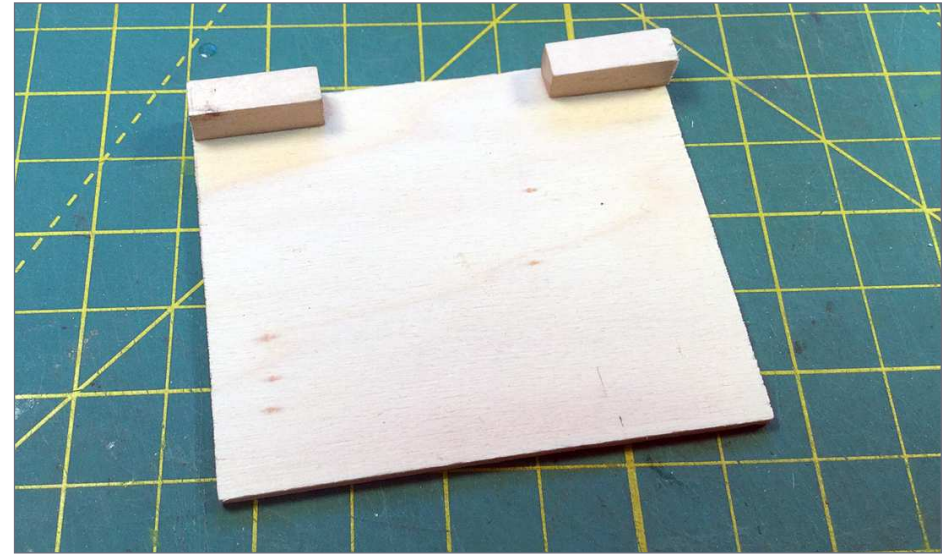
Around the same time, I drew up 2D plans for these cars, especially noting the different details on each car. (Fortunately, I had at least one photo of each of the six cars.) I used those plans later to cut the sides and ends of the car on my Cricut machine.

Cricut is brand of 2D cutting machine which is controlled by a computer and was designed for home crafters. But it can also be used to accurately cut out sides of structures, including the doors and windows openings. In my case, I used it to cut the boxcar sides and ends from 0.020" V-groove siding, the thickest styrene my Cricut can cut.

The sides of these prototype cars used 3¼" V-groove siding. Many railroads used this as standard siding for boxcars and other enclosed freight cars run in interstate service before steel cars became common.

For my six HO boxcars, I used 0.020"-thick Evergreen 2037 siding. Most Evergreen V-groove siding has the grooves running the length of the sheet, which is appropriate for structures. This siding has the grooves running across the sheet, so it works well for HO freight cars up to 12 actual inches long.

If I were to manually cut these sides from 0.040" styrene, I would have used Evergreen 4037 V-groove siding.



4. This jig will work with the car supports so a car can rest on its side without damaging vulnerable parts like sill steps.

To compensate for the 0.020" siding I used, I added pieces of 8x12 styrene just below the tops of the sides to prevent them from warping. (I bonded the bottom of the sides to the 3D printed frame.)

Rather than explain each step in the construction progress, I will share some suggestions and solutions to problems that arose during construction of these boxcars.

CAR SUPPORTS

Traditionally, a modeler might start construction of a freight car by first building the underframe and maybe of the underbody details such as the brake gear. In this case, my design included all those components in the 3D printed frames – but I needed a way to protect those components and also to rest the boxcars upright on my workbench while working on them.

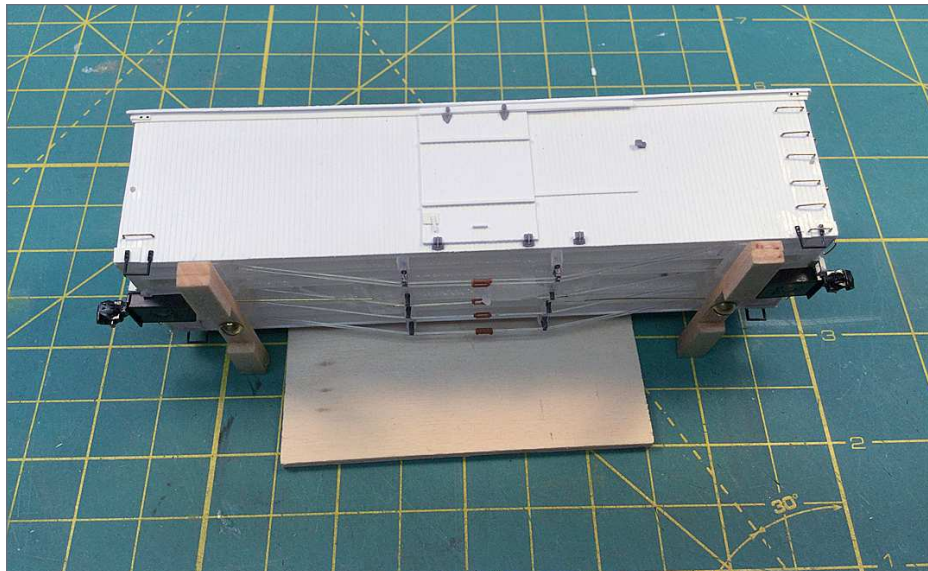


To solve this, I fashioned some simple car support frames which screwed into the bolsters [3]. I used three pieces of 1/8" x 1/4" stripwood. I made the long piece 2" long and the others about 1/2" long.

I drilled a clearance hole for either a 2-56 bolt or a 3-48 bolt (depending on the trucks being used) through the center for the bolts which attach the supports to the bolsters. Note this idea can also be used when building resin kits.

If you make all of the supports the same length with the holes for the bolts in the center of the supports, you can make a simple jig to support a car when adding details to the sides or applying decals [4].

I built mine from a 3" x 2-1/2" piece of 1/8" birch plywood manufactured by Midwest Products and Revell. You can find this birch plywood at Michaels, Amazon, and at various hobby shops or online sources.



5. This boxcar rests on the two 1/4" stripwood risers of the jig.



6. This simple "tool" made it easy to work on the ends of the cars.

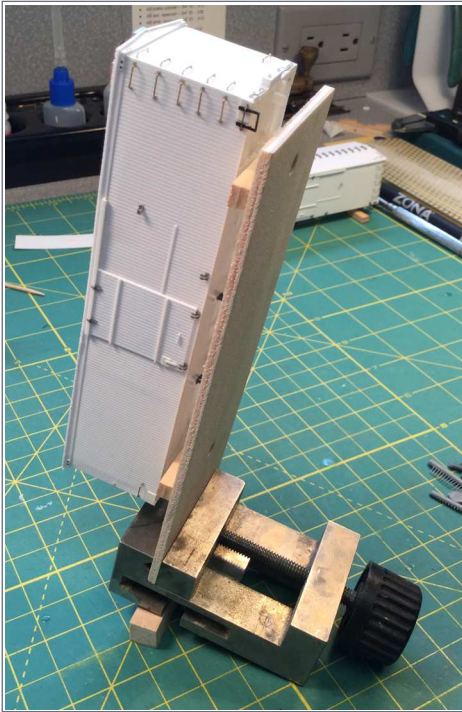
I bonded two pieces of 1/4" stripwood to the long side. The support makes it easy to rest a boxcar on its side for adding details or decals [5].

Another simple "tool" that proved to be very handy was this holder [6]. I made it 2" wide by 6" long, and also cut it from 1/8" birch plywood.

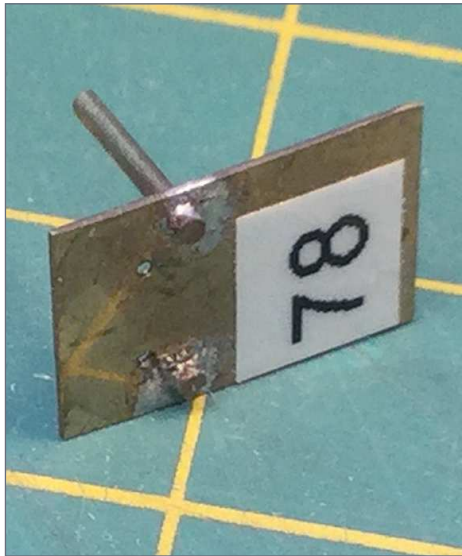
I glued a "car support" a half-inch inch from one end, and added a second one for the other bolster. A long screw through the top car support holds a car to the support [7]. I found this to be most handy when adding details to the ends of the cars, applying decals, etc

SILL STEPS

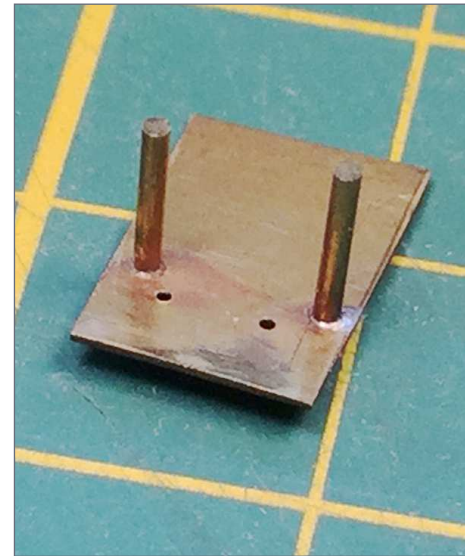
A sill step is the name for the steps at the corners of the sides of freight cars. The name came about because on wood cars,



7. One of the boxcars has been attached to the board with a screw threaded into the top bolster. The board has been locked into a small vise which rests on a piece of stripwood to tilt the boxcar forward.



8. The front of the sill step drilling jig. The two No. 78 holes can barely be seen; they're more obvious in [9].



9. The back side of the drilling jig. The jig is held under the side sill with the pins tight to the sill.

the sills form the structural members that extend the length of a car.

So sill steps are "...attached to the sill of a car, below the ladder, as a step for getting to or from the ladder." (*1908 Car Builders Cyclopedia*)

Many variations of sill steps exist, including those that attach to the bottom of the sills, and those with one leg angled. Tichy Train Group has 10 variations under the category of "Stirrups." The ones that I used are Part 3038.

Tichy molds these in Delrin plastic, so they must be attached with CA or epoxy. I drilled the necessary holes using a drilling jig I built years ago [8]. The two No. 78 holes match the spacing of the Tichy parts.

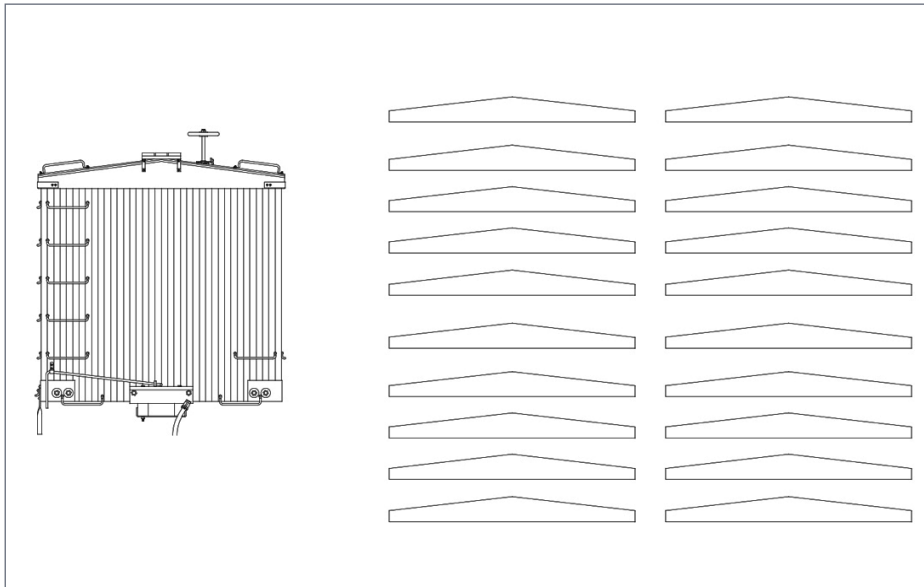
The view of the back of the drilling jig [9] has two pins that I hold tight to the bottom of the sill, ensuring that the holes will be the correct distance from the bottom of the sill. With the right or left ends of the jig even with the right or left end of the

car, the jig provides the correct offset from the ends of the car. (The “78” label reminds me of the size of drill bit to use.)

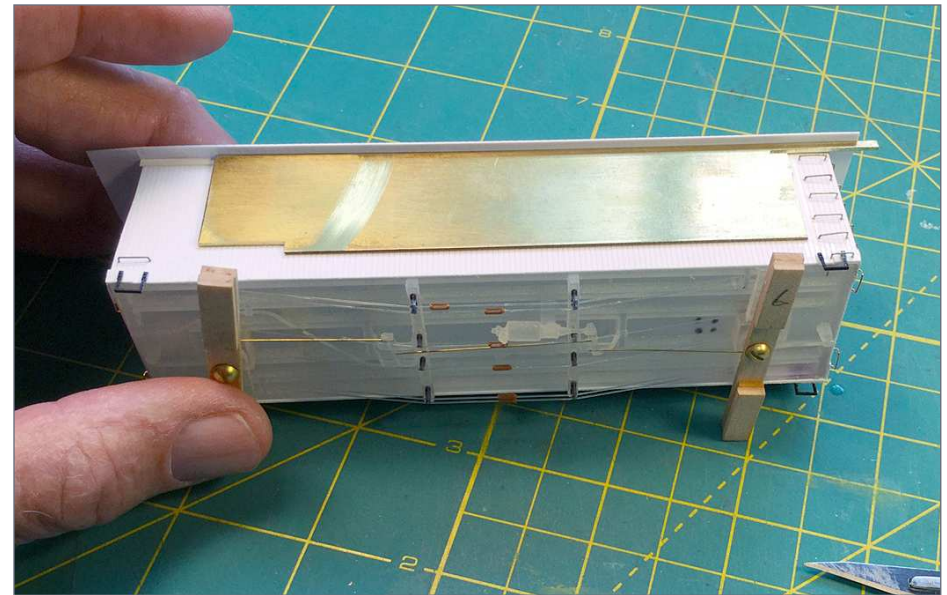
Once I have the holes drilled, I test-fit the steps in the holes. I then used a piece of stripwood to hold one leg of the sill step in place and added a small drop of CA to the back of the part where it extends down under the car.

That drop of CA immediately wicked into the rest of the part by capillary action. This works much better than adding a big drop of CA to the sill step part itself. I did the same thing on the other leg, bonding the sill step securely in place.

While CA worked fine for most of the sill steps, some later came loose and fell off. I used 5-minute 2-part epoxy for those, and that proved better than CA.



10. On the left is my drawing of the ends of these boxcars. I copy/pasted the end fascia outline and then made enough copies to fabricate the end fascia pieces for all the cars.



11. I used a piece of 0.020" brass as a trim guide for removing the excess overhang from the roof boards. Although shorter than the boxcar sides, it will slide to the left or right and still clear the grab irons.

ROOFS

Once I had added the ends and sides to the 3D prints, as my next step I moved on to adding the roofs. I don't have any photos that show the V-groove boards for the roofs of these boxcars but, based on scale drawings of other cars of the era, it certainly appears wider.

I used Evergreen 2060 V-groove siding – the 5-inch-wide V-grooves seem to match early drawings of period boxcars.

Since my 3D prints varied very slightly in length and width, I cut the roof boards oversize and bonded them in place with the V-grooves aligned from side-to-side. The boards on the

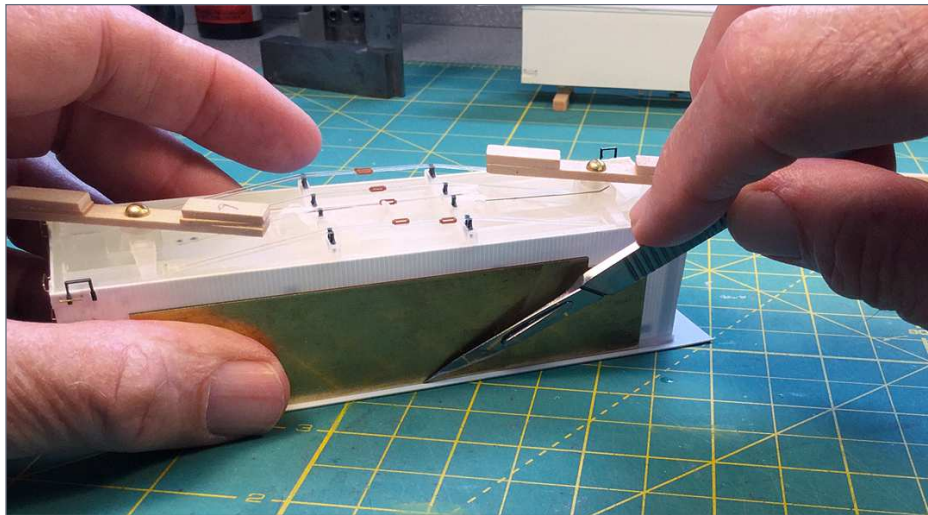


sides and ends of a car directly under the roof became known as eave fascia boards.

I used my drawing of the end of these boxcars to create an outline of the fascia boards on the ends [10]. I made this outline slightly long on both ends to accommodate variations in the width of individual cars. I then printed the drawing on repositionable Sticker Project Paper made by Avery (item 3383).

I attached that print to a piece of plain styrene, cut out the end fascia boards, and bonded them in place. I then added over-length fascia boards on the sides of the car under the roof eaves. I trimmed the boards to be flush with the fascia boards on the ends of the cars.

Then I trimmed the overhanging roof on each side of the cars. From prototype photos of these cars, it appeared that the roofs overhung the fascia boards by about 2" which is equal to about 0.020" in HO. Fortunately, I found a piece of 0.020" x 1" sheet brass in my materials stash [11].



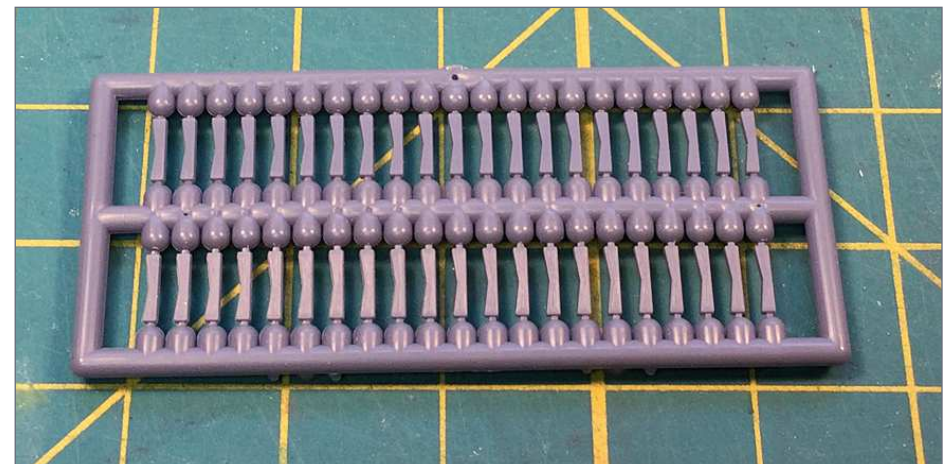
12. With the guide tight to the side of a boxcar, I cut the excess off with a scalpel.

Since I had already added grab irons to the sides of these boxcars before bonding the sides in place, I cut out the ends of that piece of brass to clear those grab irons. With this cutting guide tight to the fascia board and the side, it made a great cutting guide for removing the excess roof. I prefer a scalpel for this task since I can more easily keep the blade tight to the guide [12].

RUNNING BOARDS

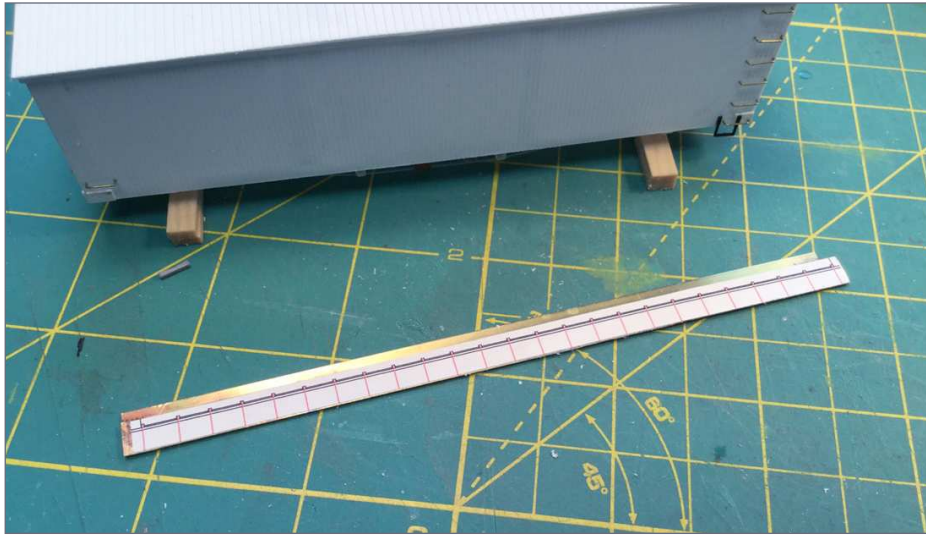
Prototype running boards (before being outlawed in the 1960s) extended beyond the ends of boxcars, refrigerator cars, stock cars, and other similar cars. They were supported by "Running Board Blocking" which were rectangular shaped blocks located under the running boards which were attached to the roof.

Tichy makes styrene roofwalk supports (part 3081) which replicate this prototype blocking [13].



13. A Tichy sprue of roofwalk supports.





14. This is my guide with the bottom piece of brass offset from the top piece which has the paper spacing guide.



15. The guide is taped to the roof with it tight to the two end supports.

Based on a few prototype boxcar drawings, the spacing of the supports varies from 18" to 24" apart and more. To get started, I first bonded a roof support flush with each end of the roof and measured the distance between the centerlines of those two end roofwalk supports.

That distance between the two end supports on my cars measured 37 scale feet. The easiest solution would be to set the supports 24" apart and make up the difference between the two supports in the middle of the car. Fortunately, I have a photo of a 36-foot-long YV stock car with the roof board supports clearly visible, which let me count the number of spaces between the supports.

It turns out these cars have those supports spaced about 18" apart, so I used my CAD program to draw up a guideline for positioning the roofwalk supports on the boxcar roofs.

To position the roofwalk supports the length of the roof, I needed two things – a guide for the spacing of the supports and a guide to make sure that all of the supports line up exactly. I made my guide from two pieces of 1/4"-wide 0.015" brass [14]

I soldered them together with an 1/8" offset so the bottom piece provided some offset from the supports and would prevent the glue from seeping under the guide. I cut out my guide alignment strip and attached it to the brass guide. Then I placed the guide on the roof tight to the two end supports and taped in place [15 and 16].

That insured the supports were the proper distance apart and remained in line. I used tweezers to position a support and pushed it tight to the spacing guide and bonded it in place. With this setup, I placed all of the running board supports for one car in less than 10 minutes.

Prototype photos of the YV boxcars seem to show three running boards. The Tichy supports measure 0.2320" wide,

which suggests 6"-wide boards with spaces between them. I didn't think about this on my first four cars, and used 0.015" x 0.060" styrene for the running boards.

As a result, the running boards extended from one side of the roofwalk supports to the other side, but not with the obvious expansion gaps between the boards.

The 0.015" x 0.060" styrene for the running boards later proved to be too narrow when I added the running board braces. For the last two boxcars I used three pieces of 2x6 stripwood which worked better.

RUNNING BOARD BRACES

From those same prototype drawings mentioned earlier, it appears that the running boards on a typical car extended



16. Completed roof supports on one of the six boxcars.



17. A close look at a photo-etched running board brace extending from the underside of the running board to the end fascia.

about 6-9 inches beyond the end of the car. Keep in mind that I am scratchbuilding boxcars for which no official drawings exist.

The ends of the running boards typically are supported from below by metal angle brackets [17].

For years I have struggled with accurately modeling these brackets. Fortunately, Yarmouth Model Works now has photo-etched parts for these supports as part No. YMW-38 (Eye Bolts & Misc: Running Board and Lateral Braces). This set provides the supports plus other parts for one car.

If you plan to use these parts, they appear to need the running boards to extend 10" from the ends, but check before you cut the excess length off of the running boards. I had cut the running boards extra-long before bonding them in place.

After bonding them in place, I cut them to length using a scale 10-inch-thick piece of stripwood as a guide to cut off the

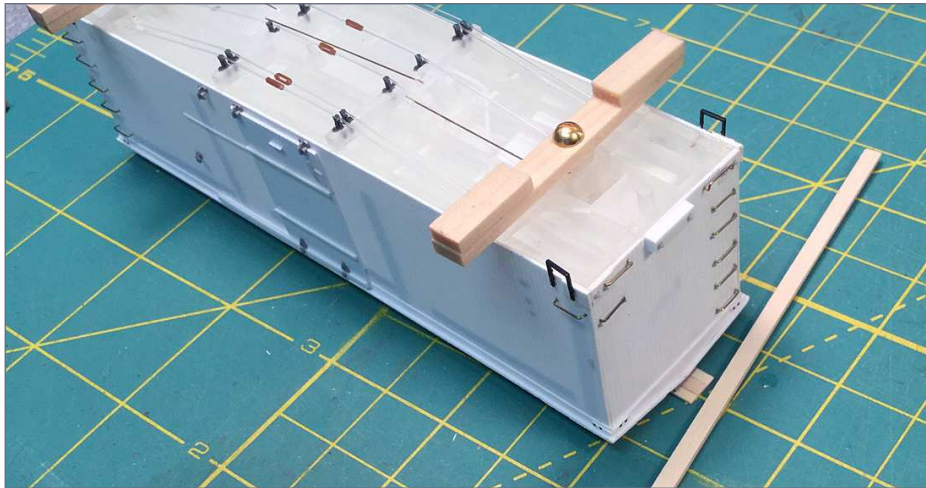


excess. Turn the car upside-down resting on the running boards (assuming you didn't install the brake wheel and shaft yet) and cut the excess with a sharp razor blade. Make sure to keep the wood spacer square with the car [18].

I struggled somewhat to formulate a plan for correctly folding the photo-etched parts. I finally drew a sketch of which way I needed to fold the part [19]. Once I had that sketch in front of me, folding the 12 braces I needed became simple!

I cut the photo-etched part from the sprue with a razor blade. I used an SMS003 Photo Etch Bending Tool 4-inch Hold and Fold from The Small Shop (see thesmallshop.com then search for SMS003) to fold the parts for the first step [20]. I slid a single-edged razor blade under the photo-etched part to fold it while in the Bending Tool.

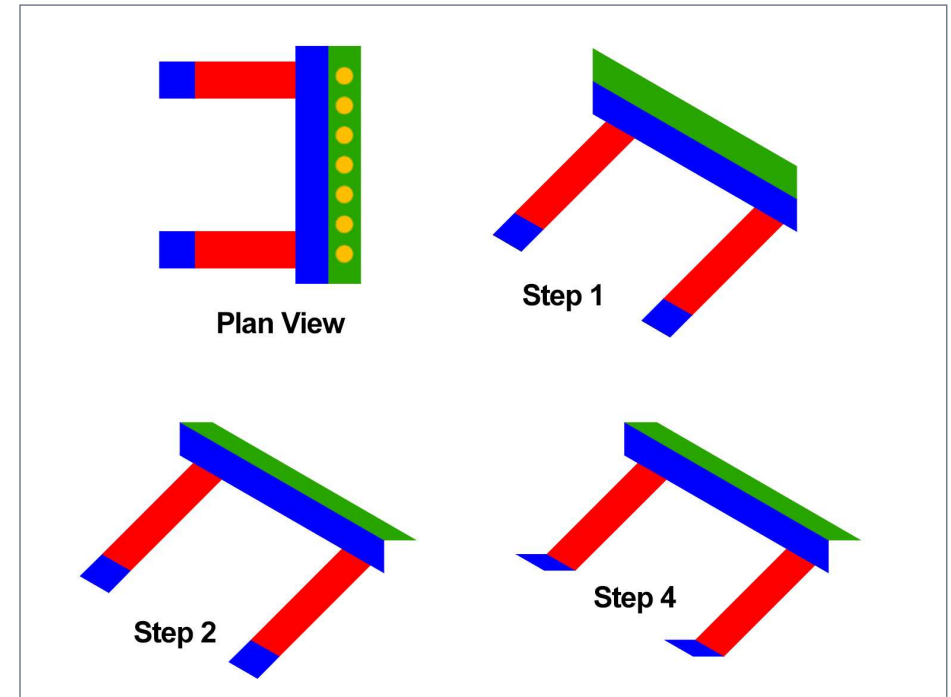
From my sketch, I knew I needed to first bend the photo-etched brace up 45 degrees. The end with the bolt heads needs to be on the top, as shown in the sketch.



18. With a car upside-down, a scale 10-inch-wide piece of stripwood makes a good cutting guide to trim the running boards.

I cut a thin piece of styrene with a 45-degree angle to check the angle [21]. Then I made the final bends [22].

Since CA doesn't work well on wood, I used five-minute two-part epoxy to bond them in place.



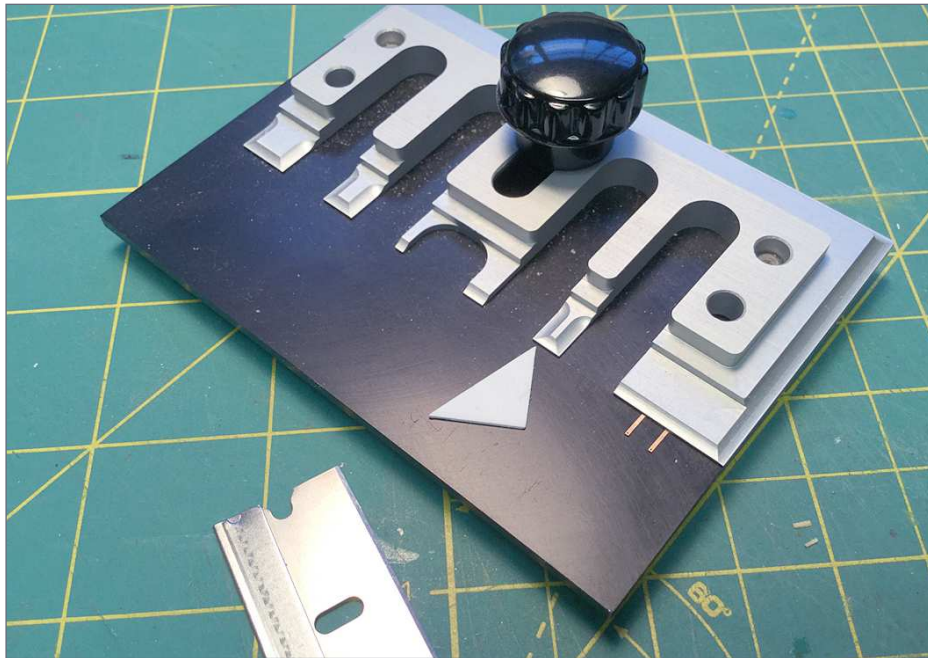
19. At the upper left is a plan view of a Yarmouth Model Works photo-etched running board brace. Note that in Step 1 and the other views that the "rivets" are on the visible side of the brace. There are three simple steps needed to bend this part to the final shape. In Step 1, fold the legs (red and blue) clockwise 45 degrees. Next in Step 2 use a pair of flat nose pliers to fold the end which connects to the running board with the rivets (green) 90 degrees clockwise. Finally, in Step 3 use the pliers again to fold the end that rests on the box car (blue) clockwise 45 degrees.



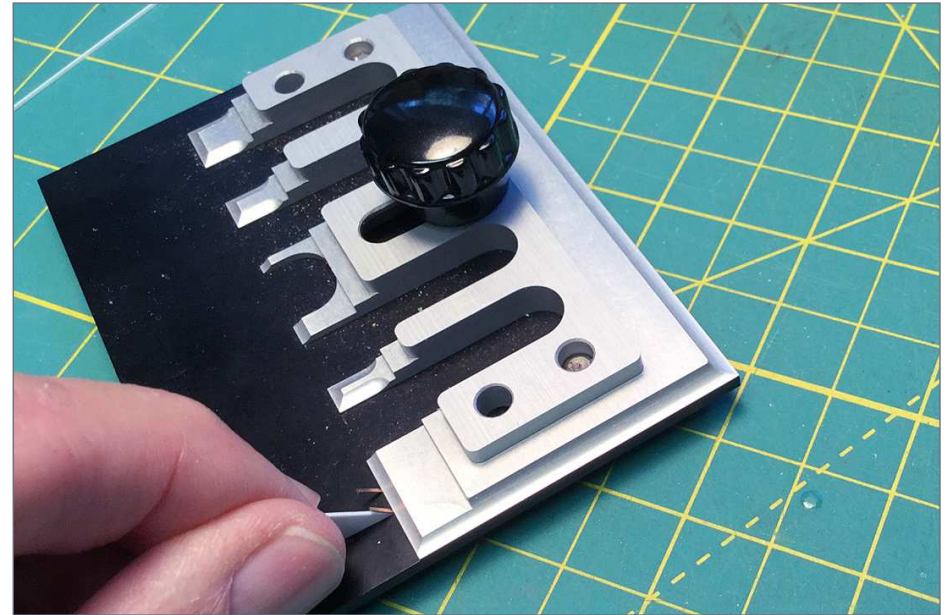
ARCHER RIVETS

I used Archer rivets on this car to replicate the bolt heads on the corner braces – those located on the horizontal fascia boards at the top of the sides of the cars. Archer rivets are basically 3D decals. Archer prints them on decal carrier paper just like decals, but they have raised surface details – they're available in a number of rivet sizes.

To replicate these small bolt heads on those corner braces, I used some O scale 5/8" streetcar rivets which would be equivalent to 5/16" bolt heads in HO scale. The spacing of these rivets proved to be correct for this application [23].



20. My bending tool with a 45-degree piece of styrene. You can just see the legs of a photo-etched brace sticking out on the right "tongue" of the tool.



21. I used a razor blade to lift up the photo-etched brace and then checked to make sure that it was at a 45-degree angle.



22. One of the braces folded and ready to install.



These 3D rivets get applied just like regular decals. When working with decals, I use a small bowl of water tipped up on a 1/2" x 1/2" piece of stripwood [24]. I add just enough water to cover half of the bottom of the bowl [25].

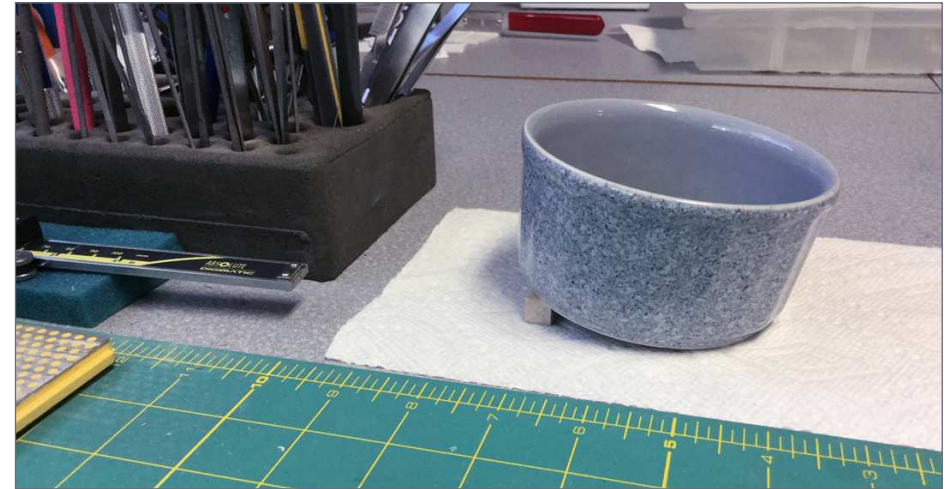
I have a small piece of brass screen, about 1/2" x 1" in size, and I put this screen in the bowl with the decal and, hold it under the water when I first start, and then I take it out of the water. I dip small decals in the water first and then put them on that brass screen. which keeps them from floating away [26].

Prototype YV boxcar photos show the corner braces on the fascia boards had two bolts on each end, so I cut a piece of the decal carrier paper with two rivets and dipped it into the water.



23. This is a typical package of Archer Rivets with different rivet spacing between the rivets and the lines of rivets, used as needed for the planned application.

I quickly put it on the brass screen which was in the bowl but now taken out of the water. The decal still sits "in water" since brass screen mesh still holds water. I leave it on the screen for maybe 15-20 seconds or so depending on the size of the decal.



24. This is the small bowl I use for working with decals. It is about 4" in diameter. Note that it is raised on a piece of stripwood.



25. I adjusted the lighting on this photo to more clearly show the water in the bowl. Because of the stripwood under one side, the water extends only halfway across the bowl.

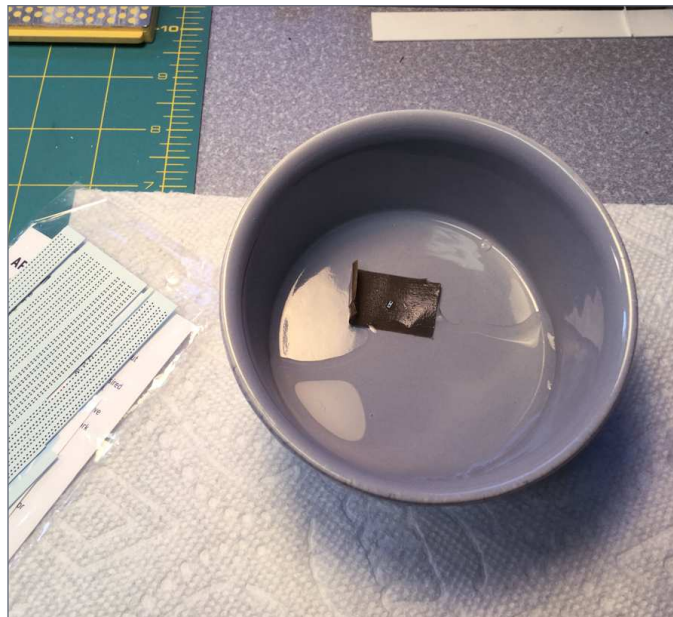


Before removing the decal from the bowl, I dip an inexpensive brush into Micro Set (blue label) and put a spot of Micro Set where rivets will be located. I use tweezers to carefully remove this very small decal from the water and put it on my left thumb. I then use the tweezers to slide the rivet decal from the carrier paper and place it on the model [27].

NBW CASTINGS

I use a lot of nut-bolt-washer (NBW) castings on my freight cars. These small, appropriate details provide “texture” to a model and make it appear more realistic when on the layout. For my boxcars, that meant adding NBW castings to the ends of every grab iron.

Both Tichy and Grandt Line sell NBW castings. However, I typically use Grandt Line NBW castings since I am replicating



rivet decal on top of the screen in this photo.

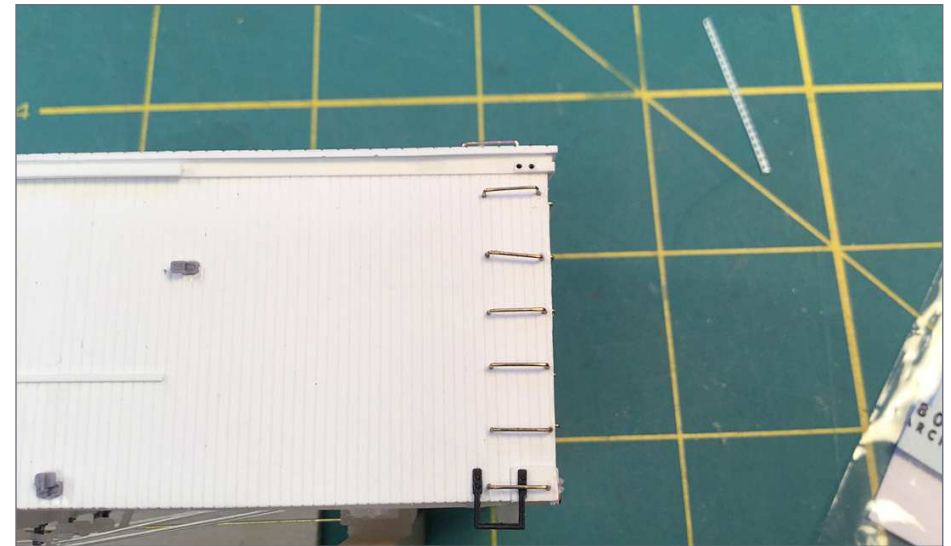
26. Looking straight down at the bowl you can see the piece of brass screen. I position very small decals on top of the screen so I don't need to chase them around the bowl as they are ready to slide off the carrier. That's a

specific nut/bolts/washer prototypes. For the nuts next to the grab irons I used Grant Line 1-3/4" nut with 2-1/2" steel washer (part 5100).

Although the prototype bolts used to attach grab irons had no washers, the washers on the NBW castings help suggest that portion of the grab iron which formed the loops through which the bolts passed.

I also added NBW castings to these boxcars for the truss rod nuts and large washers on the ends of the car. I do not drill holes for any of these NBW castings since that would mean nearly 700 holes for these six cars. Instead, I carefully slice off the NBW castings from the sprue, position them just above a grab iron, and then bond it in place.

The tools that I have found essential include: a good pair of tweezers with very fine tips, 5-power magnifiers, and new



27. A pair of Archer Rivets has been applied to one of the corner braces.

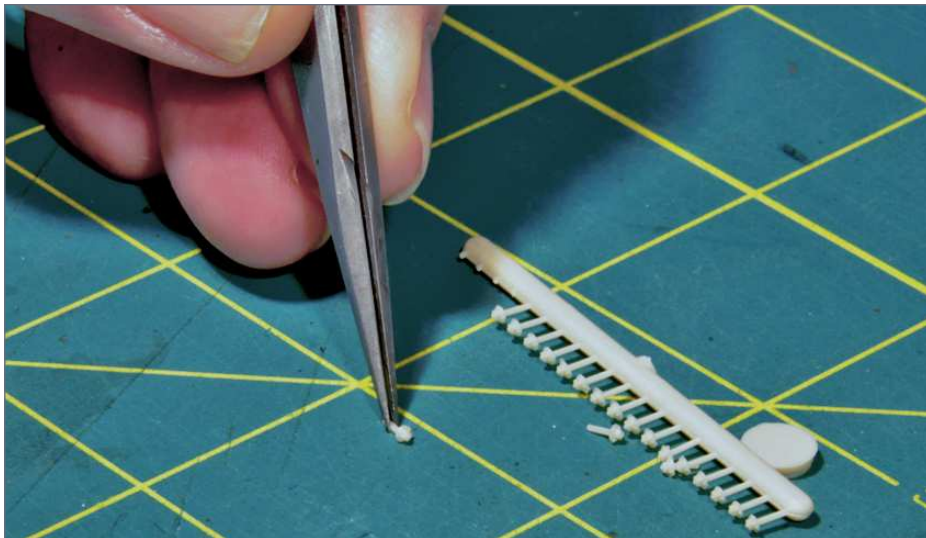


razor blade. I use Vigor 3C tweezers I purchased from Otto Frei, which caters to jewelers [28].

I think that these tweezers cost about \$15 when I purchased them maybe 40 years ago. Otto Frei still sells similar high-end tweezers at www.ottofrei.com/search?keywords=3c%20tweezer. I believe my tweezers to be stainless steel – that pair of tweezers looks to be around \$30 now, which is in line with inflation over those years.

I usually start by cutting a number of NBW castings from the sprue, trimming them close to the sprue. I then hold the casting by the sprue and position the razor blade flush with the back of the washer.

Very carefully and *slowly*, I slice the sprue off with a back-and-forth cut like carving a slice of turkey at Thanksgiving. *Do not*



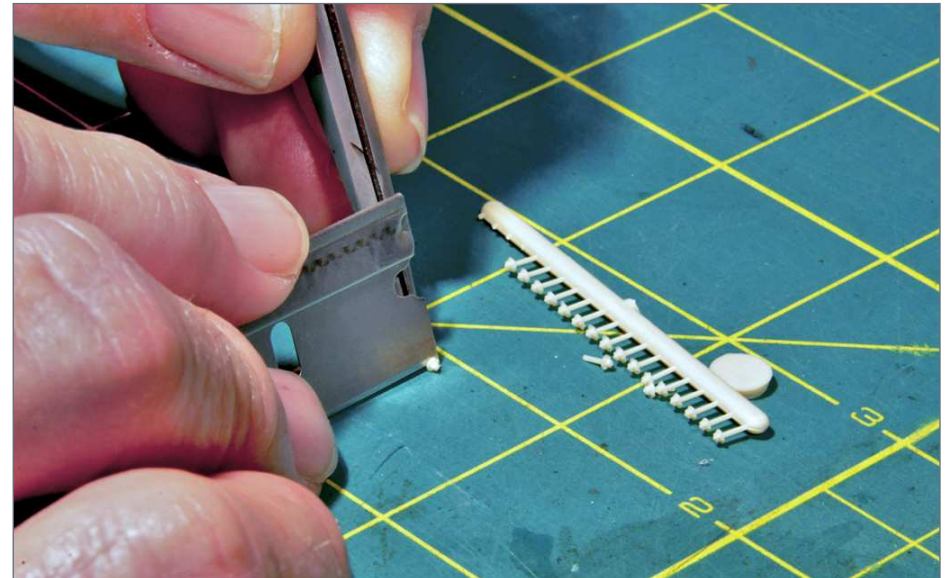
28. Here is a sprue of Grandt Line 2-1/4" Nut - 5" Malleable washers (5093). I didn't use these on the boxcars but used this size for the photos to make them large enough to see. I am holding a single NBW casting with my tweezers.

simply cut through the sprue like you did when you cut the sprues from the main sprue or the NBW will simply shoot off and disappear [29].

Having done this for years, I can now consistently slice off an NBW and slowly tip my razor blade back such that the trimmed NBW lands on my razor blade right side up [30].

I then use the sprue of that NBW casting – still between the tips of my tweezers – to slide the NBW casting onto the cutting surface.

When I am ready to place a NBW casting on the model and bond it in place, I use the tweezers to pick up a casting by the bolt or nut and put it in place on the model, then bond it in place.



29. Holding the NBW casting close to the back side of the washer, I slowly slice off the casting. If the castings shoot off, consider putting something on the cutting surface like a small box to block them from disappearing. Just keep practicing. *I put them on a piece of double-stick masking tape so they stay put when sliced – ed.*

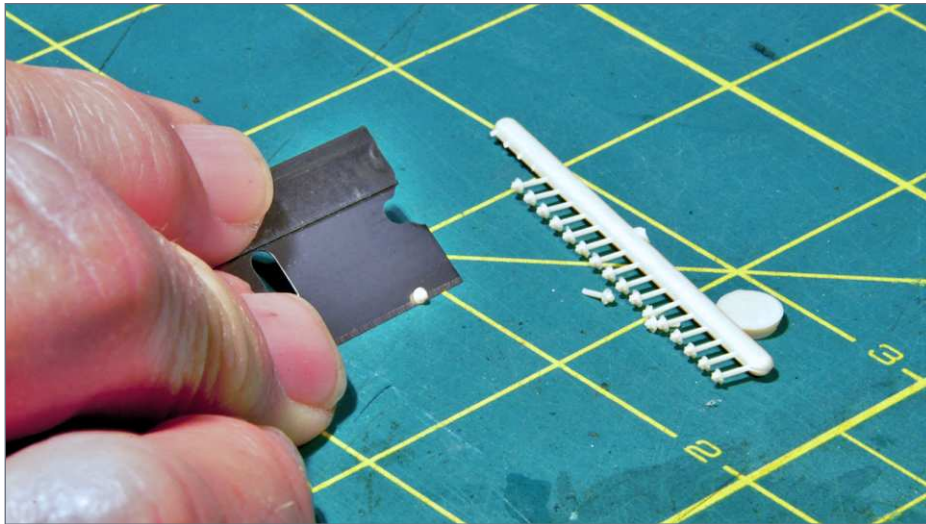


THE FINAL STEPS

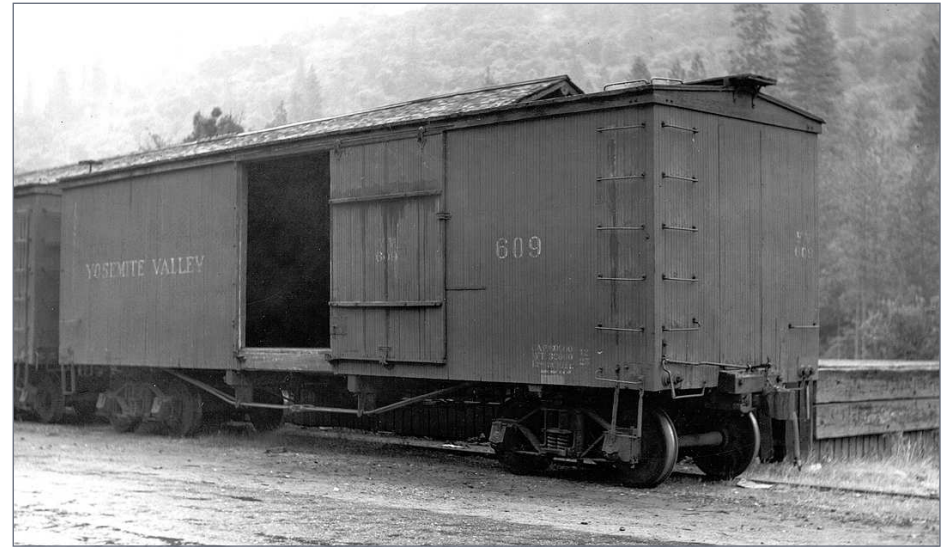
Once I finished construction of the cars, I painted them, added decals, and weathered the cars.

The Yosemite Valley did not typically use these cars in service in 1939, so I display one in the main yard in Merced and assign the rest to service in a display case in my layout room.

See the following two sidebars ...



30. I have sliced off a casting and have it lying on my razor blade. Next I will carefully slide it off the razor blade onto the cutting mat. I then use my tweezers to pick it up, place it on the model, and bond it in place.



31, 32. Prototype boxcar #609 and my replica of boxcar #602.



DID WE FIND YV BOX CAR 609?

Back in 2004, a fellow YV fan had a client who mentioned that her grandfather purchased one of the wood YV box cars from a local junk dealer in 1946 when the railroad was being scrapped. She also indicated it was still on his property being used as a chicken coop.

Without more information, it wasn't until early 2009 that we learned the location of the possible YV box car. We arranged for a visit by several YV fans in July 2009.

In our initial view, we saw the B-end of the car [1]. The hand brake arrangement first caught my eye. The railroad had that style of hand brake on three box cars built new for the YV by the Seattle Car and Foundry Co. in 1914. They were numbered 607-609.



So the question was, "Is this really a YV box car and, if so, which one is it?"

All of the lettering on this car had disappeared long ago. The sides and end were intact, but the roof had fallen into the center of the car, making it hard to get inside. A number of narrow gauge box cars

1. This is the view of the B end of the car.

acquired by a nonprofit that my wife and I have been involved in since 1983 have car numbers stenciled on the inside of the end walls.

The roof lying inside the car made it difficult to get inside the car to check the possibility of a car number on at least one of the ends [2]. One of our crew finally made his way to an end of the car, but found no lettering.



2. Looking inside the car from a side door we could see one of the carlines (which are the boards spaced along the length of a car to support the purlins) and the purlins which extend the length of the car and support the roof.



DID WE FIND YV BOX CAR 609? *CONTINUED...*

I had brought a ladder and used it to climb up on the side of the car. One of the photos I took shows what could be seen from the top of the ladder [3]. While up on the ladder, I kept shooting photos of anything interesting.

I glanced back at the top of the side door on the opposite side of the car, which couldn't be seen from inside the car due to the roof being in the way. Without saying anything, I came back down the ladder and moved it toward the center of the car. Climbing up with suppressed anticipation, I focused my camera on the plate above the opposite door, pushed the shutter to focus, and read out loud the lettering I had partially seen from the end of the car....."Y.V.R.R. 609" [4].

No question – we had found Yosemite Valley Railroad box car 609!



3. Looking at the opposite wall from my ladder. The boards angling down in the bottom of the photo were part of the roof that had fallen in.



4. The original lettering above the opposite door proves that the car was YV 609.



THE UNIQUE HAND BRAKE ON YV 607-60

The Yosemite Valley Railroad received three new box cars from Seattle Car and Foundry Company in 1914 numbered 607-609. Car 608 was converted to a section house in 1938, and 607 and 609 are two of the six cars I built.

These cars had an unusual hand brake arrangement. It can be seen in the builder's photo and enlargement [1] and [2].

Box car 609 still was in existence as noted in the "Did we find YV box car 609?" sidebar, so on a second visit I was able to take closeup photos of the hand brake arrangement, and to take measurements [3-5].

Several years later I shared a couple of closeups of this hand brake arrangement with the online Steam Era Freight



1. Builder's photo from Seattle Car and Foundry for YV box car 609.



2. The enlargement of the hand brake mechanism in the builder's photo doesn't help much but it's obviously different than the standard brake ratchet and pawl.

Cars list, asking if anyone had information on the manufacturer. I received a response from air brake expert Gene Green.

Even with his collection of over 700 patents related to hand brakes, he had never seen such a hand brake arrangement, so I was unable to identify the manufacturer of the hand brakes.



THE UNIQUE HAND BRAKE ON YV 607-60 *CONTINUED...*

After measuring up the hand brake, I drew it in 3D, and had several prints made to use on my models of 607 and 609 [6-7]. ☒



3. Looking up at the hand brake on 609 with the pawl to the left of the brake shaft.



4. Typical hand brakes have a horizontal brake ratchet wheel with a pawl which can engage the gear to keep the hand brakes engaged. However, the brake ratchet in this design has teeth on the bottom.



5. Looking down at the brake gear. When setting the hand brakes, a brakeman would flip the weight (in the shape of "P") to the right where it would rest on the pawl, causing it to engage the ratchet teeth when the brakeman stops turning the wheel. To release the

brakes, the brakeman flips the weight back over to the left and releases tension just enough for the pawl to drop.



6. An unpainted HO 3D print of the hand brake castings.



7. The hand brake casting on the model of 607.





1. A fine brass engine can run smoother with an upgraded motor. DCC electronics and sound components can enhance the operation on any layout.

Re-motor and Install DCC and Sound in a 4-8-2 steam locomotive



RATE THIS ARTICLE

MRH Running Extra | August 2020

PETE HALL SHARES TIPS TO UPGRADE A BRASS LOCO ...

THE PURPOSE OF THIS PROJECT WAS TO RE-MOTOR, and then install DCC and sound into a painted HO scale brass 4-8-2 Mountain locomotive.

Replacing the motor

This locomotive was one I'd wanted to convert to DCC/sound for a while – a brass Westside Model Company Southern

Pacific 4-8-2 Mountain [1]. I had painted it and installed constant lighting many years ago, but now DCC provides better performance, so it was time for an upgrade.

To begin, I disassembled the engine chassis from the boiler [2]. As with most brass engines, this one used only three screws to keep the unit together: one above the four-wheel pilot truck, and two more below the cab floor. I removed the truck, its spring, and the three screws, and placed them in a safe storage container in the order they were removed.

The engine hadn't been run for a while, and the original plastic tube connection between the motor and the gearbox was in bad shape [3], so it was time for renewal. Also, the original



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RE-MOTOR A 4-8-2 LOCO | 3

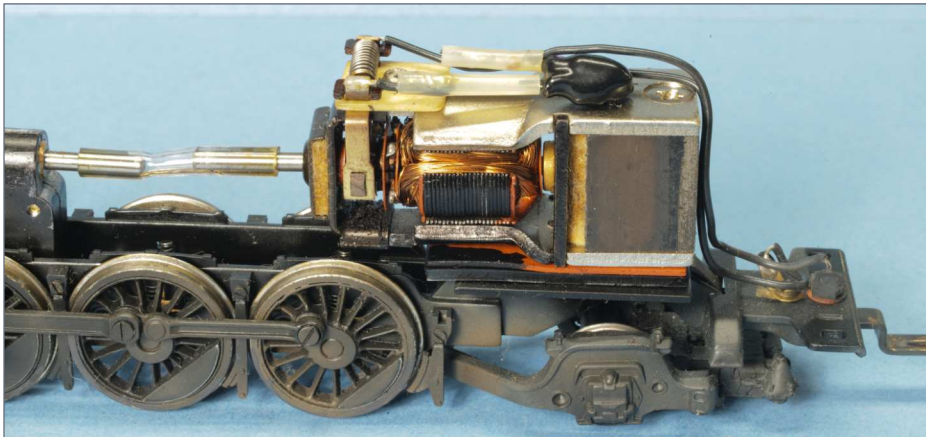
lighting system was designed for DC only, so it had to be replaced by the new DCC system. The original headlight was still useful, so I cut the wires connecting it to the motor.

I removed the screw holding the rear truck to the driver keeper plate and set it aside in the same container.

The original wire connections were to the frame of the engine and to the drawbar [5], which carried power from the tender. These wires would not be needed in the new installation, but the brass



2. The original chassis with boiler and lead truck removed.



3. The open-frame motor will be replaced.

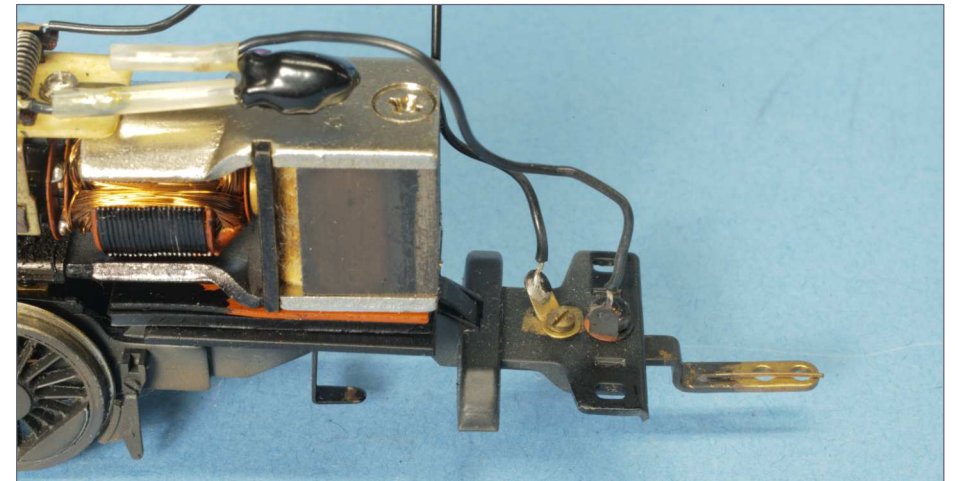
RE-MOTOR A 4-8-2 LOCO | 4

lugs that connected the wires were still useful. The lugs would be unsoldered and saved.

I reviewed the motor and other pieces after everything had been disassembled [6]. The rear truck retainer was held in place by the same screw that held the motor. The rubber and cardboard plates under the motor would not be needed. The drawbar was carefully disassembled and reassembled to keep its important components,



4. The screw holding the motor in place can be seen from the underside of the frame.



5. The wire connections from the motor to the frame and drawbar.



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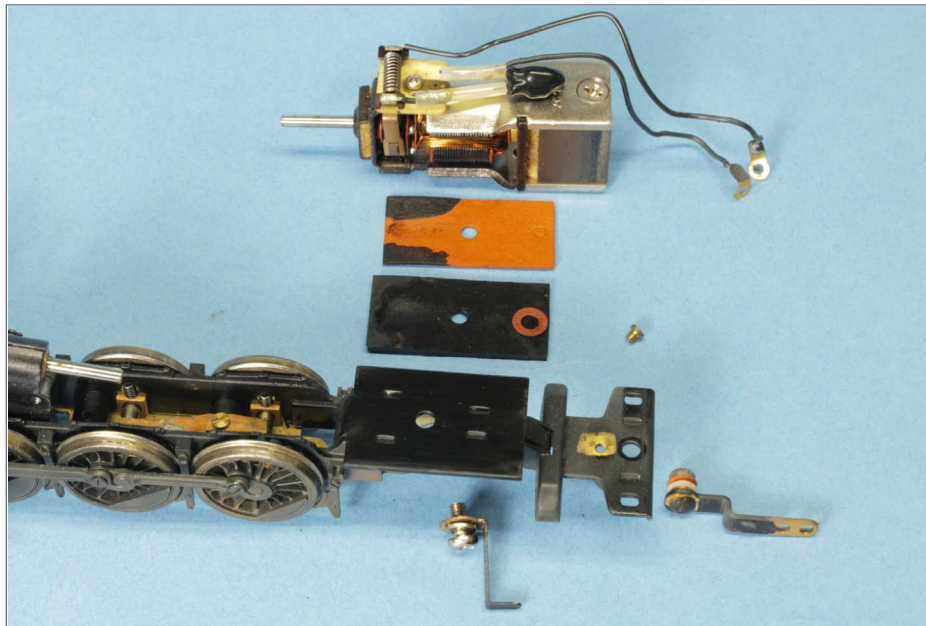
RE-MOTOR A 4-8-2 LOCO | 5

because they would all be used again. The tiny screw attaching one brass lug to the frame would also be reused.

I wanted the new motor to be as large as possible, because a large, heavy engine needs plenty of power. Brass steam engines have various capacities in the firebox, and it's important to determine how wide the opening is, to know how big the motor could be.

In this engine, the firebox opening was 20.62 mm wide [7]. That's the largest motor that could be installed without modifying the firebox. Height was often a concern, but in a large firebox like this one, there was plenty of room.

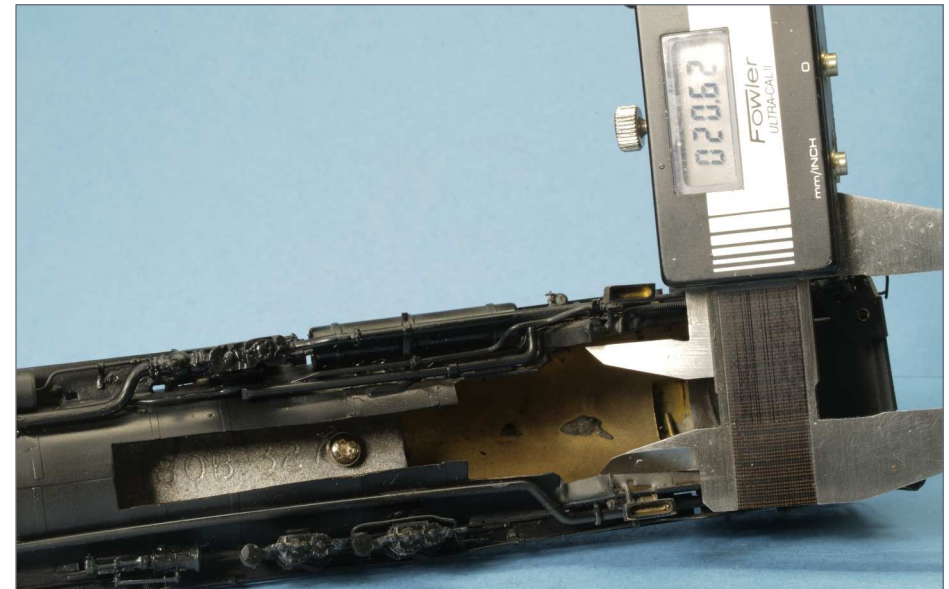
I usually have a selection of 20mm motors on hand, and in this case, I was able to choose between a Canon, a Maxon, and one of the new 18mm auto-mirror motors [8]. I've had good results with the Canons I've used in the past, so that was my choice. It has a 2mm shaft, which would be important in the next steps.



6. Here are the disassembled motor and mounting appliances.

RE-MOTOR A 4-8-2 LOCO | 6

Since the original motor came with a nice mounting screw, there was no reason to replace it, just reuse it. To determine its size, I tried it in a block of brass I had made with various common screw sizes and threads [9]. The screw fit perfectly into a 3-0.5mm hole, so the hole in the new motor cradle had to be the same.



7. Calipers were used to determine the size of the motor to use.



8. I had various motors to consider.



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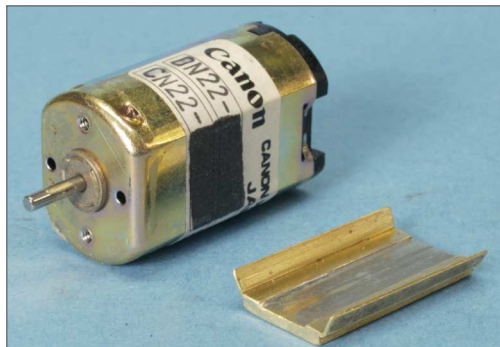
RE-MOTOR A 4-8-2 LOCO | 7

The new motor would be fit into a new brass mounting cradle. The cradle was made from a strip of 1/16"x1/2" brass (K&S), with a 1/8" angle soldered to each side. I made this assembly in a one-foot-long strip and cut off an appropriate piece when a new motor is installed. In this case, the new piece was one-inch long [10]. The angles were bent outward to allow the motor to fit inside, where it would be suspended by clear silicone caulk.

I knew the motor would fit between the sides of the firebox without trouble, but the backhead sloped into the firebox at the top. The motor had to be installed forward enough to avoid contacting the inside of the backhead. I placed the boiler adjacent to the chassis, lined up the mounting screw holes, and moved the motor and cradle forward until there was clearance between the motor and the backhead [11]. Then I marked the underside of the cradle for the



9. Here's my homemade tool to determine the size of the motor mounting screw.



10. The new motor and mounting cradle.

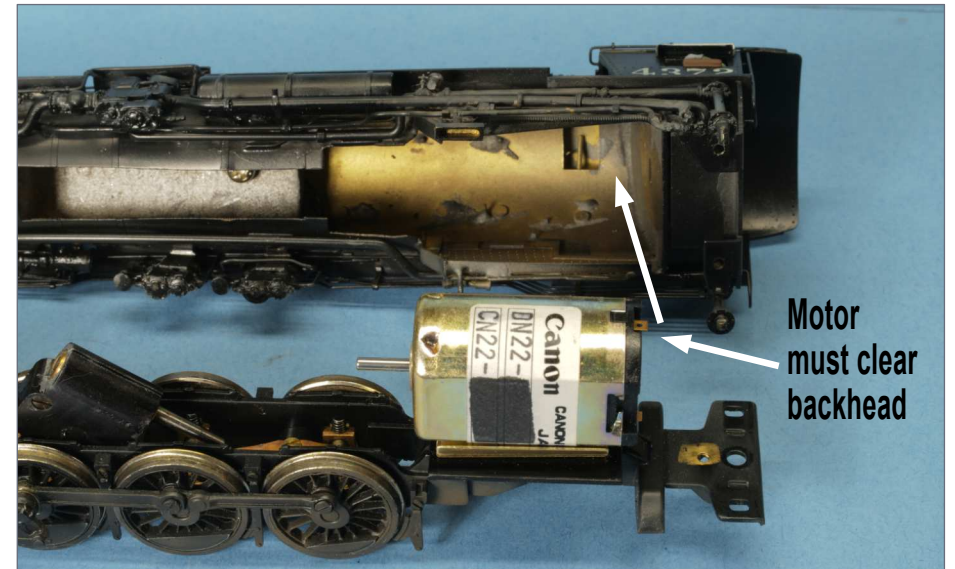
RE-MOTOR A 4-8-2 LOCO | 8

new screw hole. I drilled and tapped it for the 3-0.5mm motor mounting screw.

I inserted the 3-0.5mm screw through the frame into the cradle and found it would have protruded into the motor mounting area. I measured the thickness of the lock washer, the rear truck retainer, the frame and the cradle, and cut the screw.

The best way to do this was to insert the screw into a nut of the same size, turn the nut so that the excess of the screw was exposed, and cut it off. Then I moved the nut to expose the rough end of the screw and filed away the burrs. Finally, I backed the screw out of the nut. This cleared any remaining burrs and re-set the threads on the screw so it could be reused.

Finally, it was time to attach the cradle to the frame and glue the motor into the cradle with silicone caulk. Caulk is excellent for this purpose – it dries overnight, secures the motor in place as well as insulates it both electrically and physically from the frame, and it is adjustable during curing.



11. With the motor on the mounting cradle, I located a new mounting hole.



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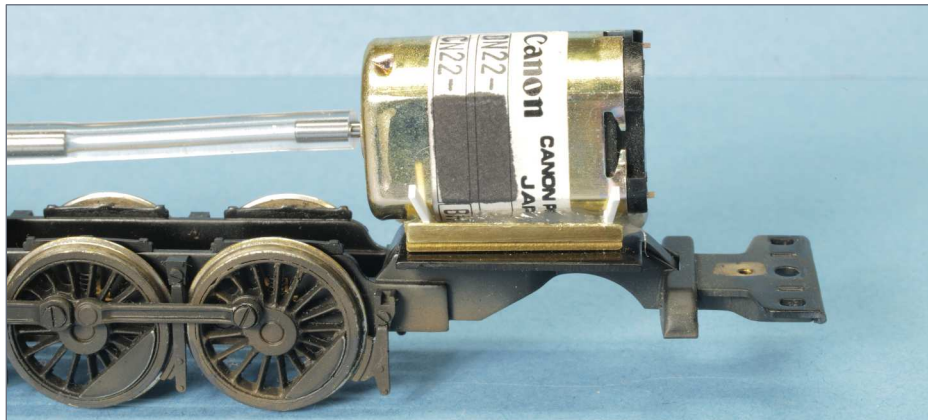
RE-MOTOR A 4-8-2 LOCO | 9

First, I cut a length of clear plastic (Tygon) tubing to length to act as an alignment tool. I slipped the motor shaft and worm shaft into the tubing, laid a bed of caulk into the cradle, inserted four scraps of 0.030"x0.060" styrene strip to act as spacers (they were removed later), and set the motor in place [12]. With everything holding the motor and gearbox in alignment, and the motor with a slight forward tilt, I let the model dry overnight.

The gearbox in this model was a quiet and smooth KTM gearbox, typical of most Westside Model Company brass locomotive models. There were several ways to connect the gearbox and motor, and this time I wanted to use a Hobbytown of Boston ball-and-socket system. That would require that the gearbox be restrained from fore-and-aft movement but be free to move up and down with its driver in the engine frame. Fortunately, Westside provided an easy answer.

I bent a piece of 0.015"x0.250" brass strip into an "L" and drilled a clearance hole in it for a 2mm screw. The keeper plate underneath the drivers was secured by 2mm screws, and the holes went all the way through the frame spacers between the frame sides. The entire hole was threaded, and the upper part could be used to receive a short 2mm screw to hold the rear retainer angle in place [13].

The front retainer was a bit more complex, as it needed to be bent up and over the valve hanger bar and be secured by the rear valve



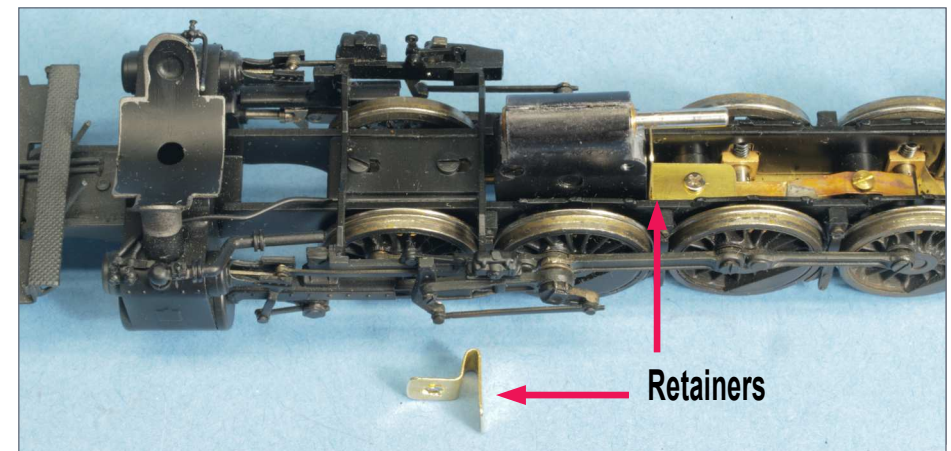
12. Silicone caulk was used to fix the motor into the cradle.

RE-MOTOR A 4-8-2 LOCO | 10

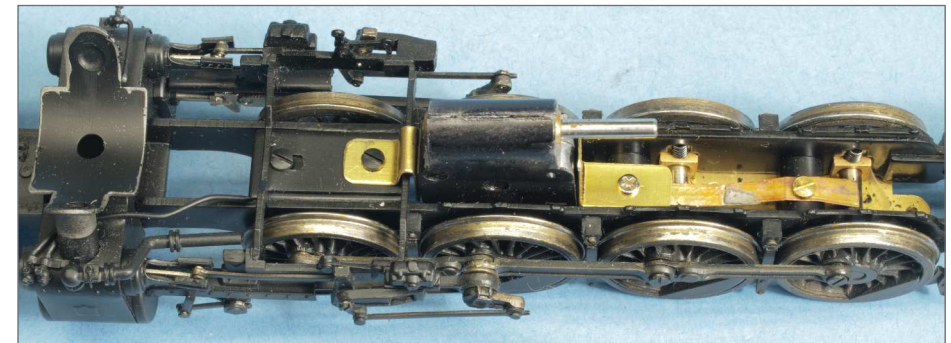
hanger screw in front of the gearbox. The nice thing about these two brass retainer parts was that they were very adjustable to achieve good performance, and the dimensions were not critical. Each engine requires its own set of measurements.

After installing the retainers, I was able to bend them slightly to provide light fore-and-aft control while preserving up-and-down movement [14].

Hobbytown of Boston makes both a 2.4mm system and a 2.0mm system. I needed both in this case. The white cup fits the 2.4mm



13. I made retainers to minimize gearbox movements.



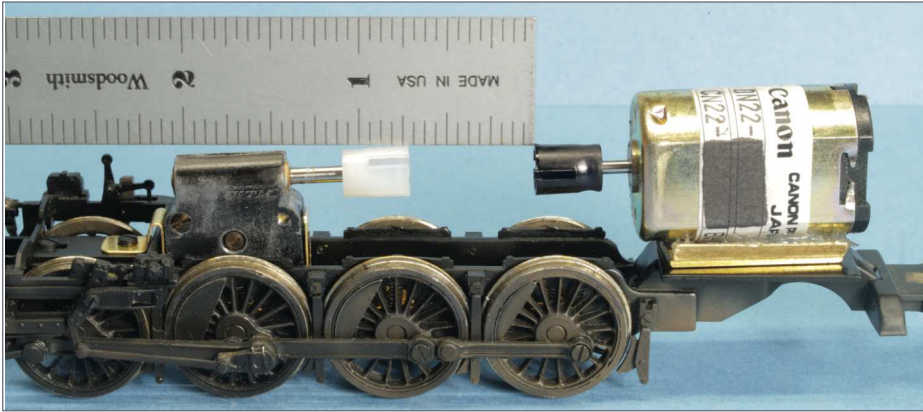
14. Here's a look at both gearbox retainers in place.



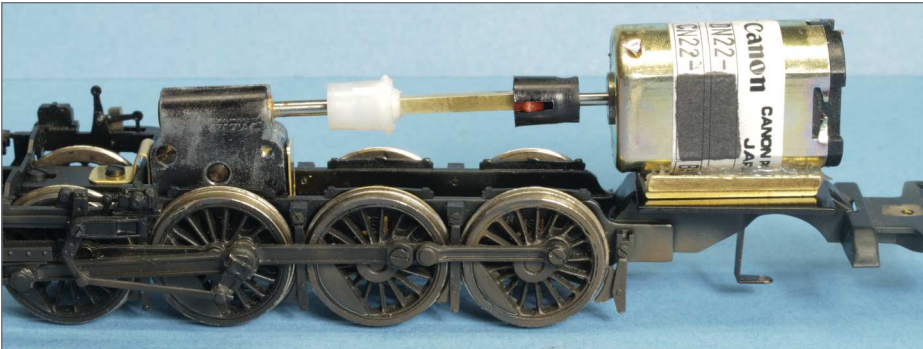
RE-MOTOR A 4-8-2 LOCO | 11

worm shaft on the gearbox, while the black cup fits the 2.0mm motor shaft [15]. The same eared balls and brass connecting shaft worked in both sizes.

I inserted the gearbox shaft into the white 2.4mm cup, and the motor shaft into the 2.0mm cup, following Hobbytown's instructions. I measured the distance between them at $11/16"$, added the recommended $5/16"$, and cut a length of square stock one inch to fit between the parts.



15. With the motor in place, I measured for the shaft connecting the motor and gearbox.



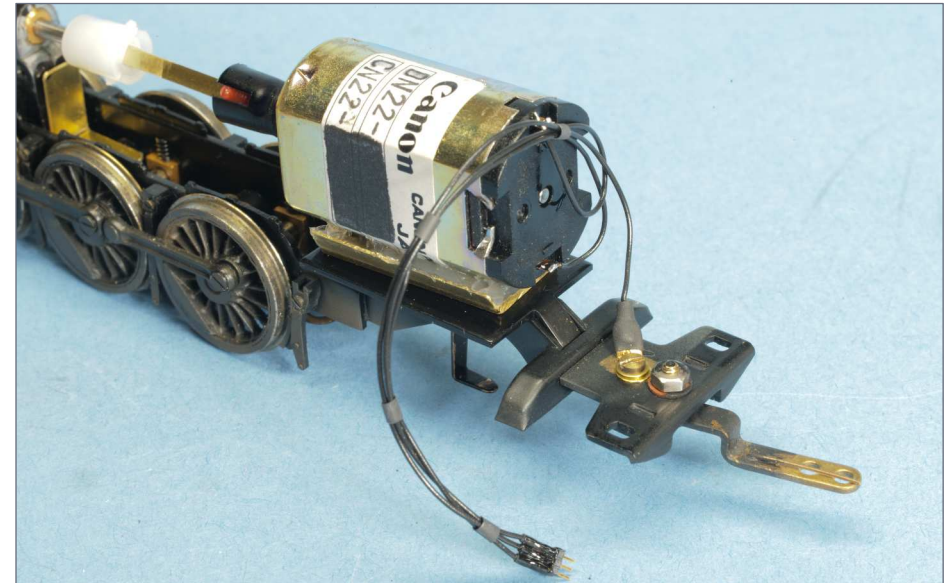
16. The completed new motor and linkage assembly is ready to go.

RE-MOTOR A 4-8-2 LOCO | 12

I decided that the red ball, which is fixed onto the shaft, should be in the motor cup, and the white ball, which allows the shaft to slide back-and-forth, should be in the gearbox cup, since the gearbox was prone to movement. I polished the brass shaft and smoothed the inside of the white ball so it slipped onto the shaft. When this assembly was complete, I set the chassis on the layout and attached wire leads from the track to the motor [16]. It worked! The engine ran very smoothly.

Before reassembling the chassis into the boiler, another clearance issue had to be assured. The lead weight inside the boiler had to be higher than the linkage. Fortunately, it was. If not, the weight would have needed adjustment.

The last item for the motor and frame was wiring for power. I used a Train Control Systems (TCS) four-wire harness with one wire removed [17]. This harness would connect to the



17. Wiring for the motor is ready for the decoder connection in the tender.



decoder. The middle wire went to the lug attached to the frame to carry right-rail power back to the decoder in the tender. The other two wires went to the motor.

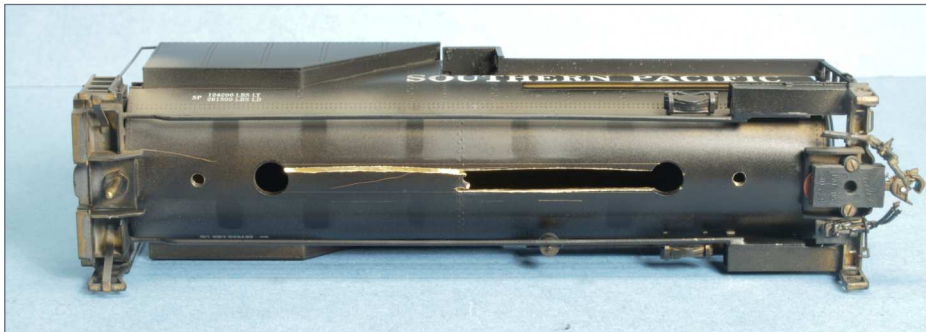
During testing, I connected this plug to the socket with the orange, red, and gray wires coming from the decoder, and oriented the plug and socket so that FWD on the throttle produced forward motion. Then I applied a drop of red paint to the lower side of the plug and socket so they could always be connected properly.

With the engine prepared, it was time to get into the electronics.

Adding DCC and sound

The electronics wouldn't fit into the boiler, as it is full of the motor, gear system, and lead weight. These parts would fit into the tender if I could gain access to the interior. These semi-cylindrical tenders have a lot of room inside, but the tank is a sealed, soldered unit. However, there is a way that doesn't ruin the paint job, nor damage the exterior where it is visible. I opened the tender along the bottom frame line.

After removing the frame and trucks, the bottom of the cylindrical tank was easy to access [18]. I made the first few cuts with a Dremel cutting disc. The entire line was opened



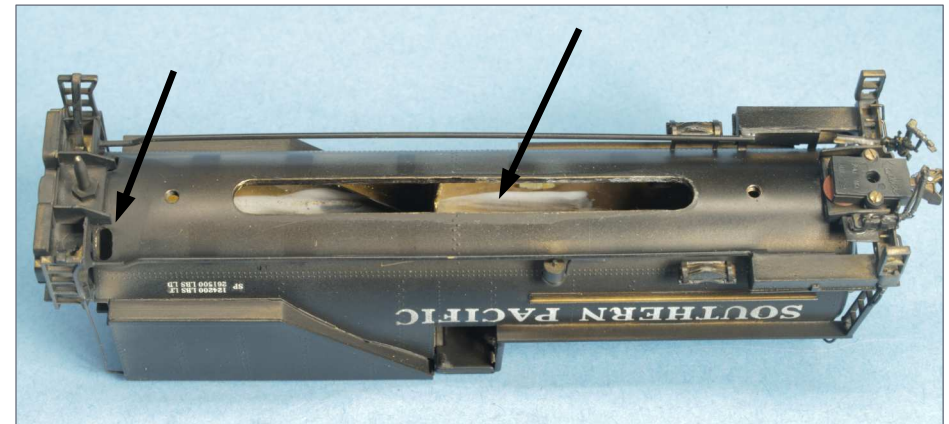
18. Here are my first cuts on the bottom of the tender.

until it would accommodate the thickness of both a Soundtraxx Tsunami2 884007 steam decoder and a Soundtraxx 810140 Current Keeper capacitor bank.

The brass baffle in the middle of the tank was also notched to provide a path for the rear light and Current Keeper wires. In addition, I opened a port through the tender deck in front of the rear headlight into the interior of the tank for a Miniaturics 1.2mm bulb.

The main port will be completely covered by the frame and trucks [19]. The Tsunami2 decoder required 0.245" clearance to slip inside the tender, but the Current Keeper capacitor bank was 0.286" over the PC board, so I made the rear half of the slot slightly wider. Fortunately, the frame is 0.306" wide, so it would cover the opening. The sides of the slot were painted black to match the body and camouflage the opening.

At the very front of the tender are the two ports, left and right, where wiring would emerge for the engine. These are 0.100" wide by 0.180" long. I glued a piece of heat-shrink tubing into each one to protect the wires from rubbing against the brass shell when the locomotive is in operation.

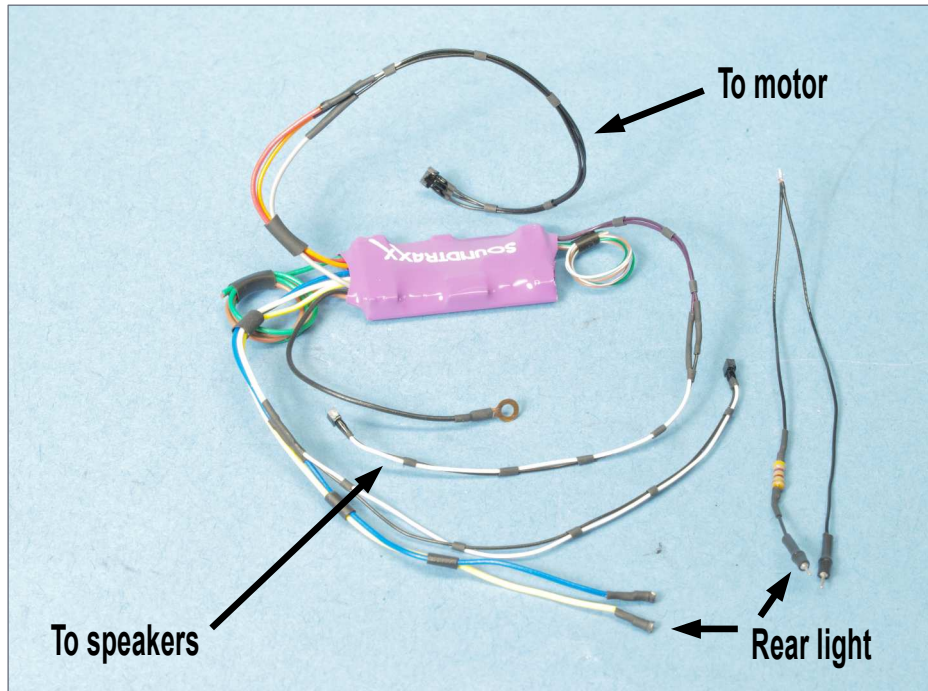


19. These finished ports enable access to the tender interior.

RE-MOTOR A 4-8-2 LOCO | 15

The orange, red, and gray wires were connected to a TCS four-wire harness with one wire removed. The red wire that went to the frame of the engine was kept as the middle connector, so the orange and gray could be flipped over to provide correct direction. With the red in the center, no short circuit would happen. All wires connected to the decoder go to the socket end of the harness. The plugs were all connected to the appliances (motor, lights, speakers).

The blue, white, and yellow wires were paired into two TCS two-wire harnesses, one for the headlight and one for the rear light. The 1.5-volt, 30mA rear light bulb was connected to NMRA plug connectors, and a 470-ohm resistor was installed in one of the leads. The same arrangement was prepared for the headlight.



20. The DCC components and wiring are ready to be installed.

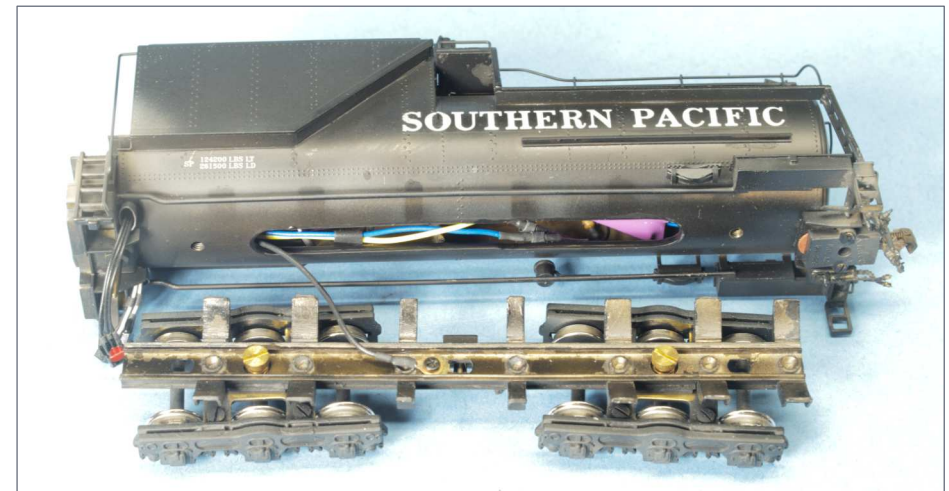
RE-MOTOR A 4-8-2 LOCO | 16

The black wire was connected to a new solder lug that would be attached to the tender frame with a new 2mm screw. The two purple speaker wires were paired into a TCS two-wire harness that would connect with the two sugar-cube speakers placed in the engine.

Each harness was organized by cutting small segments of TCS heat-shrink tubing that were then shrunk around the wires to keep everything manageable. The Current Keeper capacitor bank was plugged into the decoder just before insertion into the tender.

The green and brown wires in the front of the decoder were curled and truncated, as were the green-stripe and brown-stripe wires in the rear, as they were not needed for this locomotive [20].

Getting the electronics and wiring into the tender was a squeeze, but it worked. The decoder went into the front half of the tank, and the Current Keeper went into the rear half. I managed to get the three engine wire harnesses to protrude



21. The electronics have been inserted and the left rail wire attached to the tender frame.



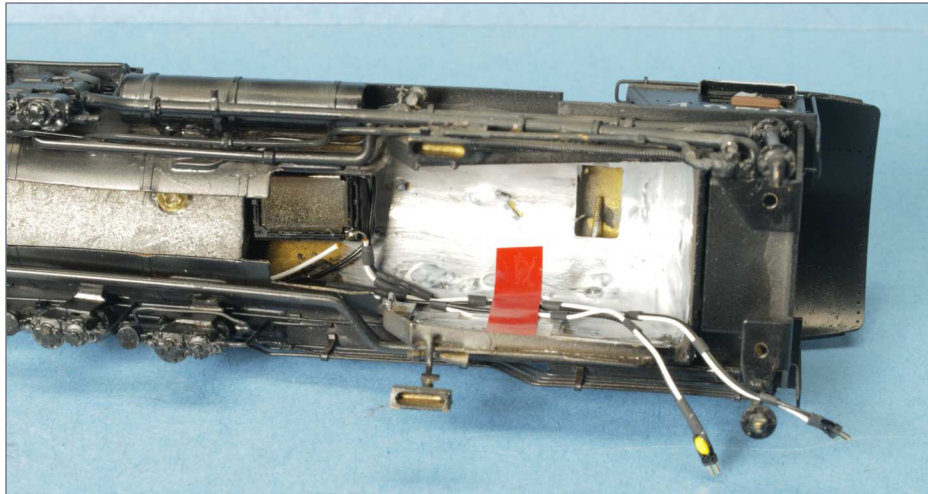
RE-MOTOR A 4-8-2 LOCO | 17

from their ports at the front of the tank, and the rear light inserted from inside the tank to above the deck [21].

Meanwhile, I wired two Soundtraxx 810154 Mini-Cube speakers in series to fit into the boiler. One went in front of the large lead weight, blasting sound up through the open stack. The other one went behind the weight in the area near the air pumps and whistle [22]. I secured both using double-sided tape.

Fortunately, the rear speaker fit with clearance over the Hobbytown drive. Two speakers provide double the sound, so the volume can be turned down to prevent overdriving the tiny speakers.

I also wired a TCS two-wire harness to the headlight and slid it in past the weight; the headlight plug and socket were delineated by a spot of yellow paint. Both sets of wires were secured by a piece of red electrical tape. I paint the interiors of boilers and tender tanks white for better visibility while I work inside the dark cavities.



22. Speakers were mounted inside the boiler.

RE-MOTOR A 4-8-2 LOCO | 18

With the engine electronics in place, I inserted the chassis into the boiler and secured it with the screws that were removed at the start of the project. The motor/frame wires protruded under the fireman's seat, and the headlight and speaker wires were under the engineer [23]. When in place, they resembled the connecting hoses between engine and tender.

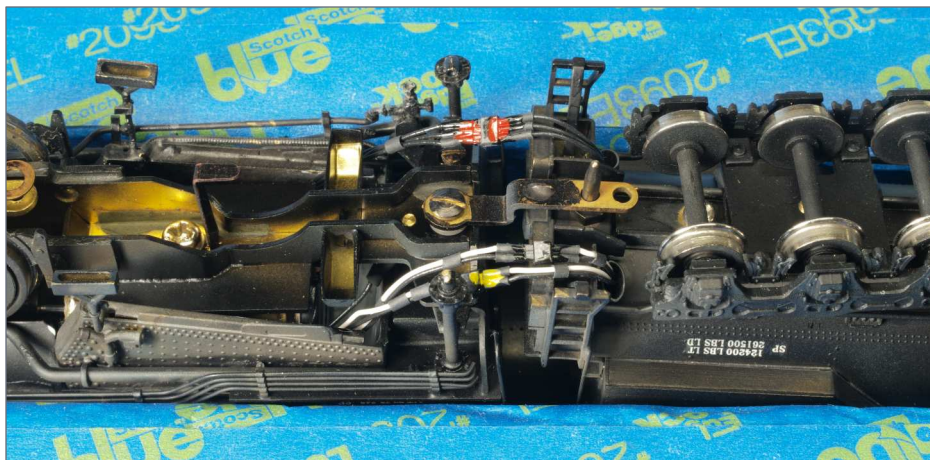
Finally, I connected the wires from the decoder in the tender [24] and tested the engine on the layout. Fortunately, everything worked. I reattached the pilot and rear trucks then programmed the decoder for the locomotive characteristics.

Nothing is as satisfying as giving an old locomotive a new voice, and watching it go back to work in its natural habitat. Re-motoring and installing DCC and sound are not complicated



23. The chassis is assembled to the boiler with motor and light connecting wires seen under the cab.





PETE HALL

Pete started model railroading at the age of four on the floor with unpainted wooden trains. A native of San Francisco, he enjoyed Lionel and Märklin before settling on the Southern Pacific Coast Line, circa 1947, in HO scale.

Pete's working career spanned 46 years, starting with the US Navy Submarine Service and ending with 20 years as Director of Safety with Amtrak. Pete is married with two adult sons who are pursuing their own careers in California. ■



as long as they are done step-by-step. I hope this article helps you learn how you can do one of your own. ☑

★★★★★
RATE THIS ARTICLE

24. (Above left) The engine and tender are connected and ready for a layout test.

25. (Left) Southern Pacific 4372 smoothly pulls into San Luis Obispo with a string of freight cars.



Animating an engine house door

MRH Running Extra | August 2020

JEAN-YVES MAZZOLENI ADDS AN ELECTRICALLY-DRIVEN DOOR TO HIS ENGINE SHED ...

ON MY LARGE SCALE LAYOUT, I wanted to have a locomotive shed with an electrically-operated locomotive shed door.

While I am building this in G scale, the principles can be adapted to other scales such as HO, for example.

My main motivation with this engine shed has been to get one with a working door!

I'm using a simple design for my engine shed itself – I'm sure some of you expert modelers in *MRH* could make something that's a lot more detailed.

ANIMATING AN ENGINE HOUSE | 2

1. Jean-Yves added a working door to his engine shed shown here.

★★★★★
RATE THIS ARTICLE

This engine shed has these two main parts:

- a) a main building and
- b) a door module.

I made the door module separate to allow for easier installation and maintenance, if needed.

Given my era, a hinged two-door design would have been a good choice, but I found that making this sort of door with servos to be too complicated for me.

For my roll-up door, I scoured the web and saw various HO animated shutter-style doors. None proved exactly suitable for me, so I designed a roller-shutter door for opening /closing across both rails entering the building.

Yes, this is something of a compromise, since this exact design does not quite match the era and western style of my steam engines. But the design does work well, so perhaps some of you will get inspired by what I have done.

THE MAIN BUILDING

I made everything using 6mm (1/4") medium-density-fiberboard (MDF) – the walls, the roof, everything. I added the horizontal boards for aesthetics [2].

I used the Piko Brewery windows kit 62804 and glued the window frames in place. See the shopping list link at the end of this article for where to get these window frames.

To keep construction moving, I assembled the roof using a few triangles of MDF.

I first glued the triangles onto one side of the roof, then the other – and finally added the reinforcements in another step [3].

CONSTRUCTION OF THE DOOR MODULE

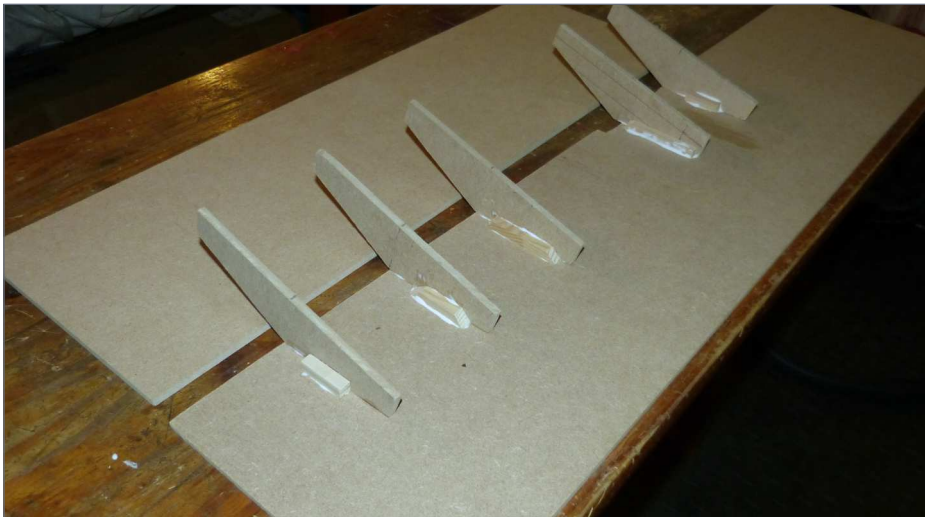
I fashioned this part of the building with two support blocks for the door rolling mechanism I will be adding later [9].

In the next section, I get into the electrical and mechanical components of the shutter. I put all this onto a self-contained MDF housing which then was placed upon the two support blocks.

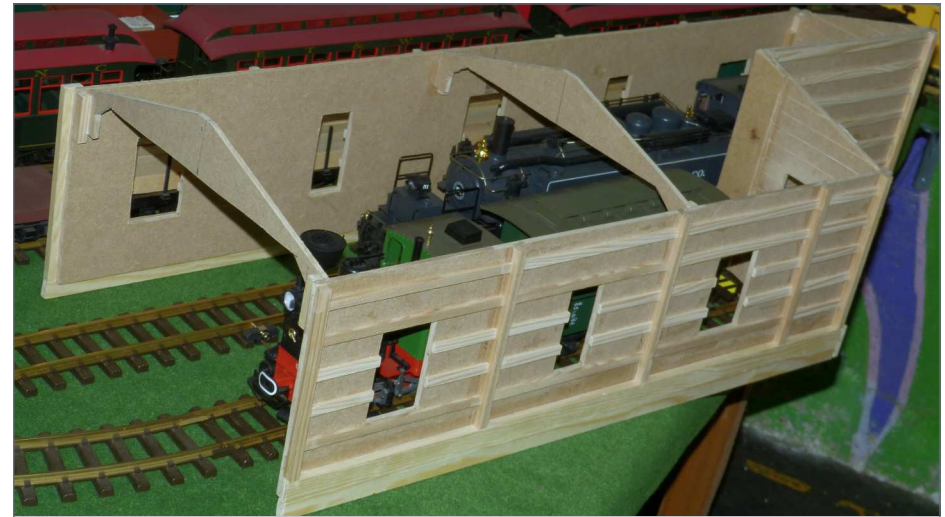
I added this rear header partition to hide all the components of the electrical system. The battery, wires, and connectors all go behind this partition [7].

THE SHUTTER BLOCK

On the top right of [8], I placed the motor on a dedicated sub-module of MDF for easier positioning and handling.



2. How to assemble the roof panels in a quick and easy manner.



3. Checking the fit of the engines within shed.



4. Fully assembled main building. Solid joints ensure the strength of the structure.



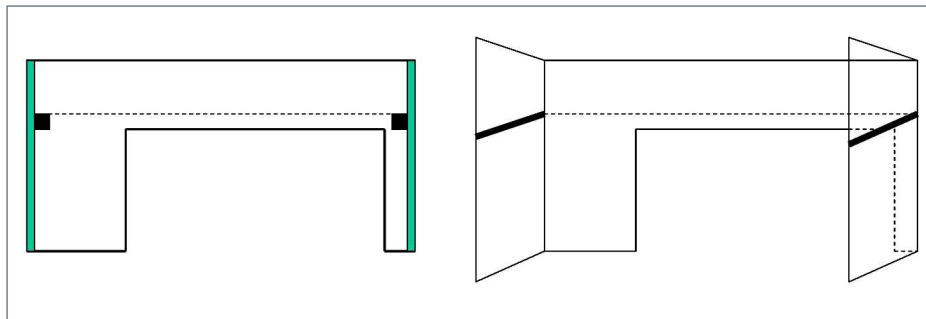
ANIMATING AN ENGINE HOUSE | 5

On the left of [8] is where the rolling shutter goes.

I used a plastic tube with a diameter 50mm (2") fixed on an axial threaded rod. I added two "washers" of MDF fixed on the rod and slid into the tube. I simply inserted the washers by

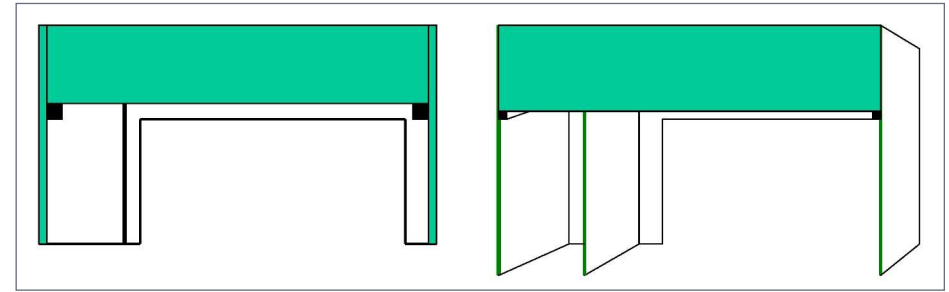


5. Rear view of the main building.



6. Basic door module structure construction.

ANIMATING AN ENGINE HOUSE | 6



7. Door module structure with the rear header partition added.



8. All the components of the shutter driving system.

force into the tube. I did not glue them into the tube so as to get a torque limiting function, allowing the washers to slide inside the tube in case of exceeding the stroke.

I made the choice of tube diameter to have a rise/descent of just the right speed, depending on the electrical motor speed. In addition, the tube diameter must not be too small to avoid putting too much strain on the shutter slat joints.

THE ROLLING SHUTTER SLIDER

The rolling shutter slides on two rails, one on each side. I went with a U-shaped plastic section for the slide guide, fixed in



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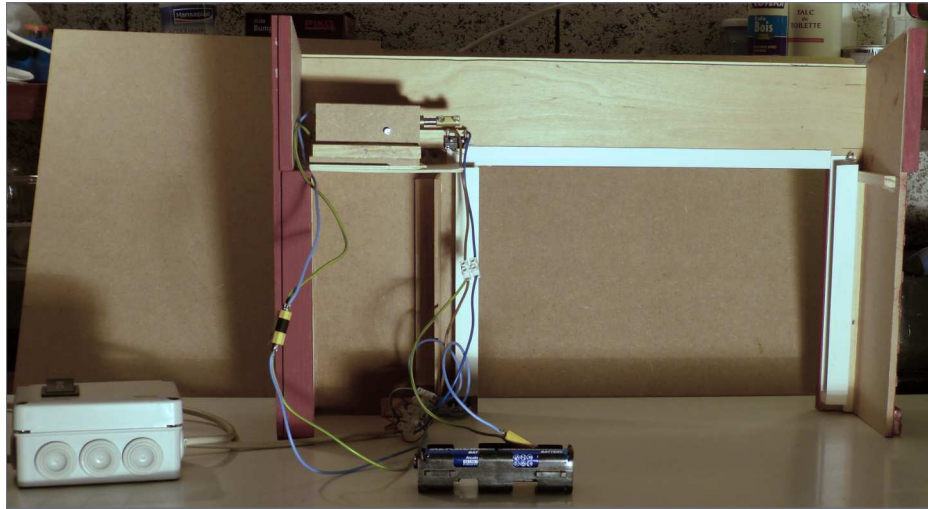
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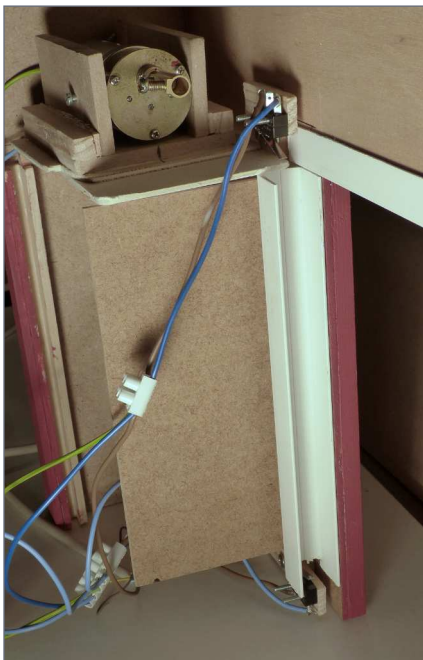
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9. Electrical circuit components: on top the motor, on bottom left the control box.



10. Upper and lower micro-switches shown on the left side.

place with strong double-sided tape [9].

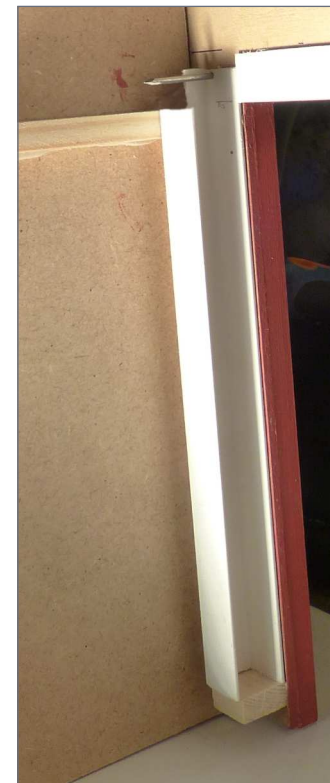
I placed two micro-switches on the top and bottom of one slide to ensure that the shutter stops in the up or down position [10].

On the other side, I made two mechanical slide stops to match the position of the micro-switches on left side. For the upper stop, I used a movable nail [11].

MOTORIZATION

I decided to use a 12V electric motor with reducer that has been sleeping in my parts box for ages. See the shopping list link at the end of this article for other motors you can use.

It turned out to be too powerful and too fast at 12 volts, so I used it at 4.5V instead.



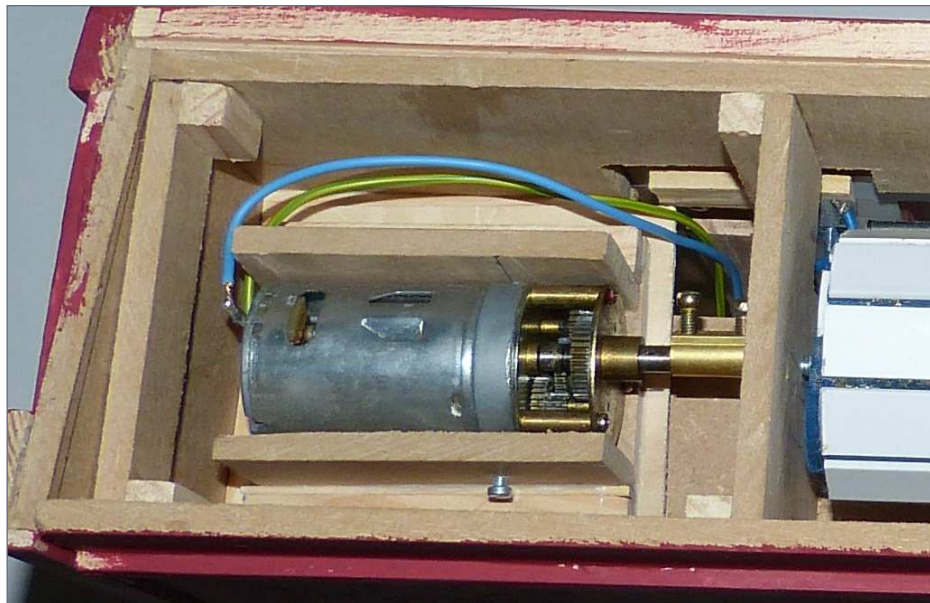
A lower voltage would have been even better. But I found it necessary to have a higher voltage since I use telephone wires linked to my control box placed at a distance.

I connected the motor shaft to the shutter shaft using a shaft coupler with screws [12]. See the shopping list link at the end of this article for shaft couplers you can buy.

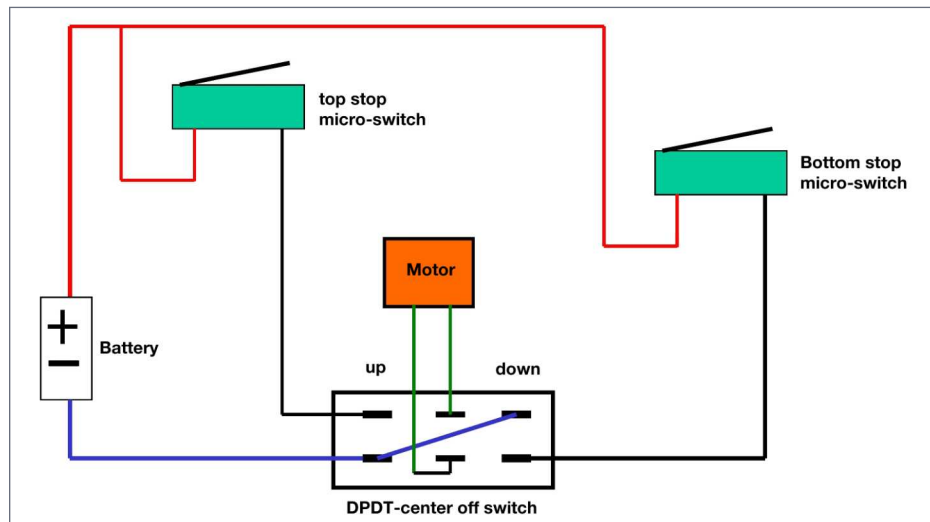
THE ELECTRICAL CIRCUIT

I used a very simple control scheme with a double-pole-double-throw switch and two micro-switches to limit travel [13].

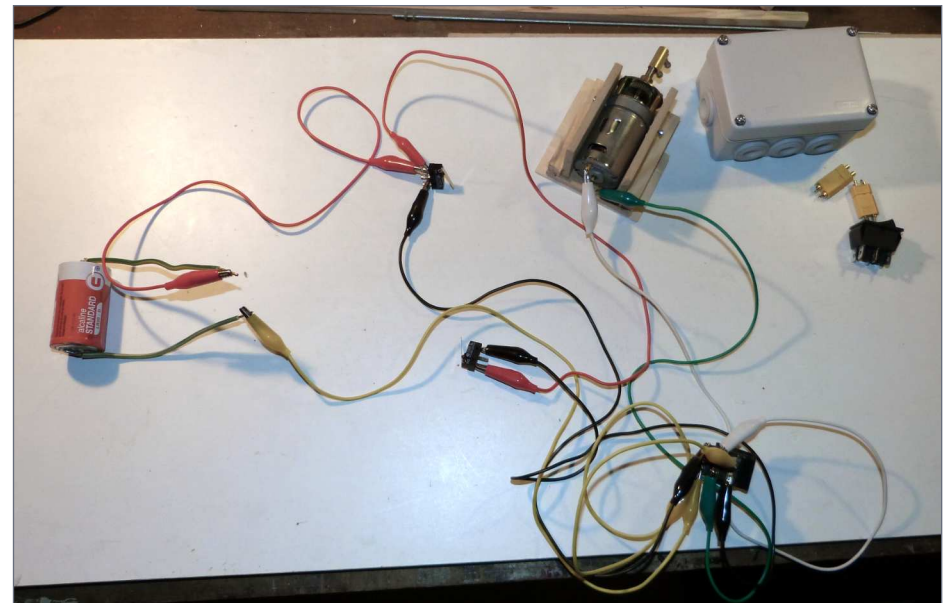
11. Upper and lower mechanical stops shown on the right side.



12. The electrical motor inserted in its support and coupled to the tube shaft.



13. Circuit diagram for my animated door.



14. Testing the motor wiring before installation.

I did a preliminary test of the wiring on the table to check that it works.

The up/down control switch for the motor I built into a small box. A 5-conductor cable connects it to the door module [14].

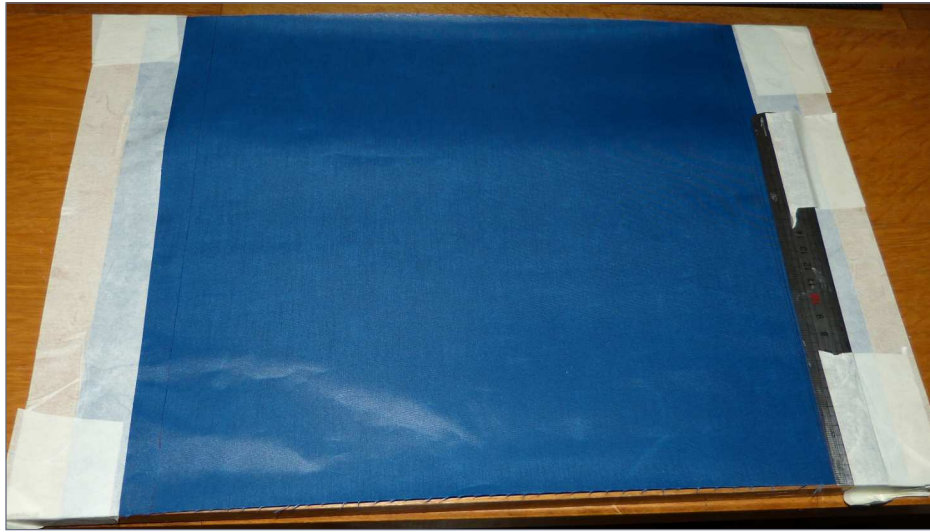
THE ROLLER SHUTTER

At first it was not too obvious how to have something both sturdy and functional.

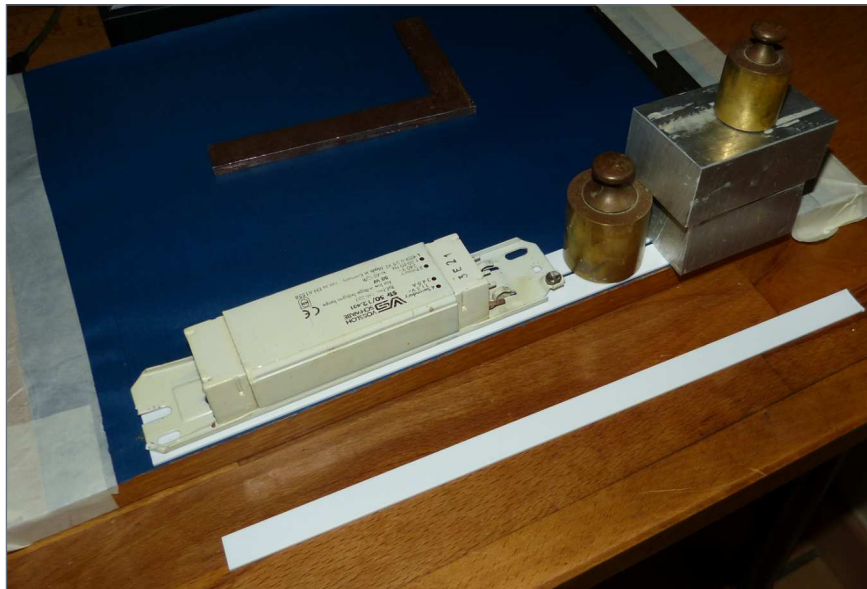
To make the shutter apron I used a piece of relatively stiff nylon fabric. It's sailcloth for model sailboard, from a time when I was interested in that. See the shopping list link at the end of this article for a source of nylon fabric for this.

I fastened it with tape on a support board. I taped a ruler on the side to have a guide when gluing the slats [15].

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15. The nylon sheet installed and ready to receive glued PVC slats.



16. I glued down two slats and weighted them while the glue dried.

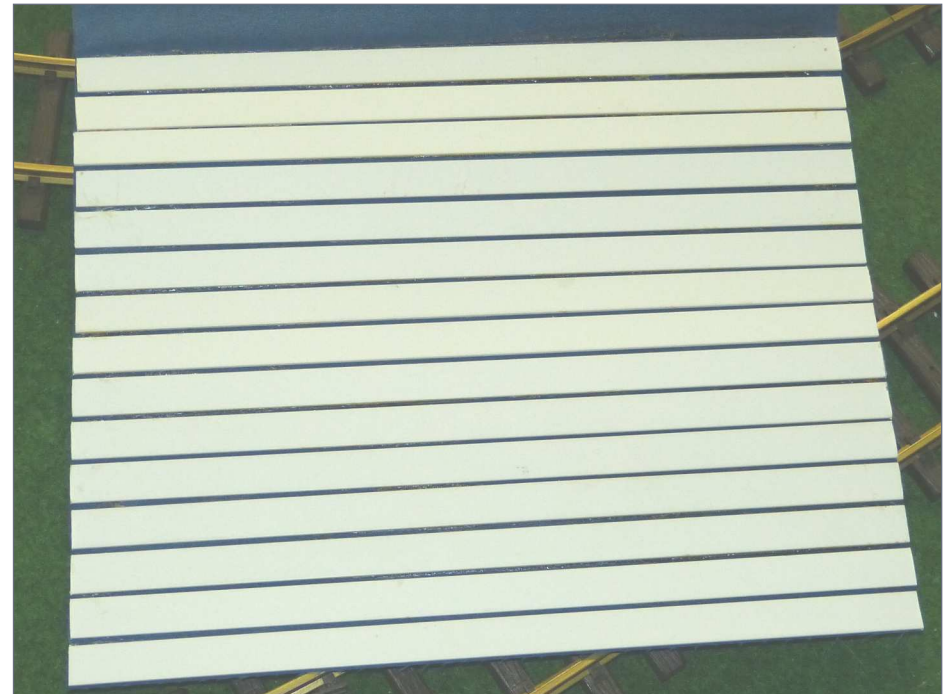
ANIMATING AN ENGINE HOUSE | 12

I bought the 10 mm wide PVC slats at a Home Depot or similar shop in 1-meter long lengths.

I used Henkel Pattex glue, which I applied in a narrow line down the center of each batten all along the length. See the shopping list at the end of the article for a source of this glue.

I then applied the strip on the nylon cloth and added some weights to hold it in place while the glue dried [16].

As these slats must wind up into a tube, I thought it was better not to stick the slats right next to each other but to leave a slight gap. I also worked to minimize the glue overflow between the slats [17].



17. The shutter door is finished.

ANIMATING AN ENGINE HOUSE | 13

I used the excess cloth without any slats to glue the rolling shutter to the support tube with double-sided tape.

To help the rolling shutter drive down better, I added some ballast consisting of two 4x8mm (1/8" x 1/4") metal bars glued on each side of the lowest batten. These bars help to actuate the electrical limit switches and help the shutters stay horizontal in the slides.

As these bars are metal and come to rest on the rails in the down position, I added adhesive insulating tape on the two bars [18].

I found the door shutter assembly to be very strong and to stay together just fine all throughout construction.

FINAL ASSEMBLY

For the shutter block I made a box of 6mm MDF with a horizontal slot for the door shutter to pass through and provided a clearance wide enough for the location of the top micro-switch [19].

I designed this housing to easily allow sliding in the electrical motor and the roller shutter drum.



18. The shutter block housing assembled. Note the slot to allow the shutter movement.

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The partition off to one side, firmly glued, helps hold things in place. I drilled a hole equal to that of the axial threaded rod down the center of the rolling shutter drum.

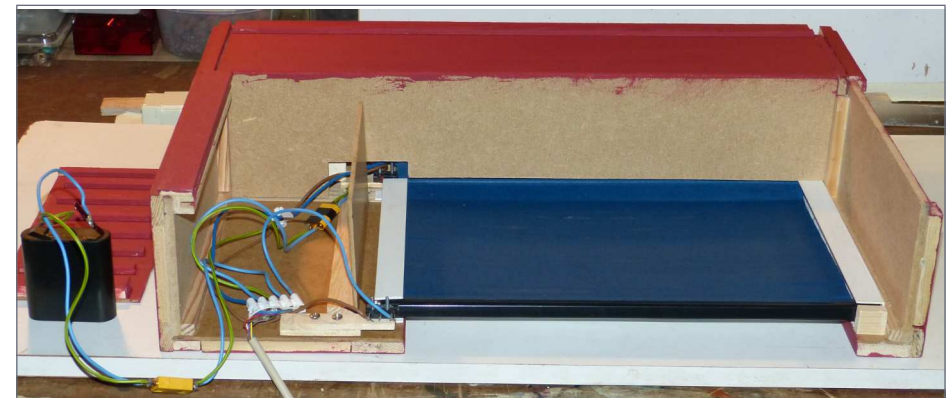
The center shaft attaches to the motor shaft using the shaft coupling with screws.

On the other end of the drum, I added an MDF plate with a hole for the center shaft drilled into it, allowing the drum to spin freely.

I slid the motor into place and connected up the wires, then passed them through the slot provided for the top micro-switch.



19. The shutter block housing in place and ready for action.



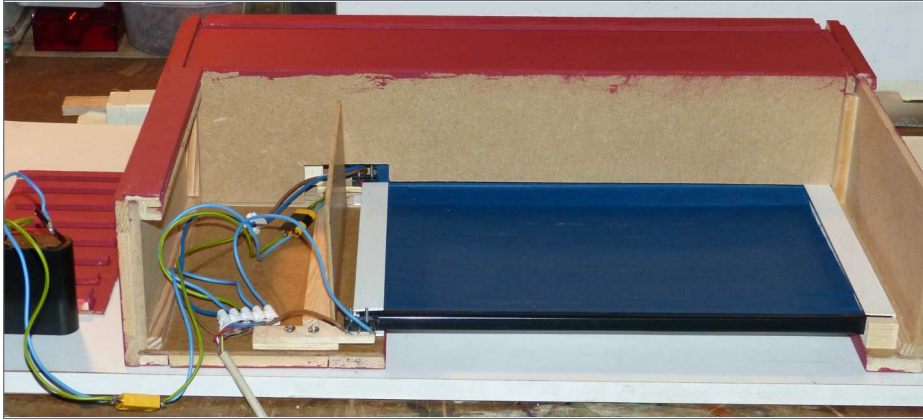
20. The shutter block installed in the door module and the shutter slid down into the side guiding rails.

ANIMATING AN ENGINE HOUSE | 15

Once fully assembled, I placed the shutter block assembly housing into place in the door structure module [20].

I unfolded part of the shutter and slid it into the guiding rails [21].

Next, I put the upper mechanical stop (small bar made of a removable nail) in place.



21. The shutter block installed in the door module and the shutter slid down into the side guiding rails.



22. The shutter door closed.

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Watch a video of this door in action can be seen on YouTube at: www.youtube.com/watch?v=cwDqLw5YTCY

You can find the shopping list for this article here:

mrhmag.com/magazine/running-extra/2020-05/animated-door



23. Another view of the engine shed in place.

JEAN-YVES MAZZOLENI



Jean-Yves Mazzoleni lives near Toulouse (France) in the heart of the European aerospace industry where he made his marketing and sales career, particularly over 25 years in Liebherr Aerospace and Transportation.

He discovered G scale railroading during one business trip in Germany a long time ago. Now retired, he is working on his indoor railroad started in 2013, one of his main daytime pursuits. ■



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Finally, I put the door module in place in front of the main building [22]. Ready to go! ☑

★★★★★
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24. Detail of the inside of the engine house.



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THE AH-HAH MOMENT

column



MRH Running Extra | August 2020

JOE FUGATE GETS FLUSH MUSIC WIRE
CUTS WITHOUT NICKING THE TOOL JAWS ...

★★★★★
RATE THIS ARTICLE

I'VE DONE SOME NO-NO'S WITH MY GOOD RAIL FLUSH CUTTERS and used them to flush cut music wire. The first time I tried that, it worked, but I permanently nicked my nice rail flush cutters. My bad!

I had to relegate my good rail flush cutter to "beater tool" status and replace it. The jaws on this cutter quickly got so marred from trying to flush cut music wire [1] that I had stop using it for that purpose and go to a motor tool cutoff disk to do the cutting.

But hauling out the motor tool to flush cut a piece of music wire gets old fast. I started wondering – can you get flush cutters specifically designed to flush cut hard music wire? It turns out, you can. *Ah-hah!*

I found these Xuron cutters on Amazon for \$25 (not cheap), but they do the trick and get rave reviews. One review reads ...

"If ever there was a proverbial perfect tool for a job, this is it for cutting small diameter music wire. In the past I had used a rotary tool



1. Using nice rail flush cutters to flush cut hard music wire will nick the jaws. Once wasn't enough for me and I ruined the jaws. Not a good idea!



2. These Xuron 2193F Music Wire Shears do a superb job of cutting hard music wire smoothly and cleanly. The jaws do not get nicked in the process!



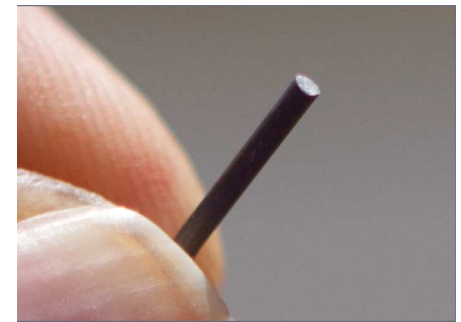
3. Here you can see the business end of these Xuron cutters. The jaws hold the wire on both sides of the cut, giving flush 90 degree cuts.

with a cut-off wheel to cut music wire – but that's time consuming and it's hard to make clean, accurate cuts.

These cutters worked perfectly to cleanly and precisely cut the wire. There's a very satisfying snap when you make a cut and the built in jaw clamps hold both pieces of the cut wire so they don't go flying (very important for the small pieces I was cutting). The cuts are also nice and clean. No burrs or nicks to clean up."

I have to agree. These cutters are amazing and they work perfectly. The jaws hold up and the wire doesn't go flying. Never again will I destroy good flush cutters on music wire! ☒

To get a shopping list for this article, visit the MRH website at this link: mrhmag.com/magazine/running-extra/2020-08/ah-hah-moment



4. Here's a close up of some 0.043" music wire I cut with these Xuron music wire cutters. Notice the perfectly square and flush cut!



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Bonus section!

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as well!

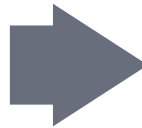
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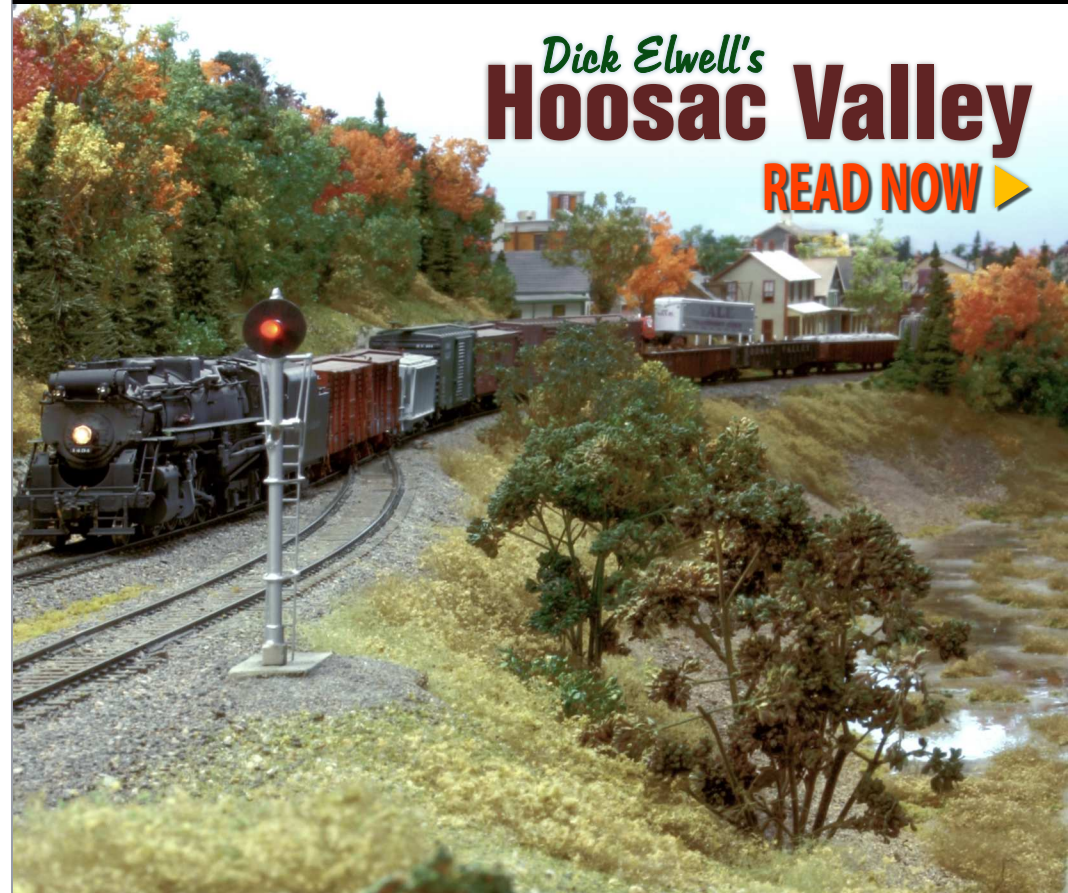


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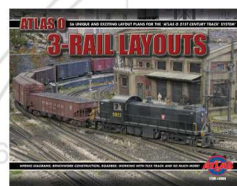
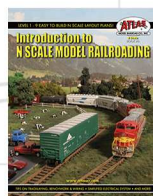
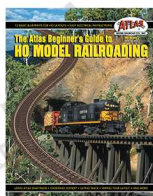
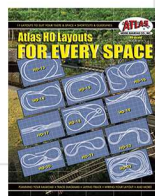
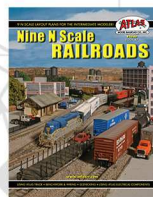
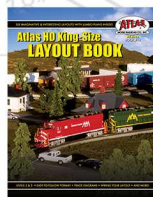
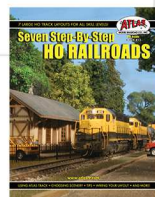
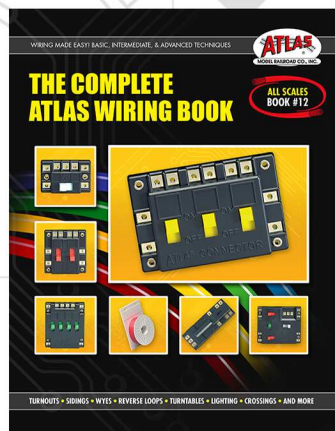
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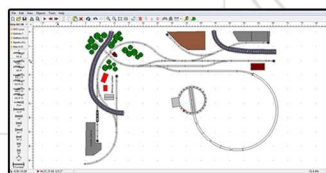
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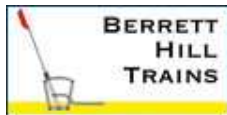
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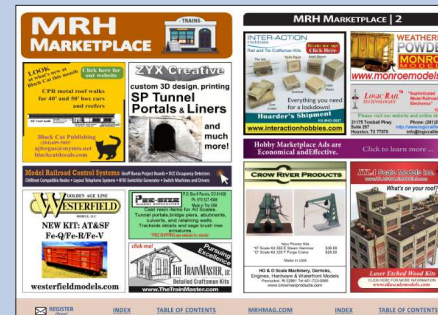


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Model Railroad Hobbyist | August 2020

JOE FUGATE ON THE NEW LOOK
COMING TO TRAINMASTERS TV...

★★★★★
RATE THIS ARTICLE

IT WAS BOUND TO HAPPEN SOONER OR LATER, BUT THE pandemic lockdown made it happen sooner: we're moving TrainMasters TV to remotely video'ed clinics!

We've been planning a major refresh of the TrainMasters look and to revamp our show lineup with many new shows. We had targeted January 2021 for these changes, but restrictions on our ability to travel means we're running out of video backlog.



1. This fall/winter, a new look will be coming to the Backshop Clinic.

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On top of that, modelers don't want a bunch of strangers descending into their basement (or spare room) bringing who-knows-what along with them in the process.

So that means we've almost exhausted our layout tours backlog. Fortunately, we do have a few layout tours left and Mike Confalone has been sharing more Allagash with us. But in a few months, we're out of raw layout footage.

Rather than wring our hands about it all, we're grabbing the bull by the horns and making changes in how we shoot our content so we can *keep bringing you* helpful and entertaining modeling videos every month on TrainMasters TV. One thing we're committed to: video quality must remain *top notch*.

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PUBLISHER'S MUSINGS | 3

The *New* Backshop Clinic

We're moving to webcast clinics, but with a high quality twist. We're using the web feed to manage the conversation, but the host and hobby-savvy guest both have additional HD webcams that we send them to capture the video and audio locally to an SD card. This gives us pristine HD footage of the webcast interaction, without noise or dropouts from internet throttling.

Both the host and guest also will be using a high quality lavalier mic that plugs directly into the HD webcam so that we get excellent audio.

For the hobby-savvy guest, we're sending them *two* webcams. They position one a couple feet away from their work surface to capture top quality closeups of the action. The "video crew"

BY POPULAR REQUEST



photo by: Gordon Lloyd Jr., Paul Wester Collection



Tri-clops Railfan ► Athearn

Thanks Athearn for yet ANOTHER run of the 2-window SD60Ms. What would be REALLY cool would be the 3-window Tri-clops versions. They're good for more than 3 railroads now. If we could get these in Genesis that would be grreeaat 🙌👍👏👏👏👏👏👏👎👎👎



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THE NEW BACKSHOP CLINIC

2. The hobby-savvy guest has two webcams that record the action locally to an SD card. This way we get high quality close ups so you can see the methods and techniques being demonstrated clearly.

will monitor the workspace closeup HD webcam feed over the web to make sure we don't miss something like a hand in the way during a critical step. We're doing high-tech internet-based video production deluxe!

This makes it easy to have a wider variety of guests in our TMTV clinics. No longer do you need to travel to our studio to present a clinic. You can demonstrate your methods from the comfort of your home, easy peasy!

We have both Rick Green (Backshop Clinic) and Bob Fal-lowfield (Notch8 / DCC Decoded) on board with hosting these remote clinics, so get ready for some fun new times as we begin rolling out this new clinic format!

There's a lot more to be said about the facelift we're giving Train-Masters TV, but I'll save those details for the October *MRH*.

BACHMANN



Entering Passenger Service This Fall Bachmann's 4-6-4 Hudson, Now in N Scale

The late 1920s brought about New York Central's need for faster, more powerful locomotives to head its famous passenger trains, such as the *20th Century Limited*. ALCO's 4-6-4 locomotive fulfilled that need as it entered service in 1927. Earning its nickname by operating along the Hudson River, the Hudson locomotive would later become an iconic symbol of both New York Central and fast, luxury rail travel.

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Then we have layout tours

You can see we have the live clinics portion of TMTV well in hand now.

But what about layouts?

Back when we first launched TrainMasters TV, we had a segment we dubbed "My Layout."

The idea was modelers could video their layout and send the footage to us – then we would add commentary around it, making it into a "meet the modeler and tour their layout" deluxe segment.

The idea never caught on so we eventually dropped *My Layout*. However, those segments had a wonderful fun organic feel to them that you just don't get with a standard layout tour feature.

I think the time has come to resurrect the *My Layout* idea. It's been seven years since we launched TMTV and a lot more modelers now have smartphones and tablets capable of some superb video.



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PUBLISHER'S MUSINGS | 6

So we're launching *My Layout* again and we will be putting out some guidelines for how to shoot video for it.

Please consider providing us some video for *My Layout* if you have a layout that's coming along. Ideally, you have at least a bit of finished scenery so we can see what you envision the entire layout eventually looking like.

And there's more, lots more

That's only some of the cool changes coming to TrainMasters TV. We're also launching several new scripted shows that don't have a host and the modeler simply presents their material following a script.

We don't shoot those segments live, so we take and retake the video footage as needed to get the optimum demonstration of the techniques. Scripted videos also don't have the chit-chat of the live clinics, so they're a bit more concise and to-the-point.

For an example of a scripted segment, see the free TMTV video I did on Zip Ballasting:

trainmasters.tv/programs/zip-ballasting-demo

I'll be spelling out much more detail on all the *new* Trainmasters TV updates in the October *MRH*. Fun times ahead! ☑

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LAST ISSUE'S RATINGS

The three top-rated articles in the [July 2020 issue](#) of *Model Railroad Hobbyist* are:

4.8 Installing a Loksound decoder

4.6 Zip Ballasting

4.6 July 2020 news

Issue overall: **4.4**

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

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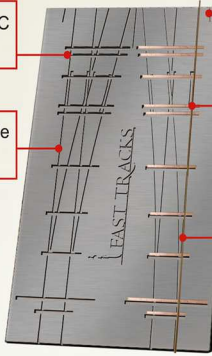


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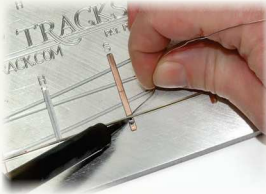
★★★★★
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★★★★★
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Best of the

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Website THIS MONTH

Model Railroad Hobbyist | August 2020

Compiled by **JOE FUGATE**

★★★★★
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Truck and wheelset painting

MRH forum member **Jeff Johnston** shows how he gets rid of the black plastic look of his truck sideframes and removes the new shiny silver appearance of his wheelsets.

With no muss or fuss, Jeff shows how he mounts the trucks on some skewers and sprays them down with a rusty brown color. Jeff then rolls the wheelsets on a paper towel and uses a q-tip dipped in lacquer thinner to clean off the wheel treads.

Read the full thread to get all the details.

[View the full thread on the MRH website](#)

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

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1. Thomas Gasior posted a video showing how he installed DCC sound into his loco using a 21-pin SoundTrax decoder and a Decoder Buddy.

Installing DCC sound into an Atlas C-424/425

MRH forum member **splitrock323** (Thomas Gasior) posted a video showing the details of this DCC sound decoder install into an Atlas Alco Century C-424/425.

Thomas included a SoundTraxx Current Keeper stay alive as part of the install, and he used an iPhone speaker – and managed to get it all to fit under the shell.

Once he got everything installed, Thomas took the loco out to the layout and fired it up for test. That iPhone speaker sounds pretty good!

Follow Thomas' install on the MRH website thread link below, which includes a direct link to the YouTube video of the install.

[View the full thread on the MRH website](#)



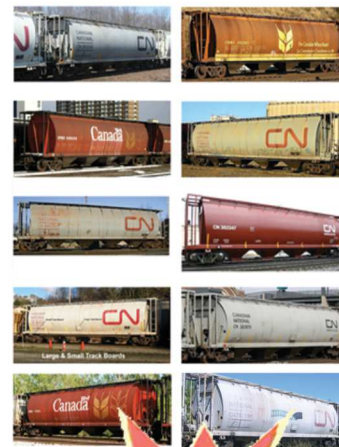
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2, 3. Greg Baker is building a series of modules for a switching layout project: the Astoria branch of the SP&S in Oregon circa 1968. Here are a couple photos from his latest blog post thread.

Astoria Plywood 1968 Spokane Portland & Seattle

Forum member **Mountaingoatgreg** (Greg Baker) posted photos of his latest module section he's building. Greg explains this module:

"I have been designing an HO scale switching layout (2' x 8') on the area around Astoria Plywood in Astoria, Oregon during October 1968. This was part of the Spokane Portland & Seattle A-Line that ran from Portland to Seaside, Oregon."

To follow Greg's progress, use the button below.

[View the full thread on the MRH website](#)

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Publisher/Editor
Model Railroad
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4. Bob Thomas is building a new TOMA layout that's a re-envisioned version of a previous layout he did inspired by an Ian Rice track plan. That's some superb modeling there, Bob!

The Crawford and Cherokee

MRH forum member **rjthomsas909** (*Robert Thomas*) lets us in on his thinking around the new TOMA layout he's building.

"Reading the articles on TOMA recently, I was inspired to build up a sectional layout which could be assembled for a short period at a time, storing it otherwise as roughly (3' to 7' x 1.5' modules. The plan starts with the existing section and a couple of new ones. Here, I document the planning, progress – and collect some feedback."

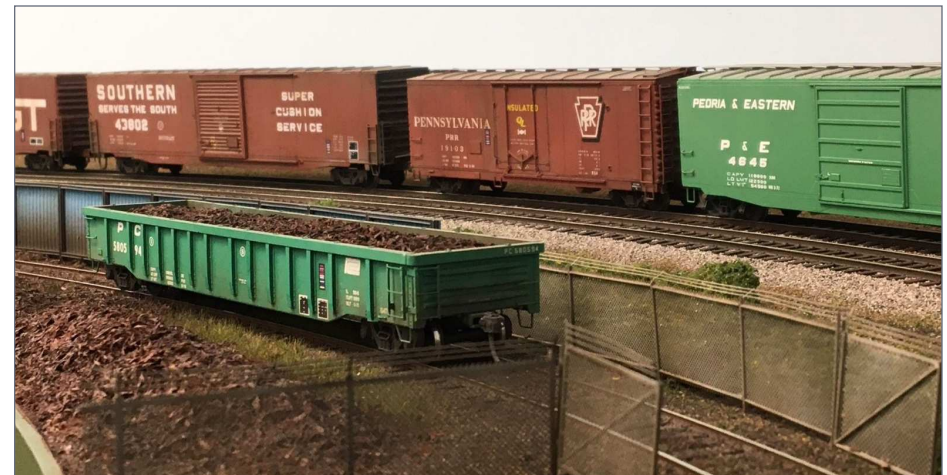
Visit the *MRH* website and participate in the dialog with Bob about his layout project. There are some awesome posts already ...

[View the full thread on the *MRH* website](#)

Latest *MRH* "Weekly photo fun" thread

As of this writing, here's a couple of the neater photos from the latest *MRH* Weekly photo fun thread. Check it out!

[View the full thread on the *MRH* website](#)



5, 6. *MRH* forum members **Mark Mathu** and **Tom Haag** posted these photos on the latest new *MRH* weekly photo fun thread. Visit this link to view all the great photos on this thread.



What's new on TMTV



DCC DECODED
Grade crossing signals



John Russell's steam era
Rock Island



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part 1



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WHAT'S NEAT



column

Model Railroad Hobbyist | August 2020

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KEN PATTERSON'S COLUMN THIS MONTH ...

- Tailing a UP Officer Special train with a drone
- Installing 8, 9, and 21 Pin Decoders
- Campbell Rice shows off his layout ...



WHAT'S NEAT!
MODEL RAILROADING
8, 9, and 21-pin
DCC installs



August 2020 show

PHOTOS AND VIDEO OF SUPERB MODELS

THIS MONTH KEN DESCRIBES HOW HE KEEPS TURNOUT POINTS CLEAN; shares a Steven M. Conroy drone video of UP 1111, Powered by our People, pulling a business train through California mountain scenery; demonstrates installing 8-, 9-, and 21-pin non-sound DCC decoders; and visits Campbell Rice's layout to see how much progress he's made in eight months.

Modeling Ideas from Above



1. Steven M. Conroy chases a Union Pacific business train led by UP 1111 "Powered by our People" through the California scenery. The angle and distance of the drone video is similar to a modeler's viewpoint of their layout, making videos like this a useful reference for modeling scenery as well as the trains.



2. A pair of HO scale Athearn Genesis SD70ACe models, one of which Ken uses to demonstrate installing a 21-pin decoder.

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in **MRH** **RUNNING** **EXTRA** ?

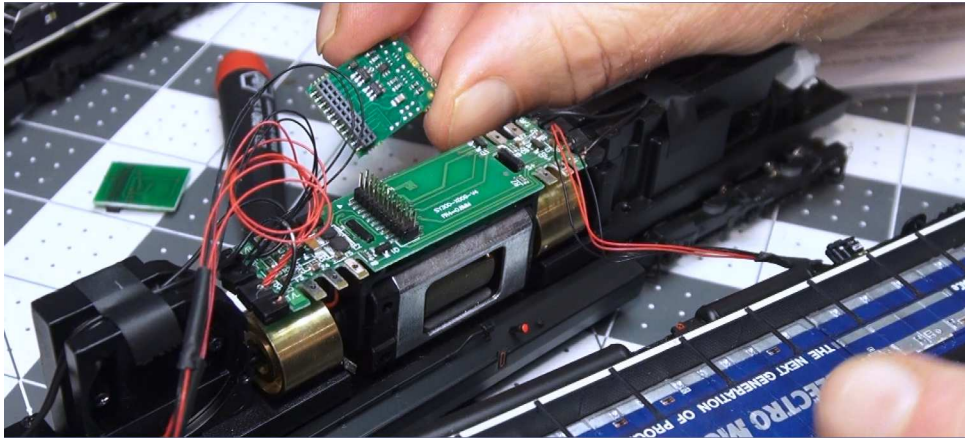
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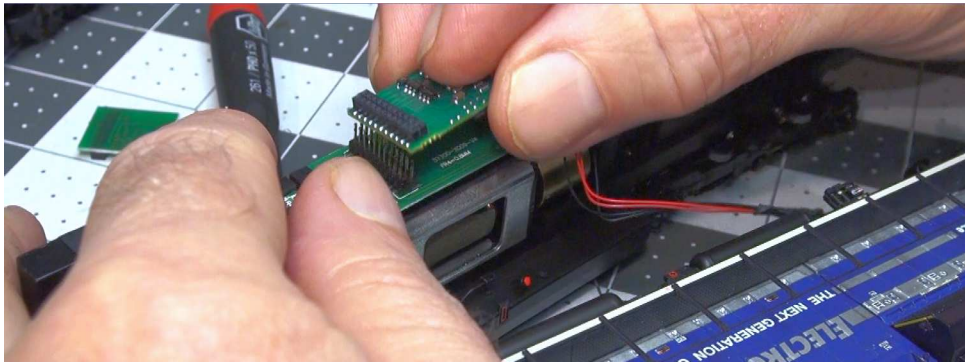


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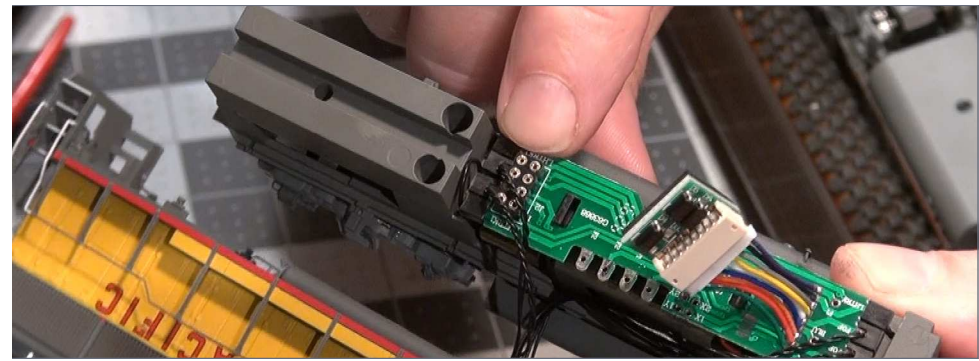
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3. To install a 21-pin decoder, first remove the shell by removing the couplers and a screw at each end of the fuel tank. Then remove the small circuit board, sometimes referred to as a "Dummy Plug," that allows the model to run under DC power without a decoder installed.



4. To install the 21-pin decoder, simply press it onto the pins on the motherboard. Note that the connector side is up, and the motherboard is missing a pin that matches a filled in hole on the decoder connector to prevent the modeler from installing it backwards. Ken is using an NCE D16MTC decoder for this installation..



5. With this Athearn GP38-2 locomotive, removing the shell only requires removing the couplers. The Athearn "Quick Plug" motherboard includes both the 8-pin NMRA and 9-pin JST sockets. To install a 9-pin decoder, unplug the dummy plug from the 9-pin JST connector.

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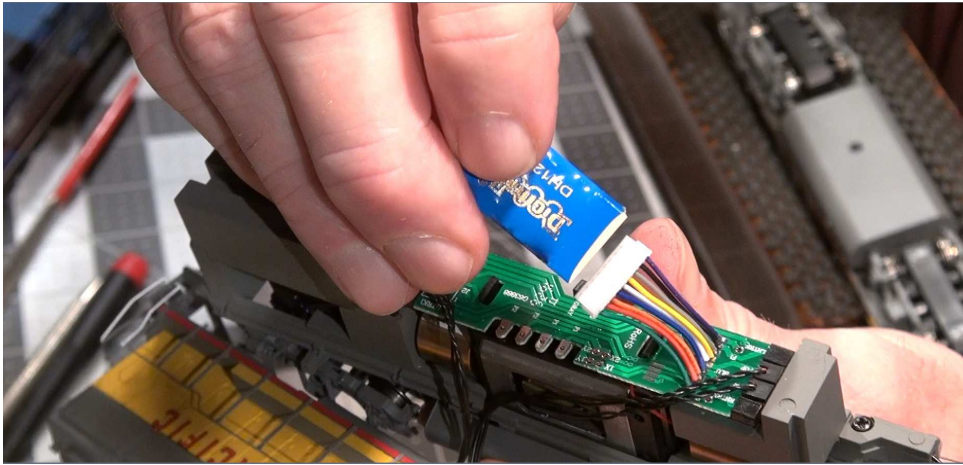


↓ Car with Load ↓



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6. The Digitrax DH126PS decoder that Ken is using for this install can be plugged directly into the 9-pin JST connector on the motherboard. Replace the shell and reinstall the couplers to complete the installation.

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Scratchbuilding
six YV boxcars

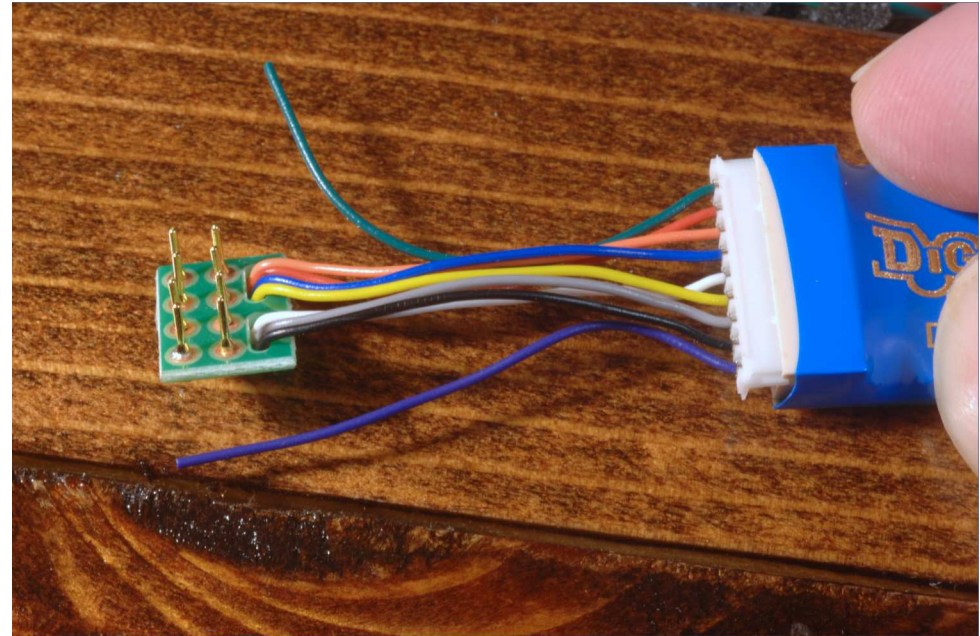
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7. The DH126PS decoder includes a 9-pin to 8-pin harness, allowing its use on models where only an 8-pin NMRA socket is available. Just plug the harness into the decoder’s 9-pin socket.

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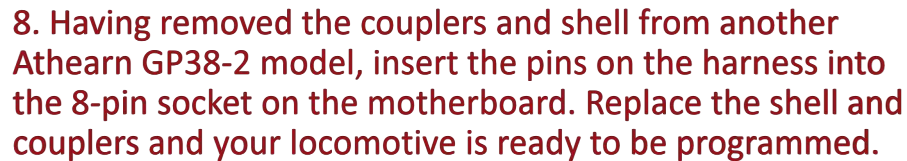
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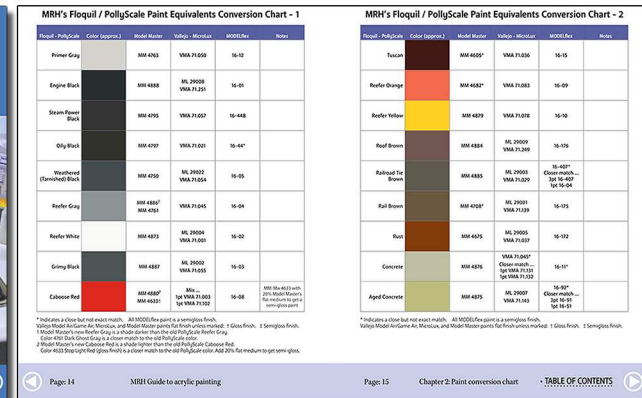
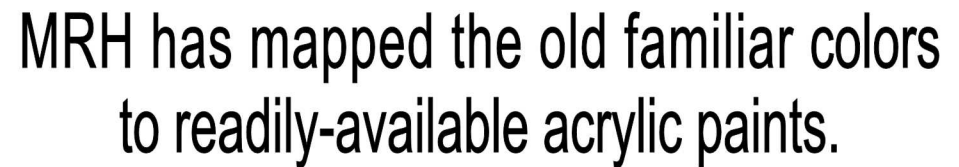
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WHAT'S NEAT | 9



9. Ken visits Campbell Rice to catch up on what Campbell has accomplished on his layout since he started building it eight months ago. Campbell's layout is built on modular foam sections on top of 1"x4" benchwork for ease in changing scenes. He has also connected the layout's power to a device linked to a Google Hub, allowing him to turn on the power to the layout by voice command.

★★★★★
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10. Campbell uses Ring Engineering's RailPro™ system to control his locomotives. Both sound and non-sound equipped Locomotive Modules (LMs) are available from RailPro and are directly controlled by the wireless handheld controller seen here. When consisted, the LMs communicate with each other wirelessly to speed match automatically. Current LMs can also be used as DCC decoders.

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Remotor a brass
4-8-2 steam loco

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11. Campbell's switch yard is used as a staging yard to make up trains quickly.

The back two tracks will be modeled as an intermodal facility. Campbell has built a diesel service facility and car shop on the far end of the yard. Minimum curve radius is 26" on the mainlines and 22" on secondary track. The layout benchwork is designed to have a track height of 43" above the floor. The entire layout in a 53' x 20' room.



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12. In this photo is a peninsula where Campbell is laying out an industrial switching area. The area is still in the planning stages, but the intention is to have a variety of car spots and switching potential. Campbell is also planning on installing LED spotlights for overall layout lighting.

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



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

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13. This river is made of Magic Water™ from Unreal Details, with a base of "Micro Engineering Stone" that comes from a creek located next to the Micro Engineering company factory in Missouri. Ken has also used it as N scale ballast in the past. The bridge is a 200-foot long Central Valley product.



14. For the background buildings, Campbell takes photographs of real buildings and has them resized to HO scale. Placed along the backdrop of the layout they add a lot to the realism of the scene.



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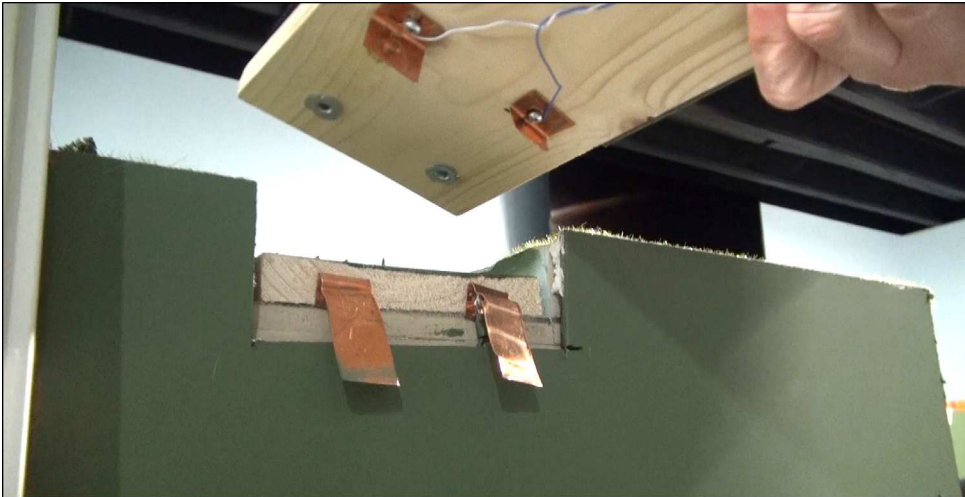
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15-16. The lift out section across the main door of the room is simply a board with track on it that fits into grooves cut into the foam of the adjoining modules. Alignment is handled by T-nuts screwed into the board fitting over pins on the modules. As can be seen, simple copper contact strips on one end conduct power to the track on the board. ☑



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21st century turnout frog wiring



**Electrical
Impulses**

Model Railroad Hobbyist | August 2020

JOE FUGATE DISCUSSES HIGH TECH TRICKS FOR WIRING YOUR DCC LAYOUT TURNOUT FROGS ...

THANKS TO THE PROGRESS OF TECHNOLOGY IN THE HOBBY,
 being a modeler in the 21st century brings us new options for
 dealing with the electrical wiring of turnout frogs.

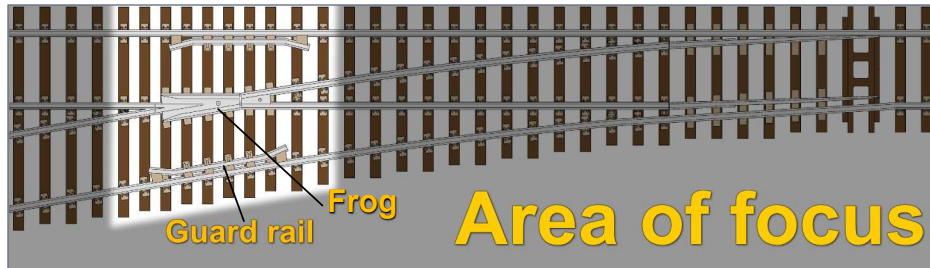
But before I delve into the electrical side, first I want to discuss
 the different frog construction methods, because they can
 affect what wiring choices we have.

★★★★★
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1. In this article, I'm focusing on just the frog area of a turnout. I do not deal with the rest of the turnout outside the designated area.

FROG CONSTRUCTION VARIATIONS

I'm focusing on just the frog area, which includes not only the frog but also the guard rails [1].

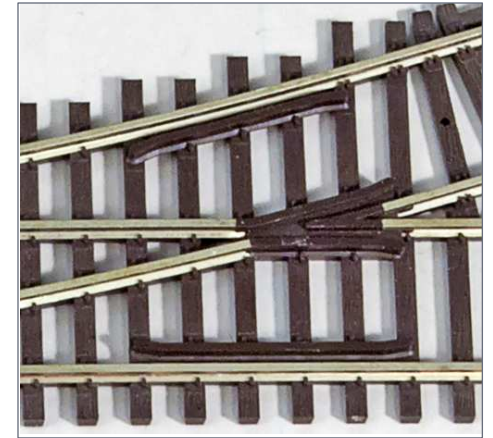
You will find three different types of frog-guard rail construction:

1. **All-plastic:** The frog wing rails, middle point of the frog, and the guard rails will be made totally of plastic [2].
2. **All-metal:** The frog wing rails, middle point of the frog, and the guard rails will be made totally of metal, either machined rail pieces [3] or cast metal.
3. **Plastic-metal hybrid:** Some part of the frog will be metal (most often the wing rails) and other parts of the frog will be plastic (most often the middle point of the frog). The guard rails may be either metal or plastic in hybrid construction [4].

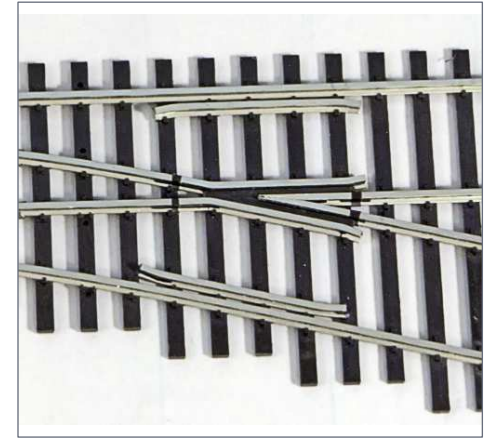
These different frog construction methods do more than just alter the cosmetic aspects of the turnout frog area. They also affect how you wire the frog.

For example, if you're running sound locomotives and you find the sound cuts out over the dead frog, powering a plastic frog will not be

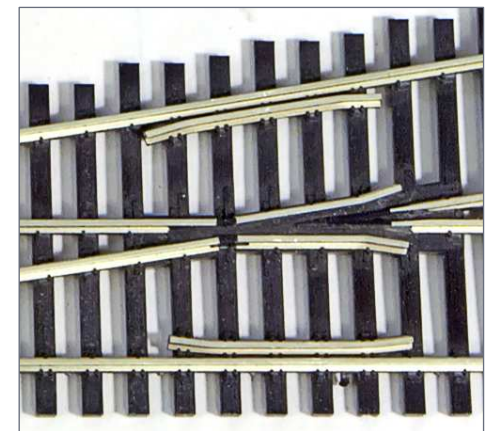
2. All-plastic frog area construction. Note the entire frog (wing rails and central frog point) is made of plastic. Also the guard rails along the two outside stock rails are made of plastic.



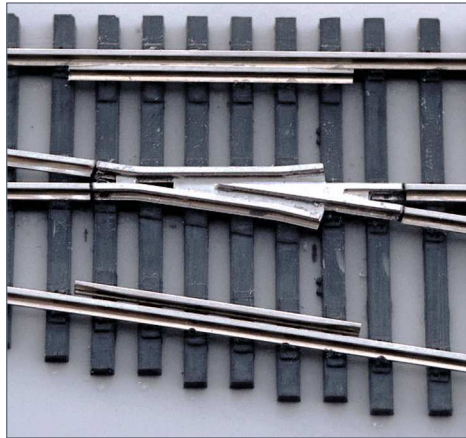
3. All-metal frog area construction. Note the entire frog (wing rails and central frog point) is made of metal. Also the guard rails along the two outside stock rails are made of metal. Note the plastic-filled insulating gaps at both ends of the all-metal frog.



4. Hybrid plastic-metal frog area construction. While the frog wing rails are metal, the center frog point is constructed of plastic. The guard rails in this case are metal, but in some hybrid cases, the guard rails may be plastic.



5. A variation on the all-metal frog is a metal frog casting. Rather than using individually machined pieces of rail, the frog uses a one-piece metal casting.



an option. Your only recourse may be to rip and replace the turnout. All-metal frogs give you the greatest latitude later since they allow you to power the frog as needed.

For this reason, I recommend you avoid all-plastic and hybrid frogs if you don't want to be boxed in later regarding how you power your frogs. Plastic can't be powered, so you're "up a creek without a paddle" if the frog has plastic parts.

Now let's get into the specifics of turnout frog wiring.



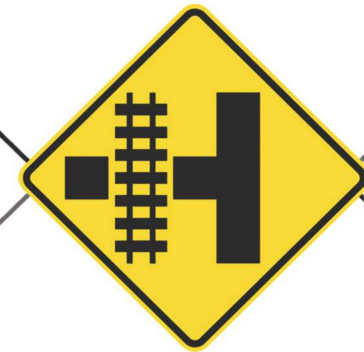
J. Fugate

ANOTHER REASON TO AVOID PLASTIC FROGS

Another non-electrical reason to avoid plastic frog parts: this part of the turnout critically affects how the turnout performs. The check gauge tolerance between the guard rails and the central frog point must remain constant if you want consistent running performance through your turnouts. Plastic frog parts represent a short-term "train set" mentality where you don't expect the parts to have a long service life. Metal parts will maintain their tolerances long term and won't wear easily like soft plastic parts. ■



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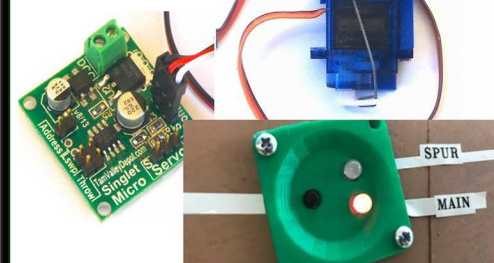
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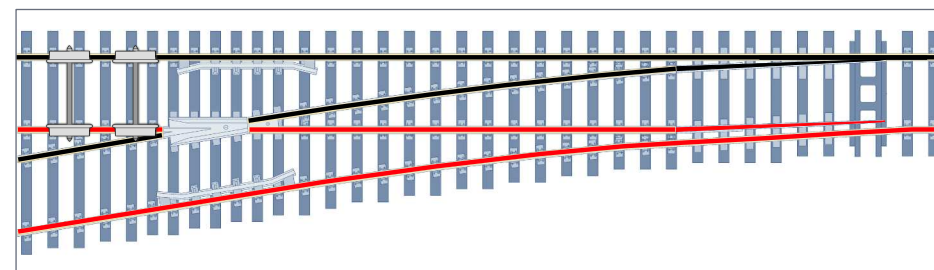
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21ST CENTURY TURNOUT FROG WIRING | 7

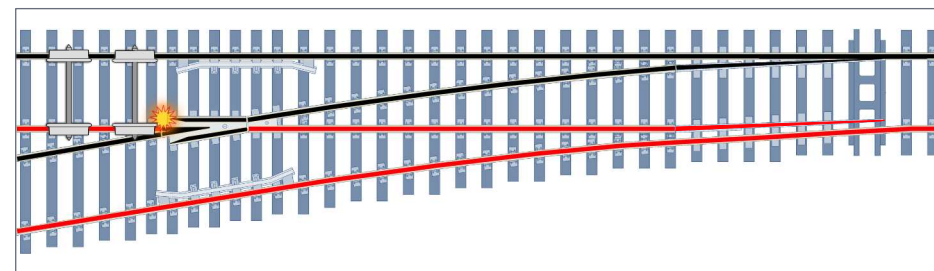
TWO BASIC APPROACHES: LIVE OR DEAD

When it comes to wiring your frogs, you have two basic approaches: live powered frogs or dead unpowered frogs.

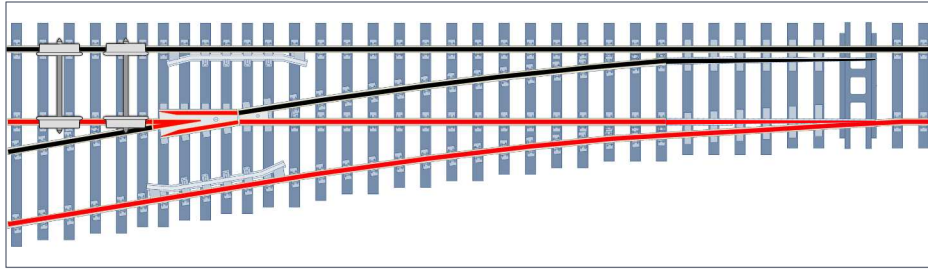
Dead unpowered frogs assume you put gaps on both sides of the frog and then just do not power the frog [6]. As long as the distance between the two sets of gaps remains short, modern all-wheel pickup locomotives typically roll over the dead frog unhindered.



6. With a dead frog, you never get a short at the frog, even if the turnout is thrown against you as in this diagram. It does mean you're likely to derail when you reach the other end of the turnout, however.



7. With a live frog, you get a short at the frog when the turnout is thrown against you as shown here. On a DCC layout, a short anywhere can be bad if you have not implemented short management: see "DCC bus wiring 101" in the April 2015 *MRH* for more on managing DCC shorts.



8. Throwing the points the proper direction for the oncoming train causes the live frog polarity to be correct and the train rolls right on through without causing a short.

Powered frogs eliminate the dead spot over the frog, but they introduce a new problem: shorts.

With a powered frog, you need to change the polarity to match the direction the turnout is thrown so locos can roll through on a frog powered to match the surrounding rails [8].

However, if a train enters the turnout from from the frog end and the points do not align with that leg of the turnout, the train will cause a short when it reaches the frog. The frog polarity will be wrong [7], resulting in a short.

So with a live frog, the good news is the train does not derail on the points thrown against it as it does with a dead frog. But the bad news is with a live frog, the train will short out at the frog when you have the turnout incorrectly aligned.

On a DCC layout, shorts on live frog turnouts will be a royal pain unless you have implemented robust short management. For more on implementing this kind of short management, see the “DCC bus wiring 101” article in the April 2015 issue of *MRH*.

So why not just go with dead frogs and avoid the shorting problem completely?

WHY DEAD FROGS MAY NOT BE THE ANSWER

While going with dead unpowered frogs sounds good and may work okay, shorter wheelbase equipment may still stall on those dead frogs.

And as your loco wheels start to get dirty, you will begin to experience more stalling on those dead frogs from a loco of any length, which can be really annoying.

Plus you may find certain locos have the perfect wheelbase length [9] to get both ends on dead frogs in a yard ladder with #5 turnouts!

Finally, you may find as I did, sound locos will cut out over the dead frogs. A loco with flywheels may have enough momentum to roll right over that dead frog. But the onboard sound decoder still sees the dead frog and the sound will cut out.

Once the loco gets back to powered track, it will execute the loco start up sound sequence again, adding insult to injury from the sound cutting out. As I added more sound locos to my layout, this behavior of sound locos over the dead frogs became extremely annoying.



J. Fugate

OLD SCHOOL FROG POLARITY METHODS

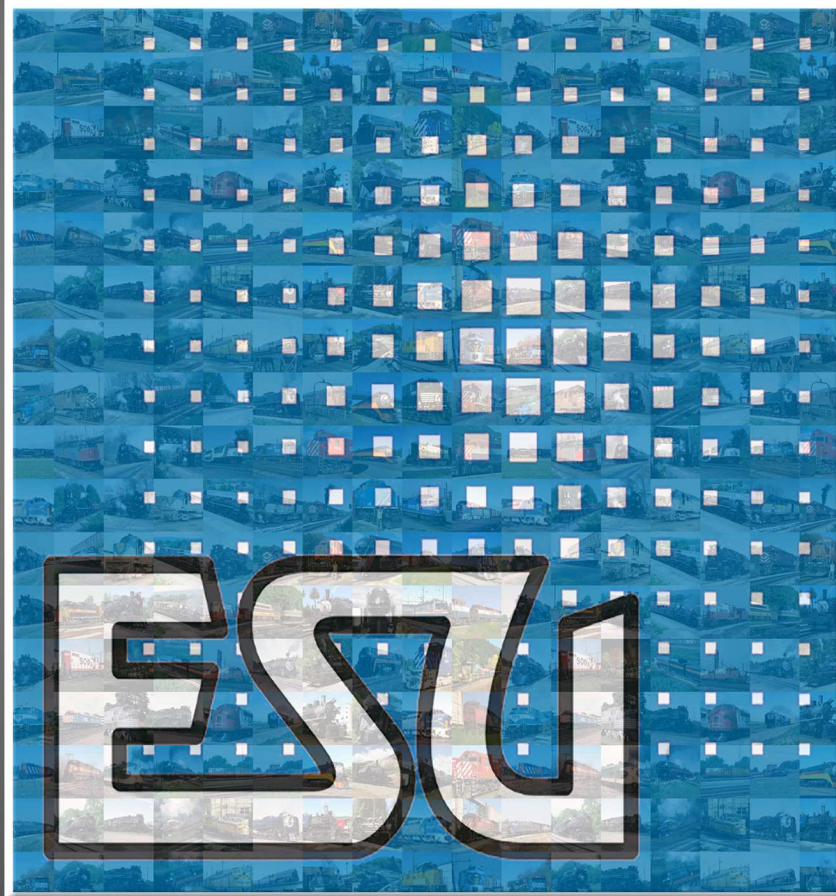
A popular old-school method for changing the frog polarity to match the direction the points have been thrown has been to use contacts on the switch machine. Or you can use a microswitch and have some mechanical extension move it when the turnout gets thrown.

Out of the box, some turnouts like PECO include frog polarity switching through the points and their contact with the stock rails. While this works at first, it becomes unreliable as the point-to-stock-rail connection gets dirty with age.

Using the switch machine contacts remains the best mechanical means for switching frog polarity. ■

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21ST CENTURY TURNOUT FROG WIRING | 10



9. One problem with unpowered dead frogs is they can create a perfect length "dead spot" as shown above. Line up several of these in a tight yard ladder and it could be a conductivity mine field.

HIGH-TECH SOLUTION 1: STAY ALIVE

One modern 21st century solution to the dead frog stalling problem: add a stay alive circuit to your DCC locomotive.

Most stay alives will keep the loco running for 1-6 seconds – plenty long enough to get over a dead frog. However, if you stop and sit on a dead frog, the stay alive will drain and then you may be stalled anyhow – so do be aware of this.

Stay alive also helps the loco run more consistently on the rest of the layout. If you have any other complex trackwork like a crossing with dead sections, the stay alive solves that as well.

The stay alive also helps you keep things running even if the wheels and track get dirty. And if you're like me, you have some locos that seem especially sensitive to dirty wheels and track. The stay alive really helps on those locomotives.

21ST CENTURY TURNOUT FROG WIRING | 11

For more details on selecting and installing stay alive, see the May and June 2019 issues of *MRH*.

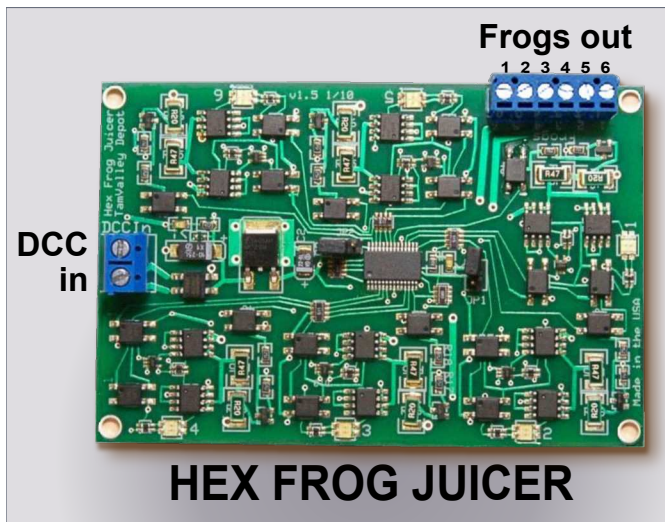
HIGH-TECH SOLUTION 2: FROG JUICERS

As I said, dead unpowered frogs sounds good, but shorter wheelbase equipment may still stall on those dead frogs.

The DCC techies figured out they could build a circuit to detect a short in the track and swap the polarity in the rails in mere micro-seconds, well before the short actually had a chance to affect anything and turn into a real short. The result?

No longer do you need to wire separate mechanical contacts somewhere to flip frog polarity. You can just have a smart reversing circuit to “juice” the frogs with the proper electrical polarity with no moving parts!

Thanks to a frog juicer, you can now power any frog simply by running a single wire to that frog from the frog juicer board. It makes sure the frog polarity is correct and doesn't actually turn into a real short.



10. This hex frog juicer board feeds six frogs with automatic polarity switching on a DCC layout. No physical contacts are needed, the board senses if the polarity is wrong and switches it electrically.

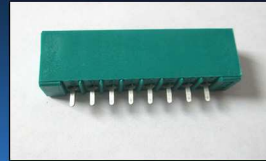
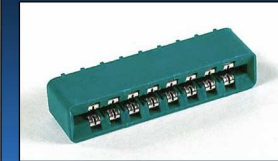
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WHICH IS BETTER: STAY ALIVE OR FROG JUICERS?

So which is the better 21st century solution to the problem of dead versus live frogs: stay alive or frog juicers? Like many things, the answer is, it depends.

A stay alive costs \$20-\$25 per locomotive if you buy an off-the-shelf version. If you build it yourself, it can be as little as \$5-\$8 per loco.

If you buy a hex frog juicer, it costs about \$72 street price, or about \$12 per turnout. If you buy a single frog juicer, it's about \$14, which costs a bit more.

In my case, I have about 65 locos in my roster and I had about 120 turnouts on my Siskiyou Line 1 layout. Doing the math using average prices:

STAY ALIVE

65 locos x \$22.5 stay alive = \$1,462.50

FROG JUICERS

120 turnouts x \$12 stay alive = \$1,440.00

In other words, its more or less a wash. If I had to choose, however, I would go with stay alive because that will improve locomotive performance on the entire layout.

THE CHESTER PRINCIPLE

As I have been writing my [Run like a Dream book series](#), I've started to look at how to get flawless performance and defeat Murphy every chance I get. For those who may not know the reference, the Murphy Principle basically says "If it can possibly fail, then it will fail at the worst possible time."

I have found one approach that seems able to finally defeat Murphy – I'm calling it the Chester Principle, named in honor of Chester Goode from the old Gunsmoke TV series [11]. It can also

be called the "belt and suspenders" approach because that's what good ol' Chester did – he wasn't known for taking unnecessary chances, so he wore both a belt *and* suspenders!

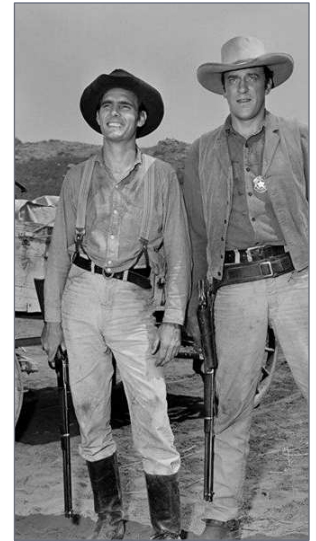
On my Siskiyou Line 2 (SL2), I've decided to take the Chester Principle approach and use both frog juicers and stay alive in my locos: belt *and* suspenders.

I asked myself how much is flawless performance really worth to me? Since I'm building SL2 a couple modules at a time, it doesn't cost that much more to add frog juicers to a few turnouts. Yes, I will pay more in the long run, but in the meantime, I can enjoy absolute flawless performance.

I've run trains on a couple of SL2 modules now with both stay alive in the locos and frog juicers on the turnouts with *absolutely delightful results*. The locos just run, and run, and run without stalling or shorting out anything – *ever*.

I discovered one big serendipity: I used to clean the loco wheels and track after every op session (every 3-4 hours of operation). With the belts-and-supsenders approach, I can run trains for 30-40 hours before needing to clean the wheels and track. Wow!

So it all depends on how much you want *guaranteed* flawless operation. If you're looking to keep the price lower, then just do dead frogs and go with stay alive in your locos. If you're like me and you want the most bulletproof performance possible, then take the belt and suspenders route and *do both*. ☑



11. I named the "Chester Principle" after Chester Goode on Gunsmoke because his character takes no chances – notice he wears both a belt *and* suspenders!



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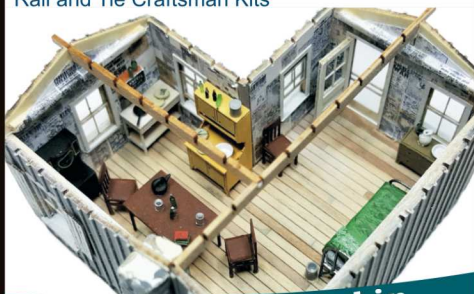
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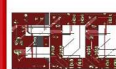
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1. An Atlas RS3 in New Haven paint pulls freight across the deck truss bridge just west of North Adams, Massachusetts. Dick made the waterfall from cotton fibers soaked with decoupage casting resin laid over waxed paper.

Model Railroad Hobbyist | August 2020

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ROBERT SCHLEICHER TOURS THIS NEW ENGLAND LAYOUT ...

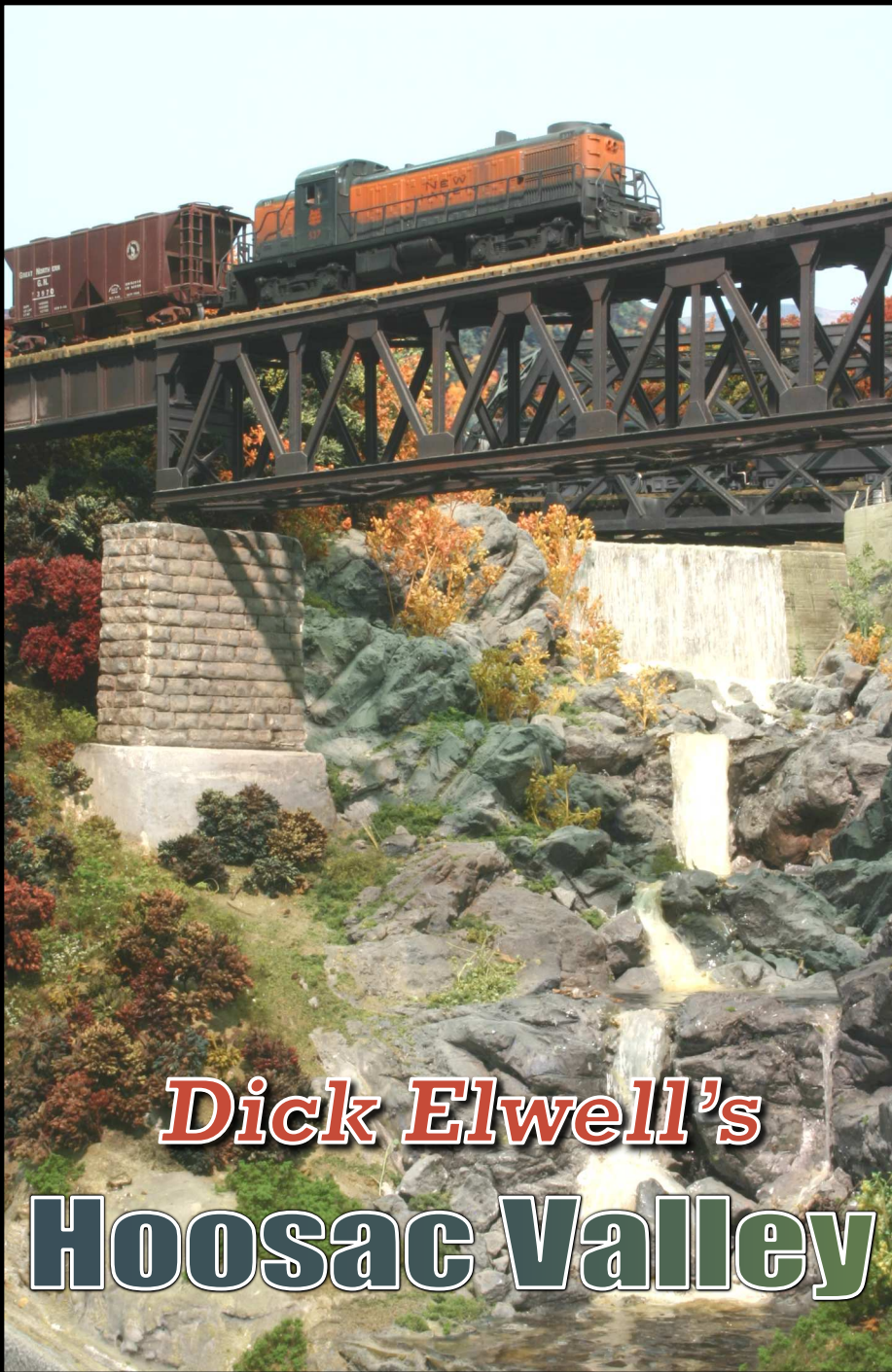
ON HIS 34' x 64' HO SCALE LAYOUT, Dick Elwell recreates scenes in the Berkshire Mountains along the railroads of western Massachusetts and eastern New York.

This is only the second layout Dick built. He started his first layout of the same theme in 1961. In 2002, he moved to a new home with a basement designed to accommodate a model railroad.

Dick liked his work on the first layout enough to keep complete sections of it, and move them into the new layout space.

He cut entire scenes at Whitehall, Adams, North Adams, and Berkshire Junction from that first layout and transported them whole to become major portions of this new layout. He built an entire new peninsula at Hoosac Falls and upgraded the previous layout segments completing the new layout by 2006.

He designed this layout so it can be operated as a point-to-point line with locomotive turning facilities at the extreme ends of the line at Whitehall and Berkshire Junction.



The staging yard serves for both south staging at Pittsfield and north staging at Essex Junction because Dick linked staging to both ends of the layout. The tracks through the Pittsfield/Essex Junction staging yard can also allow the option of continuous-running operation.

Dick built the layout on open-grid benchwork with 5/8" plywood roadbed and handlaid code 83 rails on wood ties. He equipped his locomotives with North Coast Engineering (NCE) DCC decoders.

He covered the layout with thousands of trees using colors matched to photo mural backdrops of scenes from the Berkshire Mountains. For the majority of the trees, Dick used candy tuft (sesame bloom) weeds.



2. The Pittsfield yard, a visible staging yard, serves both south and north cities off the layout.



3. This small flag stop station on the left sits just outside of Berkshire Junction (upper right), with the tip of the Hoosac Falls

peninsula barely visible on the right.



4. The peninsula that houses the town of Hoosac Falls is one of the completely new portions of the layout.



5. The Keller Bay and Whitehall areas came entirely from Dick's previous layout.



6. Eagle Bridge shares that typical small New England town look, with a station, nearby creamery, and icehouse.

Dick sprays them all yellow as an undercoat, then sprays on accents of greens, reds, and oranges. For portions of the wooded hillsides, he placed hundreds of tufts of Scenic Express polyfiber to which he glued ground foam with spray adhesive.

The dirt is real dirt, sifted through a tea strainer, and Dick used ground foam and fibers from Scenic Express for most of the grass.

Dick conceived the original layout as a completely fictitious bridge line connecting the New York Central with New Haven and the Delaware and Hudson. Dick postulated that all three roads shared motive power with his fictitious Hoosac Valley Railroad, which enabled him to operate three different real railroads' locomotives over one railroad. He also stipulates that the Boston and Maine Railroad shared motive power with his Hoosac Valley, so the B&M diesels run in regular operation.



7. Berkshire Junction on the left, came entirely from the original layout. A portion of the Elwood Stone Company quarry near Adams can be seen across the aisle to the upper-right [8].



However, Dick has enough New Haven and New York Central motive power and matching cabooses that the layout can be served exclusively by either road. When he tires of operating a fictitious railroad, he has the option of making the layout a reasonably accurate New York Central Railroad or a New Haven Railroad.



Since both railroads had extensive operations in the Berkshire Mountains that Dick has so successfully recreated, the images come across as quite credible.

With the large staging yard, he also has the opportunity to recreate modified versions of the train action on employee timetables of either road.

8. Farnams and Cheshire sit on the left, with the Elwood Stone Company quarry and Adams visible on the right.



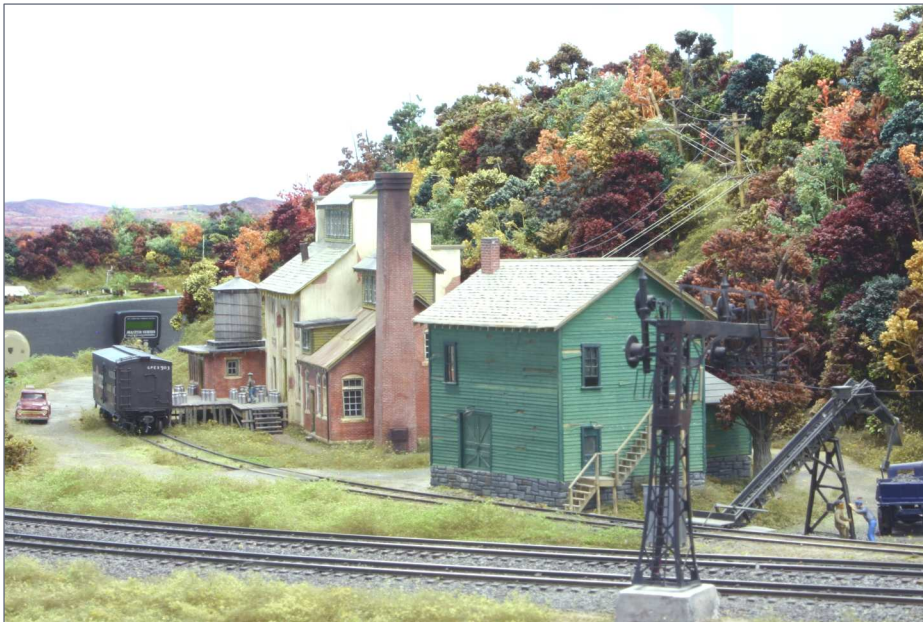


9. (Top left) North Adams covers the left shelf, with Farnams across the aisle on the right.

10. (Bottom left) A view of the majority of the layout, with Berkshire Junction in the foreground, the Hoosac Falls peninsula in the center, Whitehall near the top, and the Pittsfield staging yard in the upper right.

11. (Above) The area beneath the Hoosac Falls peninsula has built-in shelves to hold videos, magazines, and books.





12. (Top left) The engine servicing facility at Whitehall is from Dick's original 1960s layout, and was one of the first scenes he completed on that layout. Dick has six North Coast Engineering (NCE) T-shaped walk-around DCC throttles.

13. (Bottom left) The coal dealer's conveyor at Farnams, Massachusetts is an Overland Models brass import. Dick scratchbuilt both the mill and feed supply.

14. (Above) Dick covered the hillsides with spray-painted candy tuft (sesame bloom) weeds and ground foam-coated polyfiber.





15. (Above) This farm sits on the North Adams side of the Hoosac Falls peninsula. The house and barn are Dyna Models kits.

16. (Right) The river uses several layers of decoupage casting resin tinted brown. Dick made the waterfall over the weir from strings of cotton fiber soaked with decoupage resin.



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The layout uses a single-deck design with a through-staging yard at Pittsfield/Essex Junction where trains can be turned one car a time. The branchline that runs below Adams (through the A-A, section on the plan) also connects a staging yard. ☑

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17. Most of the houses at Hoosac Falls are Branchline and American Model Builders laser-cut wood kits.



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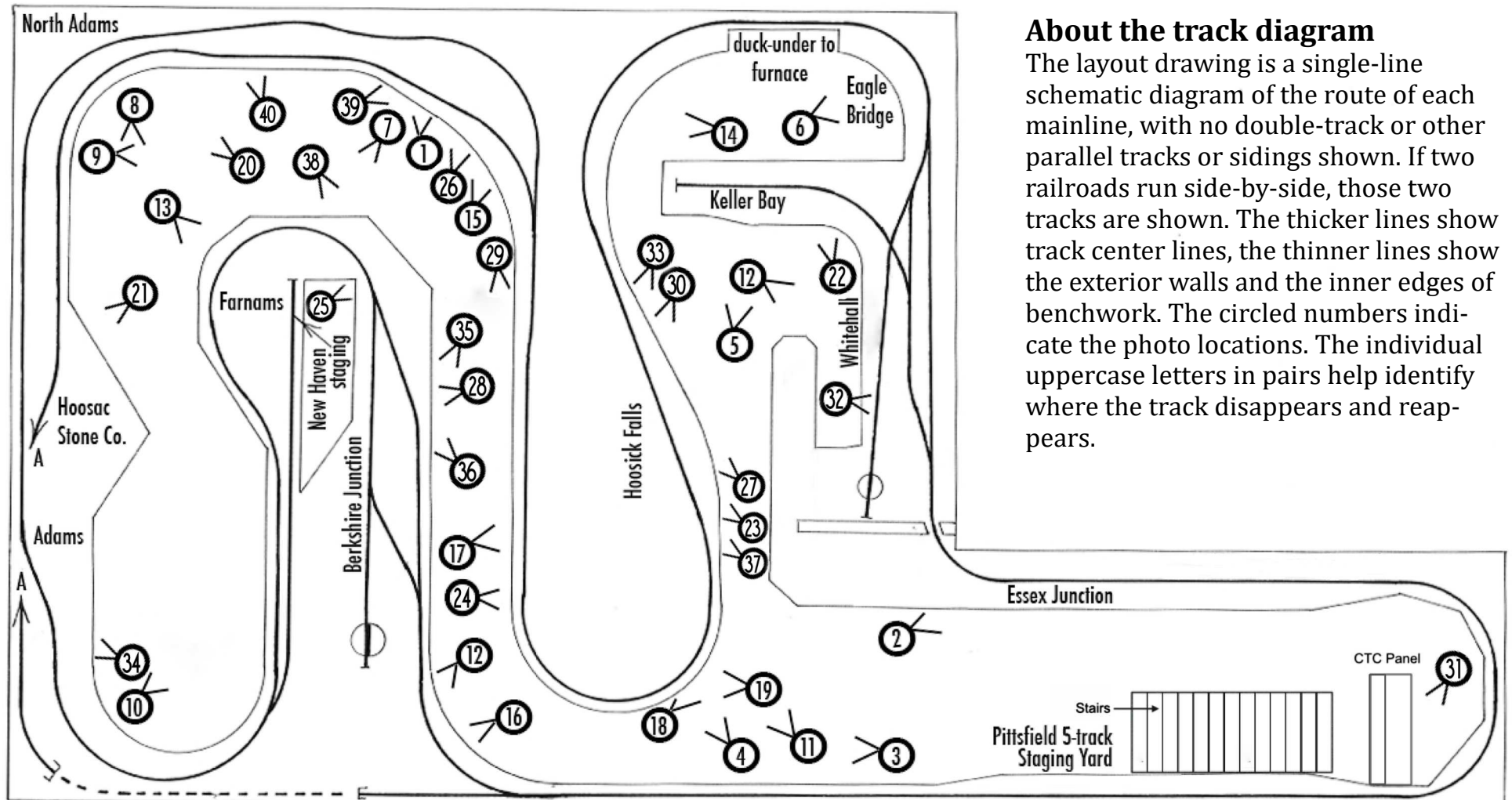
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The Hoosac Valley layout



18. The Hoosac Valley track diagram.

TEN SIGNIFICANT FACTORS MAXIMIZING SATISFACTION

1. Why this particular prototype?

Dick wanted to recreate the railroad operations near his home in North Adams in the Berkshire Mountains of western Massachusetts, making the New York Central an obvious choice because of its route.

The New Haven operated through the Berkshires a few dozen miles farther south, making it another obvious choice. He also wanted to include Delaware and Hudson equipment, but to do that he needed to have a fictitious layout because the D&H did not operate in western Massachusetts.

Fortunately, the scenes accurately portray the Berkshire Mountains, so he can have near-perfect recreations of New Haven or New York Central operations.



19. The layout combines the New Haven, New York Central, and short stretches of the Delaware and Hudson in specific New England scenes.

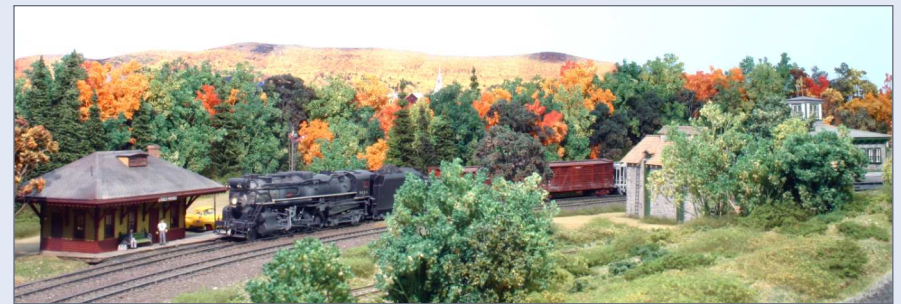
2. Which portion of the real railroad to model?

Dick opted to recreate railroad operations in the Berkshire Mountains in western Massachusetts, with Essex Junction in New York the northernmost town. His railroad covers only 80 miles of the route, including a much-foreshortened model representing one of the bridges used to cross the Hudson River for trains en route from Massachusetts to New York.

3. Choosing the era?

Dick selected the 1945-1958 era because he prefers the transition from steam to diesel locomotives. The height of fall colors in late September and early October further defines the time period.

Continued on the next page ...



20. Dick has brought western Massachusetts and its railroads into his basement with scenes like this.

TEN SIGNIFICANT FACTORS MAXIMIZING SATISFACTION *CONTINUED...***4. Which freight and passenger operations to recreate?**

Most operations involve individual cars being routed over this railroad on their way north or south from the Great Lakes to New York. Most of the freight trains include a variety of cars, but Dick does run two trains of solid reefers carrying perishables north.

5. Trade-offs taken to fit the space?

Dick knew he wanted space for a large layout with operating aisles at least four-feet wide. He designed the house as a single-floor structure to provide the largest possible full basement.



21. Dick created a railroad that allows him to operate equipment from four New England roads including the New York Central.

When he started planning the new layout, he realized he needed more area, so he had the basement expanded, and built the front porch above this section. He also specified the basement to be 7-feet 6-inches high (rather than just 7 feet) to provide extra clearance for lighting.

Dick had the builders use 2x14 floor joists rather than the usual 2x12 to minimize the number of support columns needed. Dick positioned the columns inside the peninsulas on the layout plan so they could be hidden behind sky

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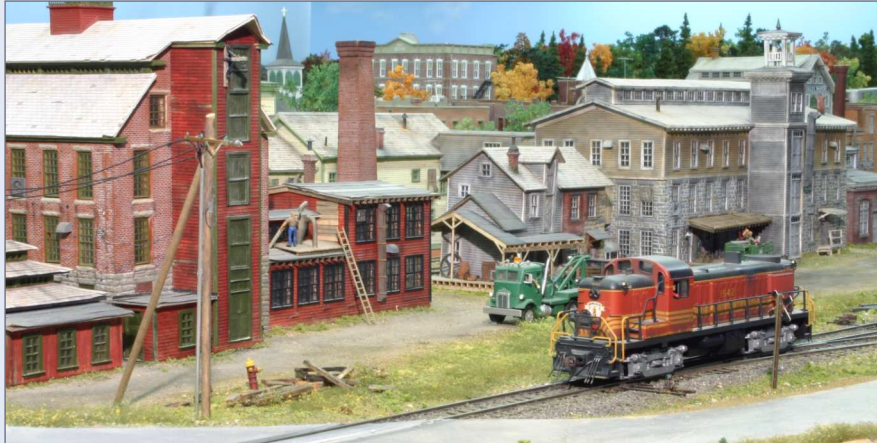


22. The layout is designed with western Massachusetts settings that allow Dick to operate New York Central and Delaware and Hudson equipment like this local freight passing Keller Bay.

TEN SIGNIFICANT FACTORS MAXIMIZING SATISFACTION *CONTINUED...*

backdrops. He raised the steel I-beams that support the floor joists and the floor joists slotted to fit into the I-beam flanges, rather than being placed above them. This way, the I-beams did not protrude below the ceiling.

Dick installed florescent lighting to provide even light distribution over the entire 34' x 64' area. He discovered, however, that he needed to add a few dozen bare one-tube fluorescent fixtures and valances hung from the ceiling to provide even lighting, and to block the glare from operators' eyes. The furnace room is in one corner behind the layout.



23. Dick has recreated a number of the mills, like these at Hoosac Falls, that are common in western Massachusetts, using stock or kitbashed models from South River Modelworks.

6. What are the defining signature structures?

The western Massachusetts area once served as a major center of manufacturing, with water-powered mills producing cotton fabric, paper, and other products. Those massive stone and brick structures make up a major feature of the layout. Dick assembled most of these buildings from limited-production cast-resin kits from South River Modelworks. Most of the stations are models of specific real stations produced by American Model Builders, Branchline, and Mountain Machine.

Continued on the next page ...



24. Main Street in Hoosac Falls is detailed to match a typical western Massachusetts mill town in the late-forties to mid-fifties.

TEN SIGNIFICANT FACTORS MAXIMIZING SATISFACTION *CONTINUED...***7. What are the defining signature scenes?**

The photo backdrops clearly “locate” the layout’s scenes, and Dick has artfully blended the foreground scenery and structures so they match the backdrops. Dick uses real town names, but has gone with generic New England structures for the most part.

8. Choosing the locomotive roster?

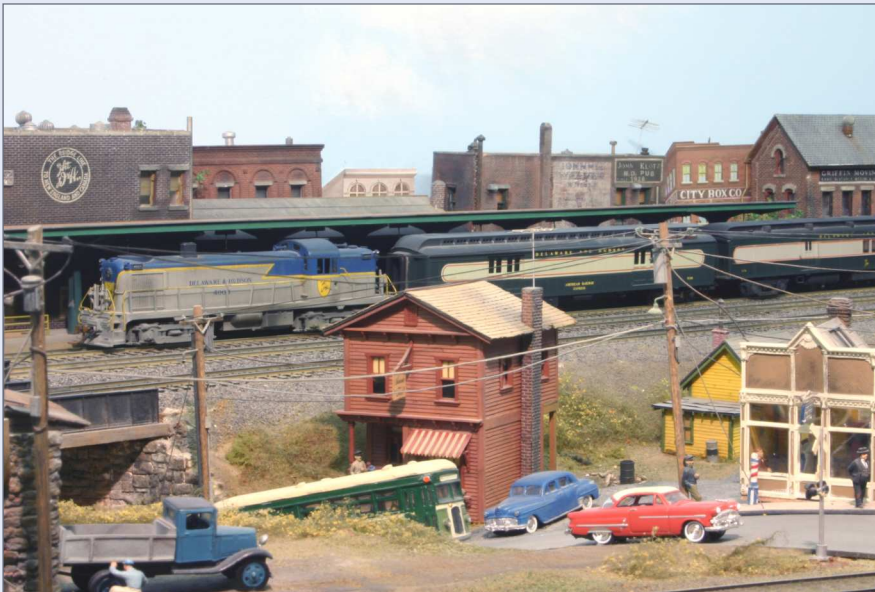
The imported brass replicas of the Boston and Albany (the New York Central subsidiary line) steam locomotives that

operated in the area make up the steam roster. Dick’s diesel locos follow the first-generation Alco locomotives that operated in the area.

9. Choosing the mix of cars in the freight car fleet?

Dick selected cars to feed typical industries. For example, Adams had several coal, grain, and oil dealers, so these industries required hoppers, boxcars, and tank cars. The once-common New England paper and cotton mills dominate each of the major towns and they require box cars. Dick also recreated New England Lime

Continued on the next page ...



25. These Delaware and Hudson passenger cars are custom painted in the 1939 “Worlds’ Fair” 1939 scheme to date the train in the late-forties.



26. Dick matched the colors of the scenery to photo murals of the Berkshire Mountains of western Massachusetts that are the setting for his layout.

TEN SIGNIFICANT FACTORS MAXIMIZING SATISFACTION *CONTINUED...*

Pharmaceuticals quarries – the lime is mined on the spot and either used or bagged and shipped out in boxcars and tank cars.

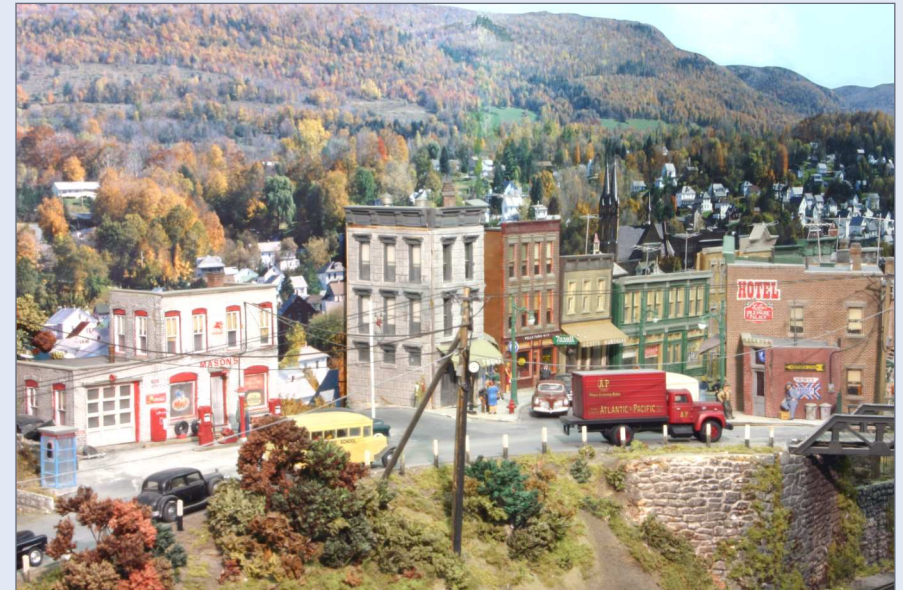
10. What research sources helped the most?

Personal visits and a history of spending his life in the area provided Dick with the images he has recreated. ■

★★★★★
RATE THIS ARTICLE



27. Dick dedicated an entire 5' by 12' peninsula to recreating the industrial area of Hoosac Falls.

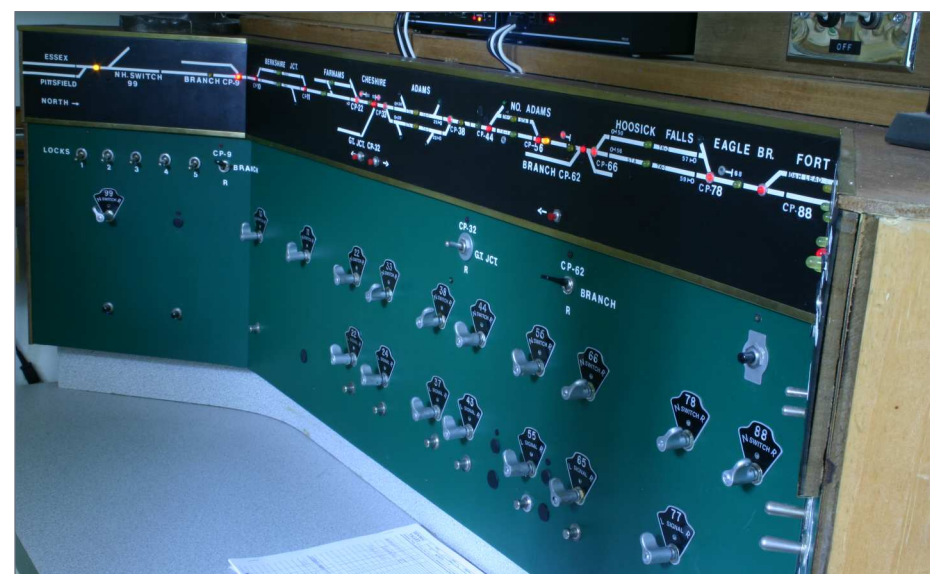


28. In most western Massachusetts towns, there were several blocks of small apartment houses, but Dick recreated the atmosphere of an entire town in just 1' x 2' with nine buildings and a photo backdrop.

For larger images you can zoom in even more on, visit this month's bonus extras link:

mrhmag.com/magazine/mrh2020-08/bonus-extras

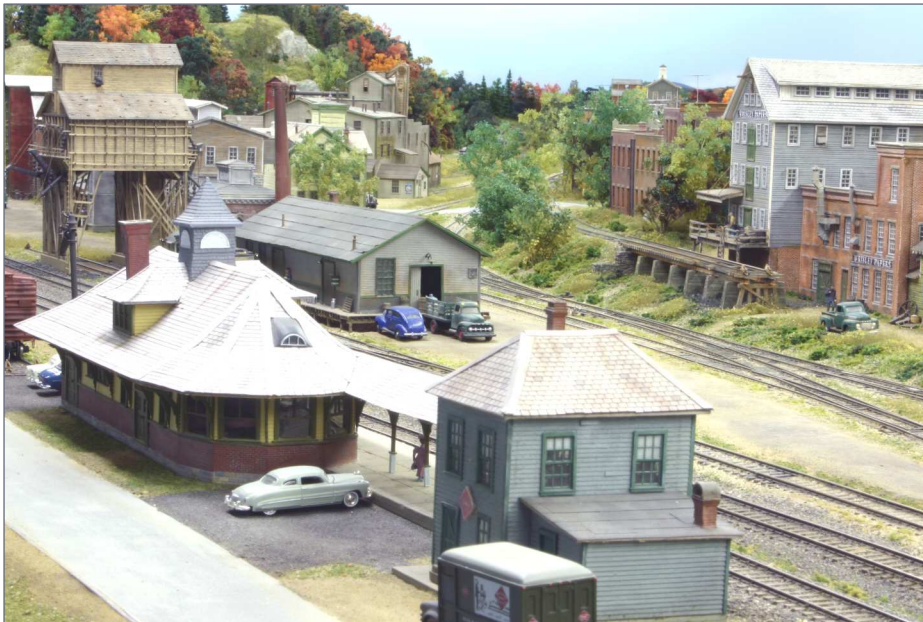




29. (Left) Boston and Albany 2-8-4 number 1434 heading Extra 220 between Hoosac Falls and North Adams, Massachusetts.

30. (Above) A Boston & Maine RS3 on loan to help cover a power shortage is switching the industries at Hoosac Falls.

31. (Below) The dispatcher's panel controls all the turnouts so the engineers can pay full attention to running their locomotives.

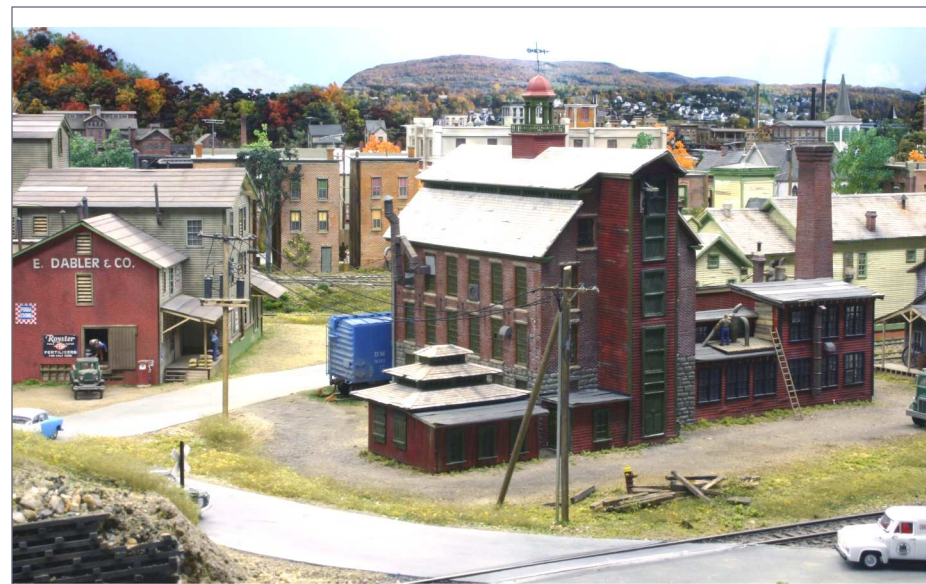
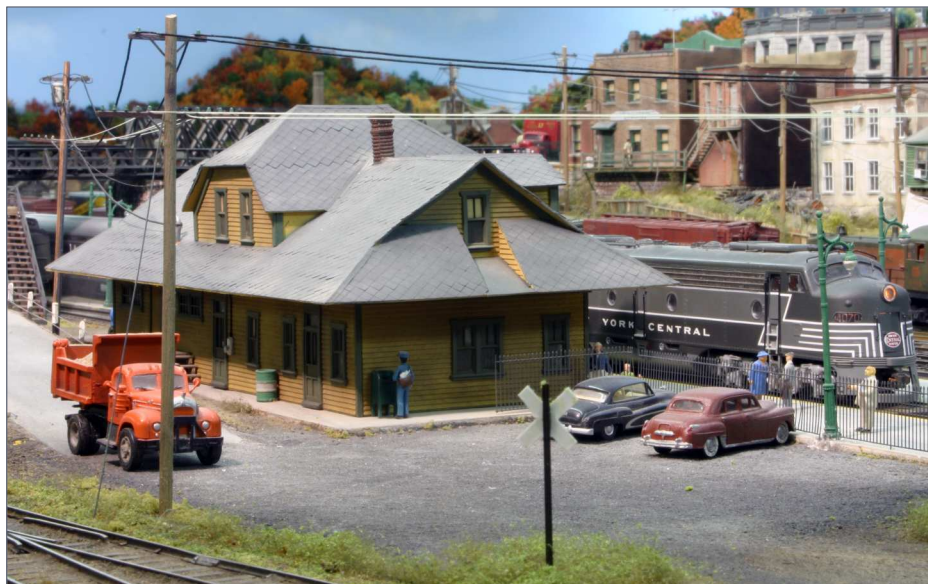


32. (Top left) A New York Central local passenger train leaving Whitehall, Massachusetts.

33. (Bottom left) In most small towns, it was the style of passenger station and often the nearby freight station that were the signature structures, as they are at Hoosac Falls. The two-story structure in the foreground is the Railway Express station.

34. (Above) The station at Adams, Massachusetts, is an out-of-production cast-resin kit of the Boston and Albany (New York Central) station that is still standing in Adams.



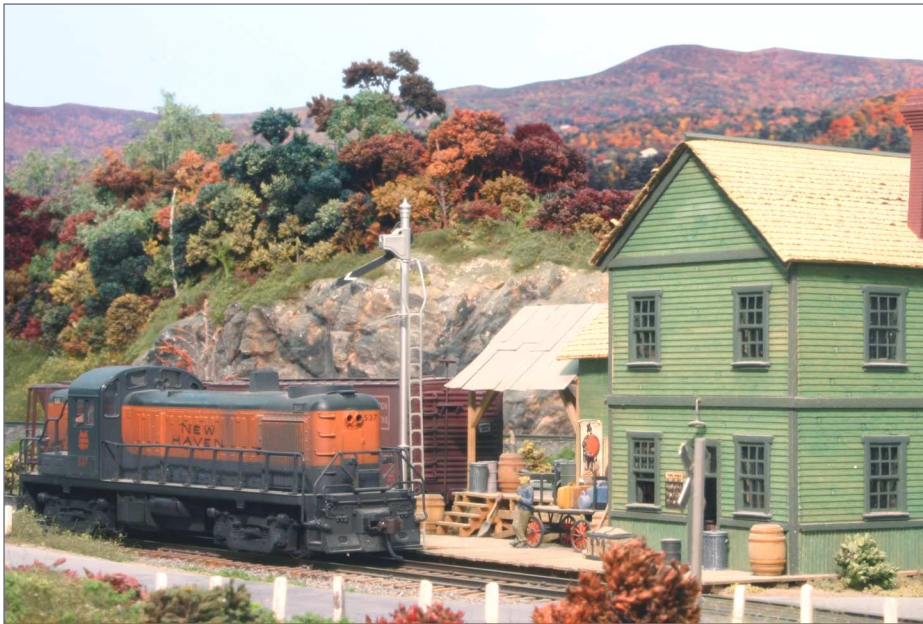


35. (Top left) Dick scratchbuilt this brick station at Berkshire Junction, to match a New York Central prototype.

36. (Bottom left) Often, the signature structures from a real railroad scene will be backyards of apartments like these at Berkshire Junction.

37. (Above) The mills at Hoosac Falls are mostly South River Modelworks kits.





38. (Top left) The New Haven had very distinctive stucco signal towers with pagoda-style roofs. N Scale Architect offers a similar structure in HO and N scale. The auto box car is an Overland Imports brass model, but Proto 2000 has produced a similar 50-foot double-door automobile car.

39. (Bottom left) Dick selected an area in the Berkshire Mountains of eastern Massachusetts where he could credibly operate New Haven or New York Central trains. This is a weathered Atlas Alco RS-3.

40. (Above) An Athearn PA1 diesel heads a short local passenger train out of North Adams.



A RESOURCE GUIDE TO AN ACCURATE NEW HAVEN MODEL RAILROAD

Books on the New Haven Railroad:

- *The New Haven Railroad's Streamlined Passenger Fleet*, by Geoffrey H. Doughty
- MBI Publishing, amzn.to/2XHRPNv
- Four Ways West Publications, fourwayswest.com
- Morning Sun Books, www.morningsunbooks.com
- The Railroad Press, www.alco628.com
- Weekend Chief Publishing, see: walthers.com/book-new-haven-railroad-midland-division

Videos on the New Haven Railroad:

- A & R Productions, google.com/search?q=a%26r+productions+railroad+videos
- Greg Scholl Video Productions, www.gregschollvideo.com

New Haven websites:

- New Haven Railroad Historical and Technical Association: www.nhrhta.org
- Passenger cars: www.faracresfarm.com/jbvb/rr/nhrr/nh_pass.html
- The NERAIL North American Railroad Photo Archive: naphotos.nerail.org ■



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DICK ELWELL



Dick first encountered trains at age 4 when he received a Lionel train set for Christmas. Dick didn't pursue model trains any further until he was a young adult.

Dick soon started scratchbuilding as a pastime in 1961, and started his Hoosac Valley layout. Dick has been hosting operating sessions with 10-12 operators and a dispatcher.

Dick is married with three children, six grandkids and four great grandkids. ■

ROBERT SCHLEICHER



Robert was editor of *Railmodel Journal* for 19 years and, prior to that, editor of *Model Railroading* magazine. He has also authored over a dozen model railroad books including the *Tyco Model Railroad Big Book Of Model Railroad Track Plans* and three books for Lionel. Bob has been a consultant to

several manufacturers and helped to kick-start the Railroad Prototype Modelers concept. He is modeling the standard gauge Colorado & Southern in northern Colorado circa 1959 in H0 scale. ■

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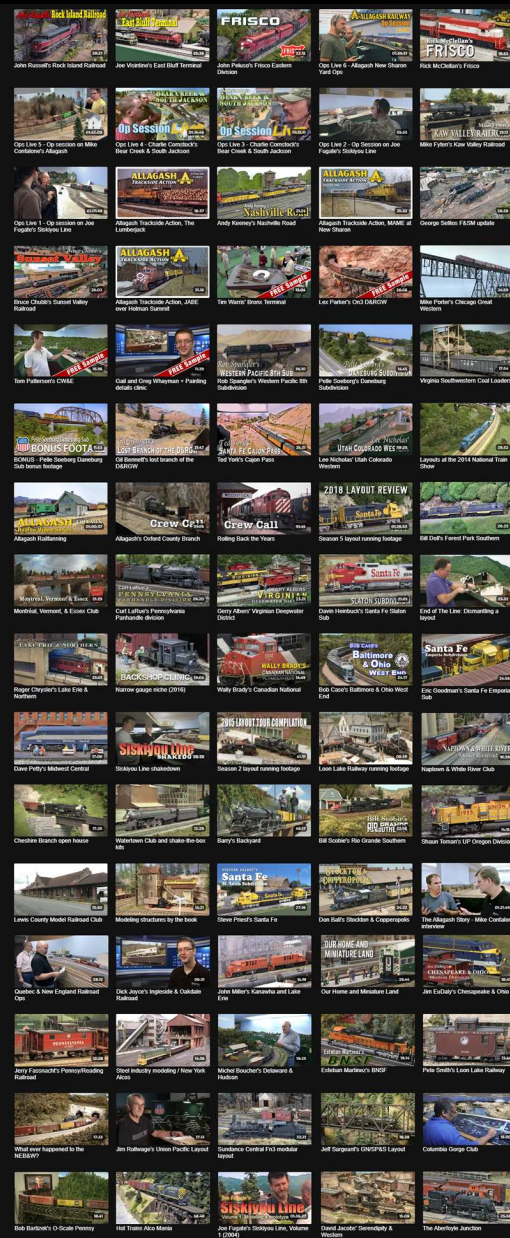
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Improving the Badger paint stirrer



Model Railroad Hobbyist | August 2020

1. Here's a simple modification to
slow down a Badger paint stirrer.

★★★★★
RATE THIS ARTICLE

VINCE PUGLIESE SHOWS HOW HE SLOWED DOWN HIS PAINT STIRRER ...

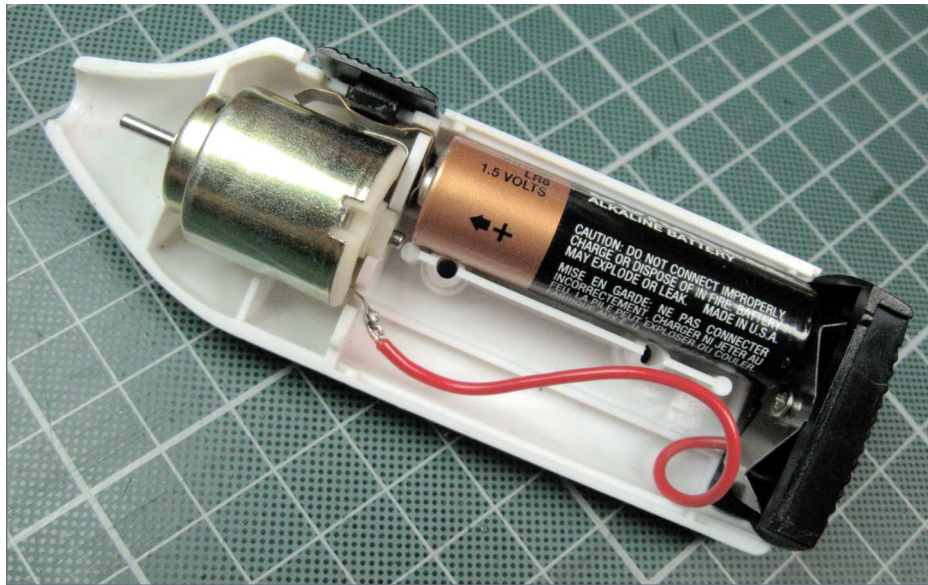
TO PREPARE PAINT FOR AIRBRUSHING USUALLY MEANS ADEQUATE STIRRING TO thoroughly mix the pigment in without leaving lumps. I picked up the Badger paint stirrer [1] a number of years ago, and found it does a great job thoroughly mixing paint – especially if the jar has been sitting for some time.

BADGER PAINT STIRRER | 2

Unfortunately, the stirrer tends to spin rather fast, resulting in unwanted froth and bubbles in the paint.

While changing the batteries one day, I thought there might be a simple way to reduce the speed by eliminating the second battery and replacing it with a short length of wire to complete the circuit. For those that can't wait, here is a view of what we will be doing [2].

To begin, I removed the black end cap and the batteries from the stirrer, then the two screws holding the halves of the stirrer together. I did this with a small jeweler's screwdriver [3]. Once I had removed the screws, I separated the two halves and took out the motor [4].



2. The trick to slowing down the stirrer is really simple: just leave out one battery and add a wire jumper in the missing battery spot!

BADGER PAINT STIRRER | 3



3. Take out the batteries and remove the two screws.



4. Separate the two halves. At this point, it's possible to remove the motor. The black battery compartment end clip isn't shown (see [2]).

BADGER PAINT STIRRER | 4

I next cut a length of #18AWG stranded wire approximately 4" (10 cm) long. Using a wire stripper, I removed about 3/4" (2 cm) of insulation on both ends.

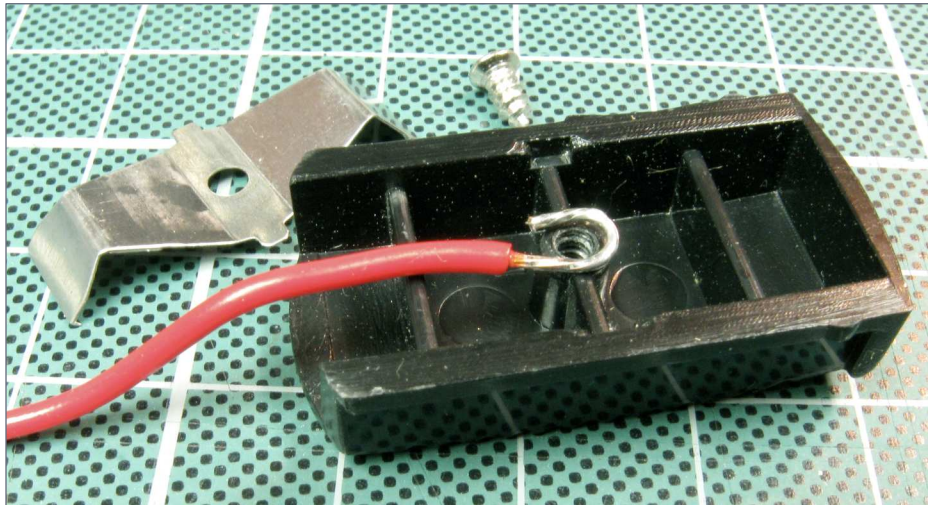
I twisted the exposed strands and tinned them with a soldering iron and solder (you can skip this step for solid wire).

I formed a small hook on each end of the wire using needle nose pliers.

I removed the screw holding the contact plate from the black battery end clip. I laid one of the wire ends [5] so that the wire easily fed out of the cap. I placed the contact plate back on top of the end cap trapping the wire and screw the plate [6].

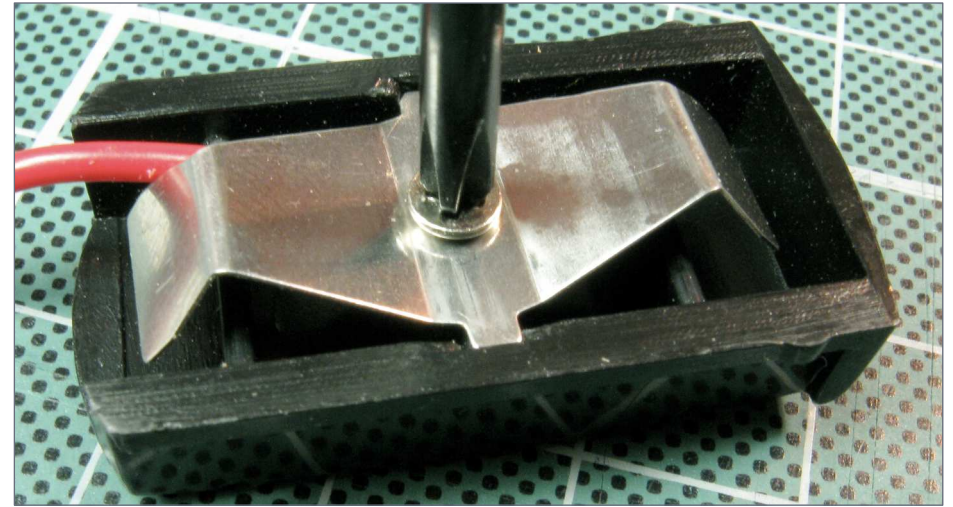
At the motor end, I simply looped the wire through the terminal and soldered the wire to the motor [7].

To reassemble, I placed the motor back in the stirrer shell and carefully positioned the wire in the space that would have

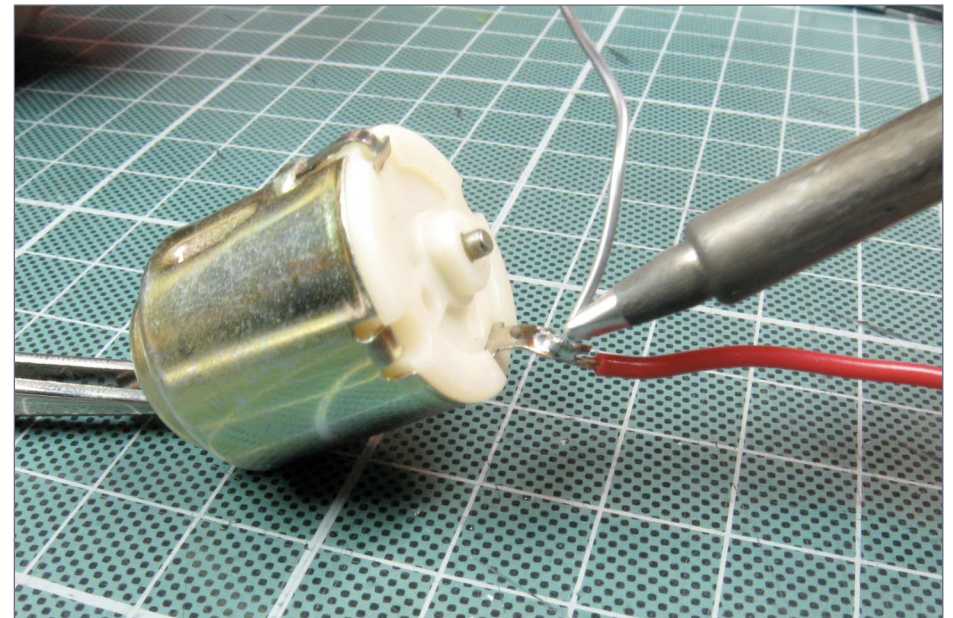


5. One end of the wire is held in place by the screw through the metal battery end clip.

BADGER PAINT STIRRER | 5



6. I screwed the metal end clip back on with the hooked wire end around the screw underneath.



7. I soldered the other end of the wire to the motor metal tab.

BADGER PAINT STIRRER | 6

been occupied by the second battery. I attached the other half using the two original screws.

I inserted a single AA battery and slid the end cap back on as usual – though it might need a bit of persuasion if the wire is in the way [8].

At this point, I tested the stirrer by switching it on. Instantly, I noticed a nice reduction in speed, and in the noise!

It goes with saying: make certain to switch the stirrer off *before* withdrawing it from the paint jar unless, of course, *you want* a splattered effect all over your shirt! ☑

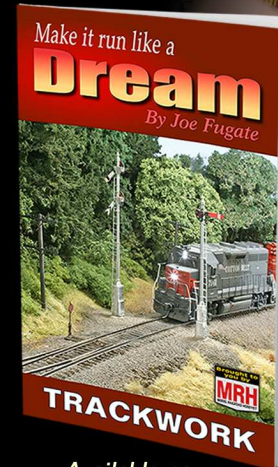


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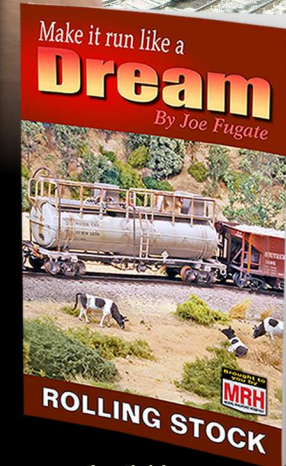


8. Once the unit was reassembled, I put a single battery into the slot without the wire.

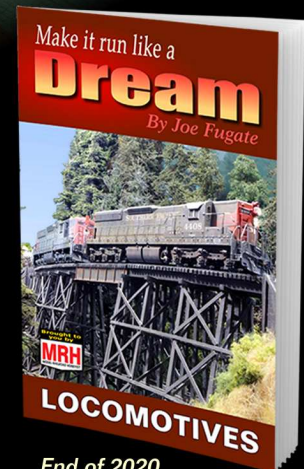
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First LOOK column

Model Railroad Hobbyist | August 2020



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**JEFF SHULTZ ON MAKING YOUR BUILDINGS LOOK
“LIVED IN” WITH CITY CLASSICS WINDOW DRESSINGS ...**

IT CAN BE EASY TO TELL WHEN A BUILDING IS unoccupied – the windows show no drapes, blinds, or shades – their “dead eyes” staring blankly out over the yard. Sadly, many of our HO scale buildings have a similarly dead stare across our layouts, perhaps lit, but otherwise looking devoid of life inside.

To the rescue comes City Classics (www.cityclassics.biz), with 12 different sets of window coverings printed on clear PVC plastic.

Here I show set 718 Small Dark Colored Curtains for Windows roughly 1/4" wide up to 13/16" tall [1]. The set contains 72 curtains in three different colors (green, brown, and yellow), with different lengths and three different styles – gathered, separated at the top, and joined at the top.

Other City Classics sets include larger curtains in the same design, curtains with shades, different colors, different sizes and designs of blinds, and even a set of factory windows.

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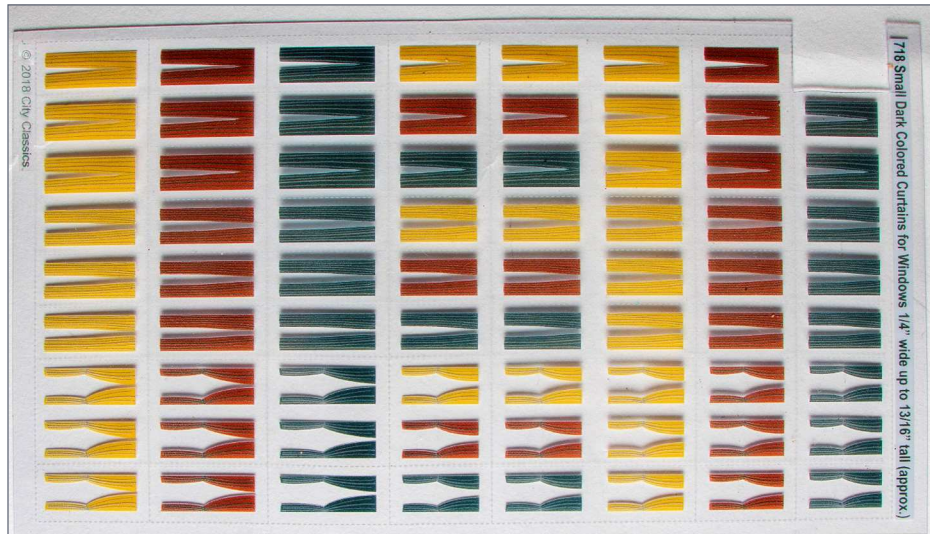
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FIRST LOOK | 2

Using the window dressings is simple – instead of using the clear sheeting included in the City Classics Company House for windows, I simply cut out the color and type of drapes I wanted and glued the piece of PVC plastic sheet with the drapes into place using Testors Clear Parts Cement. Built-in glass glazing!

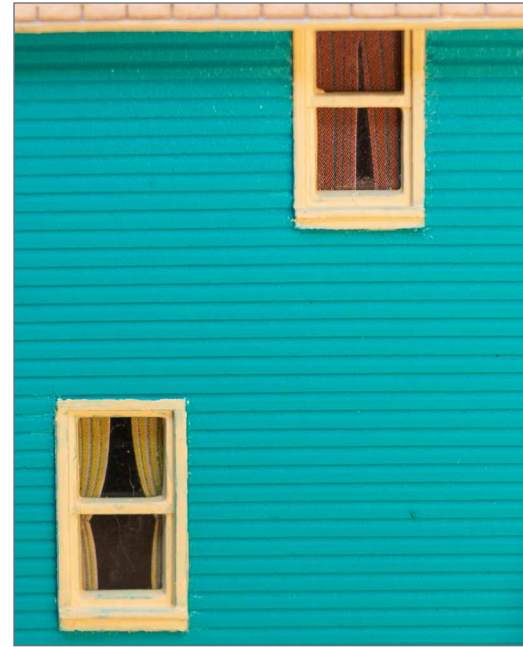
After doing this, I thought Canopy Glue probably would have worked even better.

Each sheet of Window Dressings retails for \$7.98, with a bulk pack of six of the drapes and blinds available for \$40. ✓



1. Window Dressings 718 – I was so anxious to use them I forgot to take a photo before cutting one out!

FIRST LOOK | 3



2. The window dressings used in some windows of my City Classics company house structure. This shows two different styles and color of drapes.



3. Two bedroom windows with the same style and color of drapes.



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SAVVY MODELER *Online*



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Model Railroad Hobbyist | August 2020



How to cheaply cast miniatures or plastic parts

It can be useful to learn from modelers outside the model railroading hobby. One such example by Youtube modeler **Plasmo** shows a quite clever usage of hot water moldable "Blue Stuff" to quickly make full 3D molds for casting all manner of parts.

Blue Stuff can be hard to find, but we found a clear white version of the same material on Amazon. View the [shopping list link here for more!](#) ■



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AUGUST NEWS

column



Model Railroad Hobbyist | August 2020

RICHARD BALE AND JEFF SHULTZ
REPORT THE LATEST HOBBY
INDUSTRY NEWS ...



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INDUSTRY NEWS

Chris Palomarez appointed GM at Caboose

Chris Palomarez has resigned his position as Athearn brand manager at Horizon Hobby and has joined Caboose in Lakewood, CO as general manager. In announcing the appointment, Caboose president and CEO Kevin Ruble, who purchased Caboose Hobbies in 2016, revealed that the company has been reorganized as an employee-owned public benefit corporation. Among the expected changes in the daily operation of Caboose is an increased emphasis on e-commerce.

Palomarez began his model railroad career at Microscale Industries. Prior to joining Athearn in July 2014, he was co-host of the Model Railroad Hobbyist Podcast. Caboose Hobbies was established in Denver in 1938 by Glen Brazelton. His son Duane Miller took over in 1969 and built the family business into what the Guinness Book of Records recognized as the world's largest model train store.

► **THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS**

AUGUST NEWS MULTIPLE SCALES | 2



In Memoriam: Ted Klein 1935-2020

Frank Wrabel, Director of Operations for M.B. Klein, Inc. (also known as modeltrainstuff.com) announced on July 22nd that Ted Klein, the only child of M.B. Klein founder Morris Benjamin Klein, had passed away. Ted was the primary force in turning M.B. Klein from a hardware store in the 1960s into one of the largest and best known model railroad stores in the US by the mid-1970s.

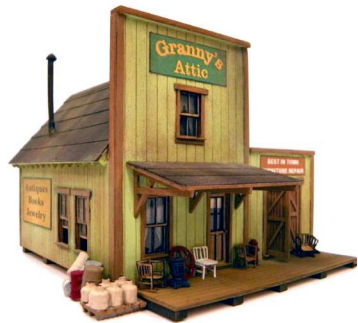
NEW PRODUCTS FOR MULTIPLE SCALES



Blair Line has some interesting structure details including wall vents and fans, and central air conditioner units. Wall items suitable for HO and S scale come with six fans and 15 vents. The Z/N/HO scale selection comes with seven fans and 15 vents. The details have a peel-n-stick backing and are laid out on a carrier sheet to simplify painting before applying.

The air conditioning units can be used for rooftop or ground installations. Kit #2705 includes three A/C units suitable for larger commercial or residential HO structures or smaller

commercial or residential units in S and O scale. Kit #1705 has four A/C units. It is intended for smaller commercial or residential units in HO and larger commercial/residential for N & Z. Assembly follows tab and slot construction and most of the parts are peel-n-stick. For additional information visit blairline.com.



B.T.S. has introduced both HO and O scale craftsman kits for Granny's Attic. The design of the wood-sided building is based on a small garage that was forced to close during the Great Depression. The B.T.S. kit features laser-cut basswood and plywood components including positionable doors and windows.

The assembled model has a scale footprint of 27' x 31'. For additional information including ordering instructions visit www.btsrr.com.



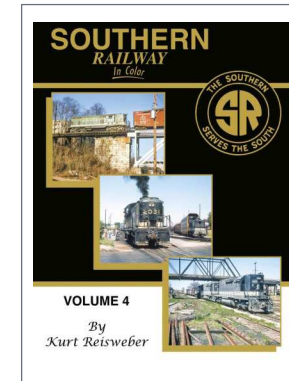
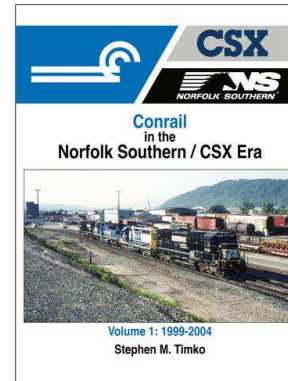
Digitrax has released an advanced super throttle capable of controlling two locomotives at one time. Identified as DT602, the hand-held unit is compatible with LocoNet systems and can create consists, set up routes, and control up to 29 functions (F0-F28). Features include a 2.4" liquid-crystal display screen, simplified 2- or 4-digit addressing setup, and fast clock display. Both tethered and duplex radio versions are available.

For additional information contact a dealer or visit digitrax.com.



Dwarvin has introduced a new line of billboards in HO, O(n3), and S scales for use with the Lamplighter fiber optic lighting system. Available both in a "flat pack" as well as fully assembled, there are 11 different billboard signs to choose from: Schlitz, Texaco, Cadillac, Hellman's, Packard, Levis, Ford, Shell Oil,

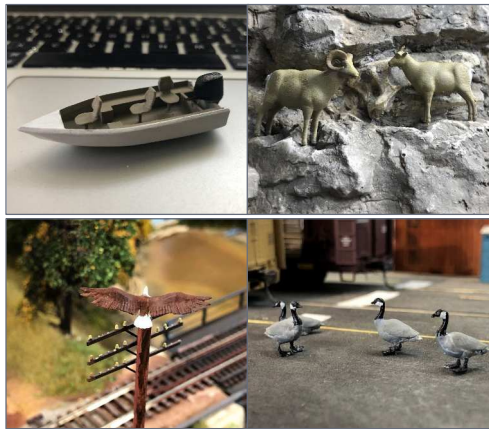
Camero, Chevrolet, and Phillips. Dwarvin states that the signs are taken from the mid-1900s, with most of the cars appearing to be from the late 30s to mid-50s, with a couple that are probably from the 60s. Installing the billboard on the layout requires a 5/16" drill for the outer supports, and a 3/32" hole for the fiber from under the layout. For more information visit dwarvin.com.



New publications from **Morning Sun** include *Conrail in the Norfolk Southern/CSX Era*, by Stephen M. Timko. This is volume 1 of a two-part series featuring the

former Conrail system between 1999 and 2004. Coverage includes an east-to-west examination of how CSX and Norfolk Southern moved traffic using a mix of motive power.

Also new is Volume 4 of Kurt Reisweber's *Southern Railway in Color* which begins in southern Illinois and Indiana then moves further south into Tennessee, Alabama, Mississippi, and Louisiana before turning north to include Georgia, Florida and parts of the Carolinas. Many of the photos are from the 1970s and 80s and include out-of-the-way locations and unusual operations. For additional information contact a dealer or visit morningsunbooks.com.



Miniprints.ca has released a new line of 3D printed resin animals and watercraft with people. Available in HO, S, and O scales, the line includes 10 types of birds, including Canada Geese, Bald Eagles and Seagulls; over 30 animals including Bison, Beavers, Groundhogs and Bighorn Sheep; and a

selection of personal watercraft with and without people, such as kayaks and small fishing craft. The newest addition to the line is a cow's skull, suitable for a desert scene. For more information or to purchase visit miniprints.ca.

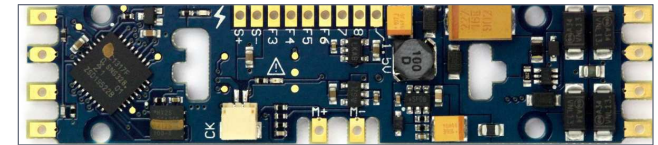
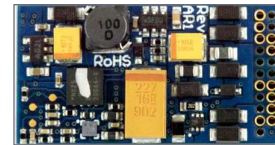


Multiscale Digital offers a wide selection of large industrial details that make excellent loads for flat cars and gondolas. The items range in scale from to G through Z.



The HO scale examples shown here include a Birchfield industrial fire tube boiler, a 1380hp V8 diesel turbo industrial engine, and an oil-filled electric substation circuit

breaker. The items are available unpainted and in basic undercoat ready for detail painting. For additional information visit multiscale.digital.



SoundTraxx has released two new Tsunami2 decoders, the TSU-PNP8 and TSU-21PNEM8. Using the same form factor as the TSU-PNP and TSU-21PNEM, the new decoders offer up to 8 function outputs. The TSU-PNP8, designed to replace the factory board in models from Atlas, Athearn, InterMountain and others, comes with five sound profiles, EMD Diesel, EMD-2 Diesel, GE Diesel, Alco Diesel, and Baldwin and Other Diesel. The TSU-21PNEM8, designed to plug into the 21-pin NEM connector now included on nearly all new HO scale locomotives. It comes with seven sound profiles, EMD Diesel, EMD-2 Diesel, GE Diesel, Alco Diesel, Baldwin and Other Diesel, Electric, and Steam-2. To purchase or get more information visit your dealer or soundtraxx.com.

LARGE SCALE PRODUCT NEWS



Narrow gauge specialist **The Train Department**, is selling an F scale (1:20.3) kit for a water tank car. The

model features authentically detailed Carter Brothers swing-motion trucks with 24" Sierra Valley wheels, and sprung, frame-mounted link-and-pin couplers. For additional information visit www.thetraindepartment.com.



R. Bale

THE KRAUSS-MAFFEI DIESEL HYDRAULICS

Most road engines available in the early 1960s were rated at 2000hp or less, forcing railroads to link a half dozen or more GP7s, GP9s, GP18s and GP20s together to handle the ever-increasing size of freight trains. America's locomotive builders were slow in offering motive power with higher horsepower. Southern Pacific surprised the railroad world in 1961 by purchasing three 3,540hp diesel hydraulic locomotives from Krauss-Maffei (K-M), a Munich-based German manufacturer. The prototype K-M ML 4000 locomotives, cab units with a unique turret cab, utilized two Maybach V16 prime movers and a Voith hydraulic transmission. The SP purchased additional series production K-M locomotives with a hood-style body eventually owning a total of 37. The Denver & Rio Grande Western ordered three prototype K-Ms, but sold them to SP in 1964 when they proved unsuitable in mountain service. In 1966, SP replaced the worn-out K-Ms with EMD's new 3,000hp SD40 and SD45 locomotives.

O SCALE PRODUCT NEWS

3rd Rail division of Sunset Models is planning a late 2020 release of O scale Krauss Maffei ML-4000 diesels. The models will be available decorated for Southern Pacific and Denver &



Rio Grande Western. In addition to North American couplers, both schemes will be available with buffers as the completed prototypes were tested in Austria before being shipped to the United States.



The O scale models will have an ABS body with added brass details. The diecast trucks will be fitted with ball bearings and sprung axles. The cab interior will be fully detailed. Operating capability will be ERR Cruise in 3-rail TMCC, and QSI Titan DCC/Sound for 2-rail versions of the model. For additional information contact an authorized dealer or visit www.3rdrail.com.



Berkshire Valley Models has released a horse-drawn buggy model in O scale. The kit includes laser-cut wood and white metal detail parts. A doctor's bag is included.

Horses and drivers are available separately. For more information visit berkshirevalleymodels.com.

S SCALE PRODUCT NEWS

Monster Model Works has released a kit called Brick Engineers Tools Shed. The S scale craftsman type kit is based on the Milwaukee Road's Engineers Tool Shed that was restored by the Sioux City Railroad Museum in Iowa. The

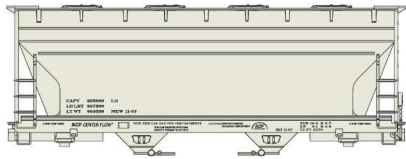




model is composed of 3-D laser-engraved aged American Brickwork including corner pieces, 3-D laser-engraved Terra Cotta coping, laser-cut peel-n-stick windows and glazing, and a laser-cut wood door. The assembled structure has a footprint of 2.5" x 4.9". Assembly

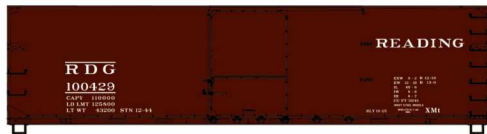
instructions and finishing suggestions are included. For additional information visit www.larkspurlaserart.com.

HO SCALE PRODUCT NEWS



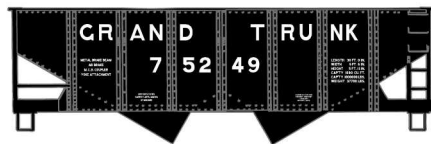
Accurail is finalizing new tooling for an ACF two-compartment twin-bay CenterFlow covered hopper. Introduced in the mid-

1960s, the prototypes were rated at 2970 cu. ft. capacity. The initial release of the new HO scale kit is planned for late this year.

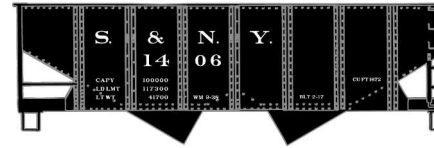


Among the new HO scale kits released by Accurail is this Reading 40' double-sheathed wood

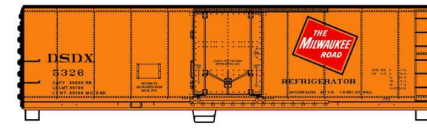
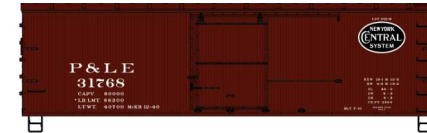
boxcar. The model is based on a class XM prototype built in October 1925.



Also new are two kits for 55-ton USRA twin-bay coal hoppers including one decorated for Grand Trunk, a subsidiary of the Canadian National Railway. The car decorated for Susquehanna & New York shows a built date of February 1917.



The prototype of this 36' Pittsburgh & Lake Erie double-sheathed wood boxcar was built in July 1910. It also wears the NYC System herald of its parent.



Accurail's HO scale kit for this DSDX Milwaukee Road 40' plug-door steel refrigerator car represents a prototype built in

March 1951. All Accurail car kits include appropriate trucks with plastic wheelsets and Accumate knuckle couplers. For additional information contact a dealer or visit accurail.com.



R. Bale

RAILGON GONDOLAS

Railgon (GONX, GNTX) owned some 4,000 gondolas designed by parent TTX and built during the early 1980s by Greenville, Berwick, Bethlehem, and Pullman-Standard. The gondolas were shared by numerous railroads in a pool arrangement similar to the Railbox scheme.

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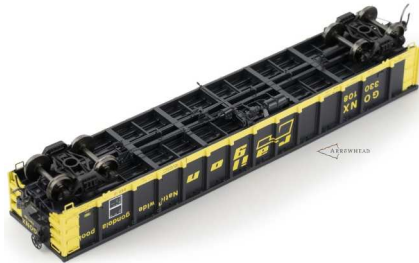




Arrowhead Models has introduced a highly-accurate HO scale model of a Greenville-

built Railgon car. The model is composed of nearly 200 individual parts including an etched brass floor and side panels that can authentically mimic the deforming of the prototype caused by weather and rough usage.

Features of the ready-to-run model include a total of 81 formed wire parts for grab irons, pull loops, and tie downs. In addition to the sides and floor, the end stiffener plates and dozens of accurately dimensioned brackets are all composed of etched brass. Additional details include Wine Drop Lok #1613 tie downs on the top chord, a five-piece Klasing #1500 hand brake assembly, and Kadee #156 Whisker couplers.



Twelve road numbers are available with each model showing the correct LT, WT, LD, and LMT data which varied widely among the prototype road numbers Arrowhead offers on this model. The model comes with 100-ton ASF trucks with

code 88 (0.088") Fine-Scale CNC machined metal wheelsets and metal axles. For additional information visit arrowheadmodels.com.



Athearn has scheduled the next release of its Genesis F7 units for June 2021.

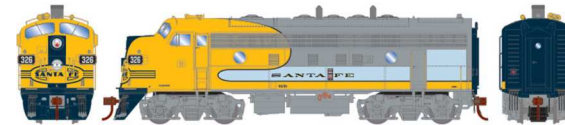
EMD's familiar F7s, with two porthole windows, four square side vents, and an etched-metal Farr grille extending across the top of the car body, will be available for most roads as individual A units, B units, and paired A/B sets. The HO scale

models will be produced from Lubliner tooling. Road names include Great Northern detailed with additional grab irons on the nose and rear roof.



F7 units decorated for Union Pacific will have dynamic brakes, an upper oscillating

headlight, lower standard headlight, and skirts. Additional details vary per road number.



Santa Fe is represented in this production run with F7 units wearing the yellow bonnet paint scheme.



A former NP F9 unit will be available decorated in Burlington Northern's "hockey stick" scheme.



Athearn's New York Central version of the F7 features small lettering and a freight

pilot. Penn Central versions of the former NYC F7s are identified by a small PC worm on the nose.



This production run includes Southern Pacific #6152, one of only two SP F-units to receive the "Winged" version of the "Halloween" paint scheme.

F units in each road name will have road number-specific details. Features shared by all units in this run include LED

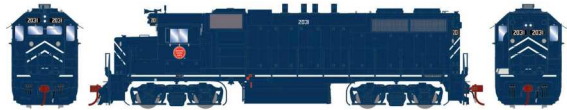
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directional constant lighting, cab interiors, uncoupling levers, MU and trainline hoses, windshield wipers, lift rings, wire grab irons, sander lines, detailed fuel tank with fuel fillers, fuel gauges, breather pipes, and retention tanks; and detailed Blomberg-B trucks.



A Genesis GP38-2 diesel locomotive has also been scheduled for release next June. A GP38-2 with an 88" nose, a 2600 gallon fuel tank, and Blomberg B trucks will be available decorated for Toledo, Peoria & Western.



An early phase MP unit will have an 81" nose, and four tall spark arrestors.



A Canadian National GP38-2 will feature forward and reverse ditch lights, a roof mounted A/C unit and Blomberg M trucks.



A Phase 2a version of the GP38-2 with an 88" nose and winterized hatch will be available decorated for SOO Line.



Completing the list of GP38-2 road names in the June 2021 release is a former GM&O unit purchased and repainted by Union Pacific.

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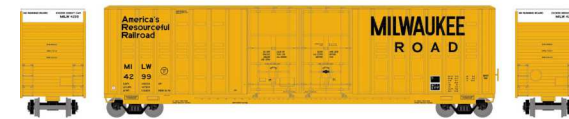
General features on all road names include uncoupling levers, flexible rubber MU and trainline hoses, see-through cab windows, cab interior, walkway tread, Celcon handrails, windshield wipers, lift rings, wire grab irons, a detailed fuel tank, sander lines, and Genesis all-wheel driveline. DCC models will have a SoundTraxx Tsunami2 decoder. DC models will come with a 21-pin NEM connector to facilitate installation of an aftermarket DCC decoder.



Athearn plans to offer a pair of F89F TTEX long-runner flat cars with and without two 53' reefer trailers. The Genesis series flat cars will have a weighted diecast underframe, raised and lowered hitches, formed wire brake rigging, and 70-ton roller-bearing trucks with machined metal wheelsets and rotating bearing caps. The cars require a 22" minimum track radius. The 53' Utility reefer trailers will have rubber tires and mud flaps.



New Ready-to-Roll models coming from Athearn next June include 60' Berwick hi-cube boxcars. Road names will be Santa Fe, Denver & Rio Grande Western, Norfolk & Western, Milwaukee Road, and two schemes each for Conrail and Missouri Pacific.



The Berwick boxcars will have wire grab irons, etched-metal end platforms, and appropriate trucks with machined metal wheelsets. The model requires a minimum track radius of 22".

Athearn's June 2021 production schedule includes a group of 40' hopper cars with extended sides to handle wood chips. The



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cars come with a removable woodchip load. Road names will be Louisville & Nashville, Ashley Drew & Northern, Gulf Mobile & Ohio, Seaboard Coast Line, Atlantic Coast Line, and Southern.



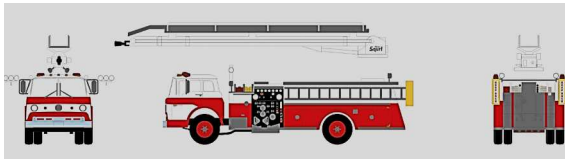
Also due from Athearn next June is a group of 50' ice bunker reefers with positionable

Santa Fe type reversed hatch covers with etched hatch stops. The SFRD-Santa Fe cars, which come with National B-1 trucks, will have a straight system map on one side and either Scout, Grand Canyon, or a large SF logo on the opposite side. The Santa Fe cars will be available decorated including a road number and decorated but without a number.



Additional road names for the 50' Ice reefers include Northern Pacific, Wilson, Fruit

Growers Express, and Rath Packing Company.

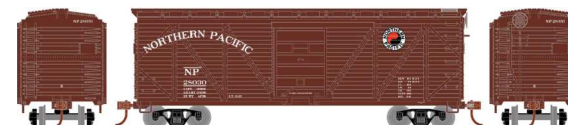


Athearn has included a Ford C Telesqurt fire truck in green and five combined red and

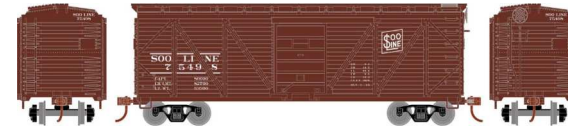
white paint schemes in its June 2021 production schedule. The trucks are unnumbered and unlettered. The 1:87 model features an extendable Telesqurt arm with fire monitor and photo-etched ladders, cab interior, clear molded windows, and vinyl tires.

Roundhouse Brand products coming from Athearn in June 2021 include a 40' single-sheathed wood boxcar. Road names will be Northern Pacific, Soo Line, Santa Fe, Boston & Maine,

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Pacific Electric.



Canadian National, Colorado & Southern, Northern Pacific, and Southern Pacific/

The plastic injection molded model will have mostly molded on details. Of note are trucks with machined metal wheels. For additional information on Athearn and Roundhouse products contact a dealer or visit athearn.com.



Bachmann has a new HO scale DCC- equipped turntable with a dual-mode NMRA-compliant decoder. A spring-loaded center-off switch is included for manual direction control. Although designed for Bachmann's E-Z Track the turntable tracks can

readily be adapted to any standard HO track as well as On30 track. Each of the 16 tracks are indexed for accurate alignment. The turntable bridge is 10" long. The outside diameter of the turntable is 14".

During the Virtual National Train Show presentation on Facebook (www.facebook.com/TrainWorldLLC/videos/330273067973019) Bachmann announced the following HO scale products:

USRA 0-6-0 steam locomotive with WOW SoundValue sound. This will be a feature reduced version of the TCS WOWSound decoder. The model is being retooled and will be available in B&O, New Jersey Central, NYC System, PRR and UP.



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EMD FT with WOW SoundValue sound. The model will be available in ATSF, NYC, Lakawanna, Southern, and Western Pacific.

PRR K4 steam locomotive with TCS WOWSound – not SoundValue. Four new roadnumbers, two each with a modern steel pilot and early slat pilot.

52' Center Beam Flat car with bulkheads. A modification of the 52' bulkhead flat car with posts running along the center of the car. The model will be available in CN, BC Rail (BCOL), Northern Pacific, and BN.

Offset streamline cupola caboose with added window glass and details. The model will be available painted for CB&Q, Wabash, Norfolk & Western, and Grand Trunk.

For fans of Thomas and Friends, James will be produced in the "Origin" black and red paint scheme.

Bachmann is adding Plate Girder bridges to the E-Z Track line, decorated for Santa Fe, UP, PRR, and a generic "Next Time Take the Train" scheme.

For multiple scale use, Bachmann is releasing a DCC control box with turnout decoder that appears to be drop-in replacement for a standard turnout control.

For additional information contact a dealer or visit bachmanntrains.com.



Crescent Creek Models is booking orders for a late August delivery of Last Chance Gas. The HO scale craftsman kit features precision laser-cut parts, more than a dozen white metal and 3-D printed details, full color instructions prepared by Dave Meek, and a sheet of colorful vintage advertising with three oil

company options: Conoco, Texaco, or Frijolene. The assembled model has a footprint of 2.5" by 3.625".



The kit was developed by master model maker Jake Johnson, who was inspired by this small Conoco station just outside of Peñasco, New Mexico. For additional information on Crescent Creek Models including ordering instructions visit thundermesa.studio/crescent-creek-models.



R. Bale

WAR-EMERGENCY GONDOLA

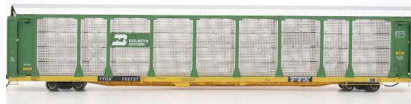
During World War II, steel was in short supply for building non-military equipment. Accordingly, the AAR modified several freight car designs so that wood could be substituted for steel wherever possible. The composite equipment became known as "war emergency" cars. Among the AAR cars was a 52' 6" class G30 mill gondola with the flooring, floor stringers, and side sheathing built from wood instead of steel. The G30 was unique in appearance since the pressed steel fishbelly side frame extended below the side panels. The PRR war-emergency cars had drop ends, and lever-style hand brakes. The Pennsylvania Railroad built 1,000 class G30 gondolas in its Altoona Shops in 1943. Beginning in late 1949, most of PRR's G30s were rebuilt with steel sides and reclassified as G30A. In 1943 New York Central's Despatch Shops at East Rochester, New York, built G30 war-emergency gondolas for NYC as well as for Indiana Harbor Belt. A majority of them were rebuilt with steel in 1953.





Funaro and Camerlengo is selling a resin kit for an HO scale Pennsylvania Railroad 52' 6"

class G30A gondola. The model accurately represents a war emergency car after having been rebuilt with steel sides. The kit is also available for New York Central and Indiana Harbor Belt. The craftsman-style kit includes decals and most detail parts but comes without trucks or couplers. For additional information visit fandckits.com.



InterMountain Railway has released a group of HO scale Bi-Level autorack cars that feature see-through, etched metal side

panels. Additional features include operating end loading doors, formed wire grab irons, metal knuckle couplers and 33" metal wheelsets.



Autoracks mounted on TTX flat cars are available from dealers decorated for Burlington Northern, Chicago & North

Western, UP/MP, Ferromex, Norfolk Southern, Louisville & Nashville, BNSF (new image), and Denver & Rio Grande Western.

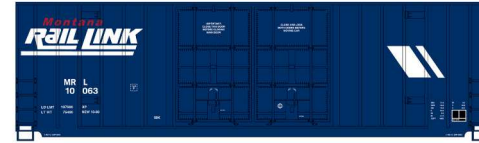


Cars with matching road names for both the autorack and the flat car are available for Southern Pacific, BNSF (circle logo), and SOO Line.



Reservations are already being booked for the next release of the popular model. Autoracks mounted on TTX flat cars will be available for BNSF, Conrail,

CSX, Ferromex, KCS, Southern, Norfolk Southern, Transportaci3n Ferroviaria Mexicana, Western Pacific, and two Union Pacific schemes. Matching Autoracks and flat cars will be available for CP Rail, GTW, Providence & Worcester, and Canadian National.



InterMountain is booking advance orders for another release of its HO scale Gunderson 50' high-cube boxcar. Two of the Value

Line models will be available with double doors. A Montana Rail Link version will have double plug-doors, while a Southern Pacific version will have a pair of Youngstown sliding doors on each side.



Models with single doors will be available decorated for Wisconsin Central, Burlington Northern, Canadian National, Illinois

Central, CSX, and IBT-International Bridge & Terminal Company. All versions will come with Kadee couplers and either 33" or 36" metal wheels depending on the practice of the prototype road being modeled. For additional information contact a dealer or visit intermountain-railway.com.



Kadee has released a 40' PS-1 boxcar decorated for Chesapeake & Ohio. The HO scale ready-to-run model replicates a prototype built in 1952 with 8' Youngstown sliding doors.

Also new from Kadee is this HO scale 50' PS-1 boxcar decorated for CNA-Canadian National. The ready-to-run model closely replicates a prototype car Pullman-Standard built in



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1970 with a 10' sliding Youngstown door. CN repainted the car in the all-blue scheme in February 1986.



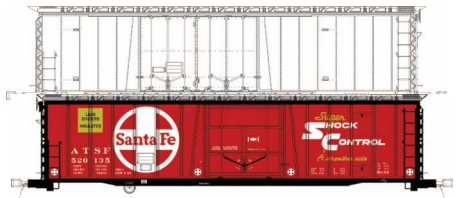
The same 50' PS-1 boxcar is available from Kadee decorated for Delaware & Hudson. The DHCN version has a galvanized roof and is fitted with a 10' 6-panel

Superior sliding door. Both models come with Kadee metal knuckle couplers and self-centering trucks. For additional information contact a dealer or visit kadee.com.



Moloco is booking advance reservations through the end of August for future delivery of Santa Fe 50' insulated

boxcars with Super Shock Control cushion underframes. The prototype cars met the Plate B clearance standard which permitted access on all North American rail lines.



Although a specific date has not been announced, the 2021 release will include the newly tooled class Fe-34 car as well as new schemes on Moloco's accurately scaled Bx-94 and

Bx-97 models. Ready-to-run models in this production run will include Fe-34 class cars with double plug-doors, Bx-94 class cars with 10' offset plug-doors, and similar Bx-97 class cars. Decorating schemes include various built dates. The release includes undecorated kits as well as a Bx-97 decorated for North Fond du Lac Railway. For additional information visit molocotrains.com.

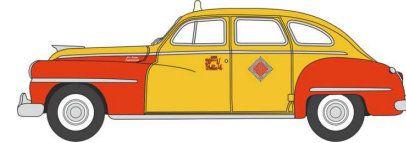
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New 1:87 scale vehicles from **Oxford Diecast** include this yellow 1961 Chevrolet Impala convertible tricked out with maroon flames, wide whitewall tires, and a silver boot over the retracted top.



Also new is a 1965 Chevy Stepside pick up. This looks like an everyday work truck painted white over blue and wearing black wall tires.



DeSoto captured a big chunk of the nation's postwar taxi business with its specially-built 4-door Suburban. Oxford's 1946-48 1:87 scale DeSoto in red and

yellow captures the appearance of the real thing. Also new from Oxford is a 1968 Dodge Charger R/T painted in white over black. For additional information contact a dealer or visit walthers.com.



Rapido is adding a Penn Central X72/X72A 50' boxcar to its expanding line of freight cars. The HO scale model replicates cars Evans delivered to PC in the early

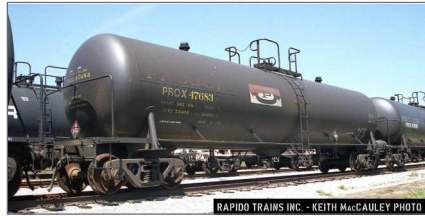
1970s. The cars eventually became Conrail property with CR reporting marks but retained their original PC numbering. Some CR cars received full repaints, while others received just patch jobs. A large number were later acquired by Canadian National with many being sold off to leasing companies.

Road names will be Penn Central and Conrail (two schemes each), Canadian National, Western Pacific, York Rail, and

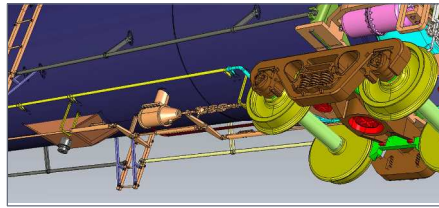


APASCO. An undecorated kit will also be available. Notable details include a fully detailed

underframe, separate door posts, door latches, uncoupling levers, cushion draft gear with Kadee #158 Whisker couplers, and 70-ton trucks with 33" machined metal wheels. Availability is planned for mid-2021.



Also underway at Rapido is an HO scale Procor 20,000 gallon general purpose tank car. The HO scale model is based on a basic design manufactured from 1969 until 1984.



Features will include photo-etched metal walkways, detailed vent stacks, loading hatches, air tanks and braking equipment, and Kadee couplers. Models based on

early production will have 70 ton trucks with 33" wheels and an exposed drain valve, while later versions will have 100 ton trucks with 36" wheels and reinforced drain valve housing. Delivery of the model is expected in mid-2021. Road names will include Procor (4 schemes), North American Car, CP Rail, and two schemes each for Alberta and British Columbia Railway. An undecorated kit will also be available.



Rapido has announced plans to reissue its HO scale Alco RS-11 locomotive with numerous improvements and significantly expanded

road-specific details. After verifying that the majority of RS-11 locomotives had several unique hood and roof details, Rapido determined separate tooling would be required to accurately replicate each road name. Individual tooling for Central Vermont, Delaware and Hudson, Duluth, Winnipeg and Pacific; Maine Central, Portland Terminal, New York Central, Nickel Plate, Northern Pacific (and BN), and Seaboard Air Line is currently underway. Another major upgrade in Rapido's RS-11 is a revised assembly design of the locomotive components making it considerably easier for modelers to remove the body shell.



The model will be available for standard DC operation, and with DCC ESU LokSound with sounds recorded from a real Alco 251B prime mover. Multiple

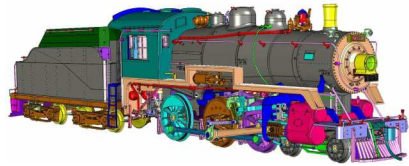
road numbers of Rapido's HO scale RS-11 will be available decorated for Burlington Northern, Northern Pacific, Central of Vermont, Delaware & Hudson, Duluth, Winnipeg & Pacific; New York Central, Maine Central, Portland Terminal, Northern Pacific, Nickel Plate Road, and Seaboard Air Line.



Rapido Trains is booking reservations for its HO scale Canadian Pacific D10-class 4-6-0 steam locomotive scheduled for

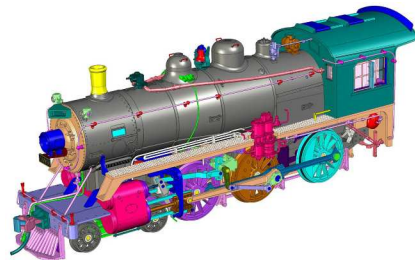
release in 2021. According Rapido executive Bill Schneider, several modifications to the original design have been completed including the application of a new high-torque coreless motor. These computer graphics illustrate the complexity of the production tooling.

The D10s appearance changed over the years with variations in the placement of piping and appliances. Rapido's HO scale



version will feature many optional details to accurately portray D10s in several configurations and sub-classes, including coal or oil tenders,

raised or straight walkways, centered or smokebox-top mounted headlights, straight or angled front number boards, two styles of power reversers, straight or angled cylinder steam pipes, and two different bell locations. The design of the production tooling has been finalized to allow these variations.



The Rapido HO Scale CPR D10 ten-wheeler will have DCC sound with synchronized exhaust. Road names will be Canadian Pacific (freight), Canadian Pacific (passenger), Dominion Atlantic, and Quebec Central. Credit Valley Railway (hobby store) will

offer a fifth exclusive version. For additional information visit rapidotrains.com.



River Point Station has released a 2010 Ford F-450 Super Cab service truck with air tank in a variety of paint schemes. The 1:87 scale model is available in white, yellow, orange, red, and

decorated for several commercial firms including Great Eastern Fabricating as shown here. The ready-to-use injection molded model has rubber tires. For additional information contact a dealer or visit riverpointstation.com.

ScaleTrains.com has released a new production run of EMD SD45 Rivet Counter series locomotives. Road names include



Southern Pacific, Conrail, Burlington Northern, Norfolk & Western (Pevier blue), Norfolk & Western (Bicentennial), Chicago & North Western, Pennsylvania Railroad,

Seaboard Coast Line, and Santa Fe (yellow and blue). An undecorated version is also available.



ScaleTrains.com's Rivet Counter SD45s feature numerous road and road number specific details.

Features common to all road names include detailed cab interior with separate floor, rear wall, seats, and standard AAR control stand, sliding cab windows, inertial air intake grilles, accurately profiled dynamic brake housings, see-through dynamic brake intakes with resistor grid, wire grab irons and lift rings, individual windshield wipers, horns, coupler cut levers, trainline hoses, and metal Type E knuckle couplers.



Electrical features include LED directional headlights, printed and LED-lighted number boards, and all-wheel electrical pick-up.



The HO scale locomotives are available for standard DC operation (DCC ready with 21-pin connector),

and with an ESU Loksound DCC decoder with two capacitors. For additional information visit scaletrains.com.

Tangent has released its dimensionally-accurate HO scale model of an International steel bay-window caboose in eight



new era-specific decorating schemes for Baltimore & Ohio, Chessie System (B&O), and CSX. Paint schemes and details of Tangent's HO scale ready-to-run

cabooses are both era and road number specific. The B&O caboose C-3041, shown above, is available in the original 1968+ blue paint scheme with yellow ends and unpainted galvanized roof. B&O caboose C-3013 is available in a similar post-accident scheme less the B&O on the bay-window.



Chessie System (B&O) caboose C-3005 represents a 1973+ yellow repaint with orange striping at the sill and below the eaves. The Chessie cat logo is placed high on

the side to allow room beneath for the ACI label.



Tangent has included two Chessie System (B&O) safety schemes in this release including caboose C-3035 in light blue, and C-3017 in red. Both schemes are 1973+.



CSXT uses a former Chessie caboose as a shoving platform. CSXT 900064 has been thoroughly shuttered but still shows her Chessie cat heritage. An undecorated kit is also available.



Notable details on all versions of Tangent's ICC caboose include see-through steps, end platforms,

and running boards; dimensionally correct rooftop vents, Waugh cushion underframe, full brake rigging, battery boxes, a

toilet discharge pipe, accurate draft gear box with side key detail, uncoupling lift bars, Kadee couplers, and CNC-machined wheels. Interior details include a sink, toilet, oil heater, bunks, and desks. Marker light options are appropriate for the paint scheme offered. Lighting is controlled by a wand included with each caboose. For additional information visit www.tangentscalemodels.com.



Walthers next name train project will be for the

Santa Fe's late-1960s edition of the combined Super Chief and El Capitan. The project will include EMD F7 A/B units wearing the fabled Warbonnet paint scheme and 14 standard and Hi-Level passenger cars. The full consist will be available individually as well as in an 11-car deluxe edition fully populated with Preiser passengers and crew figures. Cars in the deluxe sets will be lighted, which is an option available on individual cars.

Details on WalthersProto F7A-B sets and individual F7A and F7B units will be based on Phase II units 306LAB-314LAB, From Santa Fe's last order to EMD for passenger-service, they were delivered in 1952-1953. Details include five-chime offset air horn, rear-mount firecracker radio antenna, 48" dynamic brake fan, and vertical grilles and louvers. The HO scale locomotives will be available for standard DC and with factory installed LokSound 5 DCC.



Delivery of individual cars will be on a monthly

basis beginning in June 2021 with the release of a 74' Pullman-Standard baggage car. All other cars are 85' in length. A P-S baggage/dormitory with a roof line transitioning from standard height to Hi-Level will arrive in July, followed in

August by a Budd Hi-Level step-down coach with 68-forward facing seats, and a Budd 46-seat coach.

Two Budd Hi-Level cars are scheduled for September 2021: a 72-seat coach and a step-down coach with 68 reverse seats. October 2021 will see two more Budd cars including a dome bar/lounge/dormitory and a Pine series 10-6 sleeper.



Pullman-Standard cars include a dome bar lounge set to arrive in No-

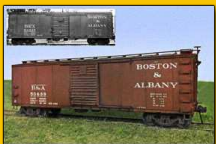
vember followed by a 36-seat diner in December. 2022 releases begin in January with a Pullman-Standard Regal series 4-4-2 sleeper.



A Budd Hi-Level diner is scheduled for February followed by a

Budd Hi-Level Sky Lounge car in March. Although many of the cars in Walthers combined Super Chief/El Capitan are from existing tooling, an 85' Pullman-Standard 11 double-bedroom sleeper, scheduled for release in April 2022, will be produced from all-new tooling. Orders for all models in the project are due by August 30, 2020.

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R. Bale

EMD GP7

Introduced in 1949, the GP7 was the first model in EMD's GP (general purpose) series of locomotives.

It was also the first EMD road locomotive to utilize a hood instead of a full car body design. Although narrow enough to allow outside walkways, the full height hood easily accommodated EMD's 1,500hp 16-cylinder 567 diesel engine. The hood concept was an immediate success since it cost less to build, was cheaper and easier to maintain, and offered much better fore and aft visibility for the operating crew. When shopping for new locomotives, many railroads found it more economical to rebuild their reliable GP7s rather than to purchase new equipment.



Walthers has released HO scale GP7 locomotives in five new road names. This production run of the Proto series model

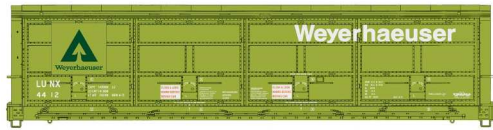
features several upgrades from Walthers previous editions including improved hood contours, wire grab irons, directional LED lighting, and road-specific details.



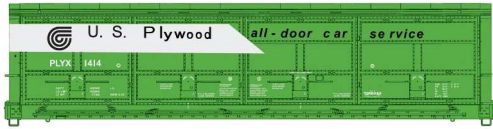
Road names are Great Northern, Belt Railway of Chicago, Chessie System C&O, Erie Lackawanna, , and Chicago, Burlington &

Quincy. Each road name is available for standard DC operation (with a 21-pin DCC-ready plug), and with LokSound Select Sound and DCC.

Walthers plans to release a new production run of its 56' Thrall All-Door boxcar in November. The Proto series model



will have etched end platforms and cross-overs, separate ladders, latch bars, door handles, grab irons and brake wheel. The HO scale ready-to-run model will have roller-bearing trucks with 33" machined metal wheelsets.



Road names will be Boise Cascade-MD&W, British Columbia-BCIT, Canfor-TCAX, Georgia Pacific, Lignum-LUNX, Potlatch, US Plywood, and Weyerhaeuser-LUNX.



Walthers is taking advance reservations for HO scale 52' steel gondola decorated for Railgon-GONX. Additional decorating schemes will include Chicago & North Western, Conrail, CSX, Wisconsin Central, and Railgon patched for Seaboard System and CNW.



The Walthers Mainline series model will have 100-ton roller-bearing trucks with 36" machined metal wheelsets.

Availability is planned for January 2021. For additional information contact a dealer or visit www.walthers.com.

N SCALE PRODUCT NEWS



Athearn plans to release a group of N scale 50' Ice bunker reefers in June 2012. The SFRD-Santa Fe cars will have a straight system map on one side and either Scout, Grand Canyon, or a large SF logo on the opposite side. The Santa Fe cars will be available numbered and fully decorated but without a number.



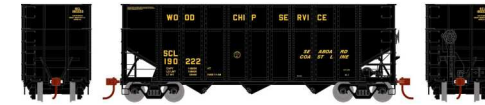
In addition to the four Santa Fe cars, road names will include

Wilson, Fruit Growers Express, Rath Packing Company, and Northern Pacific. Features include Santa Fe type reversed hatch covers, screw mounted trucks, and McHenry knuckle spring couplers.



A set of N scale F89F TTEX long-runner flat cars is

included in Athearn's June 2021 production schedule. The cars have a weighted diecast underframe, raised and lowered hitches, separately applied wire grab irons and ladders, machined metal wheelsets, and body mounted operating knuckle couplers.



Also coming from Athearn next June is a group of 40' hopper cars with extended sides to handle wood chips. The cars come with a removable load.



Road names will be Louisville & Nashville, Ashley Drew & Northern, Gulf Mobile & Ohio, Seaboard Coast Line, Atlantic Coast Line, and Southern. The N scale cars will be available individually and four packs with different road numbers. For additional information contact a dealer or visit athearn.com.

Bachmann Trains has released a 40' gondola car with a removable coal load in N scale. Part of the Silver Series, the cars are fully assembled with blackened machined metal RP-25 contour wheels with needle point bearings and

magnetically operated E-Z Mate couplers. Available roadnames include ATSF, BN, D&RGW, and PRR.

Bachmann announced at the National Virtual Train Show (www.facebook.com/TrainWorldLLC/videos/330273067973019) that they would be releasing the following products in N scale:

NYC 4-6-4 Hudson, featuring SoundTraxx Econami sound, in four road numbers, the 5420 and 5426 in an “as delivered” paint scheme and the 5405 and 5445 with a later gothic lettering scheme.

GP38 with and without dynamic brakes, featuring SoundTraxx Econami sound. Roadnames to be released include BNSF, CSX, GATX Lease, and UP. The UP model will come without dynamic brakes and feature “Little Rock” lettering.

Bethlehem Steel 100-ton 3-Bay hopper car in new tooling. Roadnames will include UP, Conrail, PRR, NS, and Pennsylvania Power and Light.

52' Center Depressed Flat Car with a M551 Sheridan Tank load. The model will come in three paint schemes – black car with green tank, car and tank in a matching green camo scheme, and car and tank in a matching desert camo scheme.

A 40' Hi-Cube boxcar will be available in ATSF, BN, D&RGW, and UP.

New N scale track products include an E-Z Track Nickel Silver blinking bumper and an Over-Under Figure-8 Track Pack. For more information visit bachmanntrains.com.

Broadway Limited has announced the July-August 2020 arrival of an N scale Cryogenic Tank Car. Sized to carry over 15,000 gallons of liquid oxygen, they were also used for other



cold liquid gas products down to -320 degrees Fahrenheit or below. Three types of the cars are available, listed by BLI as Type A, Type B, and Type C. The difference between the types appears to be in the location and types of valves and other appliances. Paint schemes for this run include AirCo, Air Liquide, Air Products, American Cryogenics, Canadian Liquid Air Co., Linde, and UTLX white. Undecorated models of each type of car are also available. The painted cars are sold in both single and two-packs. For more information see your dealer or visit the BLI website at broadway-limited.com.



InterMountain Railway has released several new N scale models of cylindrical quadruple-bay covered hopper cars.



Road names include Chicago & North Western and two schemes each for Red Canada, Alberta Heritage, Alberta “Take A Break”, Canadian Wheat Board, and Saskatchewan.



InterMountain plans to release a new run of Aero Flo and Aero Flo II coal gondolas later this year. The N scale models are based on a Johnstown-built prototype that began to appear in the late 1980s. Road names on the original Aero Flo I version will be Burlington Northern, BNSF, Procor, and Canadian National.



AeroFlo II coal gondolas will be available decorated for Navajo Mine Railroad, LUSX-Luscar, NOKL-

Northwestern Oklahoma, Canadian Pacific, and Midwest Generation. For additional information contact a dealer or visit intermountain-railway.com.



Jacksonville Terminal Co. has released several new N scale 40' standard height, 8'-6" wide containers in both smoothside, corrugated wave, and corrugated rib versions. The series includes six different body styles, twelve door variations, and five different front ends. Paint schemes released

include Showa, ACL, Nissan, SeaLand, DART, XTRA, ZIM, Nedlloyd, and ONE. The container types include service lives from 1960s to the 2000s and present day.



Also newly released are 53' domestic corrugated containers with 8-55-8 sides. Appropriate for modern intermodal

operations, JTC has tooled in appropriate details to match the paint schemes they have applied to the models, such as hazard placards, document boxes, and GPS/cargo sensors. The first schemes available for this container are J.B. Hunt, Schneider, Hub Group, and EMP.



Another 53' domestic corrugated container available from JTC has 6-46-6 sides, and is available in DRT Transportation, Canadian National, Crowley, CSX Intermodal, Hub Group Inc., and North American Container System.

All JTC containers are equipped with the JTC magnetic connection system and are compatible with other JTC containers. For additional information visit jtcmodeltrains.com.



R. Bale

SD40-2 DIESEL ELECTRIC LOCOMOTIVE

The SD40-2 was one of EMD's most popular locomotives. During its 17 year production run that began in 1972, EMD produced nearly 4,000 of the 3,000hp SD40-2s. Although higher-horsepower locomotives were available, the reliability and versatility of the SD40-2 made it one of the best-selling models in EMD's history. The SD40-2s principal improvement over the SD40 was its modular electronic control systems. A variety of low front noses ranging from 81" to 123" in length housed additional electronic gear along with a more commodious toilet for crew members.



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KatoUSA plans to start releasing a new production run of EMD SD40-2 diesel locomotives in December. Kato's N scale models represent the mid-

production of the SD40-2 with an 88" nose and walkway mounted ditch lights. Kato's last production of the SD40-2 was in 2013. This new release will offer two new road numbers for Santa Fe, NS Maersk, and BN.



The N scale models will be available in three operating options: standard DC, with Digitrax DCC installed, and with ESU LokSound DCC + Sound. The LokSound

version will be available by pre-order only. DC units are scheduled to arrive in December, with Digitrax DCC units and ESU LokSound units following in January.



Also coming from Kato next January is a new release of Gunderson MAXI-I multi-unit well cars designed to carry two stacked intermodal containers. A 40'

container will fit in the lower level with any length container up to 53' in the top position. The Gunderson MAXI-I five-unit cars in this release will come with ten removable containers. Two road numbers will be available for each of the five-unit cars.

Availability begins in January with Maersk well-cars and 10 Maersk containers. The BNSF Swoosh scheme is scheduled for release in February with 10 magenta ONE containers. TTX well-cars coming in March with 10 gray ONE containers will



complete this release. For additional information contact a dealer or visit katousa.com.



Western version is maroon with a black roof and buff lettering.



Micro-Trains has released two versions of an N scale model of a 78' heavyweight coach. A Norfolk &

An Erie version of the single-window coach is painted Pullman green with gold lettering. Both

versions ride on 6-wheel plain-bearing passenger trucks.



New freight equipment from Micro-Trains includes this Rock Island 100-ton triple-bay open hopper. The N scale model comes with a coal load.



Micro-Trains' 39' single dome tank car is based on a prototype built in the late 1930s by American Car & Foundry for Shippers Car Line (SHPX) that leased the car to Pirrone & Sons California Wines.



This 50' Northern Pacific steel boxcar with a 10' Youngstown sliding door has been updated with its running board removed and ladders shortened.



This N scale triple-bay covered hopper represents a prototype built in 1966 by ACF for the Pennsylvania Railroad. It was on Penn Central's roster for a period of time before a second merger led the still-useful car to be upgraded and decorated for Conrail. For additional information about Micro-Trains models contact a dealer.



Motrak Models has release three new detail products in N scale. The first is an exterior J-vent, which comes in a pack of 24. Two can be glued together to form a wider vent. Each package includes 24 J-vents.



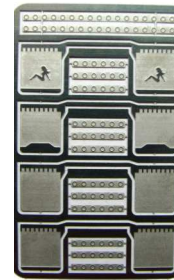
Also released is a set of picnic tables, which are made of laser-cut wood. Some assembly is required. Eight five-foot picnic tables come to a package.



Finally, Motrak has released eight-foot workbenches in N scale. Made of laser-cut wood, eight benches come to a package. For more information visit motrakmodelsusa.com.



Showcase Miniatures has a 1:87 kit for a 1970s-era GMC 9500 short hood wrecker. Components include a resin cab body, cast pewter wheels, tires and details; laser-cut windows, and waterslide decals. A GMC 9500 is also available as a dual axle short hood truck.



Additional vehicle details available separately from Showcase Miniatures include etched metal side view mirrors, mud flaps, and light bars. For more information visit www.showcaseminiatures.net.

NEW DECALS



Great Decals has released a set of decals for the Ludington & Northern #16 and Michigan Southern/Kendallville Terminal #16 in HO scale. The #16, an SW8, retained basically the same

paint scheme despite operating on six different railroads. The decals are designed to model the six major paint and lettering variations the locomotive has worn over nearly 70 years of service. For more information visit greatdecals.com.



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! BRIEFLY NOTED AT PRESS TIME ...

Kalmbach Publishing has announced the discontinuance of *Garden Railways* magazine. *GR* has been the leading periodical for garden railroading since it was established by Marc Horovitz in 1984. After selling his magazine to Kalmbach in 1996, Horovitz continued as editor of *GR* until 2018 ...

KatoUSA is developing an N scale version of a Canadian National Transcontinental train set that will include F7 A/B sets and seven cars; all in CN's black and white scheme ...

MTH plans to release an HO scale 2-8-4 Berkshire early next month, followed by Union Pacific's 3-cylinder 4-12-2 No. 9000 ...

Neil Besougloff, former editor of *Model Railroader* magazine, passed away July 26th of a heart attack. He suffered the attack while hospitalized with COVID-19 and had been recovering after having been on a respirator. Besougloff joined the editorial staff of *Classic Toy Trains* magazine in 1997. He then served as editor of *MR* until his retirement in 2017. Prior to joining Kalmbach, he had been city editor of the *Brandenton Herald*, in Brandenton, Florida ...

ScaleTrains.com has announced two new products for pre-order. The first is two different F68-series 100-ton, 68' foot long flat cars, the F68CH general purpose flat car and the F68DH heavy duty flat car. The second is an N scale model of the Union Pacific Standard Turbine, a class of 10 locomotives delivered by General Electric in 1952 and 1953. Pre-orders for both products close on August 24th ... ■

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Due to the uncertainty surrounding the COVID-19 pandemic and its associated lockdowns, Selected Events will not be published this month. Please check back next month for future events. ■

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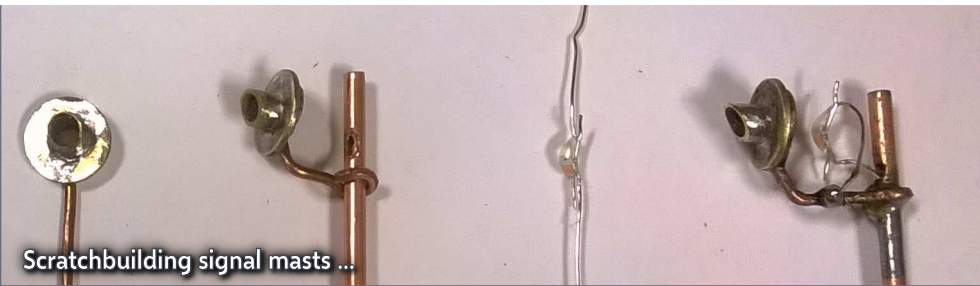
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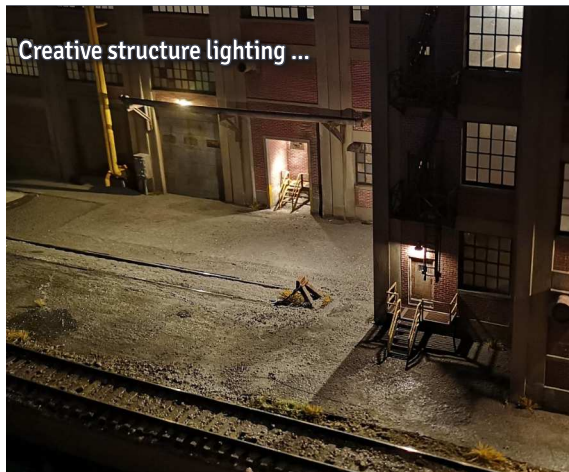
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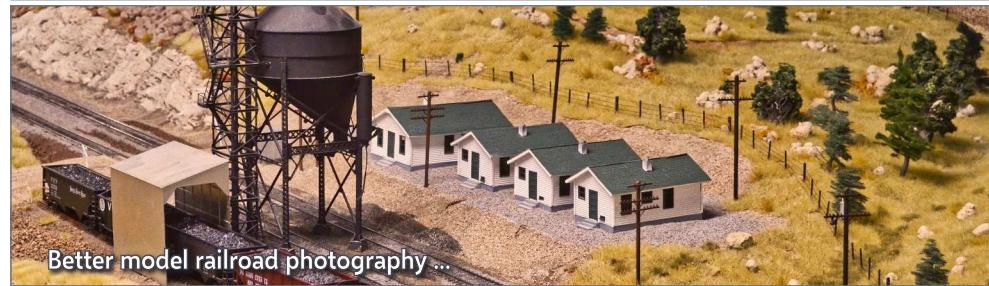
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