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LANDSCAPE EDITION

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RICHARD BALE and JEFF SHULTZ

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PUBLISHER'S WELCOME

introduction



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JOE FUGATE: THE WONDERS OF DOUBLE-SIDED MASKING TAPE ...



I SOMETIMES LIKE TO USE MASKING TAPE STICKY side up on my workbench to hold things as I work on them. I tape the ends down with a couple more strips of tape. But I found myself wondering if double-sided masking tape existed, because I sure would like to have some.

I've used other double-sided tape like carpet tape, but the stuff's really sticky and leaves a residue. I wanted *double-sided masking tape*, which like normal masking tape is reasonably sticky but not *uber sticky*.

I also wanted something affordable. Well, I found just the ticket: DS154 Shurtape [1]. For a 23 meter roll about two inches wide, the price is about \$13 with free prime shipping. Not bad.

I love that I can remove the backing on this tape quite easily [3]. This tape works great with popsicle sticks [2] to make a "tool" you can use to easily hold small parts for painting [4].

I also like to use this tape to keep tiny parts from flying into oblivion when I'm removing them from the sprue [5].

This tape also works great for making custom sanding sticks of any grit desired [6]. If you can find the sandpaper with the grit you need, you can make your own sanding sticks easily. Also, you can make tiny custom sanders with scraps of styrene and this tape. No more destroyed details! ☑

You can find an up-to-date shopping list for this article here:
mrhmag.com/magazine/running-extra/2019-12/publishers-welcome

PUBLISHER WELCOME | 2



1. Double-sided masking tape can be a bit difficult to find. Here's my favorite from Amazon: DS154 Shurtape.



2. Popsicle sticks (also called craft sticks) make a great "tool" you can use with double-sided tape!



3. Some double-sided tapes have a difficult to remove backing. Not Shuretape! Just rub it vigorously and the backing pops right up!



4. Double-sided masking tape on a popsicle stick works great for holding figures and small detail parts for painting.



5. Press nut-bolt castings against the tape and use flush cutters to remove them. No more tiny castings flying off the sprue into oblivion!



6. Finger nail emery boards work as sanding sticks but the grit choices are limited. Make custom grit sanding sticks using the tape and sandpaper.

THE LIMITED MODELER

column



MRH Running Extra | December 2019

JIM SIX SHARES NOTES ON EARLY
20TH CENTURY MODELING ...



I DEFINE THE CLASSIC ERA OF NORTH AMERICAN railroading as covering the years from 1890 to 1930. It was a time of rapid growth for both railroads and the United States. By 1890, the U.S. was becoming recognized as a rising economic power. After 1930, the Great Depression brought a general decline to railroading.

Between those years, railroads transitioned from primitive lines to modern systems, and played a key role in building America into an industrial powerhouse. This was an era of optimism, a time when young men stood at trackside dreaming of becoming an engineer operating great steam locomotives. American railroads in that time were the world's greatest transportation system, and the inspiration for my modeling.

I am committed to modeling the classic era of American railroading. What drives me to focus on 1927? One aspect is the availability of models – particularly locomotives. Finding good quality, operating steam locomotives for specific prototypes can be a challenge, unless you model the Pennsylvania Railroad [3].

► **DOING MORE WITH LESS**

THE LIMITED MODELER | 2

Broadway Limited has produced eight different HO-scale steam locomotives for Pennsy modelers over the last couple of decades. New York Central modelers aren't quite as fortunate as the Pennsy faithful, but there are some good NYC steam locomotive models



1. A southbound NYC way freight rolls into Worthington, Indiana, circa 1927. I re-detailed the HO scale Trix Mikado leading the consist.



2. Steam locomotives and wood-sheathed boxcars define my classic era of railroading.

THE LIMITED MODELER | 3

available. If you model a railroad that utilized USRA Mikado and/or Pacific locomotives, then you have a start [1].

I'll start with a discussion of freight cars and follow that with comments on weathering with powders and decal-setting fluid, brake system developments, and cabooses.

When I first became serious about modeling the 1920s, I felt there was a shortage of appropriate freight cars that were quick to build. There are a wide variety of resin freight car kits, but my limited time and money did not make these practical.

Accurail's line of 36-foot double-sheathed boxcars came to my rescue! They already had nice 40-foot single- and double-sheathed boxcars in their line. The addition of a Fowler-design 36-foot single-sheathed boxcar was a bonus. When I added those with models in the Athearn/Roundhouse and Bowser product lines, I was off and running [2]!



3. A Broadway Limited PRR H10 2-8-0 is one of the reasons I find modeling a 1920s Pennsy line easy.

THE LIMITED MODELER | 4



4. Here are a few of my recent freight car kit builds. Each has been weathered and ready for the layout.

CHANGING FOCUS

I had open heart surgery five years ago and almost left the hobby. I had lost interest during my recovery. I stumbled into details on 1920s railroads and my interest was rekindled. Learning about railroading in this earlier era has been inspirational, satisfying, and rewarding.

Since my surgery, I have re-detailed and finished several steam locomotives. I've also made progress in building a freight car fleet representing my 1927 setting. Just over the last few months, I have completed freight cars at a good rate. While my focus has been on wood-sheathed boxcars, I will soon start on gondolas and coal hoppers [4].

I admit to being prejudiced towards the simple, injection-molded plastic kits. There are many fine resin freight car kits that fit my 1927 modeling era. But I want to build my fleet quickly and the selection of HO scale plastic freight car kits has enabled a faster path to a fleet of models. There will always be a need for resin kits

as many represent prototypes that probably won't be offered in plastic. I'm sure I'll add a few when other parts of the layout project are completed.

USRA 40-FOOT DOUBLE-SHEATHED BOXCARS

The United States Railway Administration (USRA) built 25,000 40-foot double-sheathed boxcars [6] and assigned them to 25 different railroads in 1918 and 1919. HO scale models have been available from several companies. Versions with prototype-specific details have been produced as resin kits by Westerfield. Ertl marketed models of this design many years ago. Accurail introduced kits in 2005, and Rapido recently announced USRA double-sheathed boxcars as their next freight car.

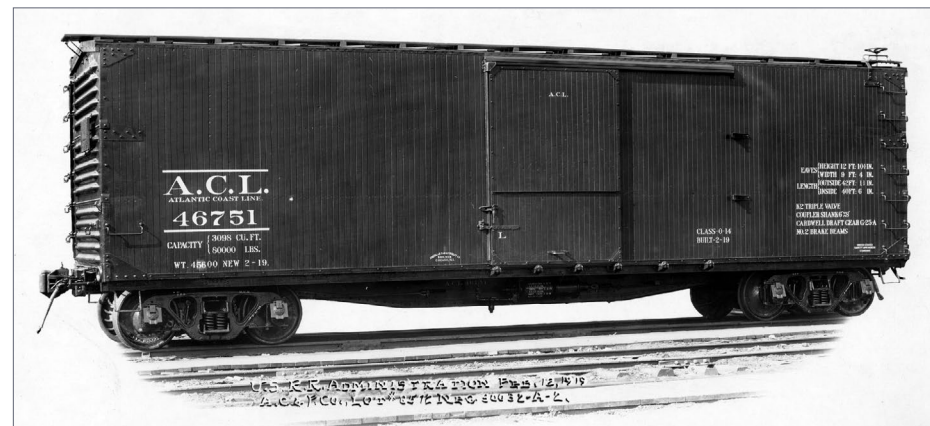
I've bought and built several of the Accurail kits. I feel this kit set a new level of detail on Accurail freight car kits [4 & 5]. The crisp, accurate detail is an improvement over earlier offerings [7].

Assembly is simple. There are two parts of the fish belly center sill, a few brake components, brake wheel, and brake staff, along with couplers and trucks. I substitute Kadee #153 short-shank



5. Here's a closer look at the Atlantic Coast Line and Wabash cars from the far end of the cut.

scale couplers with the whisker centering spring. I change out the plastic wheelsets in favor of metal versions. During assembly, the primary change was a conversion from AB to K brake systems. Simple weathering finishes off the model.



6. The Atlantic Coast Line USRA boxcars were the O-14 class. From the stencil above the left truck, we see it was NEW 2-19. It was built by American Car & Foundry for the USRA and is one of 950 cars assigned to the ACL. *John W. Barriger III National Railroad Library collection*



7. Accurail produced a run of the ACL boxcar model with as-built lettering. The only lettering missing is the AC&F builder stencil to the lower left of the door.

While many railroads despised the USRA, some good things came out of it. Several of their locomotive and freight car designs were reordered by railroads after the USRA relinquished control on March 1, 1920. Several railroads added near-copies of the USRA 2-8-2 Mikado locomotives and the double-sheathed boxcars with slight variations.

Because I model the 1920s, I installed K brake systems. This was a time before the AB brake system was developed. AB brake component castings are supplied with Accurail USRA double-sheathed boxcar kits. I discard these parts and install K brake systems. It's a simple task when I use the K brake components that come with the new 36-foot boxcars, which can be ordered from Accurail. I use the 36-foot boxcar instructions as a guide for positioning and installing the K brakes. After cementing the K brake cylinder to the side of the fish belly center sill [8], the brake rigging is cut into two sections and cemented in place [9].



8. I attached the K brake cylinder the side of the fish belly center sill using a liberal amount of cement to secure the parts.



9. The floor is installed in the body and brake cylinder and brake rods with cranks are fitted and cemented in place. The brake rigging is from the Accurail gondola kit. These parts are available separately from Accurail in their parts listing on their web page.

While I am not a stickler for underframe detail accuracy, I do like K brakes on my models. Details that can be seen when the model is on the layout are worth a few moments to install. I like to see the brake cylinder, the levers, and the brake rods represented. Accurail's 36-foot boxcar kits come with the brake lever and rods as one-piece sections that are easy to modify and install on the 40-foot cars. My layout is 57 inches off the floor so brake rigging is easy to spot. Any modeler who can build these kits can install this brake system conversion.

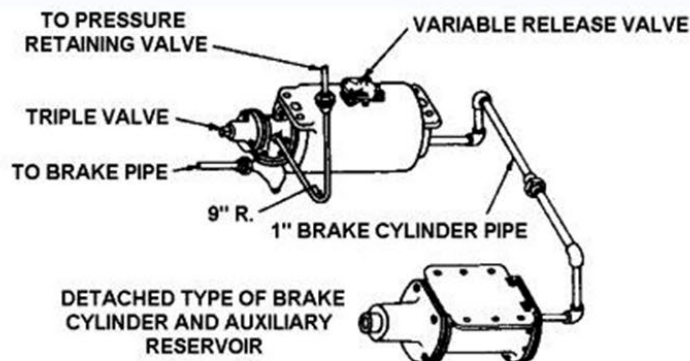
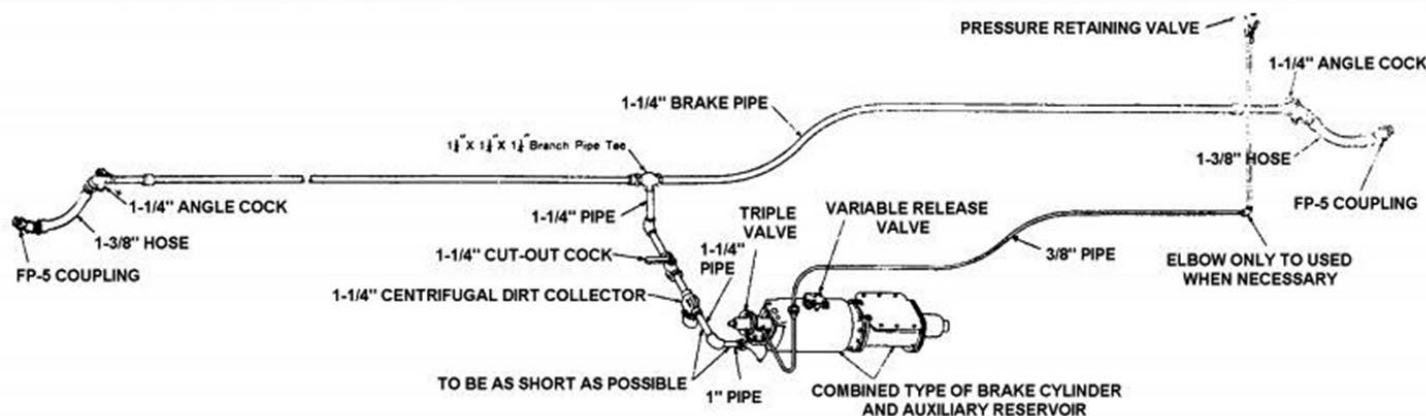
I install the couplers after the car weight and the brake components are glued in place. I use Kadee #153 short shank semi-scale whisker couplers. The short shank is appropriate for many freight cars of the classic era.

I match the truck type with the prototype photos I use to model the car. USRA boxcars used Andrews trucks, which are included with most of the Accurail kits. I install Kadee, InterMountain, or

Proto 2000 metal wheel sets. I've been using more wheelsets with code 88 semi-scale wheels and have never had a derailment with these thinner profile wheels. My track uses code 70 and 55 rails, which are not as forgiving as code 83 or 100 track.

I install the brake shaft and hand brake wheel after weathering. I don't want to damage these parts as I finish the model so I save them for last. I test run all my freight cars on the layout before weathering them.

PIPING DIAGRAM OF THE TYPE KC FREIGHT CAR BRAKE EQUIPMENT



TYPE KD EQUIPMENT "W"



COMBINED TYPE BRAKE CYLINDER AND AUXILIARY RESERVOIR WITH TRIPLE VALVE AND VARIABLE RELEASE VALVE "W"

AIR BRAKE SYSTEMS – K vs. AB

Since shifting my focus to an earlier era, I have been asked questions about K brakes and AB brakes. Here's what I found.

The K brake came into use in 1871. By WWI, there were two common styles in use, KC and KD. The KC system combined the air reservoir and brake cylinder as one unit [10]. The KD system used detached air reservoir and brake cylinder components. KC is K

Combined. KD is K Detached, sometimes noted as a split K. The triple valve controlling air flow was mounted on the air reservoir in each version.

The KD systems were common on coal and ore hoppers, and hopper bottom gondolas. KC systems were common on boxcars, flat cars, and cabooses. Mill gondolas and tank cars were equipped with either version [11]. Check those prototype photos to see what hardware was installed!

10. A general piping diagram of the KC and KD brake systems.



The AB brake systems have three components; the air reservoir, control valve, and cylinder. Experimental versions of AB brakes were tested in the late 1920s [12]. The improvement over K brakes was notable. AB brake systems were required on all newly constructed freight cars for use in US interchange starting September 1, 1933. All newly rebuilt freight cars were required to have AB brake systems after January 1, 1937. The conversion of older freight cars was postponed repeatedly. Eventually, K brakes were banned from freight cars in interchange service on January 1, 1954. There was a twenty year span where both types were common [13].

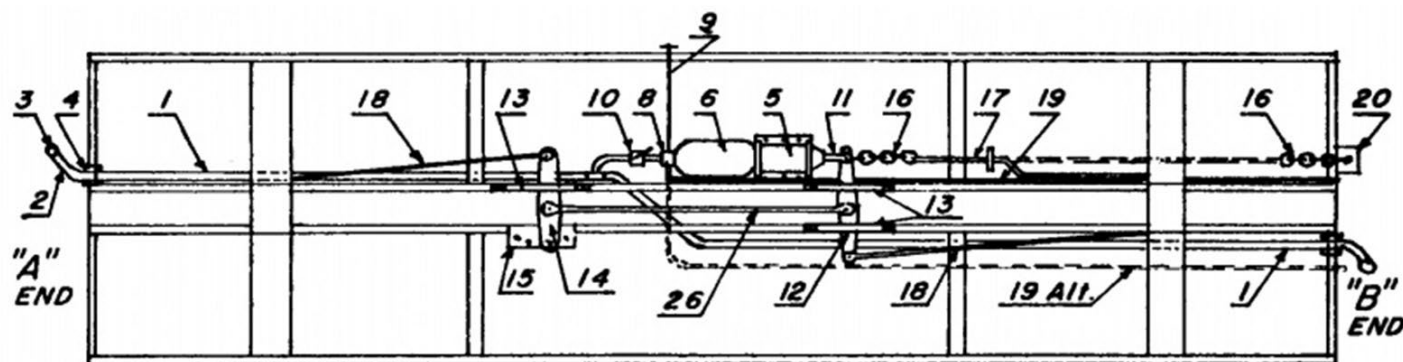
Besides better reliability, the AB brakes provided for quicker application, quicker release, and improved emergency braking. Whereas the K systems only had a single air reservoir, the AB systems had

auxiliary and emergency air reservoirs. AB brakes allowed for reliable operation of longer trains.

MY WEATHERING STEPS

While I am a prototype modeler, I do not try to make each of my models as perfect as is possible. Each is a reasonable representation of a prototype. Each have been weathered to provide visual realism that would otherwise be lost. My focus is not on building contest quality models. I am building a fleet of freight cars to operate on my layout.

My *Limited Modeler* column theme is to share how I model quickly and cheaply. My hobby funds and time are limited. I feel my models end up quite realistic even as they were completed



- | | | |
|------------------------------|-----------------------------------|---|
| 1. Train Line | 10. Dirt Collector & Cut Out Cock | 19. Retainer Line |
| 2. Hose | 11. Piston Rod | 20. Brake Staff Stirrup (For Horizontal Brake Wheel) |
| 3. Hose Coupling (Glad Hand) | 12. Live Cylinder Lever | 21. Bell Crank for Chain to Hand Brake Gear Box (Ajax etc.) |
| 4. Angle Cock | 13. Lever Hangers | 22. To Train Line |
| 5. Cylinder | 14. Floating Lever | 23. To Cylinder |
| 6. Auxiliary Tank | 15. Floating Lever Bracket | 24. To Aux. Tank |
| 7. Emergency Tank | 16. Chain | 25. To Emerg. tank |
| 8. Triple Valve | 17. Hand Brake Rod | 26. Cylinder Lever Rod |
| 9. Bleeder Rod | 18. Rod to Truck Levers | |

11. KD brake system diagram on a boxcar underframe.
NMRA data sheet D9o



with limited cash and time. If I were building models for contests and didn't need many, I would add more detail to match specific prototypes. But I am not. I am a layout builder and operator and my freight cars are for operating on the layout.

BRING UP THE REAR

With freight cars and locomotives, I also need cabooses. I have four cabooses each for the NYC and PRR. The Pennsy called them cabin cars. I plan to use the models as the prototype did back in

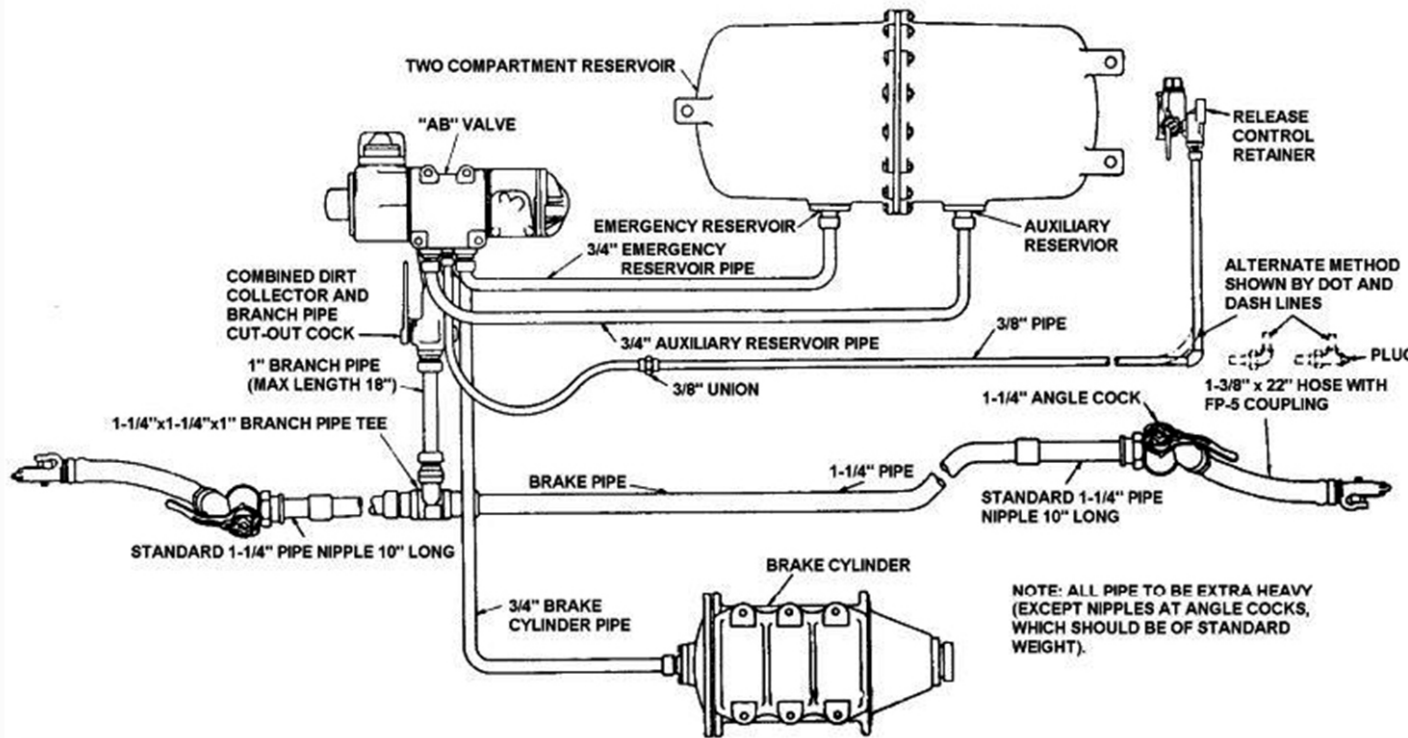
the 1920s. Each conductor was assigned their own caboose, as the cabooses were not "pooled" back then. I will assign a caboose to each of my crews so they will get the same caboose each time they operate.

Finding caboose models to match prototypes can be challenging. Trix offered an HO scale NYC 19000-series wood caboose several years ago, which works for New York Central and Rutland modelers. You can still find them at swap meets and on the internet. The Trix model has a few small detail discrepancies. The more difficult task lies in converting the "funky" coupler and trucks.

The 19000-series cabooses were the most numerous on the New York Central [23]. They originally worked New York to Cleveland. By the Great Depression, they were wandering all the way to Chicago. These cabooses were somewhat unique with a low cupola, a requirement for tight clearances in the many low tunnels on the Hudson line.

By the 1920s the New York Central had a variety of all-wood, truss rod caboose designs

PIPING DIAGRAM OF THE COMPLETE "AB" FREIGHT CAR BRAKE EQUIPMENT



12. A general piping diagram of the AB brake system.

that arrived through consolidation. Some were rebuilt with steel center sills, eliminating the truss rods [23]. Aside from the NYC 19000-series cabooses, there were many cabooses from the Big Four, Lake Shore & Michigan Southern, Michigan Central, and lesser roads.

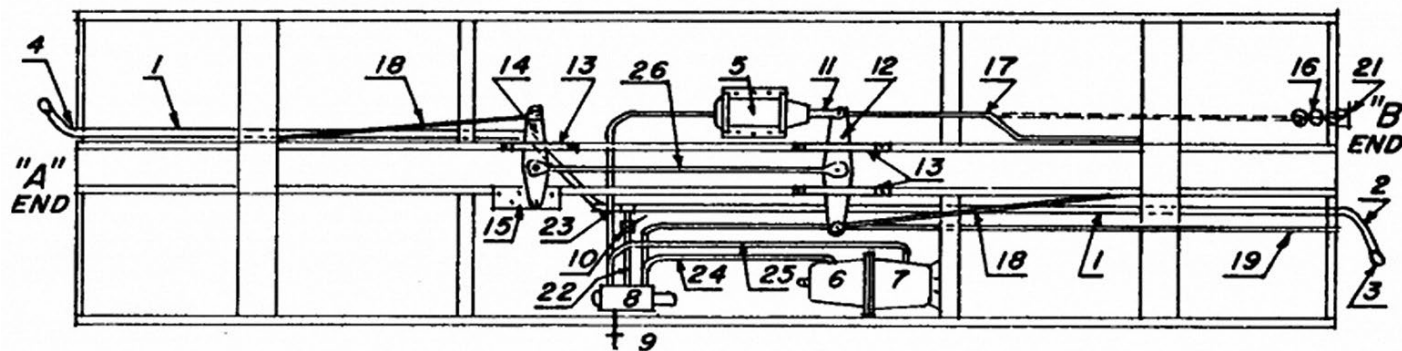
The New York Central 19000-series cabooses were distinctive with a squat cupola surrounded with walkways. They also had wide running boards using four boards. The trucks were Bettendorf T-section caboose trucks. The frames had a center steel beam but also had two truss rods for strength. There were three windows on each side directly opposite from one another [24, 25, 26].

The NYC western subsidiary railroads were using longer cabooses with taller cupolas. They did not have the wide running

boards or a platform around the cupola. They were plain looking [27]. I'll address modeling these cabooses in a future *Limited Modeler* column.

Let's not forget the standard Big Four (C.C.C. & St. L.) caboose [28]. The Big Four had a lot of these roaming from Cleveland, Ohio, to St. Louis, Missouri, and from Cincinnati and Louisville to Michigan. Note the early wide-vision, tall cupola. While widely used on the western NYC system, only a couple of brass imports have been produced. Ray Breyer and I have discussed scratchbuilding or kitbashing a few of these.

I will feature two other major groups of New York Central cabooses in a future column. These were Lake Shore & Michigan Southern/ Michigan Central and Big Four prototypes.



- | | | |
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| 8. Triple Valve | 17. Hand Brake Rod | 26. Cylinder Lever Rod |
| 9. Bleeder Rod | 18. Rod to Truck Levers | |

13. An AB brake system diagram on a boxcar underframe. NMRA data sheet D90



How I Weather My Freight Cars – JIM SIX

Here are my steps for weathering freight cars.

1. Apply a heavy coat of weathering powders and only work one car side at a time.
2. Dip a cotton swab in decal setting solution then wipe strokes from top to bottom of the model using the wet swab. This turns the powder into a thin watery slurry, depositing it in nooks and crannies. The swab wipes most of the material off flat surfaces.
3. Use a blow dryer to dry the weathered model. I will repeat the previous steps as necessary.
4. Following the first three steps the weathering powder becomes permanent on the model. I recommend spraying with thinned Dullcote for the perfect finish.

Note: I weather the underframe after installing the couplers but before installing the trucks. The trucks are weathered individually by rolling them back and forth on a piece of scrap board while spraying PollyScale Railroad Tie Brown, my favorite weathering color.

Note: PollyScale Railroad Tie Brown is an acrylic paint that is no longer available. I have a few bottles remaining which will be enough to weather more of my freight car fleet. Check out Joe Fugate's *Guide to acrylic painting...in a post-Floquil world* for a color chart to find a suitable replacement.

model-railroad-hobbyist.com/subscribers-only/painting/acrylics



14. I applied Aim Products weathering powder on this Wabash boxcar model. The material has been heavily brushed onto the car side. Some folks may like the effect seen here, but I find it too heavily weathered.



15. My ACL boxcar has had powder applied; then I used a cotton swab soaked in decal setting solution to wipe down the surfaces. Note how the remaining material has gathered in corners. I like this realistic effect and it's very simple to do.

★★★★★
RATE THIS ARTICLE



16. Here's the completed ACL boxcar. I model 1927 and want the car to be dirty but not heavily worn. The prototype was only eight years old in 1927. I feel weathering is key to transforming a good model into a great model.



17. Wabash 80789 in a 1922 AC&F builder image. The Wabash ended up with 2,800 USRA double-sheathed boxcars and bought a few thousand very similar copies through the 1920s. *John W. Barriger III National Railroad Library collection*



18. I weathered this Wabash USRA boxcar to show dirt and wear but not to look like it is running out its last miles.



19. C. C. C. & St. L. 56206 poses for a February 1919 AC&F builder photo. The Big Four was assigned 1000 of these cars, all from the same builder. *John W. Barriger III National Railroad Library collection*



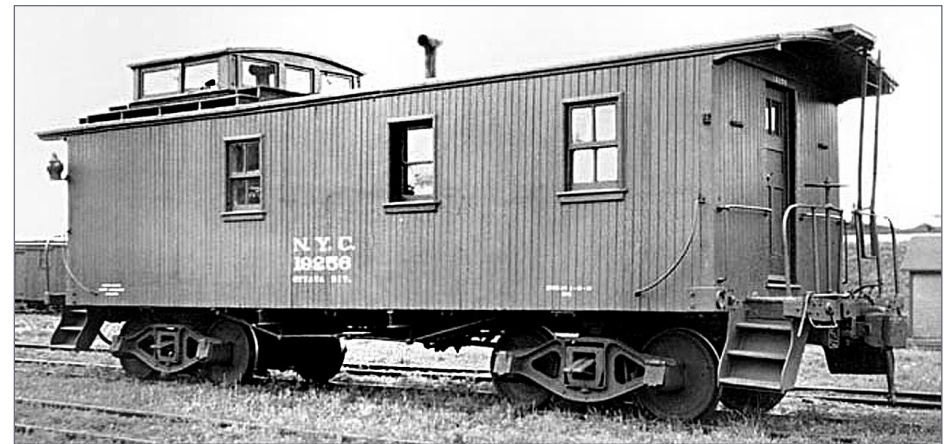
20. Here's another boxcar I weathered using powders and a cotton swab soaked in decal setting solution.



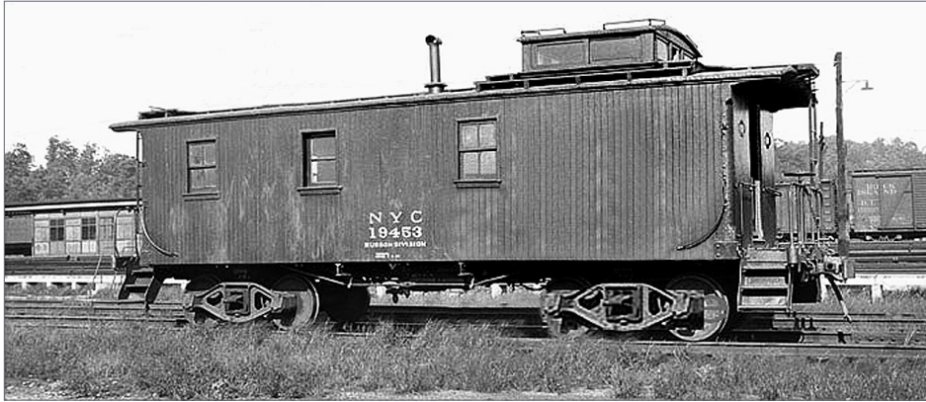
21. Nickel Plate 12928 looks like a USRA double-sheathed boxcar but was built in 1924 as a door-and-a-half automobile boxcar. It's seen here in later years after rebuilding and renumbering. These cars were about a foot taller than the USRA boxcars. *Howard Ameling collection, NKPHTS Archives*



22. I used a USRA boxcar model to represent a similar Nickel Plate car. The NKP was originally assigned 500 USRA boxcars like this, but they refused to accept the USRA assignment. The cars were off the roster within three years of arrival. Many ended up on the Wabash.



23. Here is a classic 19000-series caboose in a 1932 image, which pre-dates the 1936 corporate re-organization of NYC Lines into New York Central System. The paint and lettering are typical of pre-1936 paint schemes and it has no NYC oval herald. *NYCSHS Digital Archives*



24. As seen in these photos the window arrangement is the same on both sides of the caboose body. The smoke jack is offset to this side of the caboose. If you are modeling before the 1936 reorganization be sure to leave off the NYC herald and use Roman lettering. *NYCSHS Digital Archives*



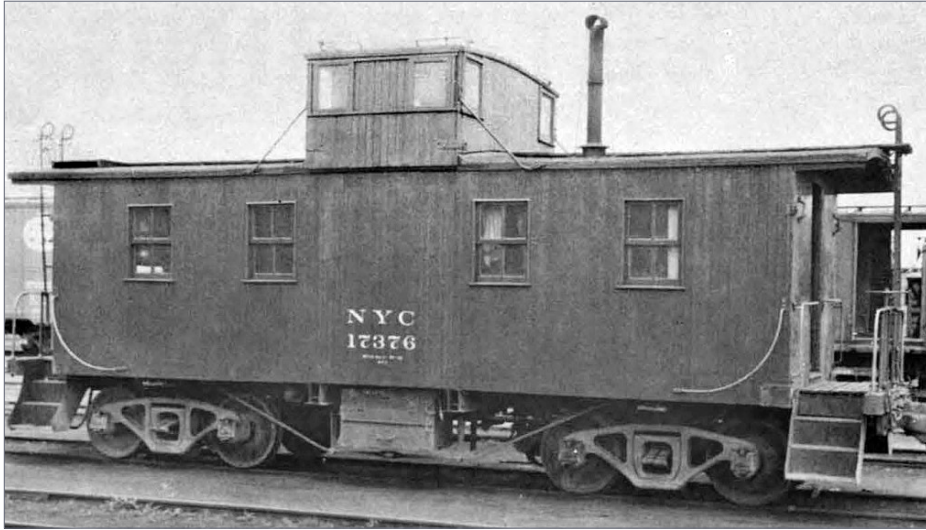
25. This caboose shows a late 1930s paint scheme. The lettering is still Roman but the oval herald with SYSTEM appears. The herald here does not seem to have a black background. *NYCSHS Digital Archives*



26. This is a later photo as the body has plywood sides instead of boards. The paint scheme is typical of NYC cabooses after the late 1930s with the oval herald and Futura lettering. The hand grabs and railings have been painted yellow. *NYCSHS Digital Archives*



27. Here's one of the Lines West cabooses. Note the four windows. There are also four windows on the other side. I used a Walthers caboose as a stand-in model to represent one of these cabooses [32]. *Jay Williams Collection*



28. NYC 17376 is an original Big Four caboose. Note the center wide-vision cupola. *NYCSHS Digital Archives*



29. I modeled this New York Central caboose to represent a recently shopped car.



30. The low cupola and walkway around the cupola are distinctive NYC features.



31. I still have work to do on this Trix caboose. I've already removed the side grab irons. Check out the five-board wide running board. This should be only four boards wide. I'll remove one of the boards then re-center the running board casting.



32. I used a Walthers caboose as a stand-in for a former Michigan Central caboose. Eventually, I'll upgrade this model with four windows on both sides of the body and feature it in a future *Limited Modeler* column. ☒

★★★★★
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GETTING REAL

column



MRH Running Extra | December 2019

MIKE ROSE tackles a bridge scene on his Lehigh Line ...



RATE THIS ARTICLE

MY JUNE COLUMN TOOK US ALL THE WAY TO the sub-roadbed stage at Dupont, Pennsylvania, on my Conrail Lehigh Line (circa 1984) layout expansion. It was a major effort to accomplish that amount of work in a few months. The pace of activity accelerated during the summer months as my efforts to get the layout operational intensified.

I realized the Dupont area was going to be a signature scene. The location required me to build it out from the wall toward the aisle. I spent lots of time mulling over the build order and requirements.

The key points for Dupont start with a stream. A Conrail main line track bridges the stream longitudinally, which was something I'd never seen before; I was immediately smitten. Then the D&H crosses the Conrail line and PA Route 11 crosses all that! It's a rare stream crossing with three distinct bridges.

My initial intention was to start with the stream and work up, but after creating the stream bed I realized that the Route 11 road bridge dominates the overall view. I had to get it right.

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

GETTING REAL | 2

Let's dive in on the design and build of the Dupont road bridge from scratch.

THE PROTOTYPE SCENE



1. A satellite view of the bridge shows all the prototype elements. The track at lower right is the D&H. Note the concrete road deck, and standard asphalt paving leading up to it, along with the skewed nature of everything.



2. Here's the view when standing on the former Conrail right of way. It's a great view of the road bridge girders with the D&H through plate girder bridge. I obtained permission from the Reading and Northern before taking these photos. The road bridge needs to sit high on the layout too, so it was crucial to replicate the supporting structure as closely as possible.



3. The skew of the bridge is apparent at road level. The D&H is off to the lower left. The former Conrail tracks sit at the bottom of the stone abutment.



4. This neat lattice railing is a key visual element on the side of the highway bridge that will be easily viewed from the aisle. Replicating this proved more difficult than I expected.

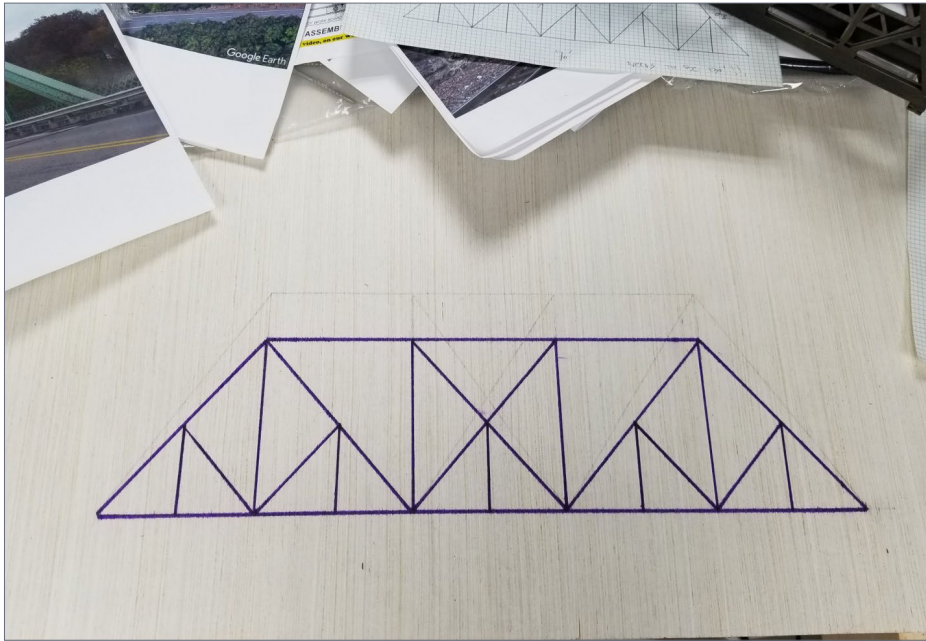


5. This prototype shot illustrates the different levels to the scene. The now-single-track former Conrail main curves below the formerly double-track D&H while viewed from the road bridge walkway. Note how the sidewalk is a continuation of the bridge deck and appears to be poured around the trusses. I felt this was a key design element but it took some head-scratching to figure out the best way to do this.

PLANNING THE MODEL

If you're going to build a truss bridge from scratch, the first thing you need to do is lay out the truss dimensions. I worked backward using the span length crossing this scene to model it as closely as possible to the prototype. I spent a lot of time checking elevations and lengths with Google Maps and Google Earth. To my surprise, what I needed to build was very close to the prototype.

My model had to *look* right, as compared to the prototype photos. This was the most important aspect other than length.



6. I worked through many attempts designing the bridge, as seen on the graph paper drawing in the upper part of this photo. Old pencil lines of past variations can be seen on the plywood. Once I settled on the design, I used a Sharpie to clearly delineate the lines for a template.

BUILDING THE TRUSS STRUCTURE



7. I used Central Valley lattice girders for this portion of the bridge. Parts from an entire bridge kit were used, plus more. I built up the girders first, then cut them to length. Building it right on the drawing made it easy to build identical trusses. The clamped level made a great straight edge. Finish nails were used to hold the truss components and to prop up the thinner interior members in the right plane. Pro Weld liquid cement was used to join most of the parts.

★★★★★
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8. After the trusses set up, the next step was to determine the skew offset. I consulted lots of online satellite images to get it right. You can see I used several weights to ensure the entire assembly set up nice and square to the plywood surface.



9. The bridge underframe will be visible. I installed segments of Plastruct I-beams to create the supports for the concrete deck.



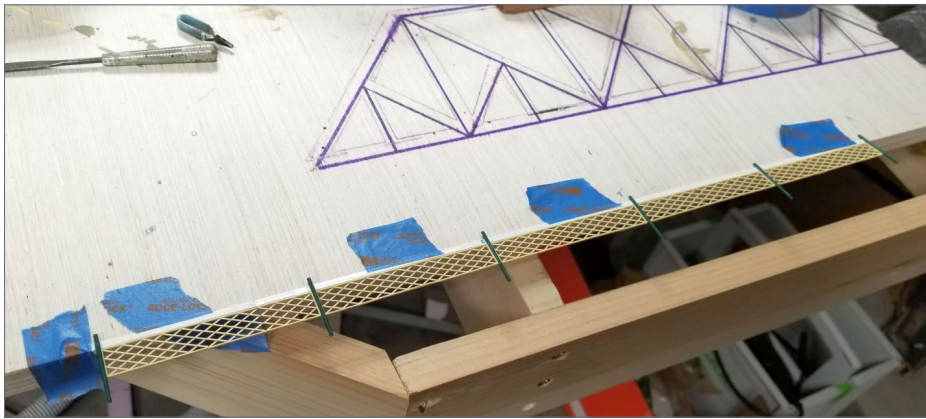
10. Additional Plastruct parts were used to create the X-bracing on top of the bridge, and the outriggers for the sidewalk. I used Cytop to attach these supports.



11. With the girder portion of the bridge intact, it was time for a trip outside to paint the structure. I used a spray can of Rustoleum 2X Ultra Cover Satin Moss Green. I think this is a perfect match for the prototype.

RAILINGS AND ROADWAY

The “railing problem” loomed large, and I needed to build these next. I could not find anything that resembled this type of lattice railing. I turned to friends for ideas. I thought there was some raw material out there, possibly a brass etching, but nothing turned up. Finally, someone suggested a Peco European pedestrian bridge, and it turns out they were right!



12. I bought several Peco pedestrian bridge kits for the railing material. I cut them up to match the prototype. Each section is made from three pieces. The seams could be seen in a close look, but they vanished after being painted. I waited to mount the railings to the bridge, as the next puzzle to solve was the bridge deck.

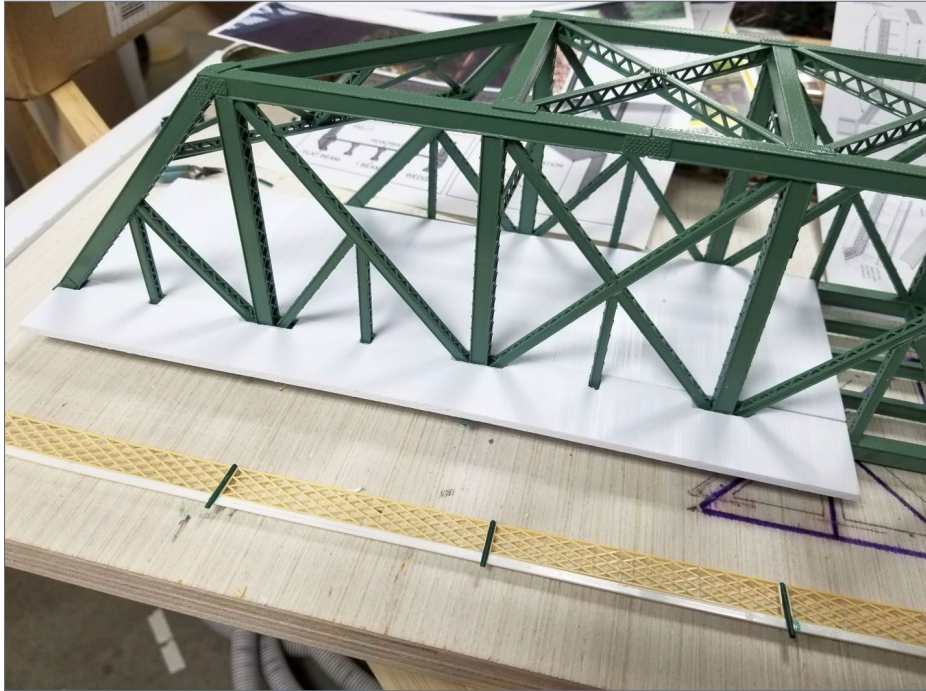


13. The bridge deck was constructed of 1/8" styrene sheet. A cross pattern is seen on a real road deck and is done by “brooming” the freshly poured concrete. I held the deck pieces against a table-mounted belt sander for a quick sanding. Then I moved the deck the width of the sander to repeat the process on the next section. It was a simple process that produced the effect I wanted. After sanding, the pieces were butt-joined. I added Plastruct square tubing for the sturdy concrete bridge curbs.



14. The bridge deck was designed to slip into the painted bridge. I checked clearances on this test fit. I tested a concrete color here but rejected it as too “tan” for the look I wanted.

SIDEWALK PARTS



15. Here's how I captured the effect of a bridge deck "poured" around the bridge girders. On the prototype, formers were built closely around the elements. I cut slots in the sidewalk material, then filed angles in the slots to fit the various girders. I was surprised how easily the work proceeded. Another piece of the puzzle was done. None of the roadway or sidewalk parts are glued together in this photo. They are placed to check the fit.



16. In this shot I'm test fitting the railings in place, making sure that the angle iron on the bottom was sufficient to allow it to be mounted to the outriggers.



17. After painting the railings, I test-fit the highway bridge in place. I couldn't resist checking how the scene has developed. At this point, the railings are not attached and the unpainted road deck is removable.



18. Here are all four pieces of the bridge deck/sidewalk system. Note the notches.

BRIDGE APPROACH SECTION



19. Rix road bridge parts were used for the bridge approach railings. I used the Rix girders for the underside of this portion. Basically, this was a concrete deck girder portion that is an approach to the truss bridge. At the lower left you can see how the sidewalk widens to clear the truss girders and allow a consistent sidewalk width.

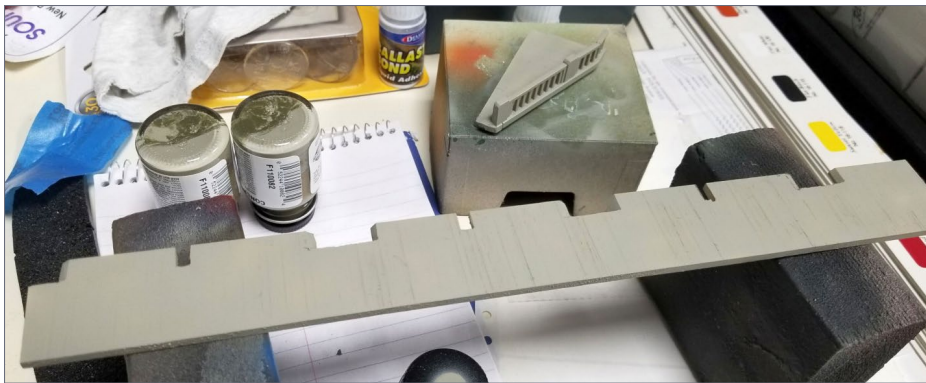


20. The concrete road girder spacing corresponds to the concrete support locations. Most of the deck and sidewalk system is being test-fit here.

PAINTING CONCRETE



21. I used a custom mix of various Poly Scale paints to get the right color. Note the support girders extending off to the right. These will interlock with the truss bridge components.



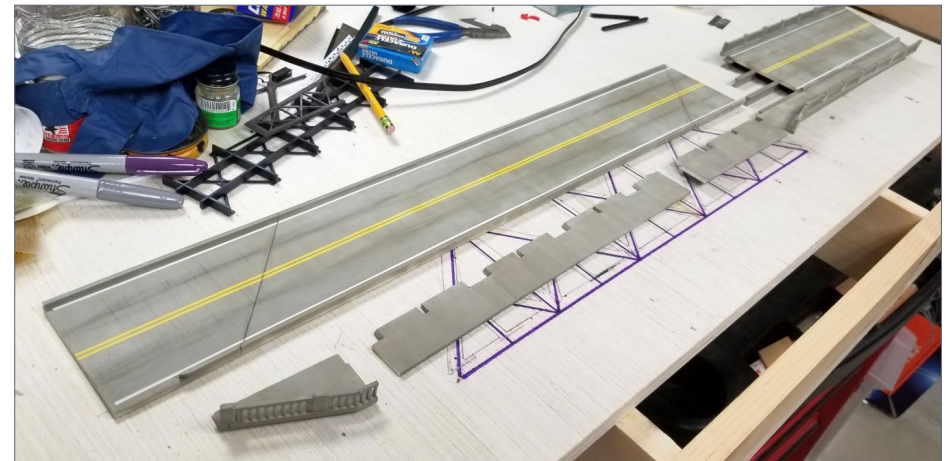
22. All of the concrete pieces were painted. Here's one of the sidewalk pieces with the flared section at the left end.



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23. In order to apply the decal striping, I used brush-on Minwax Acrylic to give me a nice glossy surface without having to use gloss spray. Microscale 6" yellow and white stripes were used for the striping.



24. I sprayed everything with rattle can of Dullcote, then used various Pan Pastels to weather the deck and all concrete surfaces. The angled expansion joints were scribed into the deck, and blackened. Now it's ready for assembly!

ASSEMBLING THE CONCRETE PARTS



25. The order of assembly was crucial here, and not immediately obvious! In fact I had a cold sweat moment when I began to fear I was wrong about being able to do this. This piece has to be slid into the bridge members, front-to-back, as the first step.



26. The main bridge deck had to be slid in next, then the main sidewalk was attached to that piece. The roadway also had to be cemented to the Rix girders from the approach bridge. These steps made for an anxious couple of minutes to get it all right. I used Cytopx for strength and a bit of "wobble time" to align the parts. The small angled sidewalk portion on the right was added last, making the bridge one unit.



27. The sidewalk side of the bridge will be the typical layout aisle view. I am very pleased with the model proportions and how the overall look matched the prototype structure.

The Route 11 highway bridge is just one element of my Dupont scene. I'll cover the bridge installation and other scenic elements of the Dupont scene in my next "Getting Real" column! ✓

Also check out my Mike Rose Hobbies store ad in Model Railroad Hobbyist: [click here](#).





Animated flash cameraman

Running Extra | December 2019

BRIAN KRUPICKA adds a cameraman with an animated flash triggered by a passing train ...

I ADDED A CAMERAMAN TO MY LAYOUT WITH AN animated LED flash triggered automatically when a train passes.

An ultra-bright LED on a hidden circuit board flashes every two seconds as a train passes a detector. I coupled the LED to a

ANIMATED FLASH CAMERAMAN | 2

1. The cameraman in action on my DBRR when a train passes.

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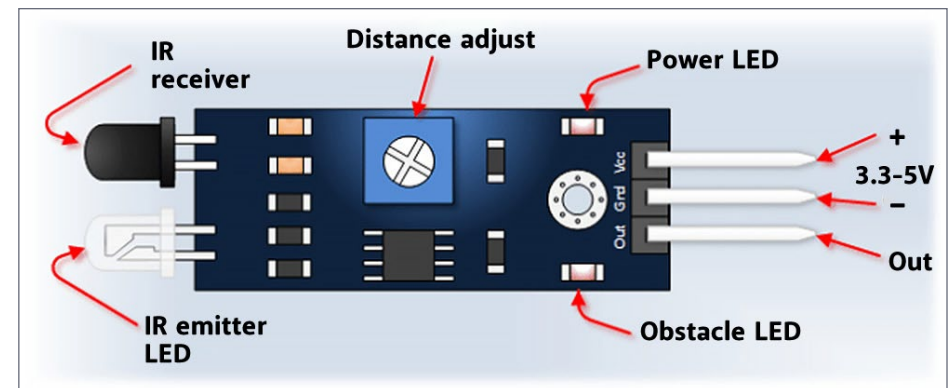
fiber optic cable and routed it up the back side of the cameraman and bent it forward to place it on top of the camera.

A 555 timer flashes the LED and adjusts the rate and the duration of the flash. I buried an infrared detector transmitter/receiver in the track about six inches from the cameraman to detect the train passing.

DETECTING A PASSING TRAIN

An infrared (IR) obstacle-avoidance sensor made for robotic use detects a passing train and triggers a 555 timer to flash the LED. The sensor works by bouncing IR light off an object and triggering an output when that light is received by a detector.

These sensors also detect IR light emitted by incandescent lights, most fluorescent lights, and the Sun, so ambient light can trigger the

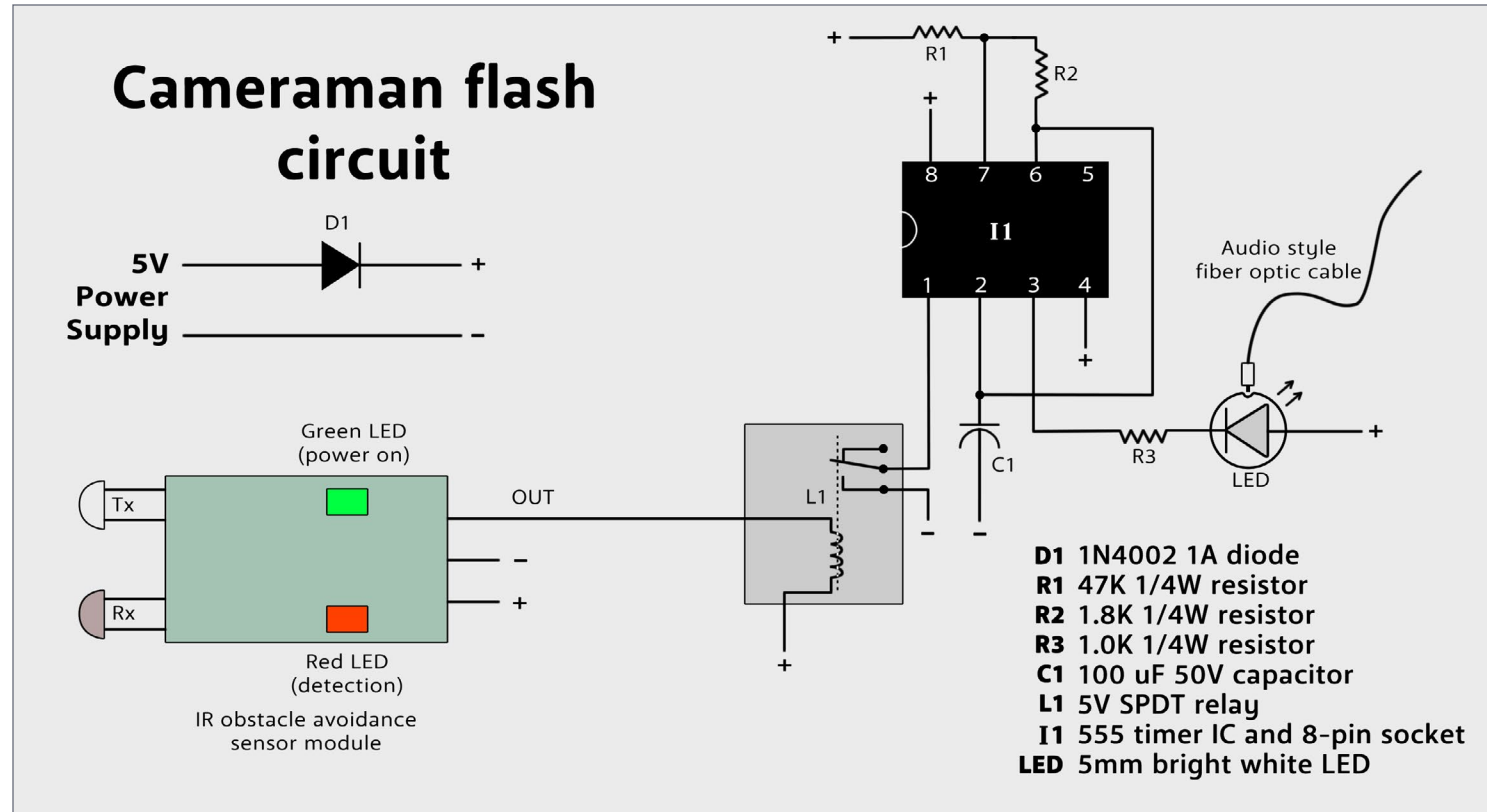


2. This IR robot obstacle-avoidance sensor detects when a train passes. It includes a sensitivity adjustment potentiometer to set the trigger distance. The power LED lights up when power is on, and the obstacle LED lights up when the sensor detects a train.

LED flash. Shielding the sensor from ambient light makes it more reliable. A piece of heat-shrink tubing on the sensor shields it well.

The distance (sensitivity) potentiometer must be adjusted carefully to reliably detect a passing train, but not be overloaded by ambient light.

To easily mount the sensor components under the track, I extended the leads on the IR emitter LED and the IR receiver with several inches of #22 wire. I drilled two 1/8" holes side-by-side along the center of the track and glued the two sensor components into them.



THE CIRCUIT

The full schematic for this project [3] includes a 5V power supply, the 555 timer to flash LED, and the IR sensor that goes in the track. A fiber optic cable intended to connect digital audio in home theaters runs from the white LED to the camera on the layout, and produces a tiny flash.

The 555 timer with R1, R2, and C1 creates a two-second repeating pulse while the train is over the IR sensor unit.

R1, R2, and C1 determine the rate at which the 555 flashes the camera LED. Once the sensor unit no longer detects a train, the relay turns off power to the 555, ending the camera flashing.

By using the relay with the track sensor, the 555 camera flash circuit is ordinarily off, and turns on only when a train passes.

INSTALLING THE FIBER OPTIC CABLE

A digital audio fiber optic cable under the layout carries the light from the white LED to the photographer.

The beauty of using an inexpensive digital audio cable is that they're readily available in lengths from three to 100 feet,

3. Here is the circuit schematic for this project.

ANIMATED FLASH CAMERAMAN | 5

so you can pick a length that works for your application. The flash will be a bit brighter with a shorter cable.

I went with a six-foot cable, and chose nylon-braided cable for easy removal of the insulation to expose the central fiber.

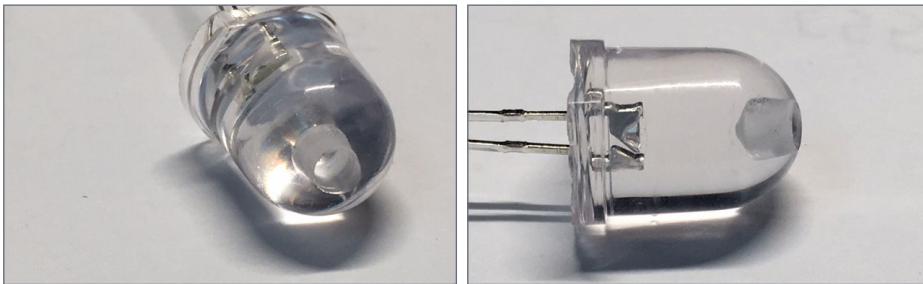
I drilled a hole for the audio cable in the flash LED [4a,b]. When drilling the hole, don't drill so deep that you damage the LED element. Stay in the outer plastic casing and you should be fine. I used some clear five-minute epoxy to hold it permanently in the hole.

On the other end of the cable, I stripped off the nylon braiding to expose the clear plastic optic fiber casing. Using a sharp X-Acto knife, I carefully cut through the plastic tube casing and exposed the bare optic fiber [6]. I was careful to not scar the fiber itself, because that can cause light loss.

I put a couple of nails into a piece of plywood to use as a bending jig and warmed the fiber with a heat gun set on medium.

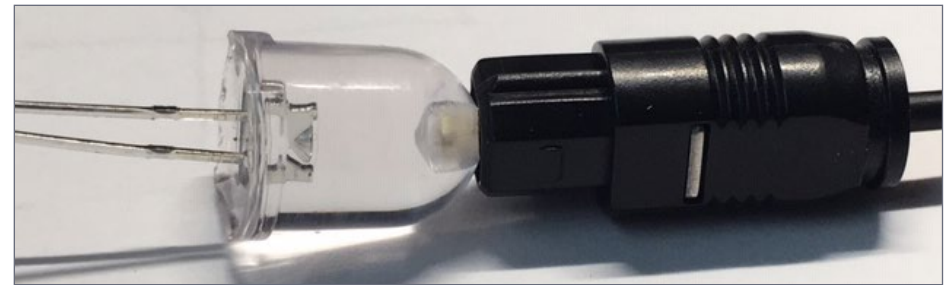
It's easy to see when the temperature is right, as the fiber bends like a warm candle. I formed a right-angle bend in the last half-inch of the warm fiber [7].

Next, I painted the exposed clear tube casing black to prevent light leakage. I also painted the fiber itself an opaque color to hide the



4a, b. I drilled a hole in the flash LED for inserting the fiber optics cable.

ANIMATED FLASH CAMERAMAN | 6



5a, b. I used some clear five-minute epoxy to glue the fiber optic cable into the hole. The closer you can get the hole size to a press-fit, the better. After this, I added shrink tubing over the entire assembly to eliminate light from the LED under the layout.



6. On the other end of the fiber optic cable, I removed about four inches of the nylon braiding. Then I carefully cut away several inches of the clear plastic cable casing to expose the bare fiber in the center.

fiber and to prevent light leakage. Of course, I left the business-end of the fiber unpainted so the flash could be easily seen!

PUTTING IT ALL TOGETHER

Once I had the detector installed in the track roadbed, the 555 circuit built, and the fiber optic cable installed on the LED, I tested it by running a train over the length of the track with the detector.

It worked, flashing brightly at the exposed end of the fiber, so it was time to install it on the layout.

I have a figure holding a camera, so I selected a suitable spot for him. I drilled a hole in the scenery for the fiber, then fixed the figure in place and carefully brought the bent fiber end onto the top of the camera.

I tested again with the train running through the scene and voila! My railfanning photographer is now shooting flash shots of his favorite trains whenever they roll by. ☑



7. After heating the optic fiber with a heat gun, I used a nail jig on a piece of plywood to form this bend.

NOTE: To get a detailed shopping list for this project, visit the MRH website at this link: mrhmag.com/magazine/running-extra/2019-12/cameraman.



8. Cameraman installed and ready to shoot flash photos.



9. Flash in action!



10. Short video of the breadboarded circuit in action as well as the final cameraman doing his thing on my layout.

BRIAN KRUPICKA



Brian Krupicka's primary hobby interests are in 1970 to 1980 model railroading operations. He has over 30 animation and automation features on his HO scale DBRR layout.

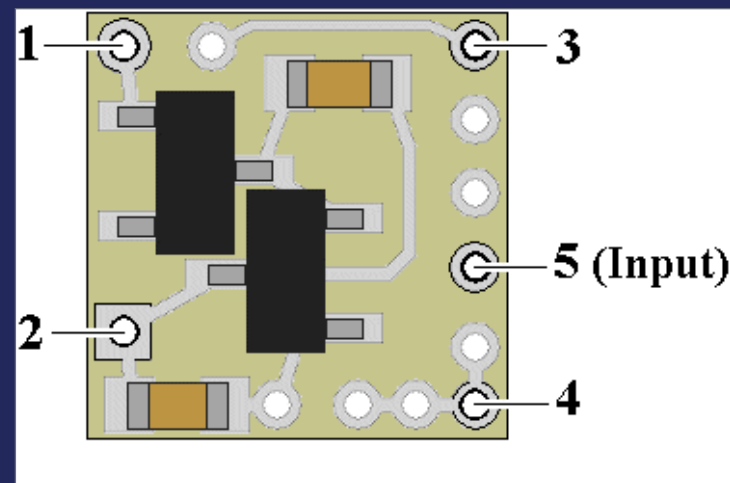
Brian often gives clinics at NMRA conventions and other gatherings and belongs to three model railroad clubs.

Brian and his wife live in Yorkville, Illinois and travel the country in an RV. They have nine grandchildren and one great grandchild. ■



J. Fugate

ANOTHER FLASH CIRCUIT OPTION



You can also get a nice flash circuit from the Ngeineering website for just \$14 if you would rather not build one yourself. Here is their description of the circuit:

This circuit generates a flash camera effect when wired to a white LED. It produces 2 short burst pulses 2 seconds apart when the input is grounded, then delays 20 seconds before allowing the input to be retriggered. Input can be triggered by a passing train.

WEB: ngineering.com/lighting%20effects%20for%20the%20railroad.htm

Scroll down to "Flash camera simulator."



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Prototypes for *Accurail 1400-series kits*



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**RAY BREYER REVIEWS MORE 36-FOOT
BOXCAR PROTOTYPES ...**

1. Accurail's new short boxcar series fills a huge gap in easily available freight car types. These shorter boxcars served dozens of railroads for nearly 50 years, and scenes like this occurred on an almost hourly basis in every corner of the country.

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IT'S TIME FOR ANOTHER REVIEW OF PROTOTYPES

for HO scale boxcar kits. I surveyed Accurail's 1300-series kits in the May 2018 *Model Railroad Hobbyist*. Those HO scale boxcars represent a New York Central-designed 36-foot boxcar that's extremely useful for modelers of the 1910-1950 period. This installment covers Accurail's 1400-series kits, which share the same 36-foot body as the 1300s but feature a different underframe.

Instead of fish belly steel center sill underframes, the 1400-series models come with straight steel center sills, offering a different appearance under the body. With the corrugated metal ends and steel roof, the basic 1400-series model represents a slightly newer car than the original 1910-designed NYC boxcar. As a transitional design between older, short, wood boxcars and longer, more modern car types, the design wasn't built in huge numbers but was bought by railroads from all regions of North America in the 1910-1917 period.

The 1920s saw a lot of car rebuilding and modernization programs, so the basic model can represent thousands of cars built in the 1910s and rebuilt in the 1920s. Some of these ran into the 1950s. With a little modeling skill, the models can be modified to include truss rods, representing cars built around 1905 that were rebuilt in the 1920s, and which ran into the 1940s.

1400-SERIES KITS

Accurail announced 13 regular-production kits in their 1400-series product line. Three cars are painted and pre-lettered with

dimensional data only in mineral brown, mineral red, and oxide red colors. The lettering follows generic 1940s-era dimensional data and 1912-specific dimensional data. Check the Accurail website for the color and lettering combinations of these data-only models.

All the announced road names represent prototypes appropriate for 36-foot boxcars. These kits should be acceptable out-of-the-box for most "proto-sincere" modelers. Do be sure to pay attention to what years each paint scheme represents, since during the steam era freight cars were repainted far more frequently than today. As a rough guideline, don't use any paint scheme that's more than 10 years older than your modeled year, especially for time periods before 1932.



2. DL&W 43059, seen here at the AC&F plant in Berwick, PA, exemplifies the type of boxcar this new Accurail model represents. Built new in 1917 with then-modern hardware such as steel ends, roof, and a lightweight, all-steel underframe, this type of car design would soon be overshadowed by more-modern wood single-sheathed and all-steel boxcar designs. *AC&F Photo, St. Louis Mercantile Library collection*

ACCURAIL 1400-SERIES KITS | 5

As with any model ever produced, there are compromises. None of them will EXACTLY replicate anything that rolled on North American railroads. These are very nice HO scale “shake the box” kits. With a bit of modeling elbow grease, a good supply of prototype photos, and a little artistry, each of these models can be turned into very good facsimiles of prototypes.

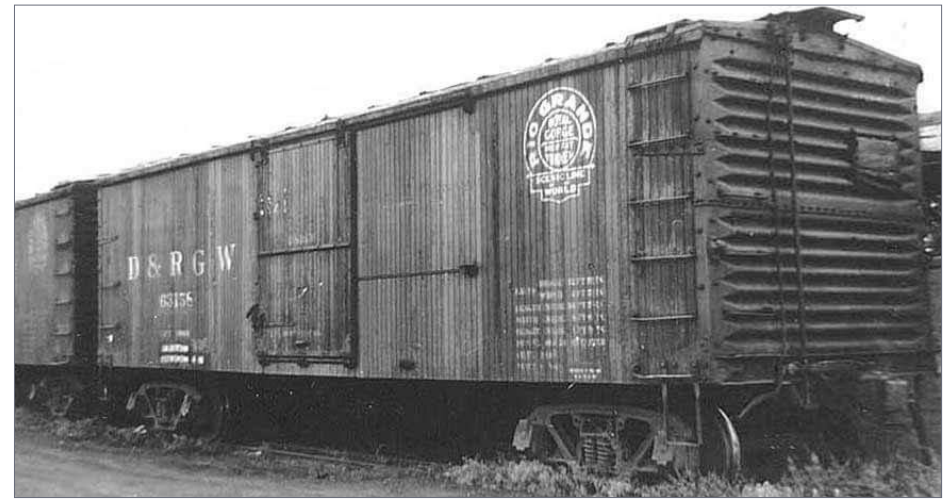
DENVER & RIO GRANDE

The Rio Grande cars are an example of how the models represent the prototype in a specific, time-dependent context. The cars were originally D&RG 62000-63499, which were built by ACF in 1909 with all-wood bodies, early Hutchins steel roofs, doors with Wagner-like latching hardware, and a straight center sill steel underframe. In 1926 the D&RGW (the railroad’s name gained the word “Western” in 1921) rebuilt the cars with new doors, new roofs, and 7/7 inward-rib steel ends. The arch bar trucks were replaced with a variety of cast steel versions.



3. D&RG cars as built. AC&F Photo, Al Westerfield collection

ACCURAIL 1400-SERIES KITS | 6



4. D&RGW cars as rebuilt. Bob's Photos

Accurail has offered two different Rio Grande paint schemes: #1401 in the 1909 as-built scheme, and #8092 (a three-pack) in 1936 paint with the “Moffat Tunnel” herald.

This poses a modeling dilemma. The prototypes were built well before World War I, but this Accurail carbody is best suited for modelers of the post-1926 period. This as-built scheme should be in their 1800-series kit lineup, which features cars with wooden ends. The as-built lettering is well done and impossible to find as a decal set, so pre-WWI modelers should consider overlooking the inaccurate steel ends. If you're a 1930s through 1950s modeler, stick with kit #8092 as it's extremely close to the prototype.

For later-era modelers, these Rio Grande boxcars lasted a long time; there were 1,433 of them on the roster in 1930, right before their numbers started to drop dramatically. In the mid-1930s, the D&RGW assigned a few dozen cars to subsidiary road Denver & Salt Lake. During WWII, many cars were either converted to MOW service or sold to the US Army for use at munitions plants. By the

ACCURAIL 1400-SERIES KITS | 7

end of 1945, there were only 225 cars left on the roster. By 1950 the group was down to 15 cars, all of which survived the K-brake ban of 1954 because they had been upgraded to AB brakes. The last of these cars were retired by the end of 1958. Several dozen cars survived in the Rio Grande's MOW fleet into the 1980s, and at least five cars are preserved in museums around the West.

NEW HAVEN

The New Haven boxcar roster from the 1915-1945 period is a jumbled mess of several car groups that went through many renumberings. This Accurail model is a placeholder/stand-in and is best suited as a "fleet-grade" model. Like the Rio Grande models, this kit represents only some of the NH's cars for some of their lives.

The New Haven began building 37-foot boxcars in 1903, and built about 22,000 roughly similar cars through 1912. Besides a couple of thousand cars with fish belly side sills, most were wood-bodied cars with straight steel center-sill underframes. Between 1926 and 1929, the NH rebuilt nearly 12,000 of these cars with new Hutchins steel roofs. The rebuilding program included two different body



8, 9. NH 73201 is seen new at Standard Steel's Butler, PA plant in 1906. NH 72150 is fresh from being rebuilt at the Readville, MA shops in mid-1937. While originally the same car, both look dramatically different 30 years apart. *Both photos Ted Culotta collection*

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changes, with rebuilt cars either receiving reinforced wood doors and composite ends, or Youngstown all-steel doors and early Dreadnaught steel ends.

These rebuilt cars became the dominant type of boxcar on the NH until all-steel cars were added in the 1940s. Their numbers plunged quickly after WWII, and the last 35 of these cars dropped off the NH revenue roster by 1953. Some cars survived in the MOW fleet into the 1970s.

Accurail has released kit #1402 [10] with Depression-era lettering appropriate for the late 1920s through the end of their service lives. While the as-built cars can be represented by Accurail's 1800-series kits (with wood ends), transforming a 1400-series



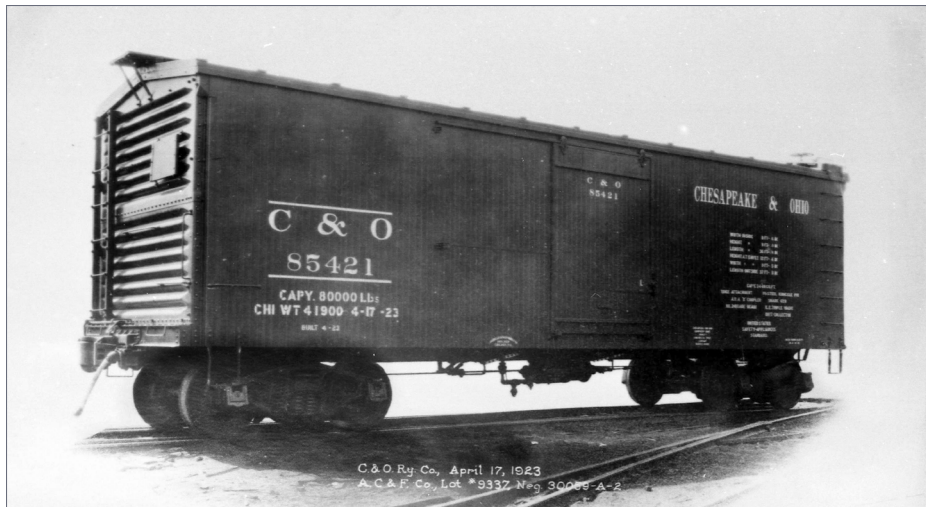
10. The Accurail model is lettered appropriately for a 1930s-1950s NH car. The 81000-series seemed to have been rebuilt with composite ends, although the NH did sometimes mix rebuilt car types through their number groups. *Photo courtesy Accurail, Inc.*

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kit into an accurate post-1927 New Haven boxcar probably isn't worth the effort, since accurate resin kits are available.

CHESAPEAKE & OHIO

Before World War I, the Chesapeake & Ohio's boxcar fleet was an assortment of small groups of short, all-wood boxcars. During the war, the USRA allocated 1,000 40-foot, single-sheathed boxcars to the railroad. The C&O did not need these (at the time) large, progressively built boxcars. The railroad took a step backward in boxcar development in 1923 and ordered 2,370 37-foot, double-sheathed cars from AC&F. The order was broken up into three types of cars: 1,750 plain boxcars in the 84730-76499 series, 100 auto carriers numbered 84630-84729, and 500 ventilated boxcars numbered 86500-86999. They also bought 200 stock cars with the same underframes, but with completely different bodies. All of these cars shared the same general body design features, giving



11. C&O short boxcars as built.
AC&F Photo, Al Westerfield collection

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12. C&O cars rebuilt with Youngstown steel doors and radial roofs. *C&OHS Collection*

them a family look. One unusual design feature not captured by the Accurail model are the “notched” corners of the prototype.

By 1925 the C&O began building 40-foot boxcars, and by 1930 all-steel boxcars. This short-car design never went any farther than the original 2,370 cars. The C&O rebuilt the cars in the mid-1930s. The automobile cars were downgraded to plain boxcars, and most of the group received radial roofs and Youngstown corrugated steel doors.

The group stayed relatively intact through WWII, with 1,850 cars on the roster at the end of 1945. With the absorption of the large Pere Marquette boxcar fleet in 1947, the short boxcars were no longer needed, and were retired quickly. By 1951 the group was down to 275 cars, mainly ventilated boxcars. All were gone before the 1954 K brake ban. The C&O kept many cars in MOW service. The last of those cars weren't retired until the early 1980s.



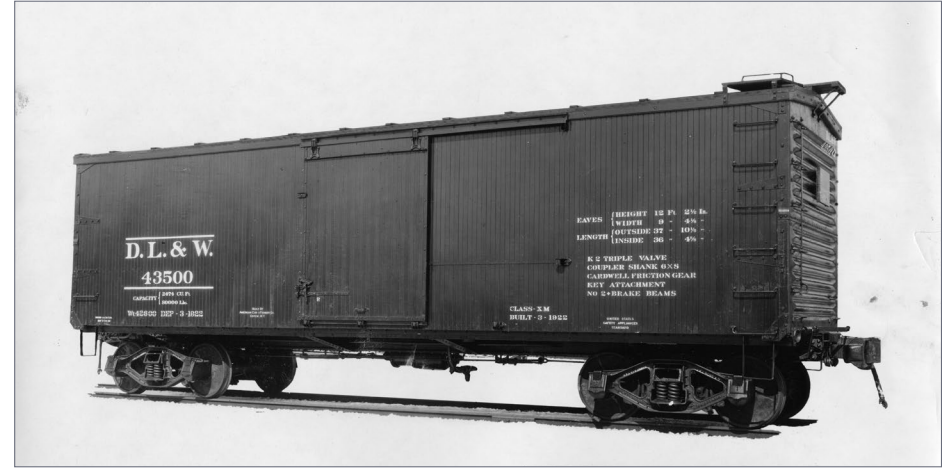
13. Photo courtesy Accurail, Inc.

The Accurail model [13] best represents the as-built 84730-86499 series XMs, before the bulk of them were rebuilt in the 1930s. Kit #1403 has a 1934 reweigh date and post-1932 dimensional data, making the model appropriate for those who model the years around WWII. A few of these cars were not rebuilt. They made it into the 1940s without Youngstown doors and survived to scraping without radial roofs.

An adventurous C&O modeler could mimic the rebuilds by cutting out the cast-on wood door and overlaying a Youngstown corrugated steel door. With a bit more work, the auto boxcars and ventilated cars can also be represented.

DELAWARE, LACKAWANNA & WESTERN

The Delaware, Lackawanna & Western owned a large roster of double-sheathed boxcars. They went through a logical progression of updating their fleet for several decades. By 1910 the



14. The DL&W built, or rebuilt, several thousand cars to this general arrangement, making them the standard Lackawanna boxcar for decades. AC&F Photo, St. Louis Mercantile Library collection

Lackawanna had standardized on a single “box” dimension for their plain boxcar fleet, and stuck with it for over 20 years. Although the road began buying 40-foot automobile cars as early as 1907, those were specialty cars not meant for general service. The Lackawanna’s traffic dictated staying with shorter, general-use boxcars: their average boxcar load was only 12 tons of manufactured goods or LCL freight.

The DL&W transitioned to straight steel underframes for their boxcars around 1908, began building cars with steel roofs in 1910, and was building cars with 7/7 inward rib steel ends by 1915. Their final order for short boxcars was placed in early 1922. At that point, the DL&W rostered 14,000 boxcars that were very similar to the Accurail model. Many of the prototypes were built with the same ends and roofs as the Accurail models, and the railroad rebuilt more with similar appliances in the mid-1920s.

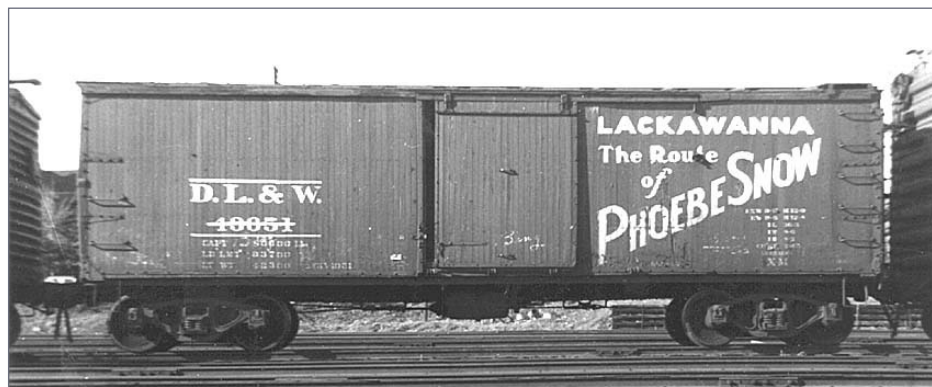
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The DL&W cars stayed on their roster for a long time. Many of the cars were scrapped in the Depression. By 1945, the fleet was down to 1,532 cars, and to 500 cars in 1950. By the time of the 1960 Erie-Lackawanna merger, there were still 14 in revenue service. All were in the 43500-43999 series wearing “Phoebe Snow” lettering.

Accurail released kit #1404 in the DL&W’s post-1951 “Phoebe Snow” scheme, which these cars wore until their retirement in 1960/1961. To backdate the car into the WWII era, just paint over the large slogan. In general, these models match the prototype very well, although the door brace is incorrect, and the cars need a second left side grab iron.

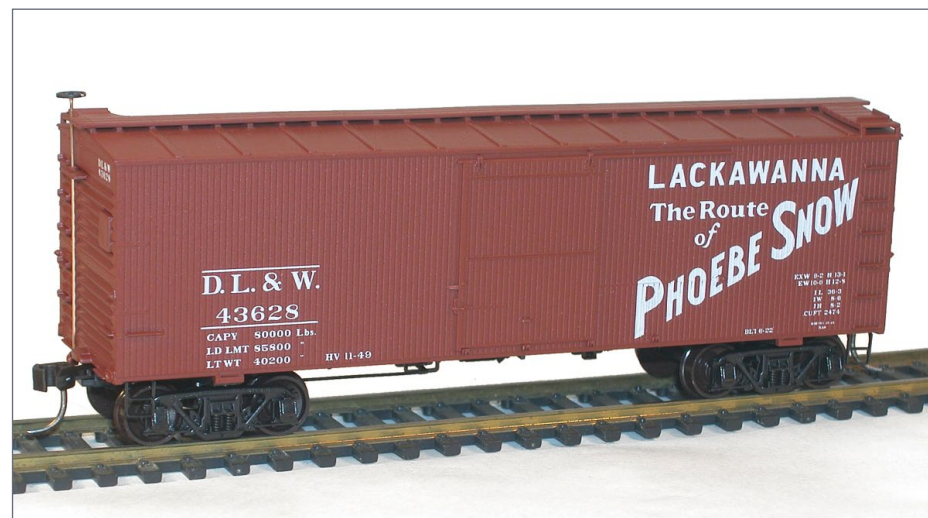
LEHIGH & HUDSON RIVER

The Lehigh & Hudson River was a small, coal-oriented railroad. It didn’t need a lot of home-use boxcars. They bought 75 cars in September 1907 and kept them until the end of 1953, when the



15. DL&W 43651 sits in a dead line in Hoboken, circa 1961. Too small and old for continued use, the E-L sold the car for scrap shortly after this photo was taken. This car survived and is now on the National Register of Historic Places, and on display at Steamtown, NPS. Clarence Tharp photo.

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16. Photo courtesy Accurail, Inc.



17. L&HR 2101 is seen here at Standard Steel in 1907. The large C-channel side sills were a signature feature of many anthracite railroad boxcars since they often hauled bulk coal.

★★★★★
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last two dropped off the roster. Since these 2101-2175 series were the only boxcars rostered by the L&HR between 1909 and the early 1960s, they were rebuilt several times. The cars received new steel roofs and corrugated steel ends in the late 1920s. Cast steel side frame trucks came many years later. Many cars survived past 1953 in MOW service right up to the formation of Conrail, so diesel-era L&HR modelers can use a few of these cars, too.

Accurail's model is decorated for an L&HR car as it would have appeared around WWII [19], making the model appropriate for modelers of the 1940-1953 period. Except for the too-small side sills, the model is reasonably accurate, although a second left side grab should be added.

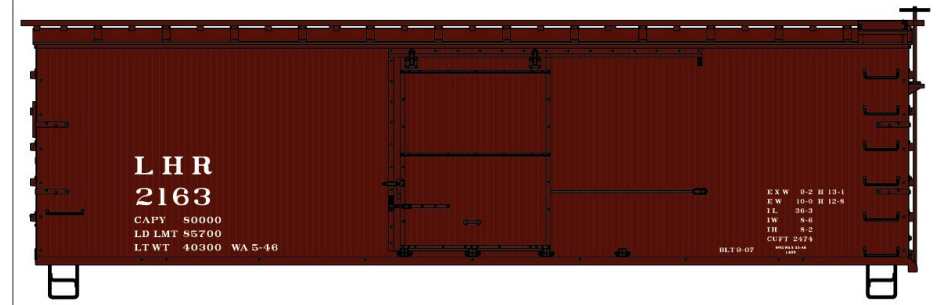
NORFOLK & WESTERN

This is a sort of an odd car. It's an N&W BI-class boxcar which was common enough. The BI and the similar BH-class cars ran through the late 1940s. Originally built starting in 1904, the N&W rebuilt many of the 3,100 cars in these classes at various times in their

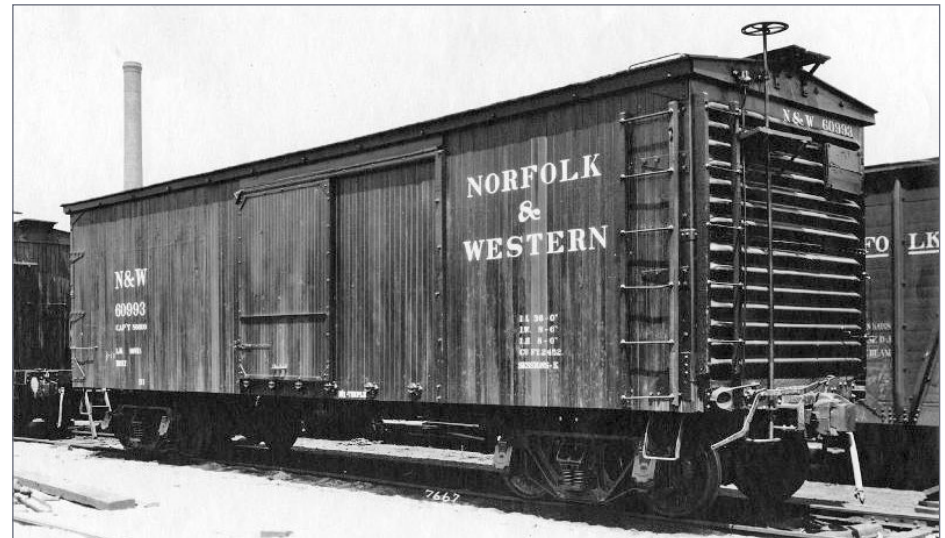


18. L&HR 2145 is seen here in 1960s MOW service.

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19. Pre-production art courtesy Accurail, Inc.



20. N&W 60993 gets a new coat of paint in Roanoke in the mid-1930s. One of a handful of BI-class cars to receive steel ends, these cars would run through the end of the 1940s. *N&WHS collection*



lives. Sadly, the N&W did so with a variety of different roofs, door hardware, and end variations. A record of these changes has not been found, so we don't know which cars received specific upgrades.

This is the only BI-class boxcar photo I've found showing a car with steel ends. The change seems to have occurred in the mid-1930s. Since these are 'outie' ribs, this makes the Accurail model a stand-in. If you're a pre-1950 N&W modeler, pick up a couple of these. The Accurail #1804 kits with wood ends more accurately depict the bulk of the BI and BH classes.

BOSTON & MAINE

As with many prototypes in this article, the Boston & Maine boxcars resembling the 1400-series kits were all rebuilds. Between 1908 and 1913, the B&M built 3,720 boxcars with all-wood bodies



22. B&M 65000 poses for a portrait after receiving new paint in October 1936. The car retains much of its as-built appearance, except for a new steel roof. This specific car is better represented by Accurail's 1800-series kits. *Boston & Maine Railroad Historical Society collection*



23. Sister car B&M 0252, seen here in captive service hauling sawdust around Boston just after WWII, shows what the cars looked like with replacement steel ends. *Boston & Maine Railroad Historical Society collection*

and steel underframes. These were scattered among 11 different number series.

Most of these cars were rebuilt in the 1920s. All of them received new Murphy-style steel roofs and about half received steel ends with 7/7 outward-facing ribs. The cars utilized a large variety of truck types in a random fashion. Many of the rebuilds kept their Fox trucks to retirement.

265 of the steel-end rebuilds were in revenue service in 1945. All had been retired by 1948. Just under 200 of the cars went onto the maintenance-of-way roster, and a couple survived into the 1970s. At least three cars survive in museums.

Because of the ends (outward-, not inward-facing ribs) and the slightly larger exposed steel side sills, this is a stand-in model. It's

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a decent stand-in since a resin car would be sacrificed to get correct ends. The model should be acceptable for anyone who needs one or more B&M boxcars. Just be sure to check photos to install the proper type of trucks!

DENVER & SALT LAKE

The Denver & Salt Lake railroad was bought by the Rio Grande in 1931 and run as a semi-autonomous subsidiary for several years. In the mid-1930s the D&RGW assigned an unknown number of their 62000-series cars to the D&SL to replace that road's own aging boxcars. The cars lasted in D&SL service until 1947 when the railroad was formally absorbed by the Rio Grande. The last D&SL-lettered 62000 dropped out of the ORER by December 1951. The Accurail 1400-series model is a good representation of these cars.

MOREHEAD & NORTH FORK

The Morehead & North Fork railroad was a four-mile-long Kentucky shortline, whose main claim to fame was being one



24. The D&SL's cars of this type were secondhand "gifts" from the D&RGW. *Otto Perry photo*

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25. M&NF 500 is seen here in 1962. *Morehead State University collection*

of the last common carrier railroads in the United States to run steam (only dieselizing in July 1963). The railroad's home-road car needs were tiny, and it looks like this single ex-ventilated boxcar was the only box they ever owned. It's unclear as to which railroad owned the car originally. The car sits rotting away in Morehead as of 2016. The doors open to the left, so an Accurail model would be a stand-in.

OTHER PROTOTYPES

With the sheer numbers of these boxcars built between 1905 and 1924, and with so many 1920s rebuilds not readily documented, there's no way Accurail can produce each variation and road name. With quality photo archives coming online every year, and with more people searching those archives, more possibilities will crop up. Here are a couple prototypes the initial release has missed.

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The Illinois Northern was a Chicago-area switching railroad that didn't need many freight cars. When they bought equipment, they turned to local used equipment reseller Hyman-Michaels. These cars were originally former C&O 84730-series boxcars that the C&O began eliminating in 1945. The IN bought 51 cars in 1946, and the cars in their 1600-1699 series lasted to 1954. At that point the IN felt it was cheaper to buy newer used cars than to spend money installing AB brakes on these older cars. So, they were scrapped. Adding the Youngstown steel doors and radial roofs of these cars would be an interesting modeling challenge.

Unlike tiny Illinois Northern, the Louisville & Nashville was a huge railroad with thousands of boxcars on the roster. Like most large railroads, they updated and rebuilt their older freight cars to increase their useful lives. L&N 11289, shown here in mid-1947, was built in 1911 with a straight steel sill underframe, but with wood ends. The car was rebuilt with corrugated steel ends in the late 1920s. Almost all of the 10000-11999 series cars

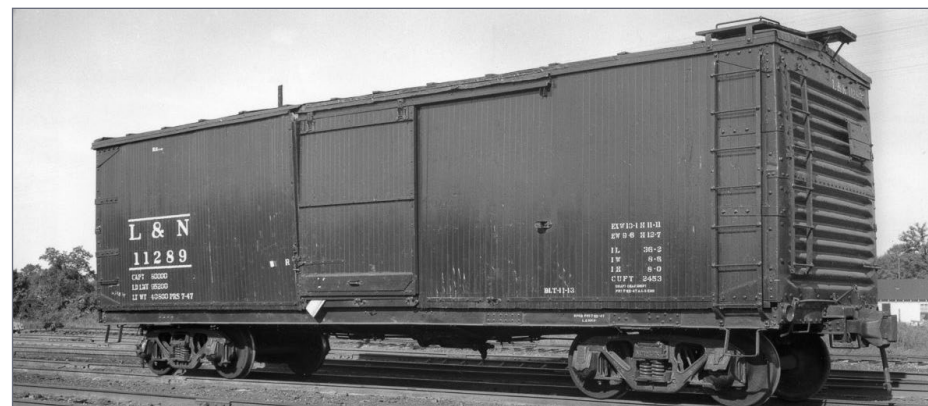


26. The same car, this time “preserved” under a shed in Morehead in 2014.

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27. Illinois Northern 1603 in Los Angeles, circa 1947, a long way from home. *Bob's Photos*



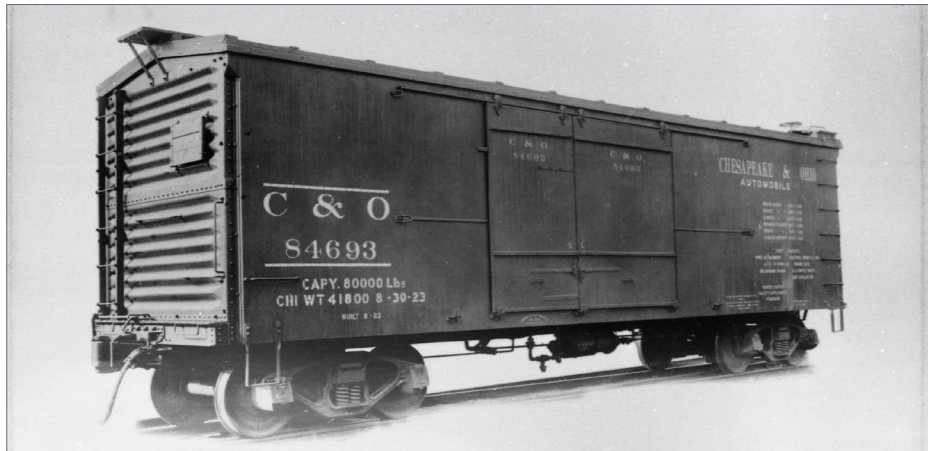
28. L&N 11289 is at the end of its line. Although the car has a nearly fresh coat of paint, it's about to be scrapped: that line to the upper left of the door reveals the car has cracked in half! *Ted Culotta collection*

★★★★★
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survived WWII intact, but all were off the L&N's roster by the end of 1954.

KITBASHING POTENTIAL

This specific Accurail kit offers several interesting kitbashing and car-modifying opportunities that the 1300-series kits do not. The straight steel center sill underframe is what's especially important here, since it allows us to model a larger assortment of cars overall. In general, there weren't as many short boxcars built with this sort of underframe as the NYC-designed cars with fish belly center sills, but there were lots of small groups of cars built for more railroads, allowing us to model a wider variety of cars. Most importantly, the straight sill underframe can be modified with truss rods, adding a huge number of usually overlooked 1920s and 1930s boxcars to the list of possibilities. Some of the kitbashes will be fairly simple, while others are definitely modeling challenges.



29. The C&O's automobile and ventilated boxcars were identical to their modern short boxcars, only differing in doors. The C&O installed 100 of these automobile boxcars in 1923.



30. Of the original 500 C&O ventilated boxcars, many were in service into the early 1950s.

These two C&O cars [29, 30] fall into a simple kitbash category. Add a second door to a basic 1400-series kit, and you've got a decent stand-in for the C&O's 84630-84729 series auto boxcars, or for their 86500-86999 series ventilated boxcars. The ventilated cars were the last short boxcars to run in revenue service for the C&O, with the last 100 cars coming off the roster in 1954. True, none of the C&O kitbashes I've mentioned will have the signature notched corners, but until someone steps up and releases all three car types in resin, these stand-ins will work. Modeling the ventilated boxcar's end vents will be a challenge.

OTHER STEEL ENDS

Some kitbashes aren't as easy. Several railroads had similar boxcars with straight steel underframes, steel roofs and steel ends, but with unique differences. The Nashville, Chattanooga & St. Louis was one of these railroads. Their 13500-16599 series boxcars,

ACCURAIL 1400-SERIES KITS | 25

built in 1912 and rebuilt in 1927, and their 3000-3249 series ventilated boxcars, built in 1923, accounted for over 60% of their boxcar fleet in the 1920s and 1930s. These were a statistically important car for any southern-region prewar modeler. Into the early 1950s, these boxcars were 20% of the NC&StL fleet with about 700 cars in service. These boxcars were rolling up revenue miles in the transition era.

Dimensionally, these prototypes match the Accurail 1400s pretty well. The real challenge lies in modeling the car ends. Cutting through the thick side walls of these models is a chore. A modeler will need to find Hutchins ends to install. Westerfield offers a four-panel Hutchins end (part #4113), but the ribs are “outies.” Sunshine made the NC&StL’s 20000-series steel rebuilt boxcars with “inward” ribs but chopping up a perfectly good resin kit for a part seems like a backwards move. We can hope someone will produce a four-panel inward Hutchins steel end as a 3D print to purchase.

Aftermarket Hutchins ends (inward and outward facing ribs) detail parts would be useful for several railroad models. The Delaware & Hudson and Pere Marquette were especially fond of them, and the



31, 32. Like the C&O, the NC&StL built different cars to the same general plan.

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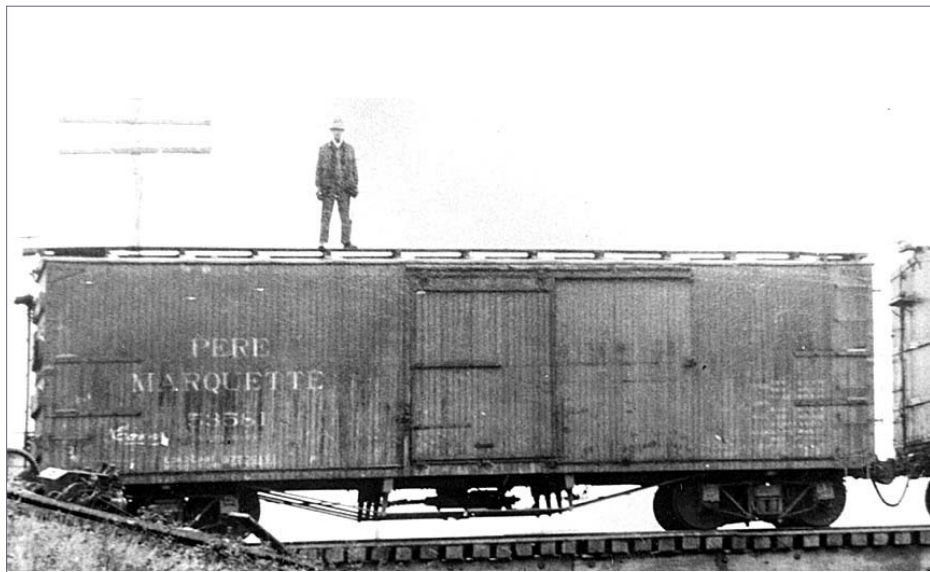
33. D&H 22717 has an inward facing Hutchins steel end.

Nickel Plate experimented with them on 200 rebuilt cars. When the NKP sold off most of their antiquated boxcars in 1932, the M&StL bought several hundred for grain service, and ended up with Hutchins ends. Having one semi-generic end on the market to fit these new kits would allow us to build models representing over 3,000 cars from these four popular railroads.

Many railroads used Hutchins ends [33-36], although most of the applications were on rebuilt cars rather than on brand new cars, as with the NC&StL's boxcars.

TRUSS RODS, TOO

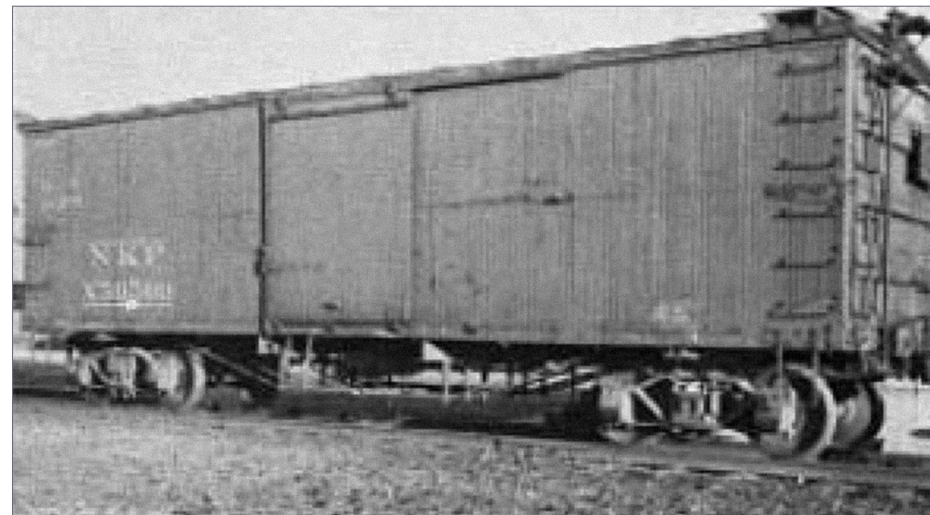
The PM, Nickel Plate, and M&StL cars also demonstrate what may end up being the most useful type of kitbash possible with the 1400-series kits: Old, all-wood boxcars that were rebuilt by adding steel, C-channel center sills, which also retained their truss rods.



34. The outward facing Hutchins ends can barely be seen on this Pere Marquette boxcar. Steel ends and truss rods are an interesting combination.



35. A former Nickel Plate boxcar in service on the M&StL.



36. Hutchins steel ends, truss rods, and arch bar trucks on an original NKP boxcar.

The combination of a steel center sill and truss rods was an extremely common feature on boxcars between 1920 and 1945, but is a detail generally overlooked by modelers. Most modelers assume that any car with truss rods has an all-wood underframe and therefore “old-timey” and unsuitable for any period after 1920.

These before-and-after photos [38, 39] illustrate how radically a boxcar appearance could change when rebuilt. Both cars were built for the Michigan Central in 1906 and 1907 to the same general design. MC 46207 is posing for its builder’s photo, and is an all-wood-bodied car. MC 48601 was rebuilt just before 1916 and now has steel ends, a steel roof, and the NYC’s ‘repair steel’ underframe [40], first introduced in 1913.

Fabricating a new underframe, jacking up an old car body, and installing it onto the new underframe cost about 25% of an all-new

ACCURAIL 1400-SERIES KITS | 29

boxcar. This was a fast and cost-effective method of adding stronger cars to a railroad's roster and to extend the car service life. It was also a tax write-off for the railroads. Rebuilds were considered a "car repair" and not a "new equipment purchase."

By the beginning of World War I (in the United States), the various NYC lines had modified close to 10,000 boxcars and rebuilt an additional 25,000 cars between 1922 and 1929. Many railroads followed the NYC's lead. Boxcars with this sort of underframe would have been seen all around the country.

A few railroads even built new steel underframe truss rod boxcars. The Southern's 18,000-odd "SU" type boxcars are a prime example. These were built after the end of WWI and USRA



37. NKP 27749 sits under New Haven wires in 1936. Notice that the needle beams (the bars that hold the queen posts in place) are steel I-beams. This is a quick and easy way to tell that an old boxcar has a new steel underframe.

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38. AC&F Photo, Al Westerfield collection



39. Cleveland State University archives, W&LE collection

control. The frugally minded Southern built thousands of “old technology” short boxcars at a time when the industry was embracing larger, longer, single-sheathed, or all-steel boxcars. These older cars ran up to 1952, and came with a variety of ends and roofs. While nice resin kits for these prototypes are offered by both Westerfield and F&C, a modeler who needs them in bulk

(anyone modeling the Southern in the steam era) might find it more cost and time effective to kitbash the cars they need.

MODELING TRUSS RODS

Adding truss rods to the Accurail underframes is a straightforward and simple process [44]. I’ve added repair steel underframes to

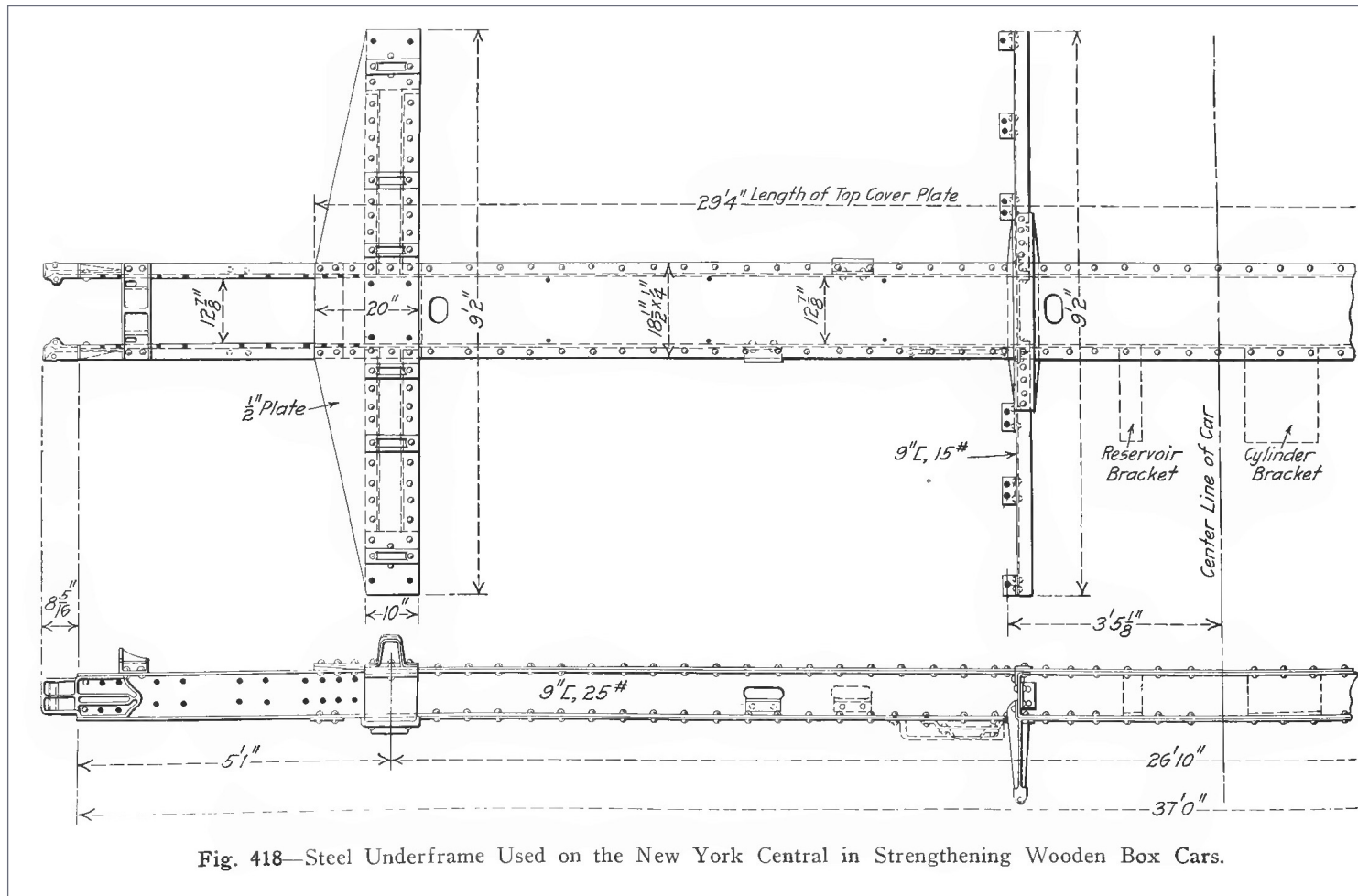


Fig. 418—Steel Underframe Used on the New York Central in Strengthening Wooden Box Cars.

40. This half plan of the NYC's repair steel underframe for boxcars appeared in the September 1914 issue of *Railway Age*.



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several of my models. A little Evergreen dimensional styrene, a few Tichy 10-inch-tall queen posts, seven-pound fishing line, and a few turnbuckles are all you need. Installation takes about an hour. It's a fast and easy one-evening project.



41. Southern 165693 in a 1923 builder photo. *AC&F Photo, St. Louis Mercantile Library collection*



42. Southern 168353 shows off the Murphy ends that were installed on 1,000 new boxcars.

ACCURAIL 1400-SERIES KITS | 34



43. An Accurail 36-foot boxcar with truss rods and other details installed.

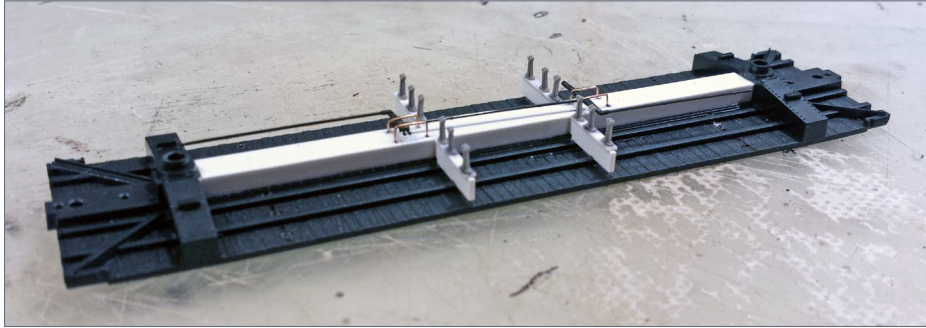
In my next installment, I'll review prototypes for Accurail's 1700-series kits. These represent older, as-built cars with wood ends and fish belly underframes. They're an especially useful model for 1905-1930 modelers. Stay tuned! ☒

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friends
about
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Extra!**

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ACCURAIL 1400-SERIES KITS | 35



44. Ray installed styrene for the steel center sills and needle beams. Tichy queen posts are in place and await the fishing line used for the rods. Brake rods and levers are in place. A K brake casting will be added before the truss rods are installed.

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

ACCURAIL 1400-SERIES KITS | 36



45. NYC 1571 lugs a string of Accurail short boxcars down the Water Level Route in the late 1920s.

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RAY BREYER



Ray, a second-generation model railroader, has been active in the hobby for as long as he can remember. At age six he gave his first modeling clinic, when he demonstrated scratchbuilding trees at the 1976 NMRA National Convention in Chicago.

Ray has been a prototype modeler since 1998. He's currently modeling the Nickel Plate Road's Peoria Division in the spring

of 1929. An avid researcher and scratchbuilder, Ray has written several prototype-focused articles for the NKPTS magazine, as well as for several online blogs.

He's also contributed research material, research time, and photos for pieces from many other authors.

Ray lives and works in Elgin, IL, with his wife Candice, daughter Vivian, and son Alex. He's also the editor of the NKPTS' online modeling magazine, the *Nickel Plate Road Modeler's Notebook*. ■

1. The Chicago & Eastern Illinois' Meadowlark slows for a passenger stop in hilly southern Illinois. David Forbes used custom laser cut sides to accurately model a favorite prototype passenger train. *Rick Schroeder photo taken on the Rossville Depot Model Railroad, Rossville, IL*

Illinois, a small Class 1 railroad that ran in eastern Illinois and western Indiana [2].

I began researching the C&EI, and the more I learned the more I got interested in modeling this small midwestern railroad. When I learned that the C&EI ordered a Pullman Standard passenger



Modeling the Meadowlark

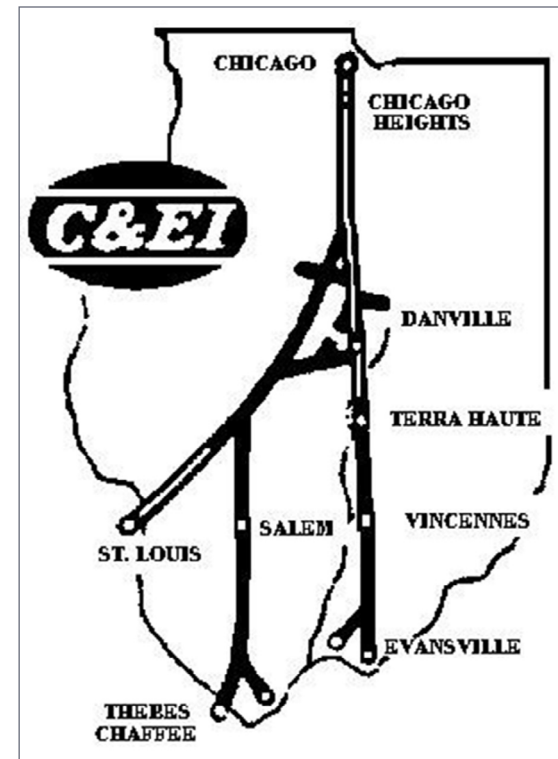


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Running Extra | December 2019

DAVID FORBES uses laser cut sides to model a distinctive passenger train ...

THE STORY OF HOW I MODELED THE CHICAGO & Eastern Illinois Railroad's Meadowlark passenger train [1] began with my first math teaching job in Altamont, Illinois. As the story goes, I finally had some change in my pocket and could explore my childhood hobby of model trains. A brief search of the local railroads turned up the Chicago & Eastern



2. A map of the C&EI was like an upside-down trident. Chicago was the northern terminus with routes to St. Louis, southern Illinois, and Evansville, Indiana. The Meadowlark followed a route from Chicago to Danville to southern Illinois. The sister train, the Whippoorwill, ran from Chicago through Danville to Evansville, IN. The C&EI would use heavyweight equipment painted in the same blue and orange scheme for the Cardinal that ran

to St. Louis. All C&EI passenger service from Chicago to St. Louis ended in 1949. *David Forbes collection*

MODELING THE MEADOWLARK | 3

set, named the Meadowlark, to run from Chicago to southern Illinois after WW2, I was hooked. It boggles my mind that at one point in time patrons could ride a passenger train from small towns in southern Illinois to Dearborn Station in Chicago. This was a passenger train I wanted to model.

HISTORY OF THE MEADOWLARK

With the rise of passenger traffic during WW2, the C&EI placed orders with Pullman-Standard for new streamlined passenger trains at the conclusion of the war. In early 1948, the C&EI took delivery of two Pullman Standard passenger trains, the Meadowlark and Whippoorwill.



3. The Meadowlark pauses at Salem, Illinois, on a morning run to Chicago from southern Illinois. The E7 was one of three E units purchased by the C&EI for the Meadowlark and Whippoorwill. The first car behind the engine is the Sparhawk Inn, an RPO/Baggage/Lunch counter car. Three coaches fill out the consist. *Photographer unknown, David Forbes collection*

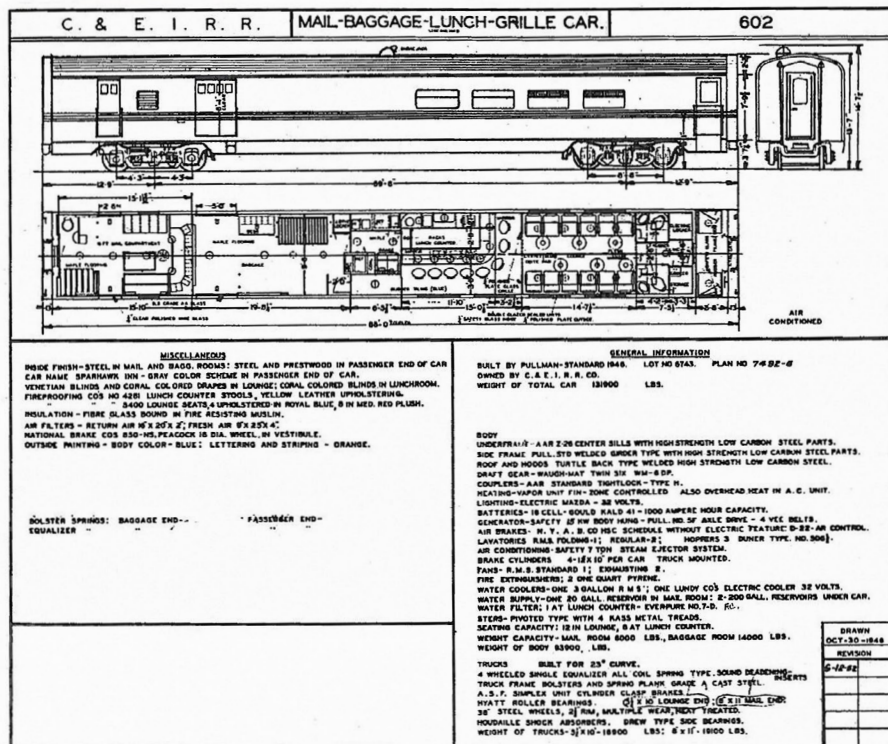
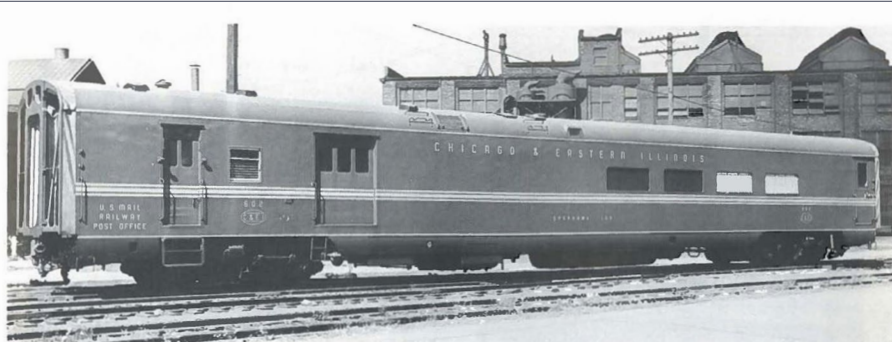
MODELING THE MEADOWLARK | 4

The Meadowlark BETWEEN CHICAGO AND SOUTHERN ILLINOIS		
		
SCHEDULES		
Daily Train No. 11 Southbound Read Down	Central Time At Chicago Trains Arrive and Depart Dearborn Station	Daily Train No. 12 Northbound Read Up
5.30 PM	Lv Chicago	Ar 12.30 PM
5.44 PM	Lv Eaglewood	Ar 12.15 PM
6.12 PM	Lv Chicago Hgts	Lv 11.46 AM
6.37 PM	Lv Momence	Lv 11.23 AM
7.08 PM	Lv Watseka	Lv 10.49 AM
X 7.53 PM	Lv Glover	X 10.00 AM
8.15 PM	Ar Villa Grove	Lv 9.40 AM
8.22 PM	Lv Villa Grove	Ar 9.30 AM
8.33 PM	Lv Tuscola	Lv 9.15 AM
X 8.48 PM	Lv Arthur	Lv 9.00 AM
9.03 PM	Lv Sullivan	Lv 8.44 AM
9.24 PM	Lv Shelbyville	Lv 8.20 AM
X 9.54 PM	Lv Altamont	F 7.47 AM
10.04 PM	Lv St. Elmo	Lv 7.38 AM
F 10.26 PM	Lv Kimmunity	Lv 7.15 AM
10.43 PM	Lv Salem	Lv 7.00 AM
11.09 PM	Lv Mt. Vernon	Lv 6.29 AM
11.44 PM	Lv Benton	Lv 6.00 AM
11.56 PM	Lv West Frankfort	Lv 5.48 AM
12.07 AM	Lv Johnston City	Lv 5.37 AM
12.18 AM	Lv Marion	Lv 5.24 AM
F 12.50 AM	Lv West Vienna	F 4.55 AM
12.56 AM	Lv Cypress	Lv 4.45 AM
1.40 AM	Ar Joppa	Lv 4.10 AM
F Stops on Flag.		
X Stops to discharge or receive revenue passengers to or from Chicago.		
Reclining Seat Chair Cars (unreserved); Diner—Lounge; Refreshments, Snacks, Meals.		

4. A 1954 pocket schedule for the Meadowlark lists the stops. A passenger could board at the southern terminus, Joppa, Illinois, and arrive in Chicago for lunch, shop or tend to business, then board again at 5:30 pm for the return home. The southern terminus of the Meadowlark changed throughout its run including Chaffee, Missouri; and Joppa and Cypress in Illinois. *David Forbes Collection*

The as-delivered equipment for the Meadowlark included three E7 A-units delivered to the C&EI in late 1946 in preparation of the new streamliners. These units were painted in C&EI's light blue with orange stripes and stenciling. The passenger train consisted of four cars; Sparhawk Inn 602, a combination RPO/Baggage/Lunch Counter car, coaches Hubbard Trail, Horseshoe Trail, and Egyptian Trail (numbered 464-466,). These coaches were 60-seat cars except one that had 58 seats and a desk for the conductor.

MODELING THE MEADOWLARK | 5

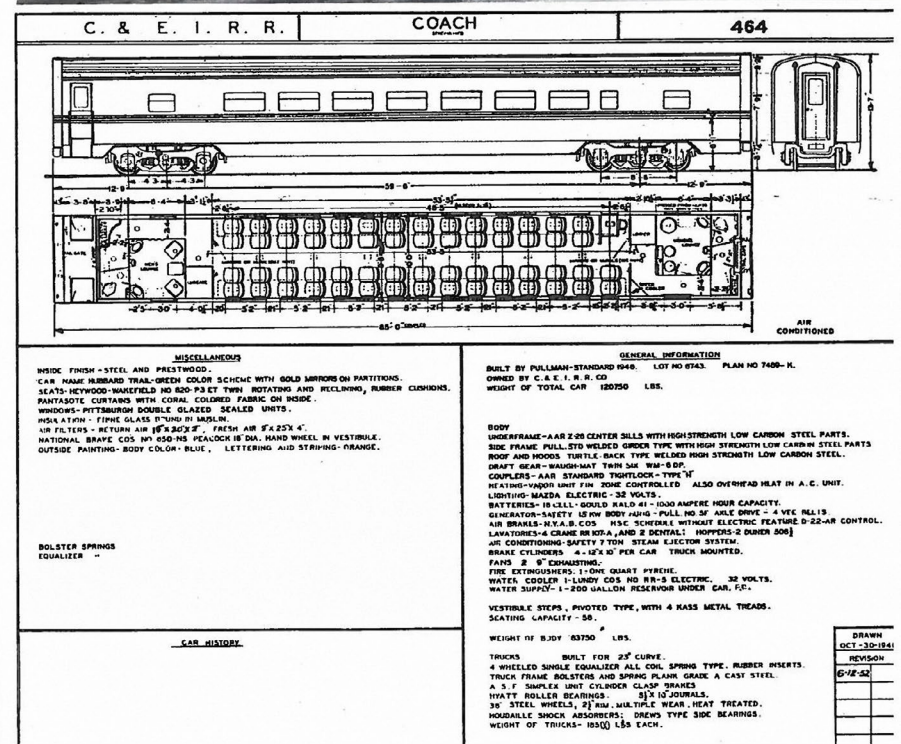
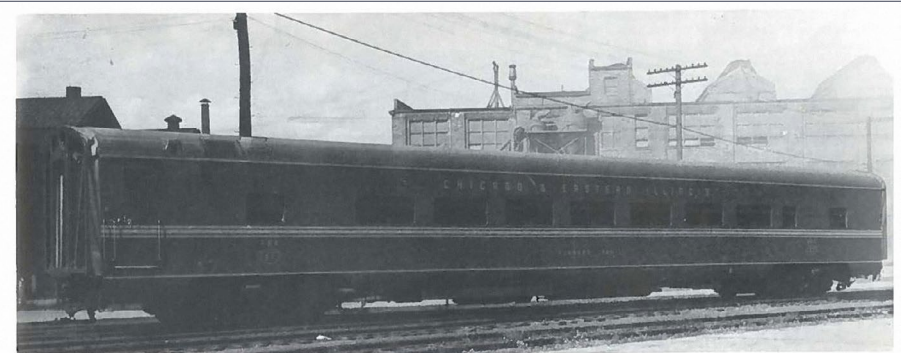


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5. The Sparhawk Inn was a Pullman-built RPO/Baggage/Lunch Counter car, a unique arrangement for passenger cars. Courtesy C&E Historical Society

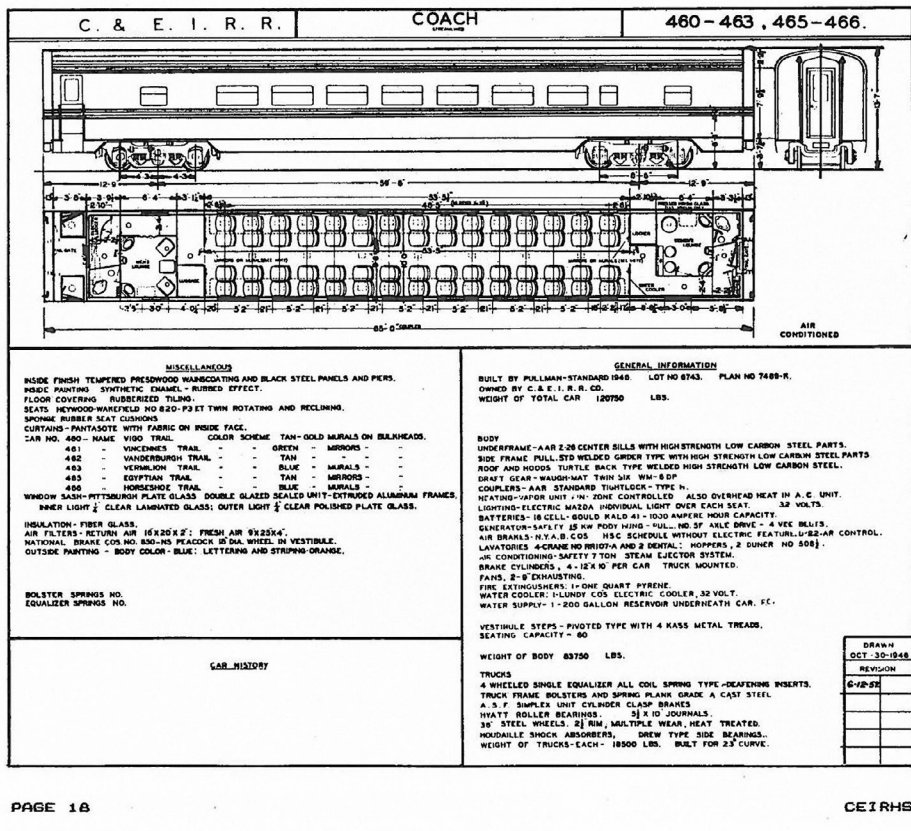
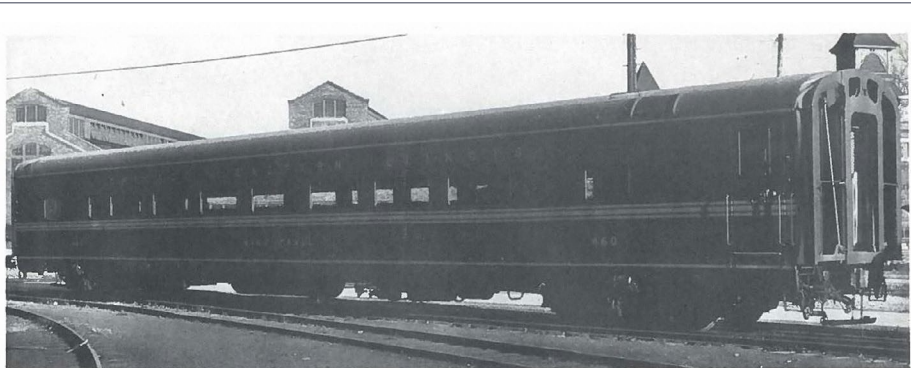
MODELING THE MEADOWLARK | 6



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6. The Hubbard Trail coach had 58 seats with a desk and a chair for the conductor to complete paperwork. Courtesy C&E Historical Society



7. The Horseshoe Trail and Egyptian Trail were 60-seat coaches built by Pullman. Courtesy C&E Historical Society

MODELING THE MEADOWLARK

I had several options to model the Meadowlark. I could repaint and decal passenger cars already on the market. I wanted the models to reflect the prototype better. I considered modifying existing cars for correct window arrangements but didn't have confidence to take this route.

Broadway Limited had previously released a C&EI E7 in HO scale. I knew the C&EI Historical Society had the correct paint and decals for the four passenger cars so I kept looking for another approach.

Matt Snell's article on building Conrail business cars in the Sept/Oct 2010 *Model Railroad Hobbyist* caught my eye. Taking inspiration from Matt's articles on using laser cut passenger car sides, I ventured forth to model the Meadowlark.

MEADOWLARK PARTS LIST

- Broadway Limited E7 (out of production)
- Laser Horizons Sparhawk Inn sides
- Laser Horizons Coach sides for C&EI-7489 Walther's 60-seat Pullman passenger cars
- TruColor C&EI light blue
- C&EI Historical Society decals
- Walther's DCC passenger car lighting kits and interiors
- Styrene

MODELING THE MEADOWLARK | 9

Matt's procedure involved applying laser cut passenger sides to Walthers passenger cars. The Walthers cars have tabs that allow for easy disassembly. The as-molded sides are removed and replaced with custom laser cut sides for a prototypical model.

MOTIVE POWER



8. The C&EI purchased three E7 diesels, 1100-1102, to pull the Meadowlark and Whippoorwill. Broadway Limited produced a great looking sound-equipped model. I removed the front coupler, added the front coupler cover plate, and installed a couple of grab irons.

MODELING THE MEADOWLARK | 10



9. Laser Horizons produced parts following the Pullman numbered floor plan. This is one set of sides for the coaches.

PASSENGER CAR BODIES

I contacted Laser Horizons to see if he could help with my Meadowlark project. He was able to laser cut the sides for the Meadowlark using the original Pullman plans [9]. The sides were cut from ABS plastic with a minimal set up fee. The sides are still available and have been used by other C&EI modelers.

The benefit of using custom laser cut sides is that almost any passenger car from any railroad can be modeled. With so many different floor plans and window arrangements of passenger cars, creating laser cut sides is an economical way to model a unique passenger train.

I found three Walthers L&N 60-seat coaches at a local train show. These will be used as the base models for the coaches. I found a Walthers undecorated lunch counter car on eBay to use for the Sparhawk Inn. The Walthers cars make great cores for conversions as they come with trucks, couplers, and underbody details already installed.

DISASSEMBLING THE PASSENGER CARS

I removed the roof from the car body first. Tabs are used to connect Walthers passenger roofs and can be difficult to remove. A YouTube video demonstrates how to remove the roof without damaging the tabs. The car needs to be twisted until the roof tabs pop; then work the roof free. It takes some practice, but it works well. www.youtube.com/watch?v=cr2A-QrqiPc.

Screws underneath the car need to be removed to release the couplers and trucks. The sides and ends have tabs that need to be pressed to release the various components. I used a small



10. I keep things organized when disassembling models. Shallow boxes are great for the car sides and roof, while parts trays keep the small things together.

straight-edged screwdriver to pry the tabs free. One of the keys to a project of this scope is to keep track of the parts and label the components so that the model is easily reassembled [10].

ASSEMBLING THE SIDES

The next step was to permanently attach the interior frame of the Walthers coach. Because of the tab construction used in the models, I wanted to have a stable base to apply the car sides. I used Testors plastic cement to glue the interior frame to the floor. I also glued the end wall to the frame, after stripping the paint with alcohol. I made sure the metal strips were left in place so I could add lighting to the cars. More on this later.

The new sides were attached to all four cars [13]. The Sparhawk Inn is the first car, followed by the three coaches. I installed the Walthers-supplied grab irons from the original models by the door openings. The holes for these grabs came pre-cut by the laser, but I used a #79 drill bit to clear the holes.



11. I used clothespins to keep the frame and floor together until the glue dried. Keep a few around your workbench as they make great modeling clamps.

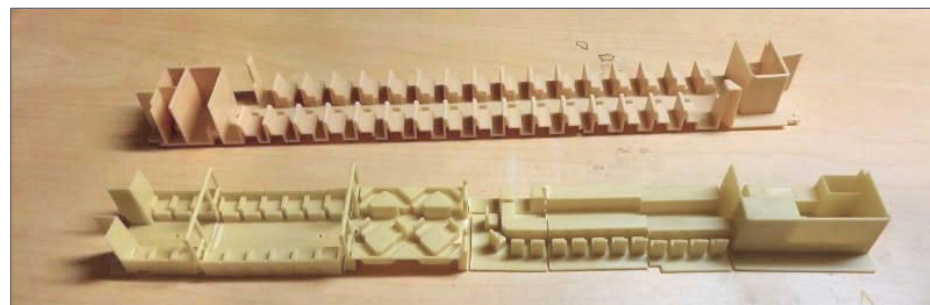


12. The laser cut sides are much thinner than the Walthers sides. To prep these for installation, I added 0.040-inch thick styrene strip to make the laser cut sides the same thickness as the Walthers car sides. I think I would use 0.030-inch thick for the next conversion as the 0.040-inch styrene seemed a little too thick.



13. I attached the laser cut car sides to the Walthers frame using plastic cement. To get the correct roof height, I held the roof in place to mark the correct

location before applying glue between the styrene on the sides and the core frame.



14. The C&EI Historical Society sells an equipment diagram DVD with nearly 900 pages documenting C&EI equipment. The diagrams include interior layouts of various passenger cars, including the Sparhawk Inn. I started with the original Walthers lunch counter interior to kitbash what I needed.

INTERIORS

I wanted my Meadowlark train to be a special model so I added interior details. I plan to install interior lighting so the details can be seen.

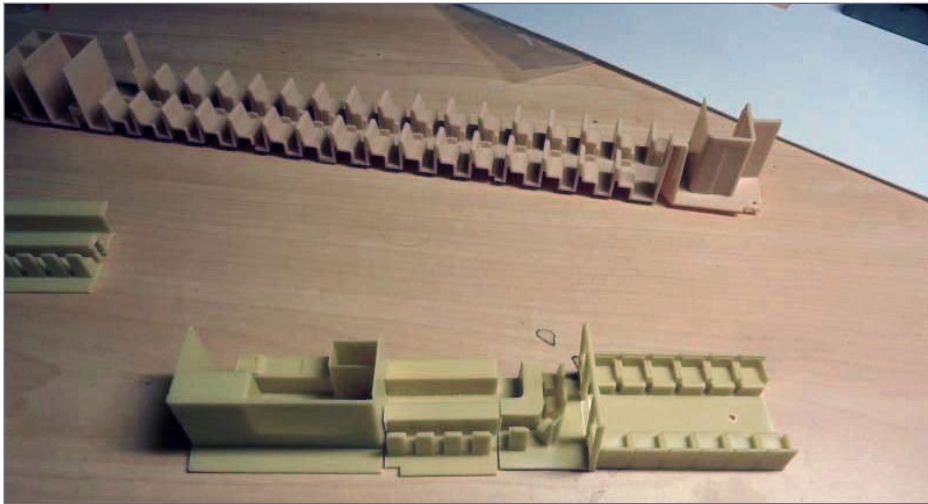
I cut up the Walther's car interior [14] to match the Sparhawk prototype. The pieces were rearranged to match the Sparhawk Inn's interior. It's not an exact match as I don't have any of the RPO counters or pigeonholes, but it's pretty close [15].

COACH INTERIORS

I focused on the coach interiors next. I found the Walthers interiors did not line up with the new laser cut sides window arrangement. The floor plan is different. I scratchbuilt the interiors to follow the prototype arrangement.

I used three Palace Car Company kits to detail the interior of the three coaches. Many years ago, the C&EI Historical Society

MODELING THE MEADOWLARK | 15



15. Here are the rearranged pieces of the Walther's lunch counter interior. This arrangement approximates the prototype car. I glued the pieces to a thin styrene base cut to match the original floor's interior.



16. I finished the Sparhawk Inn interior by adding styrene pieces for the hallway corridor and the RPO/Baggage bulkhead. The interior fits nicely into the original car body.

MODELING THE MEADOWLARK | 16



17. The Palace Car Company interior kit fills out a new coach interior. I added toilets, water fountains, and sinks from the Walthers interiors for the new coaches.



18. Here is the coach interior installed in the Hubbard Trail. This coach had a desk for the train conductor in place of one of the seats, seen in the top right corner of the car. Using interior kits allows a prototype modeler to build very nice models.

offered kits for the Meadowlark cars in addition to the interior kits from Palace Car Company. I bought these kits over 10 years ago, which gives you an idea of the planning process for this project!

The Palace Car Company kits for the C&EI coaches consist of chairs and the interior walls. I cut a new styrene floor using the original interior as a pattern. I glued the interior walls in place, then measured and divided the floor into lines to evenly distribute the chairs.

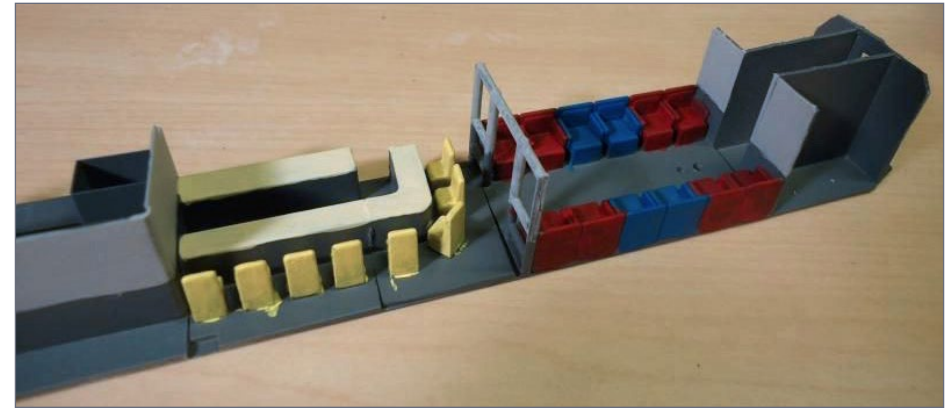
INTERIOR COLORS AND DETAILS

The interior colors of the Meadowlark cars are described in period documents and in the C&EI HS *Flyer*, issue Vol. 5, No. 2-3, April-July 86. Car 602, the Sparhawk Inn, had a two-tone gray scheme on the walls and the passenger end of the car. The lunch counter stools had yellow leather. Of the 12 lounge chairs, four were blue and eight were red. I assume the middle two were blue and the end two were red.

The Pullman-built coaches each had a two-tone paint scheme with various colors. Coach 464, the Hubbard Trail, had a green paint scheme with mirrors on the bulkheads. Coach 465, the Egyptian Trail, had a tan paint scheme with mirrors on the bulkheads. Coach 466, the Horseshoe Trail, had a blue paint scheme with murals on the bulkheads. The coaches had coral blinds and coral drapes.

I do not have close-up photos of the murals; I assumed the murals could have featured famous Chicago landmarks. The coach Heywood-Wakefield seat color was not specified in the drawings. The lack of late '40s color photography is a detriment to modeling colors accurately. I decided to paint the seats red with a white headrest until additional information is uncovered that says otherwise.

SPARHAWK INN INTERIOR



19. I painted the Sparhawk Inn interior with a two-tone gray scheme. I left the bottom half of the walls the dark primer color and used a light gray on the top half of the walls. I painted the lunch counter seats yellow and the chairs blue and red. Top of the counter received a coat of light brown as there are no color reference photos for the interior of the Sparhawk Inn. I salvaged the room divider from the Walthers lunch counter interior.



20. I purchased painted seated figures on eBay. They aren't the greatest, but they are painted. All the hair and hats are black so I added browns and yellows to randomize their tops. I glued some of the passengers in the lounge seats and some at the lunch counter. The figures at the lunch counter had to have their legs removed to fit in the seats.

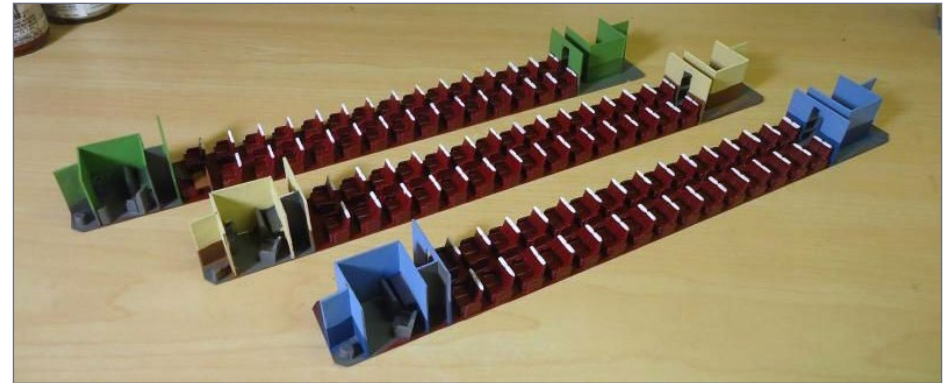


21. The figures add extra visual detail when the Sparhawk Inn is illuminated. They add a level of realism to the passenger train.

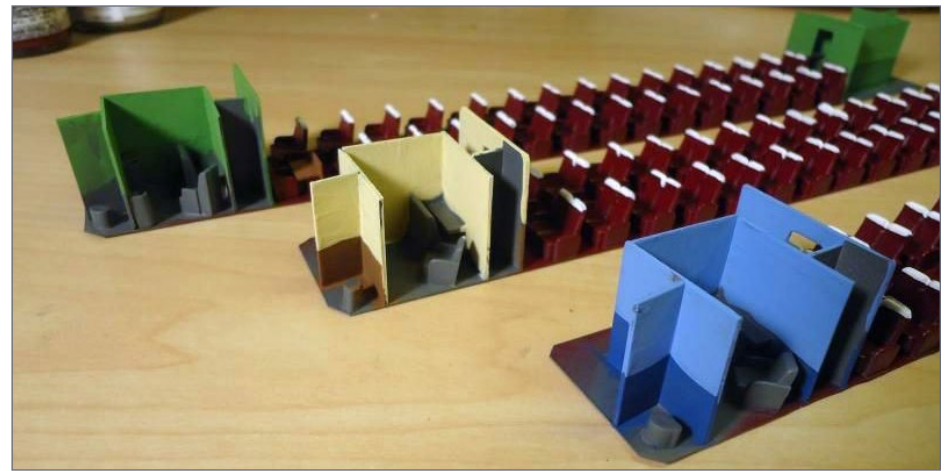
MEADOWLARK COACH INTERIORS



22. I masked off the bathroom ends and spray painted the seats red. I used a fine-tipped brush to paint the tops of the seats white to simulate head rest covers.



23. I painted the Meadowlark coach interiors like the Sparhawk Inn. I brush painted the coach interior walls in the two-tone gray. I approximated the wall colors as I did not have the color documentation. The white headrest covers make a striking interior.



24. Here is a close-up of the women's lounges. These areas had a makeup counter, chair, sink basin, and toilet closet. I couldn't decide what colors to paint the seats so I left them gray. Most of these details won't be seen on the finished model, but I think they add a nice touch. I cut these toilets and seats from the original Walthers interiors.

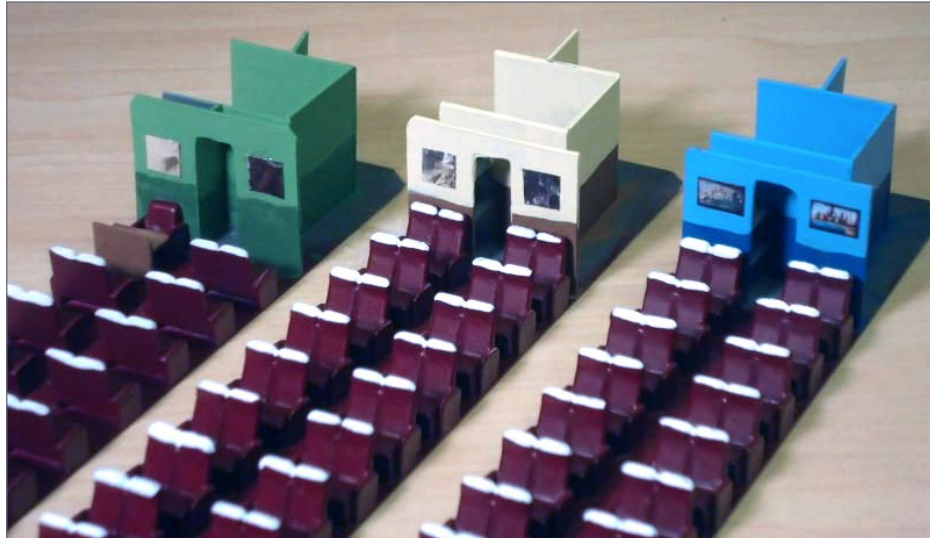
MODELING THE MEADOWLARK | 21

I outfitted the men's restroom on the other end of the cars using components cut from the original Walthers interiors.

I used foil to make mirrors for the other two coaches. I trimmed them to approximate prototype size, then attached the mirrors using tacky glue.

EXTERIOR DETAILS

With the interior details complete, I turned my attention to the exteriors of these cars. I installed Detail Associates passenger



25. The Horseshoe Trail coach had murals on the interior bulkhead. I used paintings of Chicago landmarks found in a Google search. I copied the images into MS Publisher and shrunk the pictures to various sizes to see what fit best. I printed the images and trimmed them with a hobby knife. I used a brown Sharpie marker to color the edges, creating a frame. The murals were attached to the blue bulkheads with Aleene's Tacky Glue.

MODELING THE MEADOWLARK | 22



26. I placed the car interiors in their respective coaches to check my progress. I wrote the name of each car interior on the underside to ensure the correct placements.



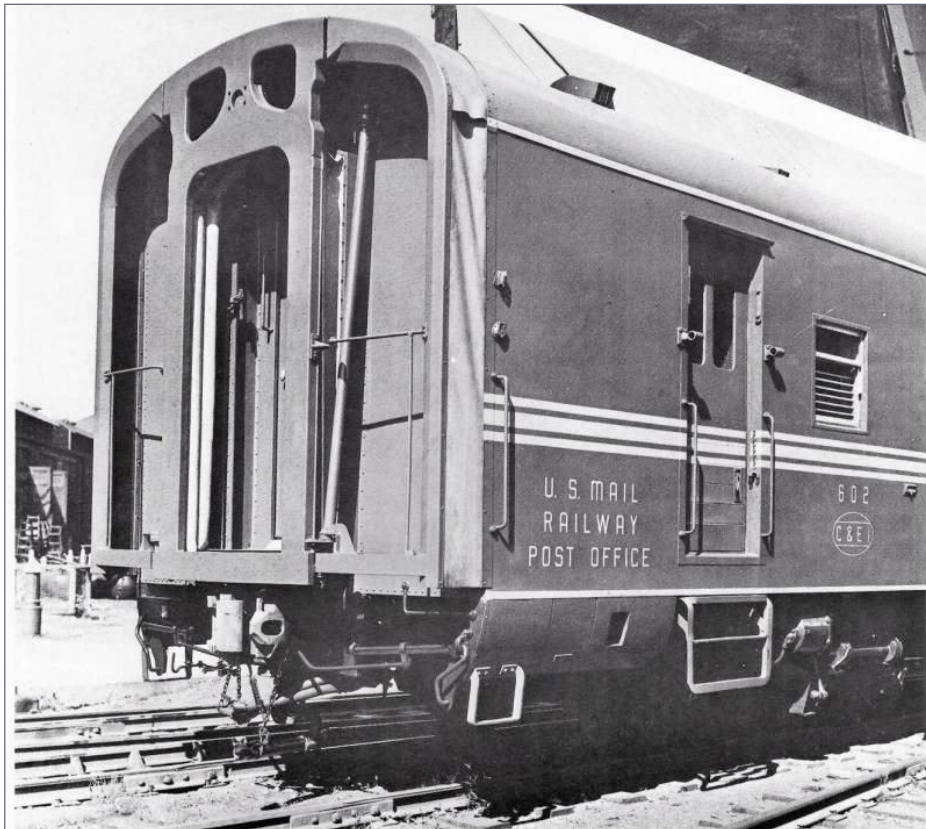
27. I worked on more figures to add in the coaches. Aleene's Tacky Glue keeps everyone in their seats. I again had to remove a few legs for the figures to seat properly. I left

one coach empty to simulate a car where passengers have either disembarked or haven't yet boarded.

MODELING THE MEADOWLARK | 23

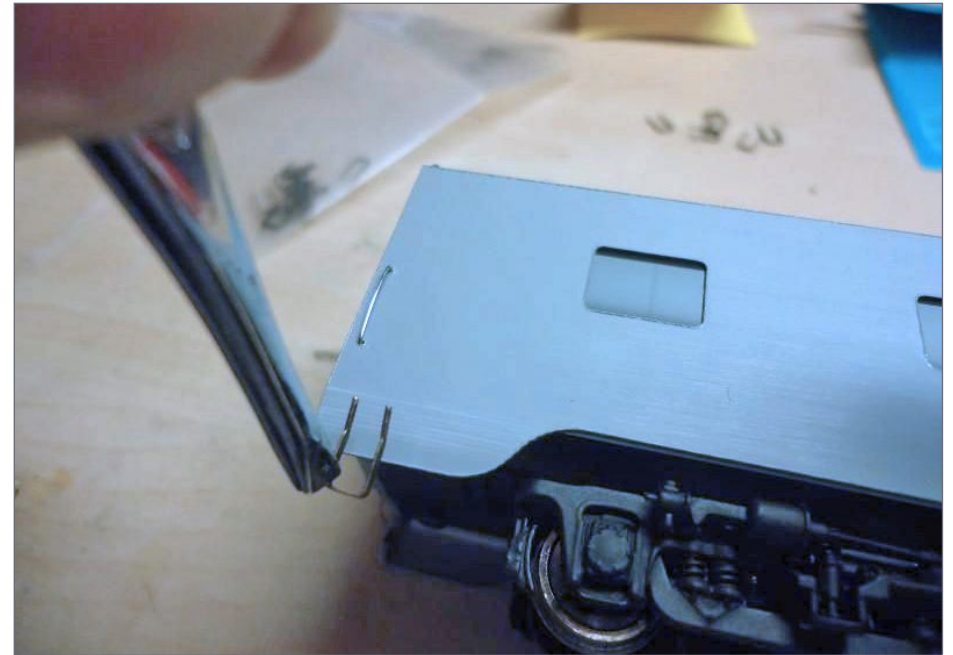
grab irons on the car sides. I don't have photos of the car ends, so I installed the original Walthers grabs.

I spent hours looking for a detail part like this sill step [28, 29]. I ended up scratchbuilding my own using A-Line sill steps (style A) and slicing brackets from a Grandt Line sill step part to create the detail. The Grandt Line part simulates the nut/bolt attachment to the car.



28. Here is the Sparhawk Inn with a view of the sill steps. The mounting brackets that bolt the step to the car are turned 90 degrees from the step.

MODELING THE MEADOWLARK | 24



29. I plotted the approximate location of the step detail. The non-door ends of the cars have a rectangular step. I made a jig to locate and drill the holes into the car skirting. I bent the mounting pins to fit, then fixed the detail in place with some CA.

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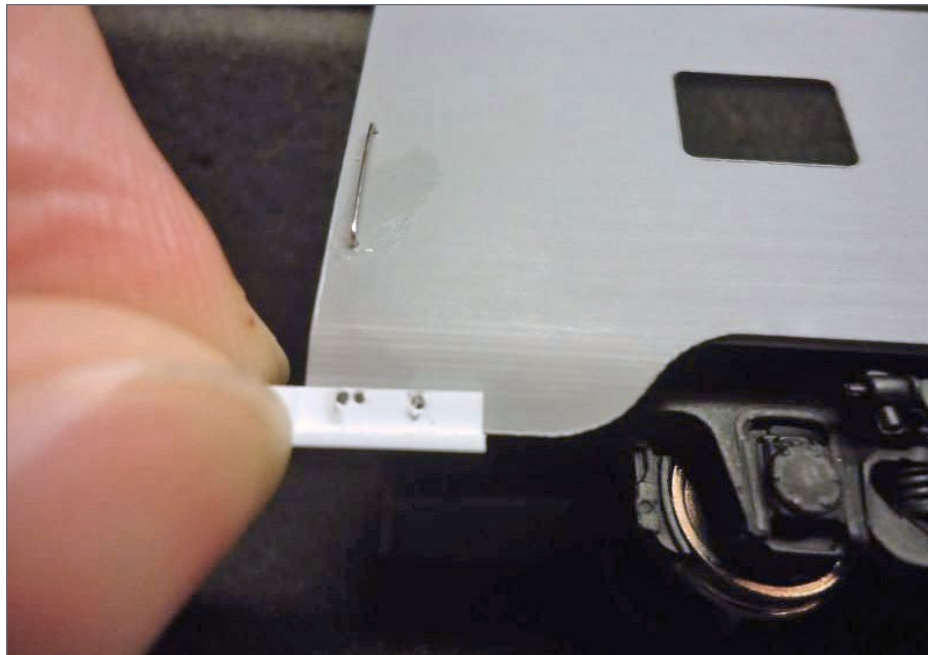


MODELING THE MEADOWLARK | 25

After installing the steps, I worked on the mounting brackets. As I cut the ends from the Grandt Line steps, parts flew off into the great unknown. An *MRH* forum suggestion from OKGraeme helped me keep the parts close. He suggested I cut the parts inside a plastic bag to keep the mounting brackets from flying away. These tiny pieces were now captured and ready to install.



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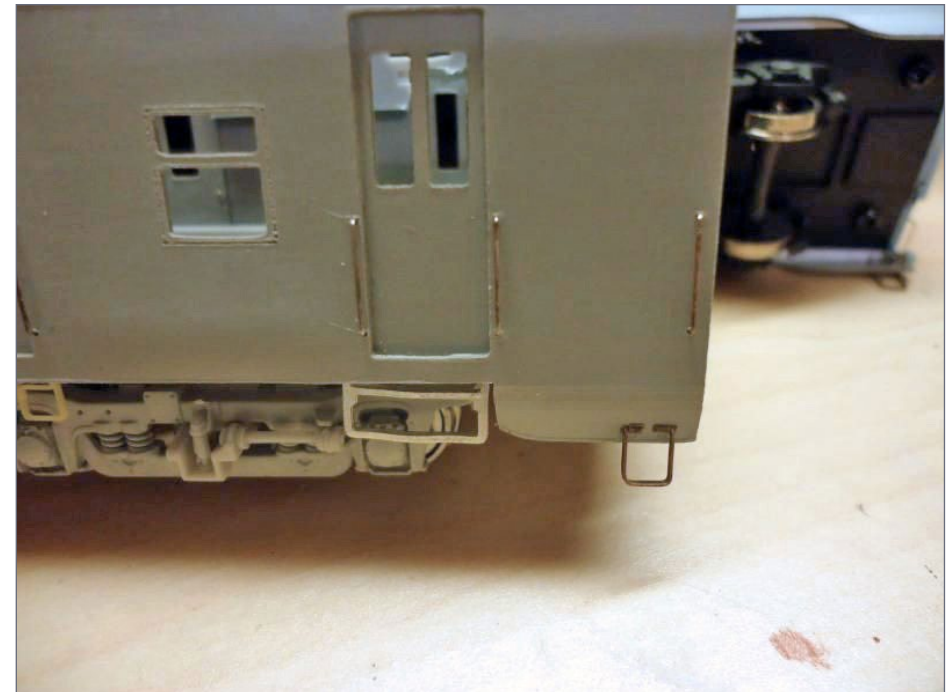


30. A simple jig helped me mark the hole locations for the steps. I made this from a couple of strips of styrene glued as a T. The T acts as a stop guide at the bottom corner of the car so the steps are mounted in the same locations. The jig is reversible to mark holes on each side of the car.

MODELING THE MEADOWLARK | 26



31. The door ends of these cars need a different sill step. A lack of mounting space forced this different design. I fabricated this step using small modelers pliers to bend the side of the A-Line step. This detail step will be attached the same as the other steps.



32. I used plastic cement to attach the mounting brackets to the insides of the sill steps. I later realized that the prototype had two bolts per bracket and the pieces I used only have one bolt. I doubt anyone will notice.

MEADOWLARK ROOFS

After the roof details were installed, the Meadowlark project took a four-year hiatus as I returned to college for a graduate degree. The models were ready to paint but I was not confident in my airbrushing skills and didn't want to risk ruining my efforts.



34. I made a few modifications to the Sparhawk roof. I put-tied and sanded the original vent locations. I used a template to position the detail parts and attached them with CA.



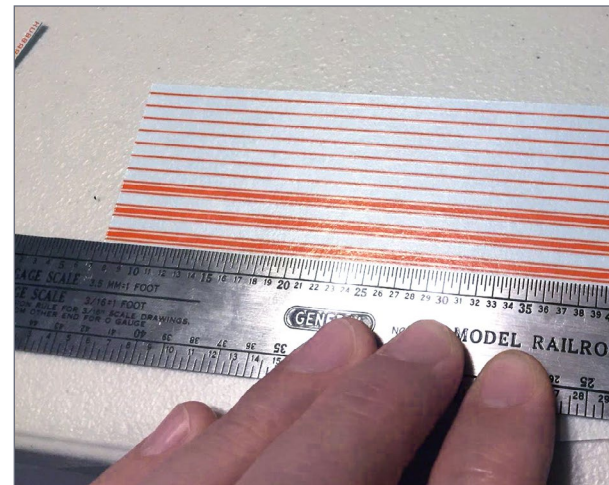
35. Here's the state of the Meadowlark project after the cars were painted. Justin Phippen did a great job and even remembered to mask metal spots for electrical connections

when I add lighting kits. Car lighting was essential for this project since I put so much work into the car interiors.

Eventually, I contracted with Justin Phippen of JR's Junction to paint my cars [35]. He used TruColor C&EI Early Blue. The paint was matched to original paint from the C&EI car shops in Danville with the help of the C&EI Historical Society. He did a great job and I moved on to decaling the cars. The C&EI Historical Society offers a set of orange decals made by Mask Island Decals. The decals were created from original drawings from the C&EI Historical Society archive.

I painted the trucks with a rattle can of flat black paint. I used an American Model Builders wheel painting jig to paint the wheel-sets. I may apply light weathering to the trucks. Since the train was washed daily, the trucks would show a minimal amount of road grime.

I reassembled the model after all the parts were painted. I had saved the parts in a container to keep everything organized. I installed the bulkheads, reattached the couplers and trucks, and installed the diaphragms. I used my wife's label maker to specify each car name and number so that I didn't end up decaling the incorrect name and/or number on the wrong car.



36. I used traditional techniques to decal the cars. The tricky part on this step is to apply the stripes straight.

DECALING

I sprayed the models with a coat of Testors Glosscote to prepare for the decals. The gloss helps the decal blend into the model. After the gloss coat dries, it's time to apply the decals.

I use a metal hobby rule and a new blade to cut out the decals on a piece of plate glass. I read that using plate glass prevents the edge of the decal from curling under when cut. Not sure if that is true but the plate glass is a nice cutting surface. I make several passes with a fresh blade to cut out the decals.

I use Microscale Micro Set to prep the area for the decal. I place the decals in a lid from a Folgers Coffee container as the black background helps me see the decal art. I keep a white dish handy for dark colored decals.



37. I use a foam cradle to hold the model while decaling. The Horseshoe Trail stripes and lettering are in place.



38. The Walther's DCC interior lighting kit fits into slots in the carbody.

I let the decal sit and soften for a few moments, then carefully nudge one end of the stripe onto the model. I hold it in place with tweezers and gently slide the decal onto the model from the backing paper. Using this process, I can get the stripe very close to the final placement. I use tweezers to make final adjustments to the stripes. I used a similar process for the rest of the decal work.

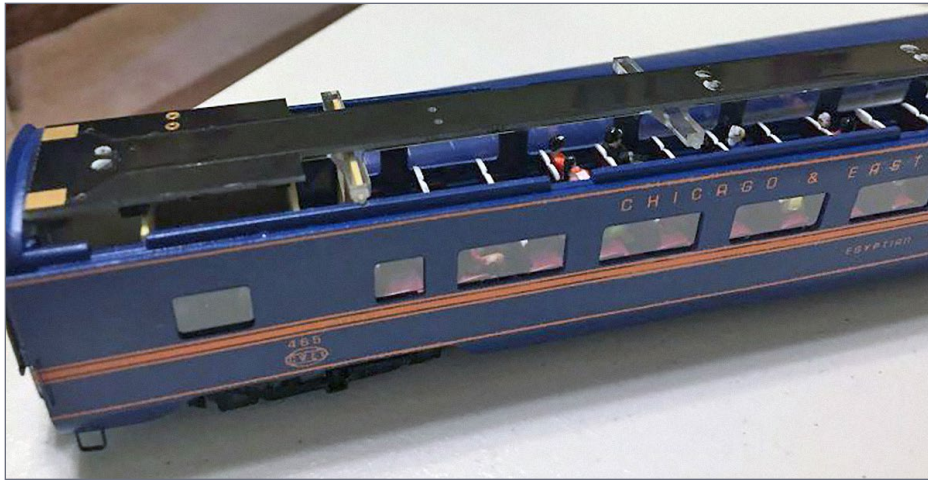
Once the decals are in place, I let the model sit to air dry. After the Micro Set has dried, I apply a coat of Micro Sol to melt the decal into any irregularities such as rivets or seam lines. I apply repeated coats to ensure the decal is seating properly. If I see air bubbles, I use a hobby knife to score the area and reapply the Micro Sol.

After everything dries and looks good, I apply another coat of Testors Glosscote to hide the decal edges. The gloss coat gives the models a freshly washed appearance.

INTERIOR LIGHTING

Interior lighting for my Meadowlark cars was planned from the start. I chose the DCC lighting kit as they also make a DC version. These kits have metal tabs that contact metal plates on the car to provide constant lighting. The lighting bar fits into slots in the car, which is another advantage of using the Walther's model as a core kit.

MODELING THE MEADOWLARK | 31



39. I've fit the Walthers DCC lighting kit in the model. I found my interiors were too tall so I cut the tops from the interior walls with side-cutting pliers.



MODELING THE MEADOWLARK | 32

After I installed the lighting kits, the last task was to reattach the car roofs. After I carefully positioned the roof and pressed it into place, the roof clips snapped into the car. The finished Egyptian Trail [40] looked great. I was excited to get to this stage of the project!

Modeling the Meadowlark was a dream come true. I have been plotting how to model this train ever since I first learned about the C&EI, fifteen years ago. The custom laser-cut sides allow a prototype modeler to recreate their favorite prototypes. Additional details can be added to the level a modeler chooses. I hope you have enjoyed my journey on how I modeled the C&EI Meadowlark.

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40. I added 0.005-inch thick clear styrene for the window glass. I cut the parts to fit and glued the clear plastic to the car using Testors Clear Parts Cement.



41. The Chicago & Eastern Illinois' Meadowlark winds through the curves on the Rossville Depot Model Railroad in Rossville, Illinois. Rick Schroeder photo ☒



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DAVID FORBES



David got into the hobby with an HO scale Christmas train set in 6th grade. His interest grew and culminated in an HO layout on two pieces of plywood by the end of high school. After college, and with some money in his pocket, he returned to the hobby.

His first teaching job was in Altamont, Illinois, where he started researching the C&EI. The more he discovered, the more he wanted to model this neat little railroad.

He soon joined the C&EI Historical Society, eventually becoming an officer and currently writes articles for the C&EI HS magazine, the *Flyer*. His modeling focus is primarily 1950s and '60s C&EI. His dream layout is the Salem Subdivision of the C&EI, from Villa Grove to the southern end of Illinois. Until that dream layout takes root, he is slowly amassing engines, equipment, and structures to populate a planned retirement project!

He currently teaches high school mathematics in Robinson, Illinois. He has three modules in his classroom loosely based on the current Indiana Railroad operations in Robinson. The modules are part of the Crawford County Model Railroad Club.

He is married to a wonderful lady named Sarah who doesn't mind riding tourist trains! ■

THE AH-HAH MOMENT

column



MRH Running Extra | December 2019

BEN KAUR USES LIP BALM TUBES
FOR MICRO DRILL BITS ...



RATE THIS ARTICLE

MICRO DRILL INDEXES THAT ISSUE A SINGLE BIT ARE just silly. Every one I own has several bits missing. Invariably I also have a pile of bits elsewhere meant to cover these losses.

Vials with extra bits work okay, but I need to tip the vial over in order to extract a drill bit. Likely as not, the drills spill out and I'm chasing tiny drill bits all over my workspace or the floor.

That's when I discovered lip balm tubes. These containers have an internal elevator – a couple of turns on the bottom screw brings all the bits to the perfect height. I can select one drill bit, then retract the elevator so the rest don't fall out.

You can find empty lip balm tubes as part of the making and selling cosmetics cottage industry. With an outer diameter of 12.5 - 15.5mm,

they easily fit into a standard test tube holder rack made for 13-16mm test tubes. Pricing is very reasonable.

My rack is just a little deep for



Better micro drill storage

Running Extra companion video

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THE AH-HAH MOMENT | 2



1. Lip balm tube for #62 drill bits.



2. Lip balm tubes in a test tube holder, secured to pegboard.

my tubes, but using a sheet of ¼" foam rubber in the base makes them easily accessible.

Lip balm tubes are perfect drill bit cases thanks to the movable elevator assisting with drill bit selection – and they store wonderfully in standard-size test tube racks. Give them a try! ☑

Get the shopping list for this article here:

mrhmag.com/magazine/running-extra/2019-12/ah-hah-moment



J. Shultz

NOTE:

Benny tipped me off to the lip balm tubes a few months ago to see if this was a good topic for an Ah-Hah Moment. After I purchased five of the tubes on eBay and tested them, I agreed that they were an excellent solution to the problem. I then purchased 50 more.

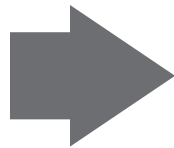
I purchased an inexpensive test tube rack on Amazon [2].

Like Benny, I discovered the tubes slipped too far down. A board and a couple of sheets of cardboard on the bottom of the rack solved that problem.

I store my rack with a couple of hooks on the pegboard backing of my workstation. Since my printed labels go on the caps, reading the drill size is easy.

Bonus section!

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



ALSO:

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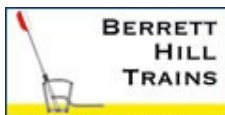
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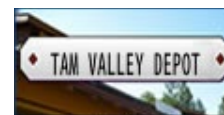
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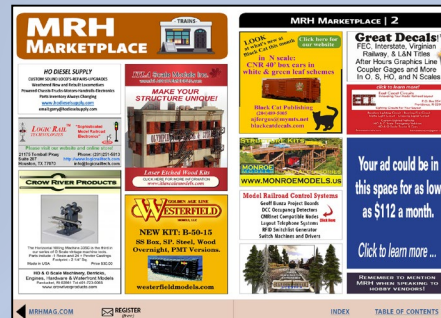
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PUBLISHER'S MUSINGS



Model Railroad Hobbyist | December 2019

JOE FUGATE: INTRODUCING DELUXE
MATERIALS ...



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ONCE IN A WHILE, YOU RUN ACROSS A VENDOR WHO HAS some amazing products. Deluxe Materials is such a vendor.

If you're from across the pond in Europe, then you're probably quite familiar with Deluxe Materials, a UK-based company. A third of our readers are foreign, and besides Australia, New Zealand, South Africa, and a smattering of Asia, many of those foreign modelers hail from Europe.

But if you're part of the other two-thirds, then you're a North American modeler and we know you've probably never heard of *Deluxe Materials*. We suspected that was the case, but to be sure we ran a survey this last summer to find out – and sure enough, some 70% of you said you had never heard of Deluxe Materials.

Well, it's time to change that.

First, full disclosure. Deluxe Materials approached us to be an advertiser and for us to help them get better known in North America, so there *is* a business relationship here. That primarily puts me on the fast track to learning who Deluxe Materials is and to get samples of their products to try.

PUBLISHER'S MUSINGS | 2

But for the next part of this editorial, I'm taking off my MRH hat and putting on my regular-old-fellow modeler hat. I am trying to keep the hype level to a minimum, but my enthusiasm for some of these products may bleed through, so do keep that in mind!

Looking at Deluxe Materials as just a modeler

Okay, I've taken my MRH Publisher hat off. This is just modeler Joe talking now.

If you follow my discussions here in *MRH* and *Running Extra*, as well as my posts on the MRH forum, then you know I've developed a passion for more environmentally safe materials to use with our modeling. As I've gotten older, I've had some personal bouts with strong chemicals affecting my health, so I've become a believer!

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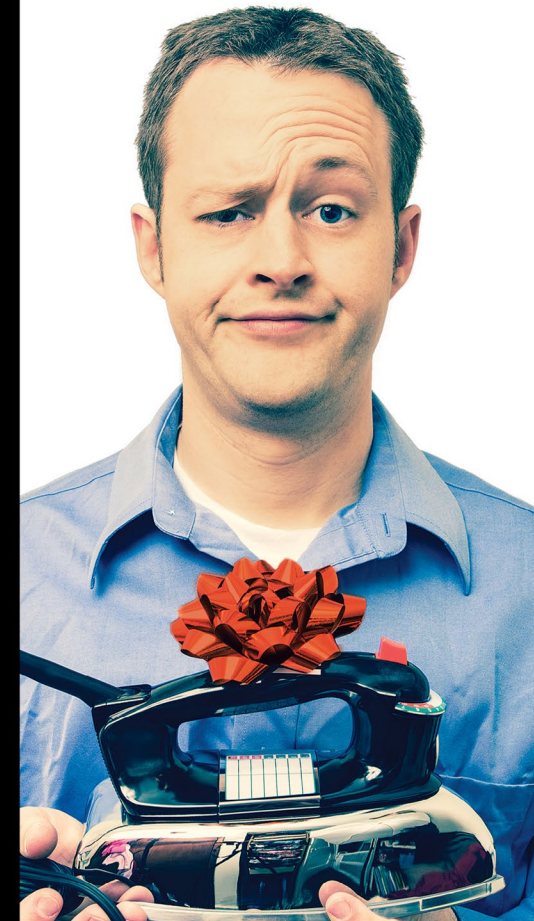
PUBLISHER'S MUSINGS | 3

As I've started to learn the product line from Deluxe Materials, I've been getting pretty excited about some of their items. Here's my top list of exciting products from Deluxe Materials:

1. Fumeless CA, ROKET ODOURLESS
2. Non-flammable fumeless plastic glue, PLASTIC MAGIC 10s
3. Track cleaner with a low dielectric constant, TRACK MAGIC
4. Rapid alternative to white glue, ROKET CARD GLUE
5. Keep brass / nylon screws on my screwdriver, TACKY WAX
6. Pour weight into my rolling stock, LIQUID GRAVITY

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Let me take these one at a time and talk more about them.

Fumeless CA, ROKET ODOURLESS: Last summer I was working on my TOMA modules indoors and using a lot of CA glue. My sinuses were aching from the fumes, and then I developed a bad case of vertigo that didn't go away for weeks!

You can bet I am very interested in CA glue without nasty fumes! I didn't know such a thing existed, so I am delighted to learn of this offering from Deluxe Materials.



Non-flammable fumeless plastic glue, PLASTIC MAGIC 10s:

Not only is this plastic glue non-flammable and fumeless, it's fast. It sets up in 10-15 seconds, so you can keep moving as you build. It's the trifecta wonder glue for styrene, plastic card, ABS and most kit plastics.



As an added bonus, they give you a second extra-long brush so you can get every last drop in the corners of the bottle – a nice touch.

Deluxe Materials tells me this stuff is popular in prisons for model building projects because prisoners can't sniff it and get high, nor can they make a "firebomb" with it.

Track cleaner with a low dielectric constant, TRACK MAGIC: Back in May, I discussed low dielectric constant track cleaners. Deluxe Materials' Track Magic has a dielectric constant of 1.9, perfect for a track cleaner. It comes with a wiper, micro-brush, pipette, and cup.

The stuff creates a kind of barrier on the track to keep it from getting dirty quickly from micro-arc-ing.



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PUBLISHER'S MUSINGS | 5

Rapid alternative to white glue, **ROKET CARD GLUE**

GLUE: I've always been pretty happy with white glue (called PVA glue outside of North America), so I wasn't really in the market for an alternative.

But once I saw Rokat Card Glue demonstrated, it surprised me. As its name implies, the stuff works *fast*. I had never imagined this kind of cardstock glue existed – something that you put on sparingly like superglue and it holds cardstock almost immediately.

This is that product you never knew you needed!

Keep brass / nylon screws on my screwdriver, **TACKY WAX:**

Magnetic screw drivers work good for holding steel screws to my screwdriver, but I've never found a good way to get brass or nylon screws to stay on the end of my screwdriver, until now.

Side note: For rolling stock trucks and coupler boxes, I prefer to attach them with non-magnetic brass screws.

Tacky Wax from Deluxe Materials fills the bill! Put a dab on the end of your screwdriver and voila! The non-magnetic screw stays put and doesn't fall off easily. Tacky Wax is your workbench hero for this application.

Tacky Wax also works good for keeping scale figures in place when you put them on your layout. Just a little dab'll do ya!

Pour weight into my rolling stock, LIQUID GRAVITY: If you have been following my tungsten powder rolling stock weighing discussions, then you know I'm a fan of alternative ways to add weight to your rolling stock easily using something you can pour into nooks and crannies instead of trying to cut and fit lead weight into your car.



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PUBLISHER'S MUSINGS | 6

Liquid gravity is extremely tiny micro metal ball bearings that are quite heavy like tungsten powder, but it's notably less costly.



An 8 oz. jar of Tungsten Powder costs about \$27 on Amazon Prime, but you can get 8 oz. of Liquid Gravity powder for just \$20 on Amazon Prime. That's 26% cheaper!

Deluxe Materials recommends that once you pour Liquid Gravity micro ball bearings in place, you fix it with CA glue – in my case, Roket Odourless, of course!

Deluxe Materials video:
Recently I called Deluxe Materials and spoke with founder John Bristow about their products on a video call.

I've put gist of the call into a 15 minute video on the next page if you'd like to watch it. Remember this is an overseas video call on the internet, so the audio and video quality varies a bit as the call progresses.

ALL-NEW HO PA AND PB



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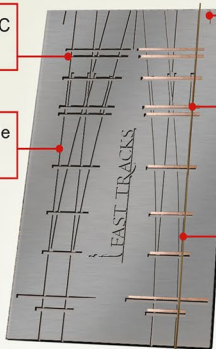


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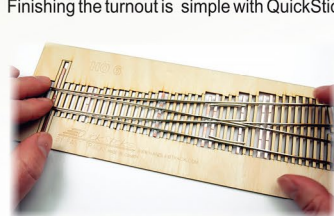


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PUBLISHER'S MUSINGS | 7

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New products for North American modelers

Deluxe Materials interview

MRH
MODEL RAILROAD HOBBYIST

The video call above gives you some idea what their product line is like and has some product demos in it. I for one am delighted to see Deluxe Materials entering the North American market! ☒



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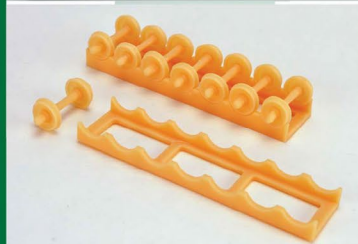
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LAST ISSUE'S RATINGS

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

- 4.8 November 2019 news
- 4.7 Operations in Allagash country
- 4.3 Stall-motor turnout control

Issue overall: 4.3

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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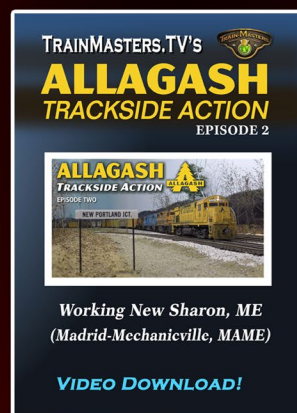
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Model Railroad Hobbyist | December 2019

compiled by JOE FUGATE

★★★★★
RATE THIS ARTICLE

Chippewa, Marquette, St. Charles and Pacific Layout Pics

Wed, 2019-11-13 12:41 — johnsong53 Layout tour

Since Joe asked for some layout pics in a previous post I thought I would make a new entry. As with most layouts the Chippewa is under construction.

The picture below is base on the old Kate Shelly bridge her in Iowa. It was constructed from Evergreen Models structural shapes (ordered in bulk). It is 14.5 ft long and stands 60 inches off the floor so the center can be used as a duck under. This took about a year to build.



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ON THE MRH WEBSITE ...**

This is the Wyocena yard engine house. The hot air balloon on the backdrop covers a Dremel tool hit.

1. If you're in the mood for some inspiring eye candy, MRH forum member **johnsong53** has a thread that fills the bill. Enjoy viewing some *great* modeling and an awesome layout building project!

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

Modelling the POTB – Making of GP9 3771 & 101

Thu, 2019-11-28 07:48 — Janelectro Diesel locos

So finally after some weeks I find the time to tell about the hassles I went through modelling the two GP9s of the POTB.



3771 started out as a Pennsy GP9 II, 101 was in the colors of Western Pacific. Both are P2k models. After stripping the shells I added the Farr airfilters and filled in the class lights on 101. I also drilled the holes for 101's snow plow.

After that both shells were painted with Alclad white primer.



2. MRH forum member Janelectro is modeling some Port of Tilamook Bay (POTB) Geeps! Check out this thread for the step-by-step process in detail. Very cool.

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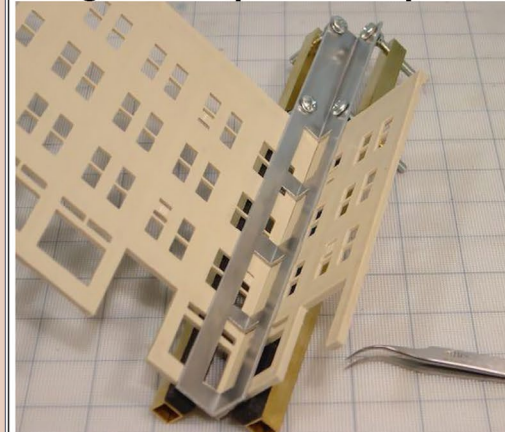


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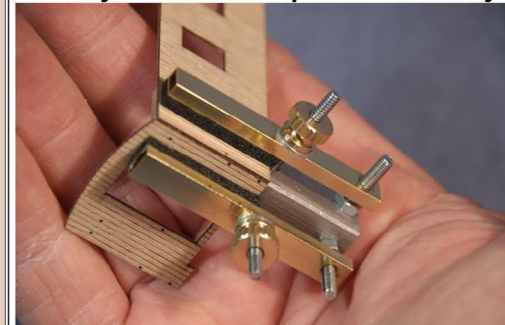
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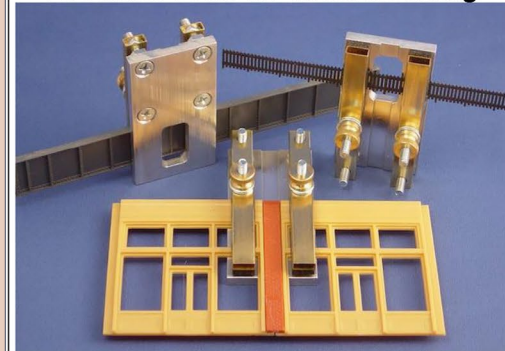
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Converted LPG tank car build

Sat, 2019-11-16 15:28 — mesimpson Locos - Rolling stock (general)



My friend Mark P. took a lot of photos of his model building process. I was looking for some portable modelling inspiration, and a couple of shots caught my eye. I saw a few cars in the locomotive fueling area. They were older style cars that were quite interesting in appearance. A bit of sleuthing with the scans and Google told me that they were former LPG tank cars that had been converted into general service cars. The solution was to build them that the cars had been rebuilt in the early 1980s and used to carry 10's in my mind and are now used for other purposes.

A few spare Walther's parts from the same era were needed to do the model. Off we go!

Marc Simpson

[mesimpson's blog](#) [Login or register to post comments](#)

Comments

Starting point

Sat, 2019-11-16 15:46 — mesimpson



3. Forum member mesimpson does a nice step-by-step LPG tank car build on this thread. Marc regularly posts threads of this caliber and they're a real joy to read. Check it out!

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First cardstock model

Tue, 2019-11-12 10:38 — Stevenput [Scenery and structures](#) [Scenery - Structures](#)

This was my first cardstock model and I think I'm hooked. It looks convincing And it was quick and easy to build. I wish I took more pictures of the process.

Here's the story:

I was looking for a loading dock for my team track. A google search turned up an ironic result. Team Track Models has a free sample of a loading dock available to download. I figured, "hey, if it's free let's try it out!" After printing it I realized the support base uses poster board, which I didn't have. I ended up building the base from styrene and only used the printed deck texture. Had the whole thing done in a couple hours. No paint. No mess.

The start:



Styrene base:



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4. If you've ever wanted to see a live example of how impressive an inkjet-printed cardstock model can look, this thread by Stevenput should make you a believer. The finished model is awesome!

Thanks SJVRR, transfer and

Wed, 2015-01-07 22:51 — MikeC in Qld

Thanks SJVRR, transfer and Terence.

There's a new loco here: a Proto 2000 GP18. It's nowhere near being DCC ready, and it looks like a hardwire job, so someone else can do that for me sometime. It's a very sweet runner on DC.



The snow is an experiment with baby powder that contains corn starch. Elsewhere around the house we have an invasion of ants, and in desperation my wife sprinkled some of the powder which they really dislike, so I'm trying it on the semi-outdoors deck where the layout is situated.

The loco needs some weathering, if only to kill the translucent look of the plastic in particular the grabs and around the fans.



5. In the mood for some great New England winter modeling layout photos? Then check out this thread by MikeC in the Qld ... no, it's not Mike Confalone ... ☒



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WHAT'S NEAT

column



Model Railroad Hobbyist | December 2019

KEN PATTERSON TALKS TO DANIEL COOMBS ABOUT HIS LAYOUT-IN-PROGRESS; HE GOES NIGHT-SHOOTING WITH JAMES REGIER, AND JAMES SHARES THE CIRCUITRY AND MODELING TECHNIQUES TO LIGHT UP AN HO HOLIDAY SPECIAL ...



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WHAT'S NEAT!

MODEL RAILROADING Christmas LED train

MRH December 2019 show

► PHOTOS AND VIDEO OF SUPERB MODELING

Daniel Coombs

“What’s Neat” regular Daniel Coombs has graduated from his old layout built on several 4x8 plywood sheets, and he is making good progress on his “transition layout.”



1. **Daniel Coombs:** “My old layout was just a typical middle of the room layout that you had to walk around to get anywhere. I was tired of it, it was old, and it was time for it to go. Modular design is what we have here. The layout is about 48 inches high, on ‘L’ legs. My max radius is about 28 inches and the minimum is 22. It fits into an 11x7 foot corner.

“I’m building it in modules, so I can take it with me when I finally move out of the house. The scenery I’m planning is just a little bit of hills with countryside in the corner. When I put the track down, I realized I don’t really have enough room for a suburban setting, so I might make it kind of rural-ish. It’s still in the works.



2, 3. “The legs design came from an old layout that I had, and it’s two pieces of wood at a 90-degree angle with three 45-degree braces top, center, and bottom to the leg extra durability and stability. On the bottom I have furniture glides on leg levelers to adjust up and down.

“I’m using Digitrax DCC, however I have the NCE PowerCab on my test track. I’ve got the Digitrax wireless Wi-Fi system and a few wired throttles here and there.

For signals, the company has been around a while. It’s called Azatrax (Azatrax.com). They’re basically a simplified signal system, not a tiny plug-and-play but you don’t have to get a gigantic signaling board like we’re all used to.

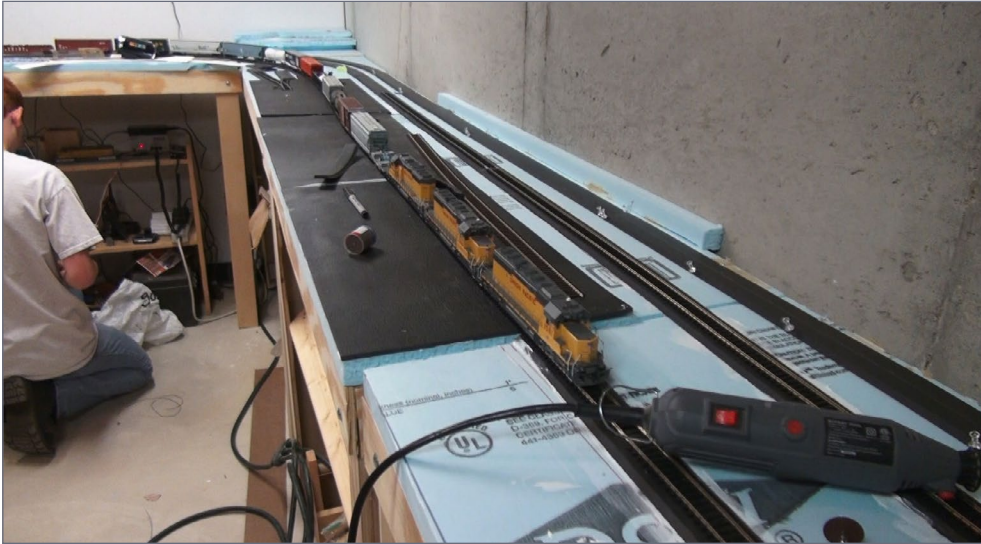
You take your signal wire and wire it into the board. Then you take your track feeders or detection blocks, and you individually insulate the blocks that you want the signals to occupy. It shows the status, and where the train is.

★★★★★
RATE THIS ARTICLE



Also see the new “What’s neat this week” weekly video podcast!





4. "The track is Code 100 Atlas flex track. I know Code 83 is more popular but Code 100 is less expensive. This one I'm using Woodland Scenics foam roadbed because I really didn't want to fuss with cork. It tends to dry out after a period of years. This black foam roadbed from Woodland Scenics does work.

"This layout, the main thing is to plan and do one step at a time. The other layout, it was built, the track was laid, and I just went right to scenery. After that, I just quit. For two years it was deteriorating. It was getting in a crappy, crusty state. I just didn't like it.

"I'm in an ops session group on several Tuesday nights ... we go to several gentlemen's layout. I don't have the attention span to operate; people know that. I thought, you know what? I'm going to give it a shot. I'm going to think about getting the Micro-Mark card routing system.



RATE THIS ARTICLE

Shooting at night

Ken Patterson and James Regier are out in the back yard in the middle of the night with a beautiful moon to do a segment on night photography. James has a Canon EOS 5D Mark III with a telephoto lens and is lining up a shot of a locomotive coming down the track.



5. James and Ken use the B (or "bulb") setting on the cameras to make a manual exposure and manually set the lens at the smallest aperture available. The manual B setting allows them to make a long exposure to highlight the LEDs installed on the engines. They set the ISO on the digital cameras at 100 for maximum resolution. Exposures can be six minutes or longer and the cameras' reviewing screens let them check to see if the exposures are too dark or too light. Filters are removed from the front of the lenses to eliminate nasty reflections.



6. A couple of Santa Fe passenger cars produce a nice study of reflections on water. Not everything works, but experiments can produce some great images. In addition to moonlight, Ken and James are using a flashlight for highlights and bright exterior lights on the house for fill. The spotlights might be used for 10 seconds of a long, long exposure. Watch them at work in the video.



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



7. Modular scenes are great for night photography. They can be easily repositioned to take advantage of the light and it is easy to position the camera for maximum impact.



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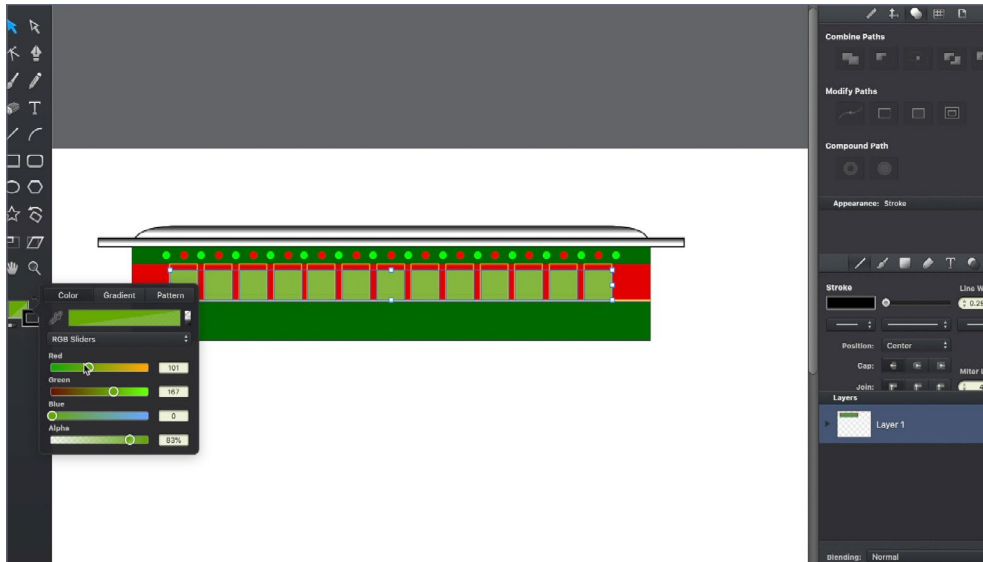
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BEN KAUR shares a very clever method for conveniently storing micro-drills with spill-proof access.

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Christmas cars

James Regier is using Bachmann old-time passenger cars to create a holiday excursion train – that means lots of bright lights. He has LEDs, rectifiers and resistors ready to convert the cars. The techniques will work with any sort of car or locomotive. For the Christmas theme, he uses red, green, gold, and white lights.



8. Before he starts on the model he mocks up the car side designs with a graphics program on his computer that lets him experiment with color combinations, timing, cues, and lighting arrangement without actually putting anything on the car.



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

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WHAT'S NEAT | 9



9. For a step by step illustrated explanation of all the artistic and technical steps of his project, watch this month's "What's Neat" video on [Page 1](#).



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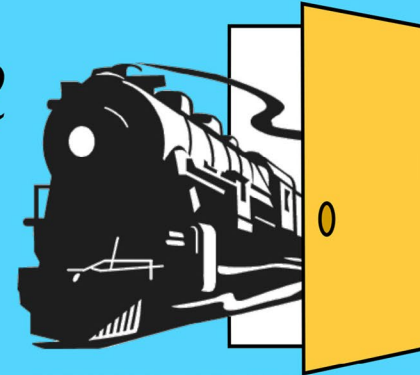
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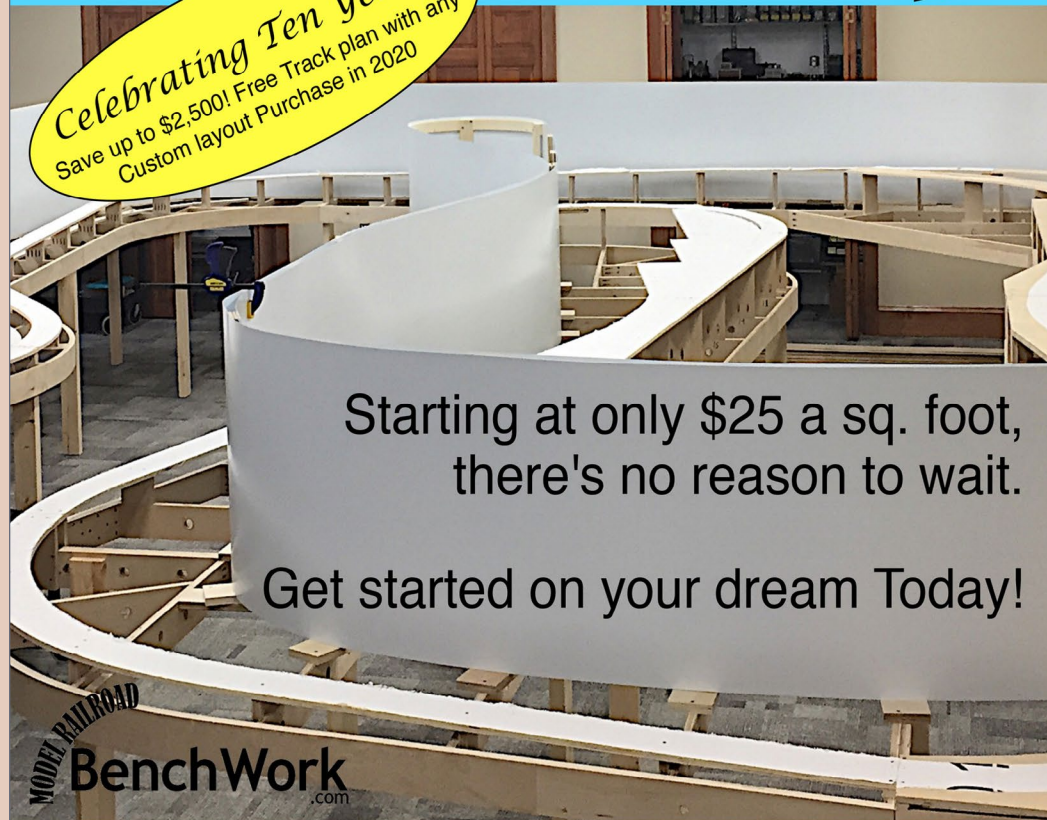


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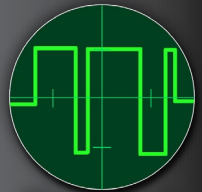


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BOB MORNINGSTAR USES AN ARDUINO TO DRIVE A FAST CLOCK ...

MODELERS USE THE TERM "FAST CLOCK" DESCRIBE analog and digital clocks altered to display time at a faster rate than "real world" clocks.

Fast clocks have become ubiquitous in model railroad operations, helping expand our limited layout space by making time pass more quickly. For us old timers, Frank Ellison's popular series "The Art of Model Railroading" (see footnote Pg 2) introduced the concept of the time-adjusted scale mile or *smile*, combining scale distance and scale speed into a single concept.



Ellison's ideas triggered one of the first fast clock articles ever in the August 1944 issue authored by Harry Bondurant.

All modes of model railroad operations ranging from Timetable and Train Order (TTTO) to modern Track Warrant Control (TWC) and Centralized Traffic Control (CTC) can make use of a fast clock.

Originally, fast clocks used fairly high ratios such as 8:1, 10:1 and 12:1. In recent years, slower ratios such as 4:1, 3:1, or even 2:1 have become more popular. On a 4:1 fast clock, one hour takes only 15 minutes in "real world" time, for instance.

If you don't want to mess with modifying hardware, you can get software-only fast clocks from a number of sources, including free ones. Multiple manufacturers also produce and sell fast clock solutions from plug-n-play to kits you build. These solutions can even include multiple master-slave clocks. See the links at the end of the article for more.

Most fast clock programs use a digital fast clock, which works fine for layouts set in the 1970s or later. For an earlier layout, a fast clock with hands feels more era appropriate. This project shows how to get just such a fast clock with hands fairly inexpensively.

Past solutions for a model railroad fast clock often involve the use of the 555 timer integrated circuit plus a host of supporting electronics. This project takes a different approach using an inexpensive single-board programmable microprocessor, the Arduino.

¹ *Model Railroader*, Mar-Aug 1944, reprinted again in Aug 1964.

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The project

Doing this fast clock project involves:

1. Modifying the clock to use our new driver circuit
2. Assembling the new driver circuit
3. Programming the Arduino with the desired new clock speed

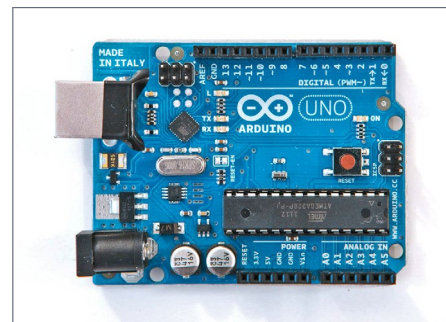
I'm assuming no prior knowledge of electrical circuit design or of programming. Experience working with Arduinos can be helpful but it's not required. I use a modest bill of materials for a total outlay of about \$30.



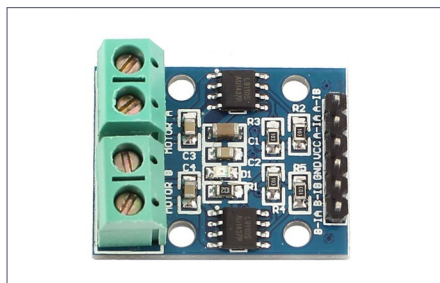
2. La Crosse 8" black clock.

For my solution, I use an inexpensive quartz crystal wall clock [2] available at WalMart, Amazon, and other retailers for less than \$5. See the shopping list at the end of this article for details.

I also use two other components:



3. Arduino UNO R3 board.



4. H-Bridge stepper motor board.

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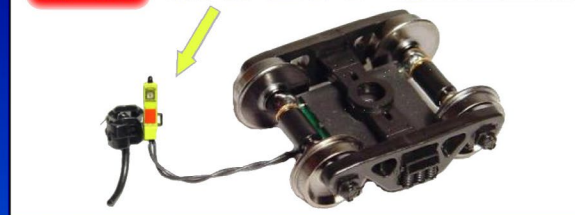
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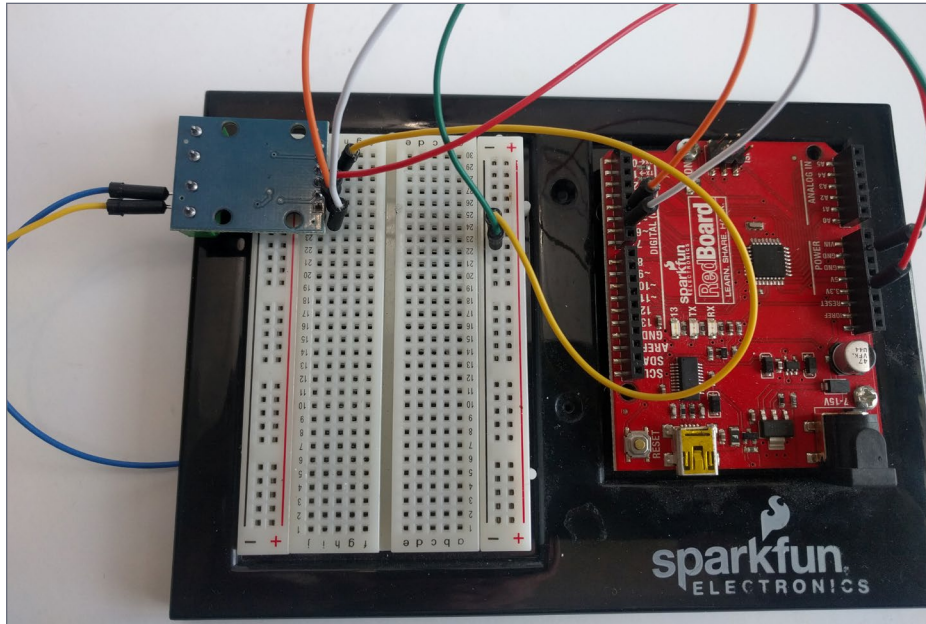
"BASH" THIS FAST CLOCK | 4

- Arduino UNO R3 [3] single board computer (\$17)
- L9110S DC Stepper Motor H-Bridge [4] driver board (\$7)

How this fast clock works

The quartz crystal in the clock creates magnetic impulses in the coil, which drives the clock's geared movement. By substituting pulses from an Arduino + H-Bridge, we can readily control the clock speed via a simple program (called a "sketch" in Arduino-speak) that we install on the Arduino.

In the build photos, I used a "breadboard" to do a proof-of-concept test of the circuit [5]. After validating the solution worked, I transferred the solution to a perforated circuit board for final permanent assembly.



5. Interim breadboard proof-of-concept construction.



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Modifying the clock

Disassemble the clock by removing the clock outer decorative housing and gain access to the hands. The clear bezel on my clock was a snap-in affair that is easily removed by locating the tabs and disengaging them from their respective slots [6].

My clock was put together with three metals screws holding the clock mechanism to the front bezel and faceplate.

Carefully remove the hands. Typically, on a fast clock the second hand is useless, so dispense with it completely. You only need to save the hour hand and the minute hand.



6. Removing the front bezel.

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"BASH" THIS FAST CLOCK | 6

Remove the quartz drive mechanism from the clock back plate. Most of the cheap clocks have a snap-fit for the mechanism. Your disassembled clock should look like [7] when you are done.

Important note! For the remainder of the steps have your camera or smart phone ready. Photograph as you disassemble the mechanism so you can put the clock gears back in correctly later.

I find the quartz drive mechanism to also be a snap-fit affair – at least for all the mechanisms I have tinkered with. Release the two tabs on side and carefully remove the front portion, that is, the portion that has the shaft protruding.



7. Disassembled clock components.

"BASH" THIS FAST CLOCK | 7

Take your first photo of the completely assembled mechanism [8]. Remove the outermost gears [9]. Continue to disassemble the clock taking a photo after the removal of each component [10]. Taking a photo each time you remove a layer makes reassembly easy!



8. Quartz mechanism before disassembly.

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9. Removing the topmost gearing.



10. Further quartz mechanism disassembly.



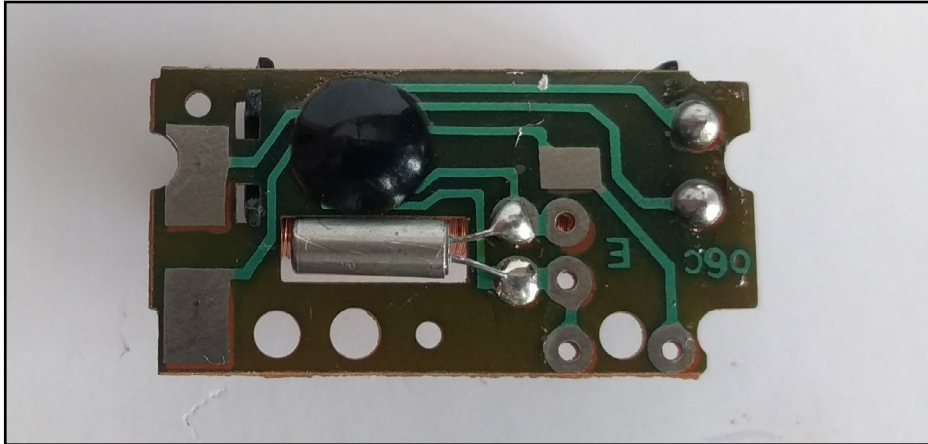
11. Quartz mechanism removed.

Remove the coil/circuit assembly [11]. *Be careful* as there is a small magnetized gear on the back side of the circuit board – don't lose it!

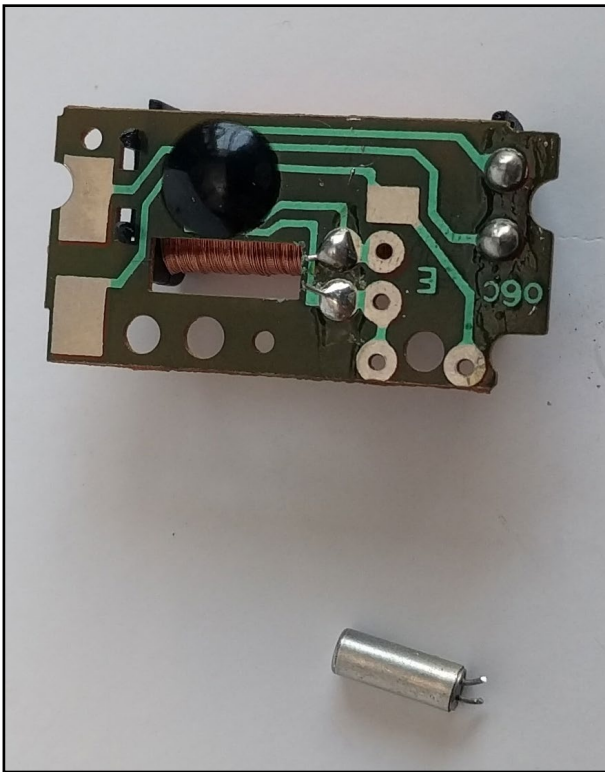
Modifying the coil/circuit board

Carefully snip off the crystal which is the silver cylinder [12]. Be careful not to cut into any of the fine wires on the coil underneath. There is no need to unsolder the crystal from the board - just snip it off as close to the canister as possible [13].

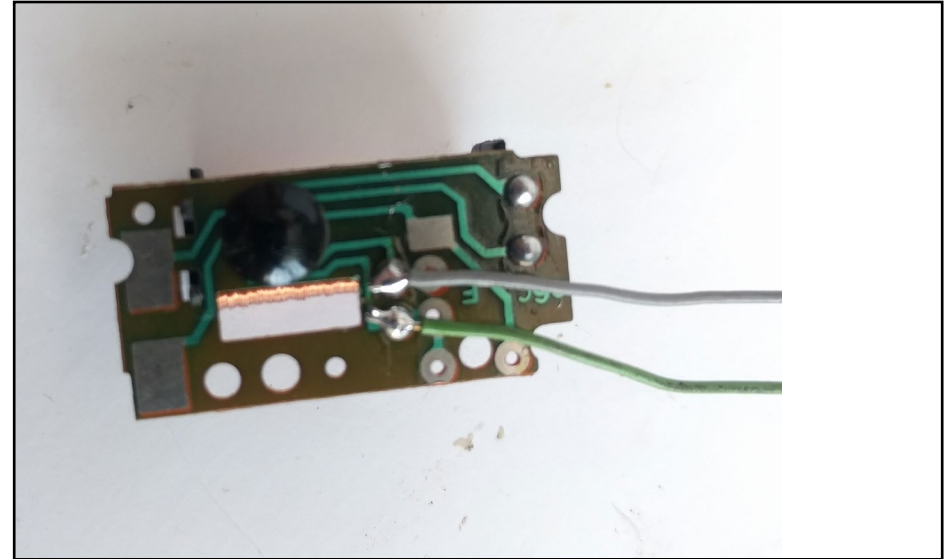
Next, solder two #22 wires onto the solder pads [14]. These wires conduct the pulse needed to drive the coil – make them at least a foot long. No need to observe any polarity on which wire goes where.



12. Before removal of the silver cylinder (the crystal).



13. After removing the silver cylinder.



14. Quartz mechanism removed.

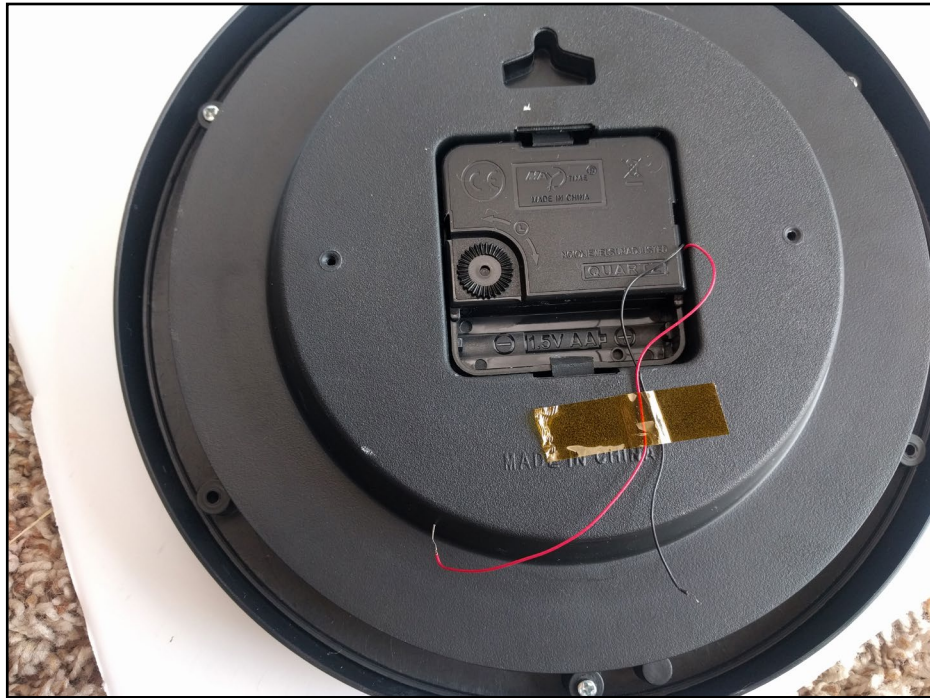
Reassembly

Either cut a small notch into the side of the plastic housing to route the wires out of the assembly or route the wires out through the now-unused battery compartment. The battery housing cover can be discarded [15].

Using your photos, reassemble the drive mechanism. Reattach the hour and minute hands, then discard the second hand.

Spin the time adjustment wheel on the back of the clock to verify the clock's gearing works properly by observing the hand movement. If everything is working properly, snap the drive mechanism into the back of the clock and reattach the clock bezel.

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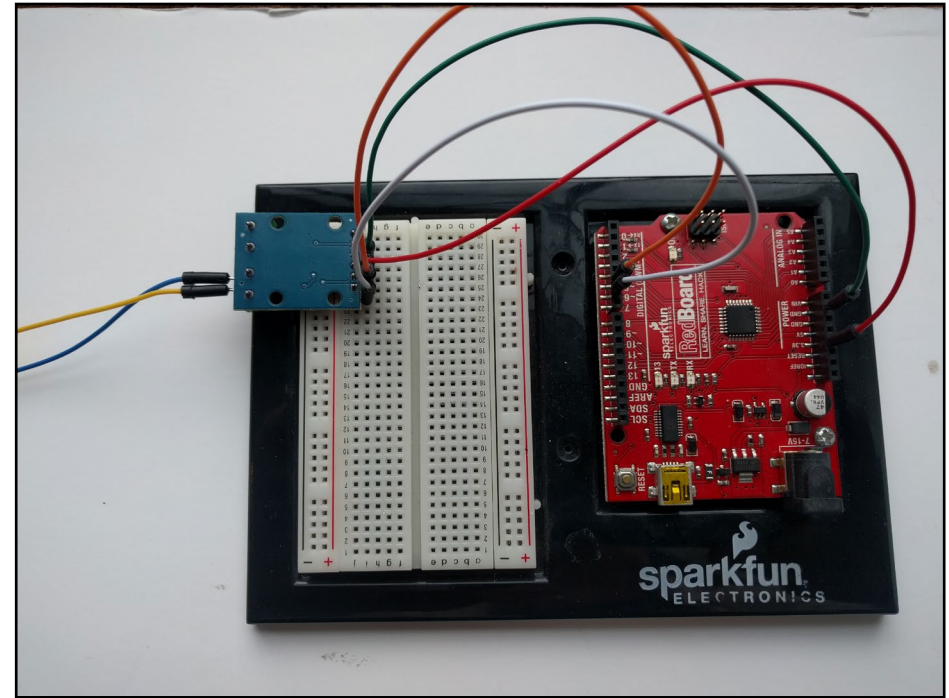


15. Wire routed through the now unused battery compartment (cover discarded). The Kapton tape acts as a strain relief on the wires.

Secure the two wires with a piece of Kapton or other tape to the back of the clock; this will act as a strain relief to prevent pulling the wires off the circuit board.

Assemble the new driver circuit

The new driver circuit consists of an Arduino board and an H-Bridge circuit board. Using a breadboard to test the circuit facilitates circuit diagnosis and troubleshooting. Note that I attached the H-Bridge board upside-down to allow its input pins to engage the breadboard [16].



16. Breadboarded circuit with the H-Bridge board on the upper left.

There are six interconnections between the clock, H-Bridge Driver, and the Arduino [table 1]. Also see [17] and [18].



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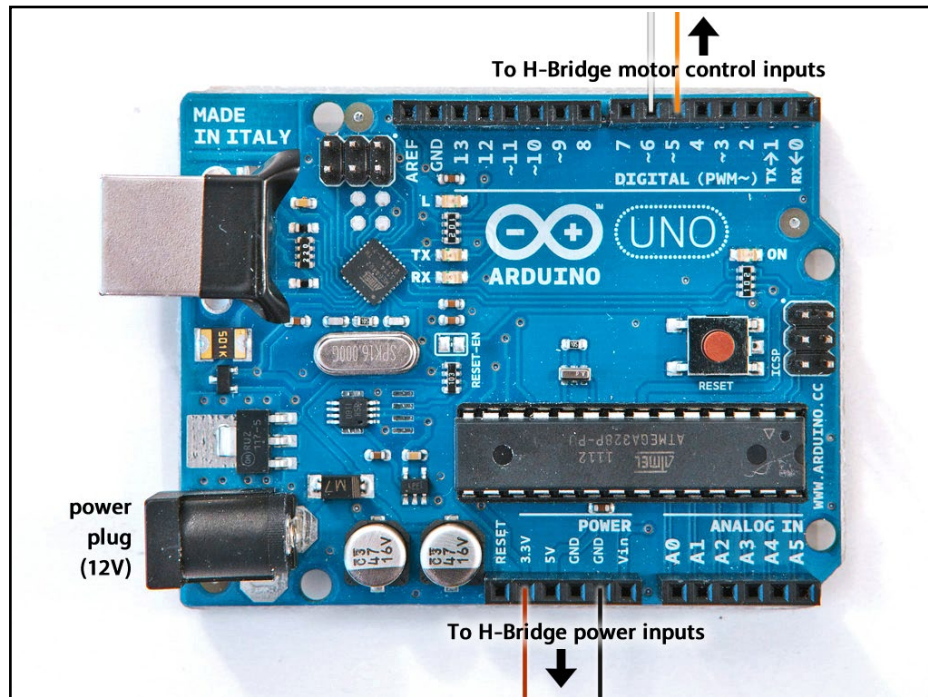
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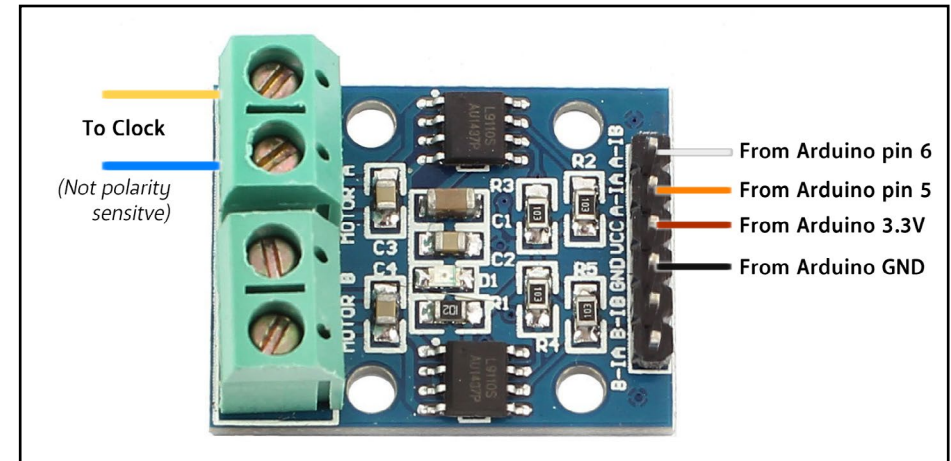


Color	Connects From	Connects To
Red	Arduino 3.3v	H-Bridge VCC input
Black	Arduino Ground	H-Bridge Ground
Orange	Arduino Digital Output Pin 5	H-Bridge A-1A motor input
White	Arduino Digital Output Pin 6	H-Bridge A-1B motor input
Yellow	H-Bridge Motor output	Clock
Blue	H-Bridge Motor output	Clock

Table 1: Arduino, H-Bridge, and clock interconnections.



17. Arduino wire connections.



18. H-Bridge Driver Board wire connections.

Programming the Arduino

The last step is to load the Arduino with the programming sketch required to drive the H- bridge. If you are unsure of how to program an Arduino, see the December 2016 *MRH*, “Modelers’ Introduction to the Arduino”

[mrhmag.com/magazine/mrh2016-12-dec/arduino].

You can adjust the clock ratio by modifying the variable **delay_time**. The code as written will run the clock at around 4:1. The clock cannot run faster than 6:1 due to the weight of the hands and the ability of the coil to reliably react to the clock pulses from the Arduino.

The smaller the variable value, the higher the clock speed. Adjust as needed to accommodate for any slight variances in your clock mechanism. On rare occasions, you may have to try more than one clock to find a mechanism that works smoothly. Luckily these clocks are inexpensive.

Cut and paste this code into the Arduino sketch program:

```
/* Fast Clock Driver
 *
 * Used to drive a quartz clock for model railroad fast clock usage.
 * Utilizes the L9110S DC Stepper Motor H-Bridge Driver Board
 *
 * Adjust the variable delay_time to suit your needs,
 * the small the variable value the faster the ratio *
 * Licensed under GPLv3
 * Copyright 2018, Robert Morningstar
 *
 * Derived from code found at
 * https://bitbucket.org/robertmassaioli/quartz-clock-control
 */

const int AIA = 5; //used for clock 1
const int AIB = 6; //used for clock 1

const int BIA = 3; //unused could be for 2nd clock
const int BIB = 4; //unused could be for 2nd clock
byte speed = 1; // any value other than 0

int delay_time = 250; //4:1 fast clock
/* Delay time in milliseconds ...
 * 500 = 1/2 sec (2:1 fast clock)
 * 333 = 1/3 sec (3:1 fast clock)
 * 250 = 1/4 sec (4:1 fast clock)
 * 200 = 1/5 sec (5:1 fast clock)
 * 167 = 1/6 sec (6:1 fast clock)
 */
```

```
void setup() {
  pinMode(AIA, OUTPUT);
  pinMode(AIB, OUTPUT);
  pinMode(BIA, OUTPUT); pinMode(BIB, OUTPUT);
}

void loop() {
  forward();
  delay(delay_time);
  backward();
  delay(delay_time);
}

void backward()
{
  digitalWrite(AIA, 0);
  digitalWrite(AIB, speed);
  digitalWrite(BIA, 0);
  digitalWrite(BIB, speed);
}

void forward()
{
  digitalWrite(AIA, speed);
  digitalWrite(AIB, 0);
  digitalWrite(BIA, speed);
  digitalWrite(BIB, 0);
}
```



Finishing up

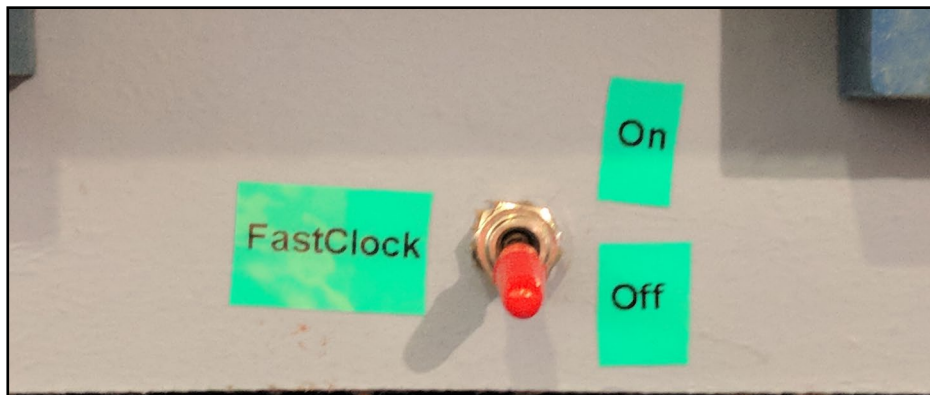
You can set the start time on the clock by using the thumb-wheel on the back of the clock. Stop the clock by removing power to the Arduino.

I do not worry about what time is displayed when an ops session begins as the next ops session starts where the last session ended. The Arduino stores your program in non-volatile memory, so you don't have to worry about it losing the programming if you turn off the power to the Arduino.

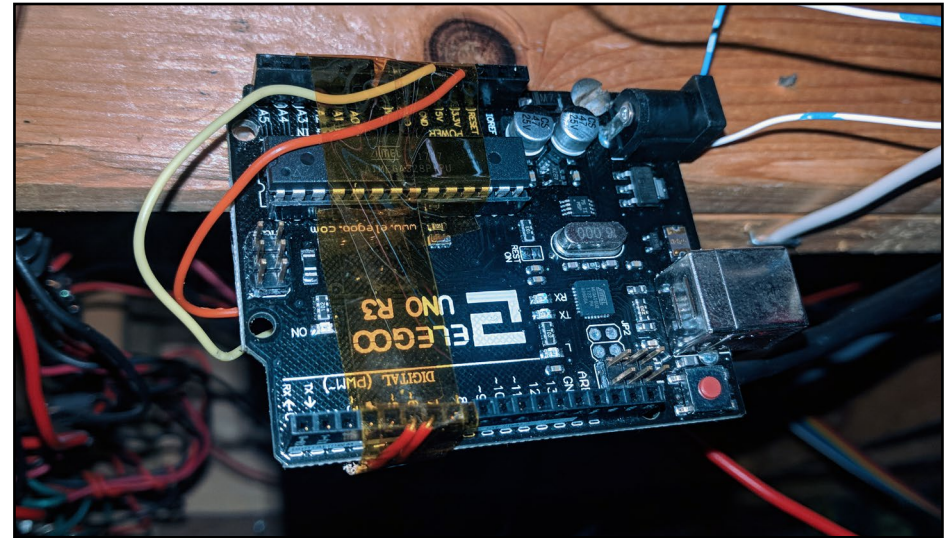
Remember that if you want to change the ratios, you will have to reconnect your computer to the Arduino, modify the sketch, and re-upload it.

I added a power on-off switch using a single-pole-double-throw toggle switch in line with the 12V supply to the Arduino [19].

I mounted the Arduino and H-Bridge under the layout and ran the power to it via my 12V layout bus. I used a single wood screw



19. Fast clock power on-off toggle.



20. Arduino mounted to benchwork.

through one of the mounting holes on each board to mount the Arduino and the H-Bridge.

The Arduino is primarily a teaching computer, so you may want to think about more permanent wiring connections. There are three ways I have permanently attached the wiring to an Arduino:

1. Purchase an Arduino wiring shield with a solder-ready interface for each pin.
2. Place a spot of epoxy on each wire occupying a pin.
3. Use Kapton tape to hold the wires into place.

I used option 3 in the clock installation, as I expect to eventually move the clock to a different location.

Enhancements could include adding a second clock or adding a reset switch and changes to the Arduino sketch to allow the clock to be reset to a predetermined time.

"BASH" THIS FAST CLOCK | 20

One way to do the reset could be by counting the number of cycles elapsed since the clock was started and determining how many cycles are necessary to bring the hour and minute hand to a known location on the clock face.

I hope you find this article informative and useful. This is an inexpensive way to get a fast clock with hands on your model railroad and also gain experience using Arduinos on your model railroad. ✓

You can find an up-to-date shopping list for this project on the MRH website here:

mrhmag.com/magazine/mrh2019-12/fast-clock.

Useful links:

MRH free digital clock program - Dec 2019 bonus extra (Windows) mrhmag.com/magazine/mrh2019-12/bonus-extras (must be registered to access, registering is free)

MRH's Mike Dodd's fast clock kits fastclock.mdodd.com/index.html

FAST CLOCKS FOR OPERATIONS, the DCC Guy, Larry Puckett www.dccguy.com/?p=4100

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JMRI simple fast clock www.jmri.org/help/en/package/jmri/jmrit/simpleclock/SimpleClockFrame.shtml

Windows digital fast clock (32-bit) www.wesleysteiner.com/mrsoftware/mrfastclock.html

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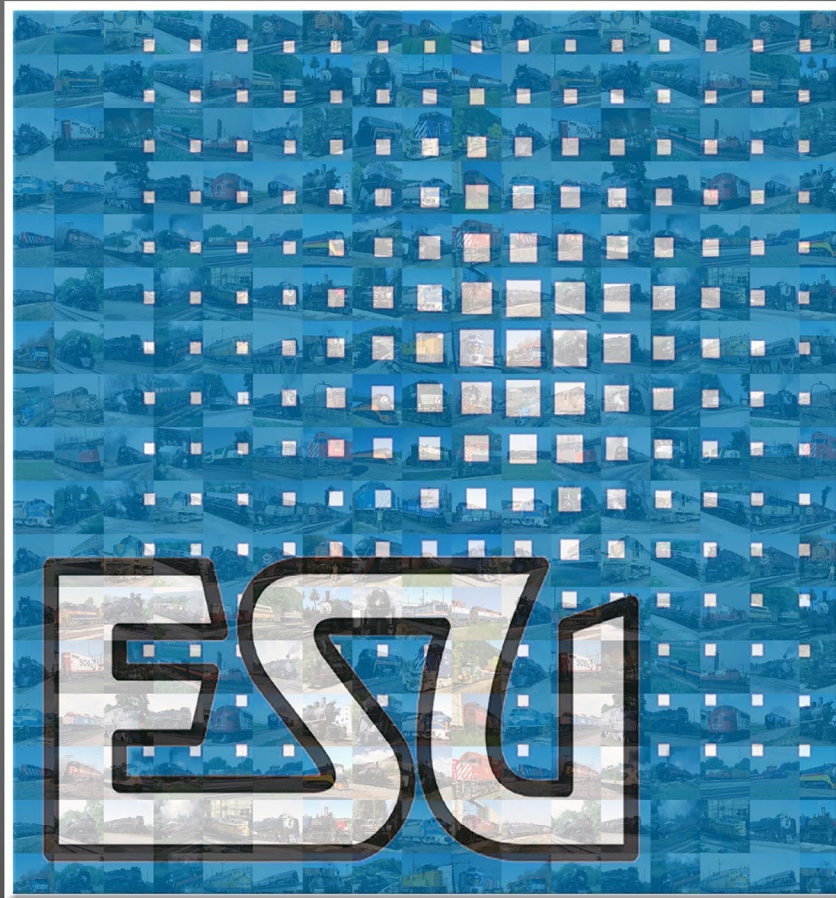
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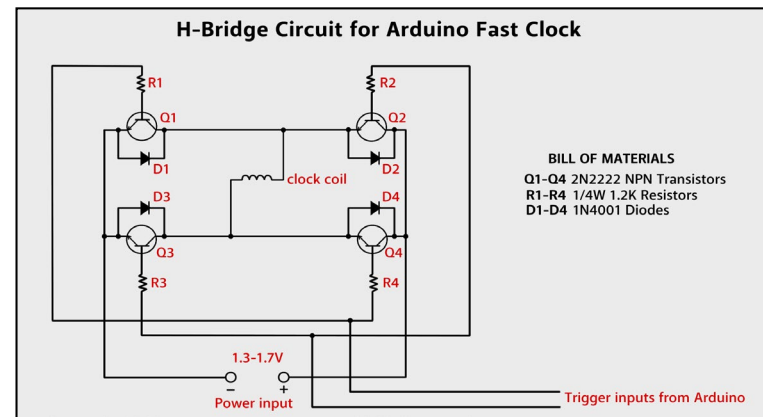
"BASH" THIS FAST CLOCK | 21

H-BRIDGE BACKGROUND

More about an H-Bridge

An H-Bridge can also be built using discrete electronic components (4 NPN 2N2222 transistors, 4 diodes, and 4 resistors) and achieve the same results as the H-Bridge Driver board I used.

Here is a sample schematic [21] if you're more adventurous and want to build the H-bridge yourself.



21. H-Bridge circuit diagram.

Using a prefabricated driver board reduces assembly errors, bypasses soldering errors, and decreases build time.

Another advantage of using the H-bridge driver board is you can drive two clocks with one board if you have that requirement.

The spec data sheet for the board can be found at me.web2.ncut.edu.tw/ezfiles/39/1039/img/617/L9110_2_CHANNEL_MOTOR_DRIVER.pdf. ■



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BOB MORNINGSTAR



Bob Morningstar has been a model rail-roader since his parents gave him a Marx HO scale train set in 1968. His current layout is based on the Western Maryland Railway as it existed in the late 1970s.

Model railroading combines his hobbies of electronics, programming, and model railroading nicely. He is also very interested in the operations part of the hobby and

participates in a round robin ops group in his local area. The layout is on the web and can be viewed at wmrwy.com.

Bob manages the cybersecurity engineering division for his employer and he is a retired Air Force Lt. Colonel. His other passion is sailing on the Chesapeake Bay during the summer.

Bob lives in South Central Pennsylvania with his hobby-supportive wife, Jane. ■



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MRH: ANDY, HOW DID YOU GET STARTED IN the hobby?

Andy Keeney: I got started in this hobby back in Ottawa, Canada. I must have been five- or six-years old, riding steam trains out of Ottawa.

Every year as a kid I got a model train for Christmas. Even when I went to Vietnam, I built an N scale layout and put it in a container that could fold open. The layout was on one side, the locomotives and the cars on the other. I took the container with me.

Luckily, I was stationed somewhere with electricity – I used to get it out and run trains around. There's never really been a time when I've not been in the hobby – I've always been active in it somehow.

I got even more into the hobby once I knew we were staying in one place. But then our house burned down in 1995 and we lost everything.

MRH: Wow, that sounds awful. What happened?

Andy: I was a state police officer, a Lieutenant. One night at operations headquarters it was four in the morning and I got a frantic call from my neighbor saying my house was on fire!

I immediately was concerned for my wife and daughter, so I raced home. When I exited the freeway, my house was still several miles away out in the country, but I could see the glow in the sky. Talk about a sickening feeling ...



2. The B&O and the Rock Island have running rights on Andy's Nashville Road. They connect at Ribo Yard in Nashville.

This was four days before Christmas, so there was snow on the ground. I arrived to see the house blazing and fire trucks all over. My wife was just walking circles in front of the neighbor's house, looking very lost. Our daughter was safe at the neighbors. So I took my wife into the neighbor's house and we started to come to grips with the loss.

It turned out to be an electrical problem in the garage – something of my making really. We had baby goats and I used a heater out there and the cord overheated. That caught the straw in the pen on fire and then up went the house.

We had a rough time because we lost several animals, the goats, as well as dogs and cats. So we had to deal with that, too. My wife

felt very guilty because we didn't get all the animals out, but she got herself and my daughter out, which was the most important.

We lived in a trailer in the driveway next to the burned out house while they built a new house in a new location. We're sitting in the basement of that new house – we moved to this new house in '96.

I recommend everyone walk around your house and take videos of everything, make lists of all your stuff including your train stuff, and store it someplace other than your house.

Just picture one day you come home and your house is just a smoking hole in the ground – do you know what you had in there? They gave us sheets to list all our stuff, from the clothes to everything else.



3. Andy models 1956, which allows him to still have steam in active service as well as first generation diesels. Here, an older articulated, still in N&W livery, takes on coal in Cedar Hills yard, the next big yard south of Bowling Green, Ky.



4. Speaking of steam and diesel, here a northbound Nashville Road 2-10-4 Texas meets a southbound trio of diesel F units just on the edge of North Gresham yard. North Gresham is an industrial area on the outskirts of Gresham yard, the largest yard on the layout.

Think how much easier it would be if you walked in each room, just circled around with your video, pulled drawers open and so on, just to get an idea of what you had. And it's a lot easier to prove you had this stuff also with a video.

MRH: Interesting. Do you have any pictures of the house on fire?

Andy: No pictures, and my wife doesn't want any memories of it either. Of course, I lost all my railroad stuff.

I had about 15 brass locomotives and I had some layout modules in the basement of the old house. I had a 20-foot module of a yard that our local club had used. And of course I lost all that.

MRH: How did you get going again in the hobby after such a tragic loss?

Andy: I had bought a bit of everything. The house fire gave me a chance to start anew, and by then I had become more interested in operations. This time I wanted to build a layout with a specific era. So I went with 1956 since that allowed me to have first-generation diesels and steam engines.

I took quite a bit of time developing what I wanted. I used a lot of modelers license in building this layout, but it's what I wanted for operational purposes.

I still didn't know a whole lot about operations at that time.



5. A line of cabooses awaits assignment in Cedar Hill. Andy still has a long list of painting and decalling projects. Meanwhile, he presses not-quite-complete equipment into service anyway so he can hold regular op sessions.

MRH: How did you develop this interest in operations?

Andy: I wanted to learn more about operation, but I was afraid I would get myself in trouble because of my ignorance. That fear caused me to avoid going to operating sessions.

But I longed to be involved and I wanted to learn more, I just didn't know where to start. Jack Ozanich, a prototype railroader



J. Fugate

THE UNVARNISHED TRUTH ABOUT LAYOUTS

It has become a tradition among hobby publications to feature finished layout scenes as part of a layout tour, and to avoid showing unfinished areas.

That wasn't always so. If you look at the model railroading magazines from the 1950s and 60s, you will see plenty of unfinished scene photos as part of the layout tours published in those days.

As someone who has visited a lot of layouts over the years, I can tell you that most layouts have more unfinished areas than they have finished areas. The mostly finished layout is sensory shock because they're rather rare, frankly.

I feel this evolution to super-slick finished-scene-only layout presentation is doing the hobby a disservice.

First, new modelers might assume most layouts are finished. When they look at their own unfinished efforts, they start thinking they're something of a hobby freak with so much unfinished layout. Talk about a downer.

Second, under-construction layout photos can be quite instructive when studied. By not showing these photos, we're robbing readers of the chance to learn by seeing how others build their layout.

So we're breaking that trend big time with this layout story. Andy has a fascinating huge layout project, but much of it is unfinished. Rather than hide all that from readers, we're showing you the unvarnished truth. Andy still has a lot of work ahead of him.

A huge layout takes a lot of work to complete, but you don't have to wait for completion to start having fun with operating sessions.

from this area with a well-known operational layout ran a clinic titled "Slow the hell down!" and it was an eye-opener for me!

Jack approached the topic as an employee on the railroad and told what you do when you go to work. I finally understood that I don't have to be in a hurry with ops, just take my time.

When you're operating like a real railroad, don't take shortcuts. Take your time, try and do it right, and learn from it. I started operating with Jack and I learned a lot from him.

Jack loves to teach, and he also loves to give you a good-natured chewing out if you screw up! But with new guys, he works hard to teach you the ropes. With Jack, I learned to relax and love the challenge of operation.

The more I can make my railroad operate like a real railroad, the more I enjoy it. And I've tried to pass that mindset on to the people who operate with me – to keep it fun.



6. Andy's triple deck layout runs about 30 trains in a typical operating session and the layout hosts several yards to manage all that traffic. While an op session takes 6 actual hours, using a 1.5:1 fast clock makes the session cover just over 8 hours on the schedule.



7. Andy's main Gresham yard has this 12-stall roundhouse at one end, along with other extensive locomotive maintenance and repair facilities.



8. Andy has yet to repaint a number of his locos in their final Nashville Road scheme. So he runs them with whatever paint scheme they currently have for now. Let the ops continue!

You want everybody going home wanting to come back because they had such a good time. They might have been “stressed” but stressed in a good way, you know?

My approach to operation just developed over time and it evolved as I understood what I wanted on my railroad.

MRH: How do you explain this layout to a first time visitor?

Andy: When they come in here, they're probably going to be overwhelmed! It's three decks and everywhere you look is railroad. Lots of aisles and peninsulas. It can be disorienting!

So let's take it slow.

They come into the layout through a duck-under, and they see a whole lot of railroad in front of them. I show them lower staging is the lowest level directly in front of them, representing Bowling Green, Kentucky. I explain the railroad starts at this point and it goes around the room three times, then ends up around the corner to the left in an alcove as upper staging at Columbia, Tennessee.



9. For turnout control in the yards, Andy is slowly relocating all his Caboose Industries ground throws to these fascia shelves.

Then I explain when you're looking at the railroad, left is always south and right is always north. It's a north-south railroad.

It's really just a linear route with a whole lot of curves but no turnbacks in the middle anywhere, so that makes it a lot easier.

MRH: Why are you modeling this particular region?

Andy: My very first HO train was a Revell Rock Island F7 that I got in the late 1950s. As I started collecting equipment after the fire, I bought several Rock Island RS-3s and fell in love with that railroad again.

But my all time favorite railroad was the B&O. I had many B&O brass engines, which I lost in the fire. I decided I wasn't going to go back to brass, because brass is too hard to keep running well.

But I really did like the B&O paint scheme. So those were the two railroads I wanted – and I always wanted my own freelanced railroad, too. Now we're talking three railroads.

The B&O went as far southwest as Louisville and the Rock Island as far southeast as Memphis. Extending the Rock Island to Columbia, TN and giving both railroads running rights into Nashville allowed them to connect at Ribo Yard.

So I brought them both into Nashville. And I gave them trackage rights on my freelanced Nashville Road. The Nashville Road is my own railroad, which runs from the Great Lakes to the Gulf of Mexico. That gives me north-south traffic, east-west traffic, and a lot of interchange ... nothing like modelers license!

It's more what could have been, rather than what was. I tried to do it in a realistic way, but I avoided actually duplicating the city of Nashville or the cities around it. I just wanted this to be a fun proto-freelanced railroad with a lot of traffic.

I created a history of the railroad and decided it went through a bankruptcy and receivership, with the L&N and Milwaukee Road

taking it over later. That means you may see Milwaukee Road and L&N equipment running with the Nashville Road equipment.

MRH: What was it like developing the track plan for this layout?

Andy: Developing the track plan was a lot of fun. But I also realized I wasn't a great track designer. I had a good feel for the main line, but when it came to yards, sidings, and industries, I wasn't so good at towns.

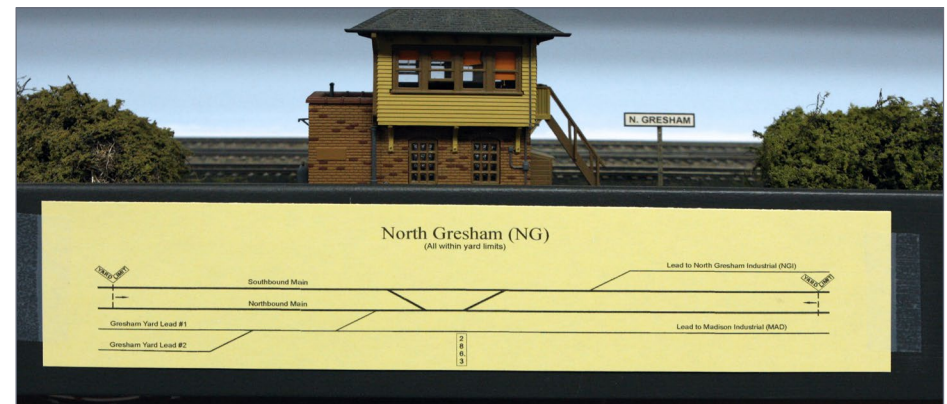
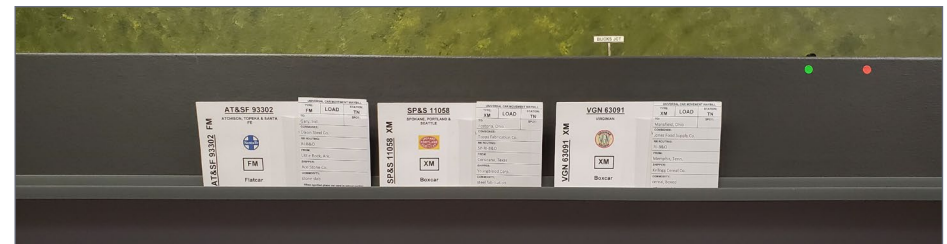
I had developed a favorite way of laying out a town, but it became a rut. Every town had my favorite arrangement and that didn't look right, of course.

One thing I did to break out of the rut is I visited other layouts and studied them. One such layout was John DePauw's EJ&E located north of Detroit. He has a very large layout that's multideck.

I had started with a single deck that was all city. It had a big yard surrounded by city and both ends disappeared into staging.



10. Here's another example of Andy's turnout control using ground throws mounted on a shelf along the fascia. That avoids the need to keep reaching into the scene to throw a turnout.



11, 12, 13. Andy has put a lot of thought into operator-friendly layout ergonomics. His good friend Craig Rosenberger made about 50 sets of card boxes for the layout [top]. Andy has mounted plastic panel moulding in towns to ease car sorting [middle]. Each town also has a track schematic with things labeled for easy reference [bottom].

Although there's nothing wrong with that, you don't get to run your train very far, just into and out of the yard for a little ways. That's not really what I wanted.

At John DePauw's, I saw *two* decks. So I said, "I can do two decks!" I came back and redesigned the layout and added a second deck. That gave me rural running, and then I come into the city, and finally at the other end, I go into staging.

Then I went to Bruce Chubb's. He's got *three* decks in places!

So I thought, "I can do three decks!" I redesigned it a third time.

Now I've got the middle deck as city with the main yards. The upper deck is south towards Columbia, Tennessee and the lower deck is north towards Bowling, Green, Kentucky. I'm now very happy with this design.

But it does take finesse designing multideck. You don't want people all standing in same spot working different decks, and I've tried to account for that. I think it's worked out fairly well.

MRH: When did you start construction?

Andy: I started construction on this railroad around 2001.

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

Andy: The two-track helix is 36" and 33-½", but the visible main-line minimum is 36. There's one turnback in a hidden area that is 35. The majority of the curvature on the open portion of the mainline is up in the forties or above.

MRH: You mentioned to me earlier that you now upgrade your Atlas switches?

Andy: When I started building the railroad, I went with Atlas flex code 83, and I used code 100 in staging because it was cheaper.



J. Fugate

THE HOBBYIST'S OWN PLANNING PAPERWORK

True to our name, *Model Railroad Hobbyist* likes to give you a better sense of how you as a hobbyist can do the hobby. Like getting inside your fellow hobbyists' head.

With layout stories, if we can give you a better sense of the planning journey by sharing some of the modeler's own planning paperwork with you, that's some valuable insight at your fingertips.

For Andy Keeney's layout, we have his original layout track plans that we're presenting here. Andy made changes to this plan as he built the layout. To help you see those changes, we're also providing a significant album of layout room photos so you can compare the actual location to the original plans and can see what changed.

One significant change came about when Andy added on to his house. He gained a new 13x19 foot alcove in the lower right corner of his track plan space. An orange line on Andy's original plans marks the wall he removed.

Andy used that extra space to add more length of run. He didn't add any new towns, although he did add more yard trackage and some new industry spurs in this new space. You can see specifically what Andy added in the layout room photos.

At first, Atlas didn't have number eights, so I went with Shinohara/Walther's 83s, using number eights for the main. Over time, I've not been real happy with the quality of the Atlas switches – they produced a lot of stalls.

I even soldered little wires across the pivot from the point rail to the closure rail. That helped, but I still wasn't happy.

So I looked into Fast Tracks jig-built turnouts.

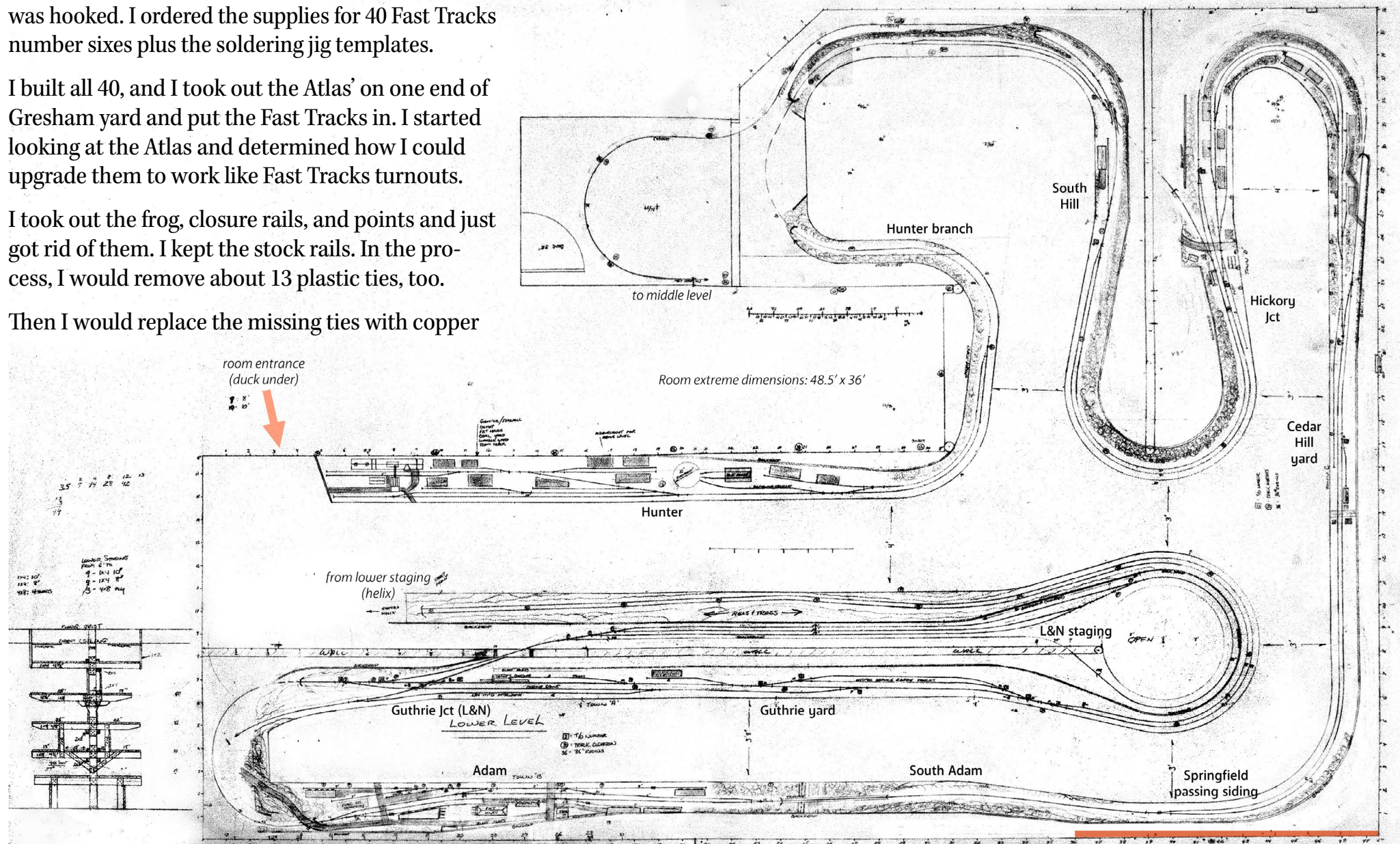
We had our division meeting for the NMRA and my friend Jerry Brown did a clinic on Fast Tracks. We built one right there and I

was hooked. I ordered the supplies for 40 Fast Tracks number sixes plus the soldering jig templates.

I built all 40, and I took out the Atlas' on one end of Gresham yard and put the Fast Tracks in. I started looking at the Atlas and determined how I could upgrade them to work like Fast Tracks turnouts.

I took out the frog, closure rails, and points and just got rid of them. I kept the stock rails. In the process, I would remove about 13 plastic ties, too.

Then I would replace the missing ties with copper

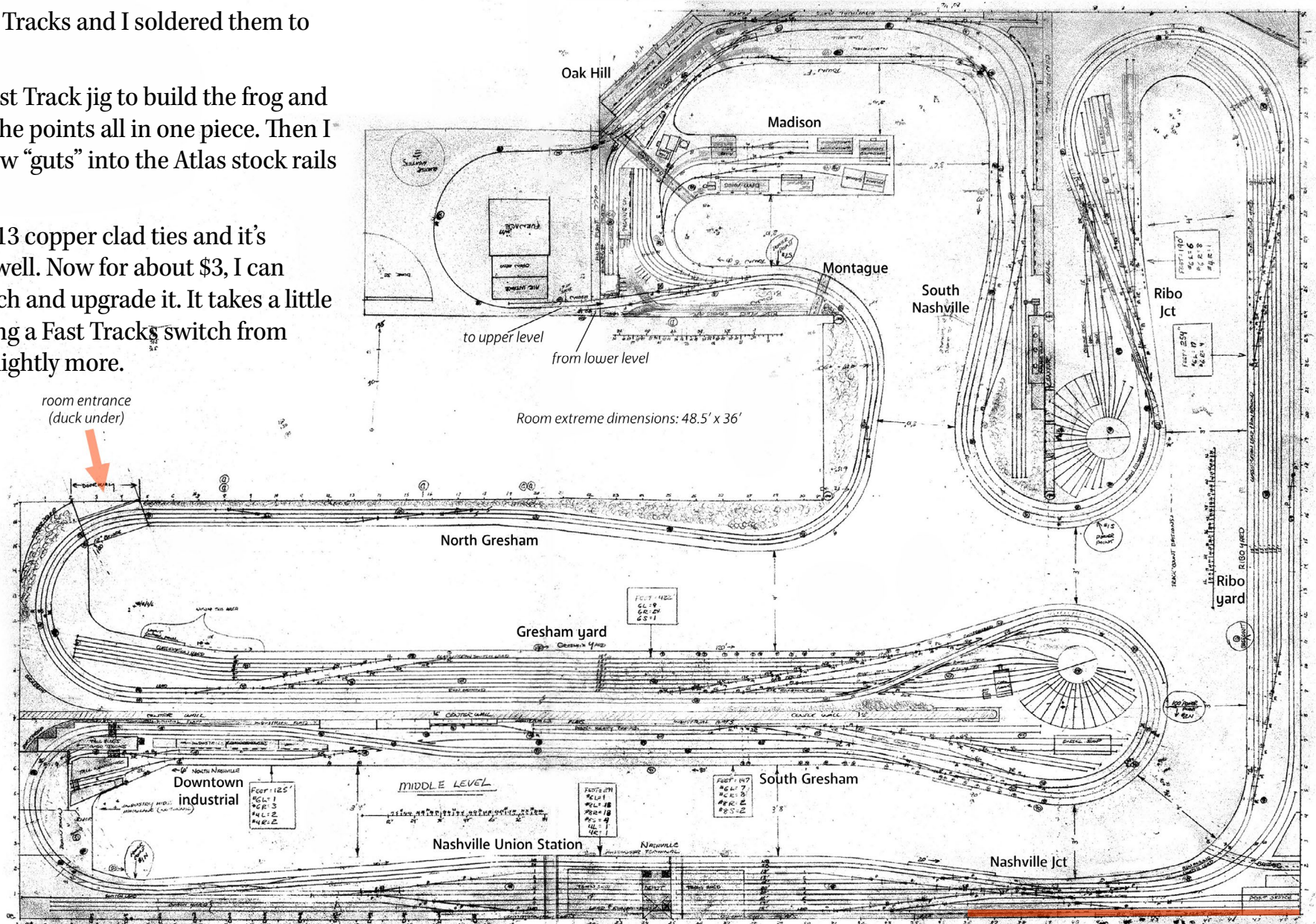


14. Andy's original track plan for his lower level. Compare to the layout room photos to determine what he changed later.

clad ties from Fast Tracks and I soldered them to the stock rails.

Next, I'd use the Fast Track jig to build the frog and closure rails with the points all in one piece. Then I would set these new "guts" into the Atlas stock rails I kept.

I'd solder to those 13 copper clad ties and it's worked out really well. Now for about \$3, I can take my Atlas switch and upgrade it. It takes a little longer than building a Fast Tracks switch from scratch, but only slightly more.



15. Andy's original track plan for his middle level. Compare to the layout room photos to determine what he changed later.

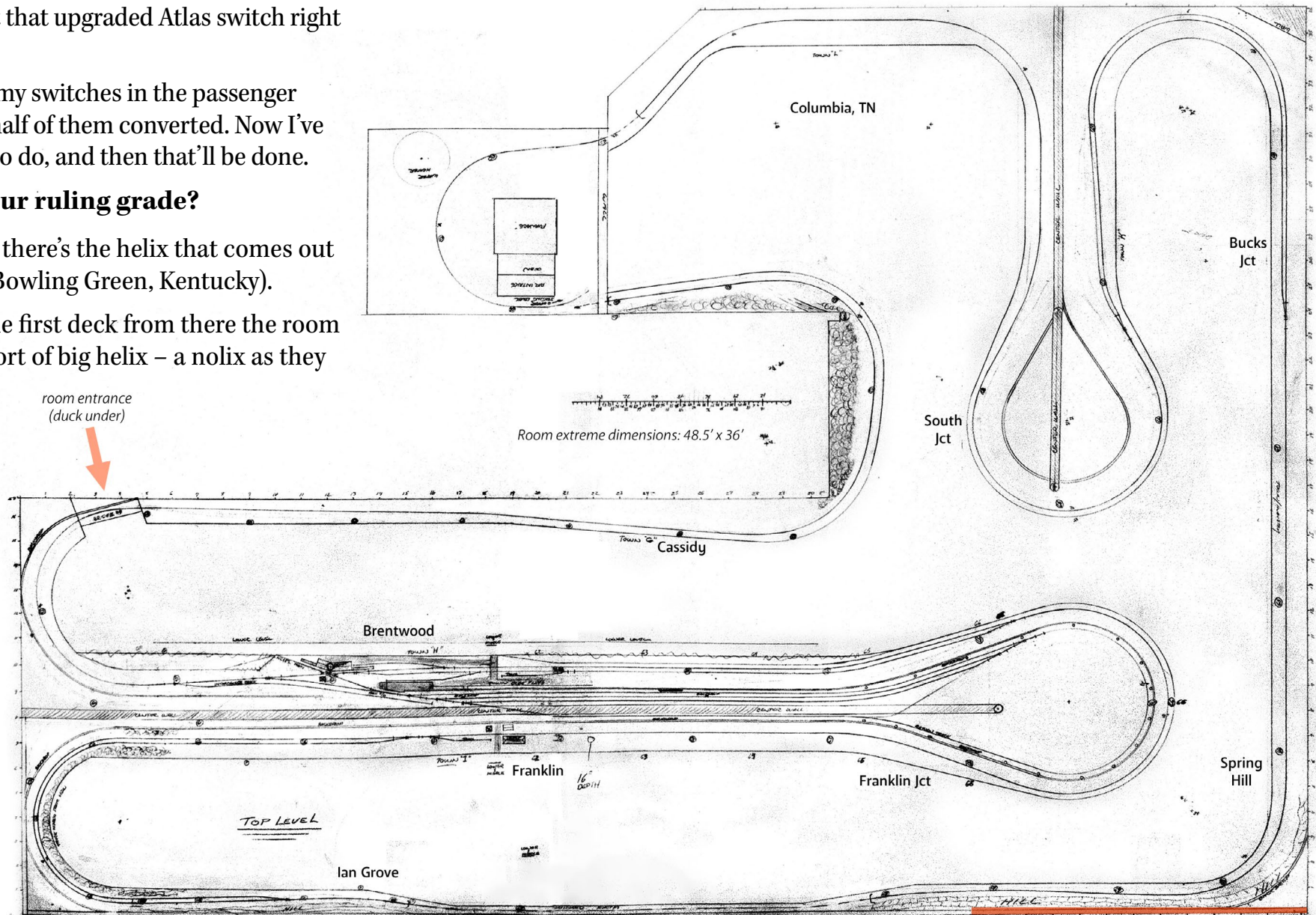
Then I can just put that upgraded Atlas switch right back where it was!

I'm converting all my switches in the passenger terminal. I've got half of them converted. Now I've got the other end to do, and then that'll be done.

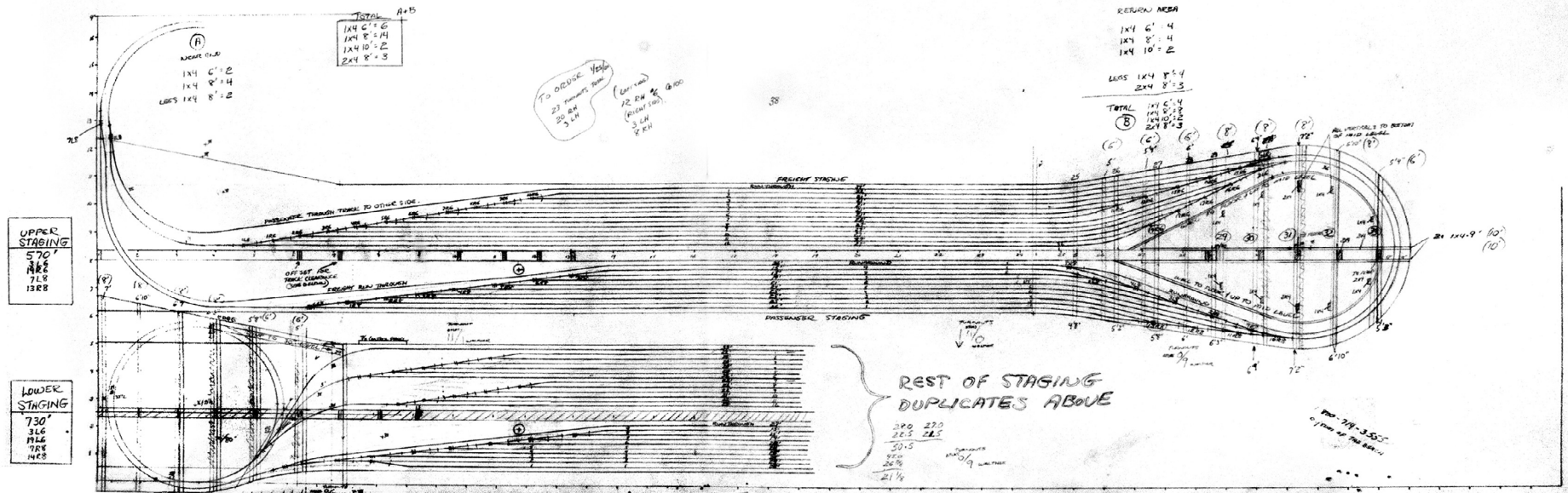
MRH: What's your ruling grade?

Andy: First of all, there's the helix that comes out of lower staging (Bowling Green, Kentucky).

Once you get to the first deck from there the room itself becomes a sort of big helix – a nolix as they



16. Andy's original track plan for his upper level. Compare to the layout room photos to determine what he changed later.



17. Here is Andy's original staging track plan. Andy kept the lower staging pretty much as shown with a helix up to the lower level. However, he moved upper staging to the town area labeled Columbia, TN on his upper deck plan, and added a reverse loop in the upper left furnace room.

like to call it. It circles the room, climbing as it goes around the furnace. The grade is a little over two to two-and-a-half percent.

In one area, we have a "high line" metal trestle that goes through the city. We wanted to keep that level, so track climbs a little faster getting to that trestle. Then again it climbs little faster after it leaves a trestle. It's a long steel viaduct, actually.

But for all three decks it's about two and a half percent, except for the areas on each end of the viaduct.

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

Andy: Some of the most challenging parts of this layout have been not completely liking what I've got. If I don't like what I have, I should tear it out and do it right or I'm not going to be happy with it. Then if I'm not happy with it today, I'm likely to be even more unhappy with it tomorrow!

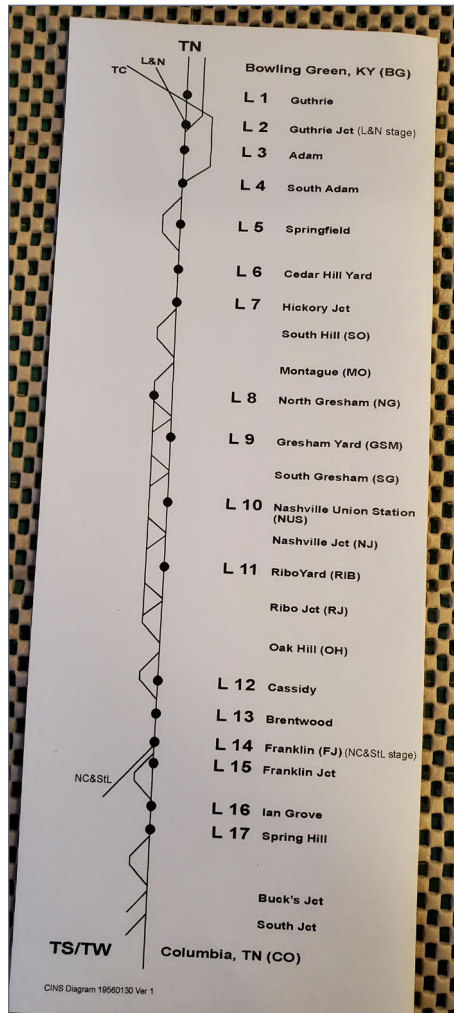
The guys laugh at me because I take half of it down and redo it. But it's worked out well for me.

There are a few things I wish I had changed when I had the chance, but it's too late now. For example, I could have adjusted the height a little bit on certain decks, but overall it's been okay.

I'm not really a great electrician, but I've done all the electrical myself on this railroad.



18. More interesting operator ergonomics: Andy's fascia sticks up above the layout ground level a half inch or so, allowing operators to hang a clipboard on the fascia with just a simple wooden knob as a "hook."



19. Andy provides operators with this "route card" giving a simple layout schematic. The L code is for routing the carcard/waybills. Every location has an L # code. TN means "Thru North," TS "Thru South," and TW "Thru West."



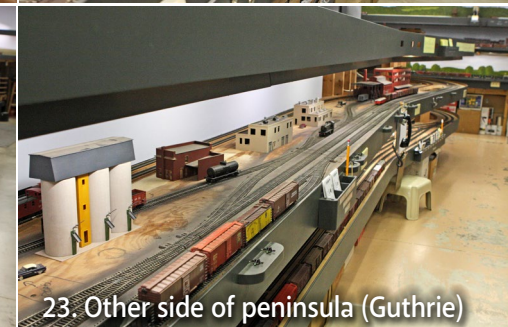
20. Lower staging (Bowling Green, KY)



21. Helix climb to first level



22. First level further along peninsula



23. Other side of peninsula (Guthrie)



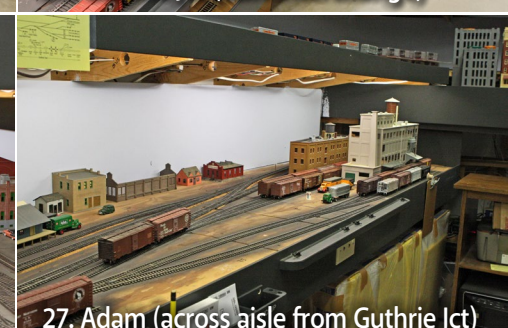
24. Guthrie further along peninsula



25. Guthrie Jct (L&N interchange)



26. Guthrie Jct (end of aisle)



27. Adam (across aisle from Guthrie Jct)

Zoom up to 300% to study photos more closely.



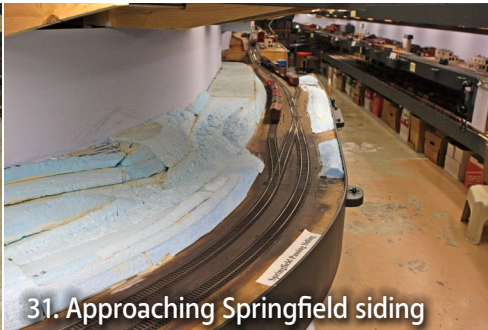
28. Further along town of Adam



29. Viaduct to South Adam



30. South Adam area



31. Approaching Springfield siding



32. More Springfield Siding (new alcove)



33. Other end of Springfield Siding



34. Entering Cedar Hill yard (across aisle from [33])



35. Further along Cedar Hill yard

Zoom up to 300% to study photos more closely.

The challenges have ultimately been enjoyable because I've learned something from each one. For every problem there's a fix. And I like nothing better than to find the fix for problems!

I redesigned a big section of the main Gresham yard. I went through and ripped it all out and redesigned what I think is a lot better now.

So just remember, don't give up. If you've got a problem, stick with it. The answer will usually come to you about two o'clock in the morning!

MRH: Did you encounter any nasty surprises?

Andy: Not exactly a nasty surprise, but a surprise – I ended up with a bigger room. My wife decided she wanted an addition on the house, a 14 by 20 space. Originally there was just supposed to be a crawl space under there because I already had layout built all the way down that basement wall.

So we asked the contractor about the crawl space and he said, "Well, we'll put a hole right here" and he pointed right at the wall with my layout's lower, middle, and upper deck in the basement. And I said, "No way!"

So I asked, "What would it cost to put a basement in here? He said, "Since you live in the country, it won't cost much extra to just take more dirt and move it somewhere else on your property. That's the big cost." It was less than a thousand dollars difference!

We had them drop the wall further down and pour me a basement. And so I got this nice 13x19 addition, but it was a hell of a mess during construction. They hung plastic while they were cutting the basement wall with a cement saw.



36. And further along Cedar Hill yard



37. And still further along Cedar Hill yard



38. End, Cedar Hill yard (end of aisle)



39. Hickory (across aisle from [38])



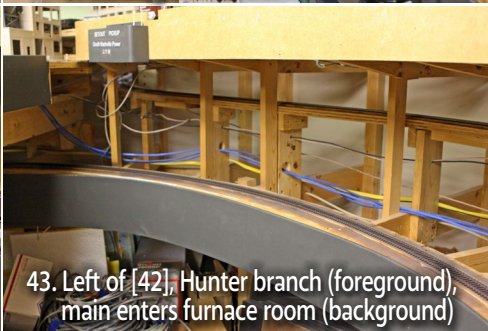
40. Hickory Jct (start of Hunter branch)



41. Around corner from [40], Hunter branch goes under main



42. Hunter branch (foreground), main (background)



43. Left of [42], Hunter branch (foreground), main enters furnace room (background)

Zoom up to 300% to study photos more closely.

Partway through, the plastic fell down – with cement powder and chips shooting all over my locomotives in the diesel house.

The guy felt terrible. He wanted to pay for it. I said, “No, I’ll just wash it off, no problem.”

Once I had this new 13 x 19 foot alcove, then the fun part started: designing my new area. You know, I added almost 20 feet. So the Ribo yard from end to end now is 56 feet long, which makes for quite a yard.

That’s about as nasty as it got, which wasn’t that bad!

MRH: At least there was a happy ending. What do you like most about this layout?

Andy: My friends coming over and bringing it to life. I don’t run trains much. But I make a good cup of coffee and I’m really good at changing the toilet paper roll!

The phone system is up now, but we were using radios. It was great hearing the radios, the calls to the dispatcher, and all the OSing. You hear all the trains running and the guys having a great time.

I’ll walk around and take pictures and post them on my Facebook page.

I really enjoy that. After everybody’s gone, I almost never run trains by myself. I’d much rather put the time into the railroad by working on it.

MRH: What do you like least about this layout?

Andy: The upkeep. The upkeep is a bear because it’s dusty in the basement here and I’ve got so much track. I have 1,150 feet of



44. Hunter branch, across on far wall



45. Hunter branch, around corner from [44]



46. Hunter branch, further along from [45]



47. Hunter branch, around corner from [46]



48. Town of Hunter



49. More town of Hunter



50. End of Hunter branch



51. Main [43] emerges onto middle deck

Zoom up to 300% to study photos more closely.

main line, with a lot of it double track. And several big yards. But here again, I have good friends.

My friends come over and they help me with the maintenance, checking the track, or cleaning the track. They also help me get it ready for the session. So that helps ease the problem. But the upkeep is something to think about.

MRH: What DCC system are you using?

Andy: We use NCE. Lansing is a hotbed for NCE. Bruce Chubb got NCE going in Grand Rapids, and as a group we got it going in Lansing. We made one big buy, so we got a nice discount. And that was the early 2000s, maybe 2005 or so.

The majority of people here that didn't already have DCC have gone with NCE, which makes it really nice because you can help each other, and share throttles. If you have problems, you understand each other's system a lot better.

MRH: What decoders are you using?

Andy: We use a mishmash of decoders. It's been anything I could throw in to get the engines running. I want to move to better decoders and get more locos with sound.

At this time, I'm still working to get all the trains on the tracks. That means getting some kind of decoder in the loco is the most essential thing.

One of the things I'm looking at is putting keep alives in the locos. I'm looking at building my own. There's a couple good build-it-yourself examples on YouTube. I've also got some friends working with keep alives. So we're looking at mass producing keep alives for our equipment.



52. Wider view of [51], main in back



53. Right of [52], Madison



54. Wider view of [53], more Madison



55. Around corner from [52]



56. Entering North Gresham



57. More North Gresham



58. Still more North Gresham (Hunter branch below)



59. North Gresham, end of aisle

Zoom up to 300% to study photos more closely.

MRH: What's your least favorite part of doing the layout and how do you motivate yourself to do it anyway?

Andy: My least favorite part of building a layout would be the electrical. I'm not good at electrical and I don't enjoy soldering. But if we want to run trains, I have to get it done. I ask the guys to come run trains. And the only way I can do that is to *get the electrical done*. You know, so I just bite off chunks and do it.

Most of the layout wiring is behind me now, unless I'm making changes. The only electrical I'm doing now is when I'm working with the turnouts – you know, upgrading the track. I've got to get the soldering iron out to do that.

One thing about soldering: get a good soldering station. I have a Weller soldering station and it has made all the difference in the world. It works great for soldering feeder drops and to solder rail joiners. It has a very fine tip and that makes the job easier.

I do pretty good at soldering in decoders too. Good equipment is really important, as anybody that's done soldering knows.

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

Andy: I've thought about what I would do different if I was going to do it over again. My sister lives in New England and I have fallen in love with New England. I would seriously think about doing maybe S scale. O scale is a little on the large side even for this basement, for the curves and all.

It would be either HO or S, and I would go more branchline. Small yards and just have crews go out to a couple different areas and switch. If I kept the three decks, it would make a great run for them.



60. Gresham main yard



61. More Gresham main yard



62. Gresham main yard, other direction



63. Gresham, end of peninsula, steam loco roundhouse



64. Left of [63], diesel shop facilities



65. Around corner from [64], South Gresham



66. More South Gresham



67. Still more South Gresham

Zoom up to 300% to study photos more closely.

Now we've got over 70 trains on the schedule every 24 hours. And that doesn't include passenger trains, except for two we put on here. We did two passenger trains for the guys to get familiar with a timetable having class one trains and learning to stay out of their way.

This layout and all those trains makes a lot of upkeep for me. I would really consider small time railroading with a nice long branchline, and a main line connection for cars coming in and out. Simplify it. That's probably what I do.

MRH: This is a large layout – can a layout be too big?

Andy: Layout size is an interesting discussion point. I love my big layout, but I think a layout can be too big for one person. You really have to make that decision for yourself.

I've seen some massive layouts that work really great and I've seen some small ones that don't work worth a darn. So it depends on the individual and how much he thinks he can bite off.

I was surprised to see certain people tearing their big layouts down and going to smaller layouts. The only way this layout's going to be torn down is when I'm gone.

My wife swears that if I go first, she's going to rent the layout out – she's going to charge for the guys to come and play [laughs].

But I think the bigger layout you build, the more you're biting off and so expect a lot more upkeep.

But if you've got friends, it almost becomes a club layout of sorts. I do very little of this layout by myself any more.



68. Downtown Industrial



69. Across aisle from [68]



70. Approaching Nashville Union Station



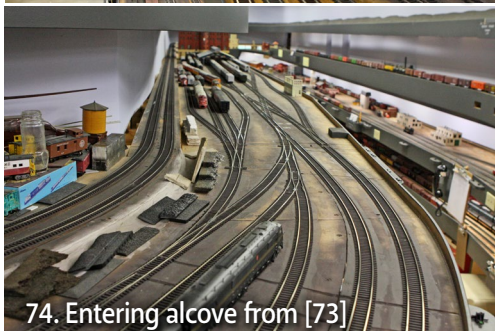
71. Nashville Union Station



72. Nashville Union Station (other direction)



73. Further along Nashville Union St.



74. Entering alcove from [73]



75. Around corner from [74], coach yard

Zoom up to 300% to study photos more closely.

If you have trouble getting friends, maybe you need a smaller layout with fewer crews needed for an op session. You could enjoy that more.

But that's a decision you make based on your own situation.

MRH: What are your thoughts on doing scenery and backdrops?

Andy: You can see the backdrop behind me here. Chris Lyon up in Ottawa, Canada did some YouTube videos and has been on TrainMasters TV. He's been very helpful in teaching us how to paint this layout's backdrops.

Every time he sees pictures of my layout, he shoots me an email or a text saying: "Get working on that backdrop!"

Once I get going painting backdrop, it goes pretty quick. The backdrop is not a piece of artwork. It's in the background to extend your layout. You're watching a train go down the tracks, so the backdrop just complements the view.

Chris Lyon's backdrop videos can be seen on both Trainmaster TV and on YouTube (as CNLVN).

I did use some Kings Mill backdrops buildings, they're flats. They're not available now, but luckily I got quite a few of them and I've been using them along the main Gresham yard.

Those buildings are all Kings Mill and that's Chris Wiley who did them. Chris has become a friend, so that's been nice.

MRH: How often do you have op sessions?

Andy: Normally we do an op session the last Saturday of each month. Start at 10 and go to four. The doors open at nine, so the guys can come and chit chat and we can have our coffee and donuts.



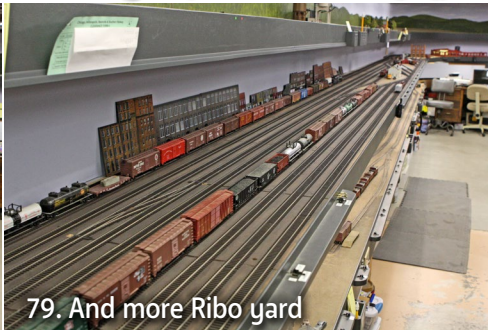
76. End of Nashville yard (other direction)



77. Ribo yard (across aisle from [76])



78. More Ribo yard



79. And more Ribo yard



80. And still more Ribo yard



81. Yes, even more Ribo yard



82. End of Ribo yard (end of aisle)



83. Closeup of aisle end [82]

Zoom up to 300% to study photos more closely.

And then we get the clocks running at 10 o'clock. Then we run until about four. We can get almost 30 trains run in that time. Fast clock is 1.5 to one which makes the session eight hours or close to eight hours. So that works out well.

We've recently gained too many people that wanted to operate and a lot of us are retirees. I talked to the guys and now we have a Monday morning op session too.

For that op session the doors open at 10. It starts at 11 and goes to four. So it's five hours and they call it the old guys session!

It's a nice situation to have a railroad that you want to operate.

MRH: What's fully staffed at an op session?

Andy: I try to have 18 people. I can get by with less, but we start running into problems not having enough crews for the trains. Once I get passenger operations going, I'd say we will take 20 to 24 people with no problem.

The passenger terminal will be two additional people right there, and then we will need crews for the passenger trains.

There might be a bit of sitting in waiting, but they enjoy that too. They get a break and they can sign up for the train they want. It's up to them how much they want to operate.

MRH: What advice would you give to someone starting out new in the hobby?

Andy: Oh boy. For somebody starting out new in the hobby, I would say the best thing you can do is to associate with other model railroaders.



84. Across aisle from [83], Ribo Jct



85. Around corner from [84]



86. South Nashville (foreground), main (background)



87. More South Nashville, main (background)



88. More South Nashville, main on steel viaduct (background)



89. Wider view of [88], main on viaduct enters furnace room



90. Main enters furnace room, closeup of [89]



91. Main enters upper deck (far wall from [90])

Zoom up to 300% to study photos more closely.

Find a local club or just find some nearby model railroaders and get invited to their layouts. Operate with them and get a feel for what you're really going to really want.

Pick their brain, visit their layouts, get invited to operate.

Tell them you're new. Most of us love new people. We're always looking for new modelers, especially younger guys. I tell you, some of the young guys that come in now are really sharp. They learn quick!

And read the publications. Used to be when I was a kid, all we had was *Model Railroader* and *Railroad Model Craftsman*.

There's so much stuff available to people now. Get online, watch *Trainmasters TV*, and read *Model Railroad Hobbyist*.

MRH: We can't argue with that. ✓



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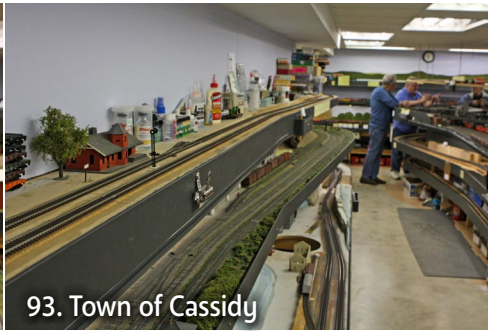
Joe Fugate: The wonders of double-sided masking tape.

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ANDY KEENEY'S NASHVILLE ROAD | 43



92. Around corner from [91]



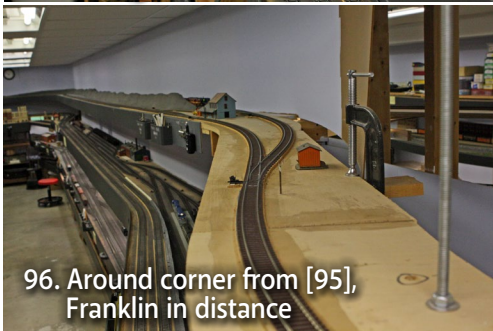
93. Town of Cassidy



94. Cassidy (end of aisle)



95. Entire opposite wall from [94], Brentwood in distance



96. Around corner from [95], Franklin in distance



97. Rest of Franklin siding



98. Ian Grove (across aisle from [97])



99. Other direction from [98]

Zoom up to 300% to study photos more closely.

ANDY KEENEY'S NASHVILLE ROAD | 44



100. Approaching Spring Hill



101. Spring Hill (across aisle from [100])



102. Bucks Jct (Spring Hill in distance)



103. South Jct (beginning of staging)



104. Columbia, TN (left of [103])



105. Wide view of [104] upper staging



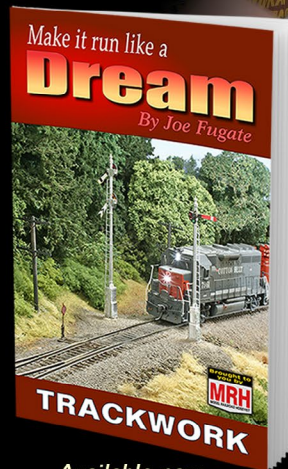
106. Left of [105], more upper staging



107. Return loop (end of upper staging)

Zoom up to 300% to study photos more closely.

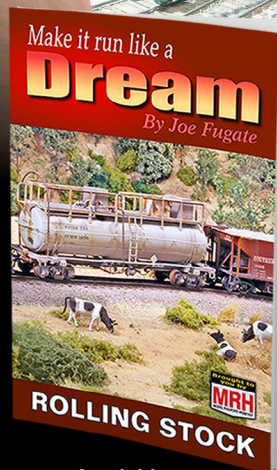
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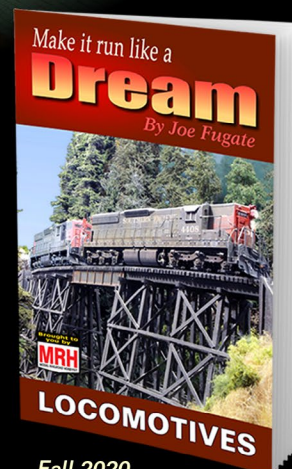
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Scratchbuild a '70s gas station



Model Railroad Hobbyist | December 2019

★★★★★
RATE THIS ARTICLE

TIMOTHY F. DUDLEY scratchbuilds with styrene scraps and leftover kit parts ...

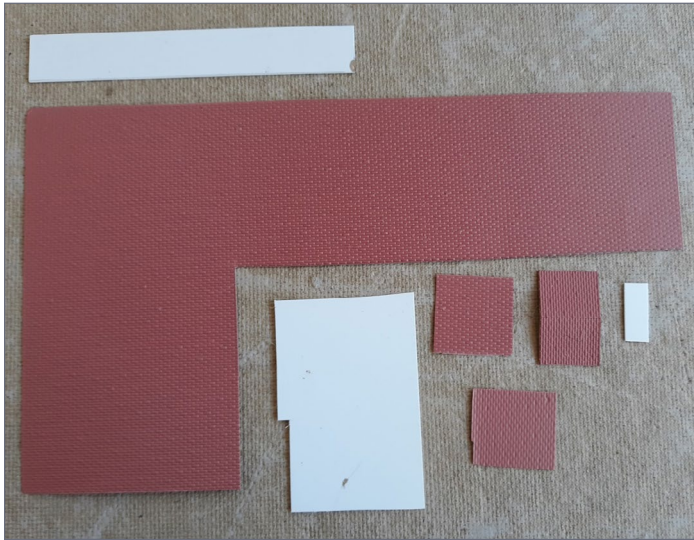
AS A PASTOR IN THE EARLY YEARS OF OUR MINISTRY, my wife Cindy and I tend to be on a very tight budget –money for trains can be limited. With some styrene scraps lying around my layout shed, I decided to build a simple gas station for the vacant spot I had on my latest New England-based switching layout.

I used simple tools [2] to lay out and cut the walls of the basic structure.

[INDEX](#)

[TABLE OF CONTENTS](#)

'70s GAS STATION | 2



1. Samples of the scraps of styrene and brick sheet material I gathered for this structure project.



2. I estimated dimensions from a photo I found on the internet of a gas station from the early 1970s, the era I currently model. I then used my HO scale rule to lay out the walls on my styrene.



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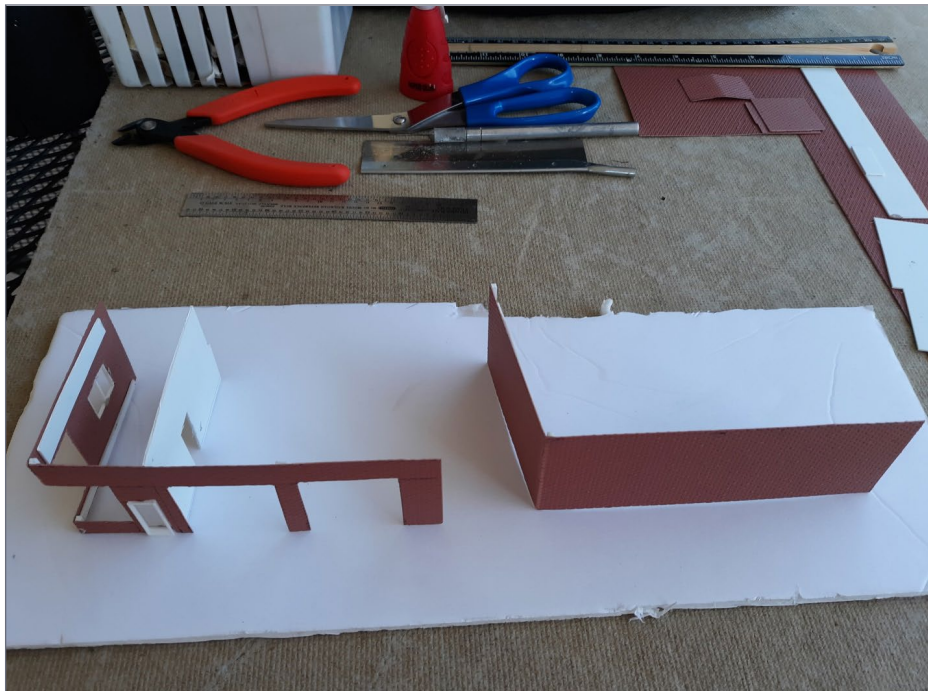


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'70s GAS STATION | 3

I used a pen and HO scale rule to draw cut lines on to the brick material. Then I cut out the walls with a pair of scissors. Using leftover parts from a Pikestuff kit, I added a door for the front entryway and a side window [3] for the parts area of the gas station. I added an interior wall to separate the garage area from the service counter.

I reinforced the corner connection of each wall set with scrap square styrene. I also reinforced the walls with scrap styrene [4]. It's not pretty inside, but the walls needed strengthening because the brick sheet from my scrap collection turned out to be thin and flimsy.



3. Here are the two L-shaped wall sections, not yet joined together.

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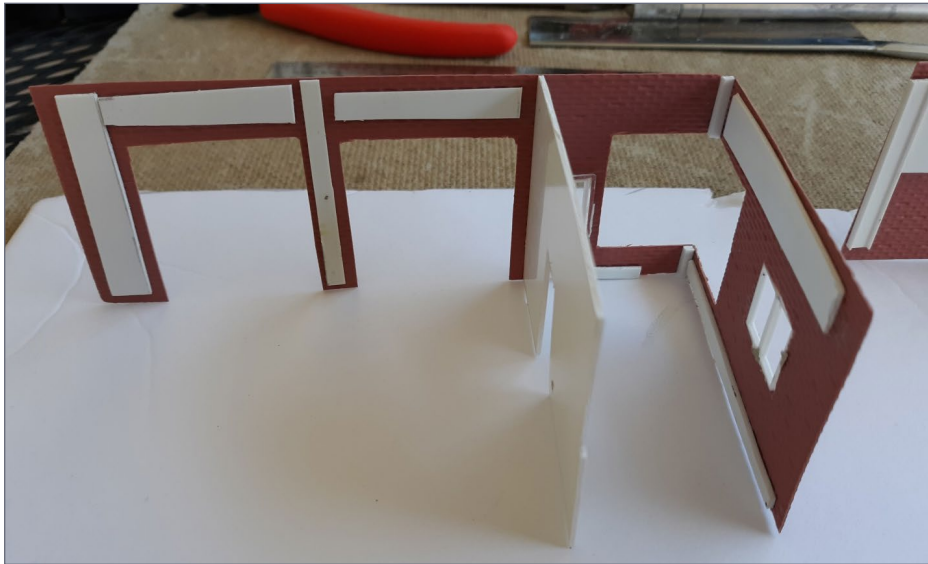
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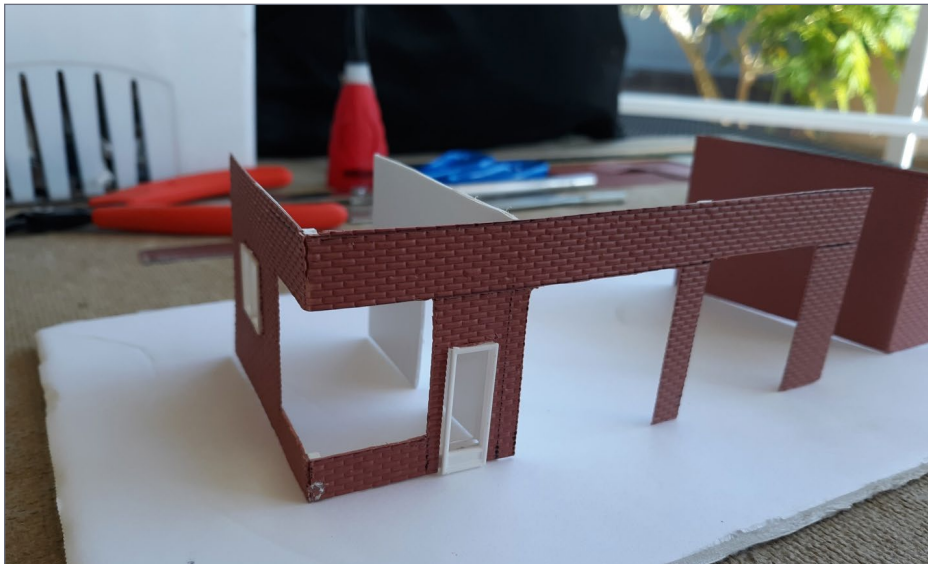


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4. I reinforced the walls with styrene scraps.



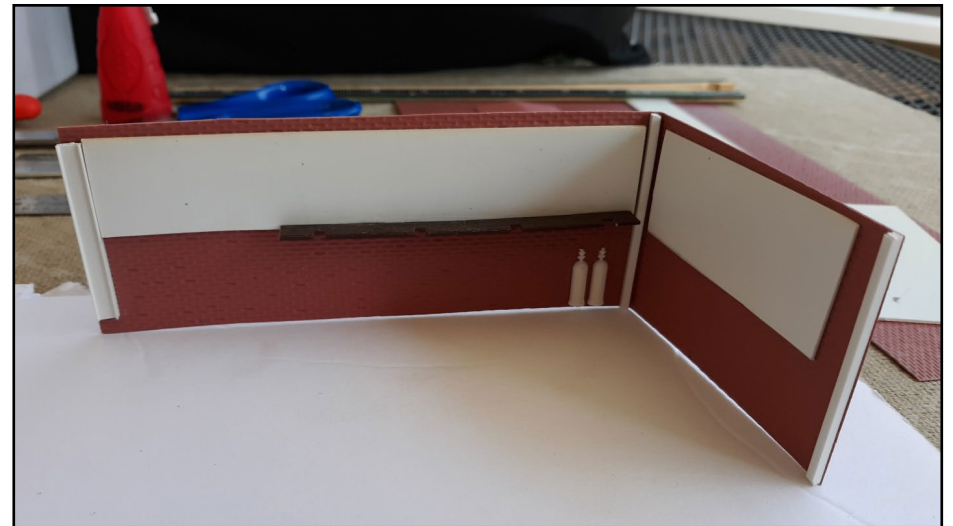
5. This shows the front and left side walls of the station from a front view. The front door and side window have been installed.

I cut the right side and rear walls from one piece of brick and bent it at a 90 degree angle to form the remaining two exterior walls. Inside I added styrene reinforcement before adding a parts shelf and two acetylene tanks as simple interior details [6].

I painted all the exterior walls with white acrylic paint before assembling them. I left the two wall sub-assemblies separate until the end of construction so I could add details and paint to the interior.

On the interior wall [7] of the customer area I used a gel ink pen to draw a shelf and wall clock to give the space a little detail. I painted the door and window frame flat black.

I noticed, in this early photo [7], that my window and door openings were not clean and square – so I cleaned and sharpened them up with a needle file.



6. Simple details make a difference in a model and sometimes less is better.

I noticed my ink pen lines still showed as well. I added more coats of white paint to cover up those lines.

It's amazing what a photo can reveal that the eye may not see. I mounted the gas station on a piece of scrap 0.060" styrene painted very dark gray.

I collected from my scrap box [9] details for the car bays like a lift, oil pump, tires, barrels, and an oil can rack.

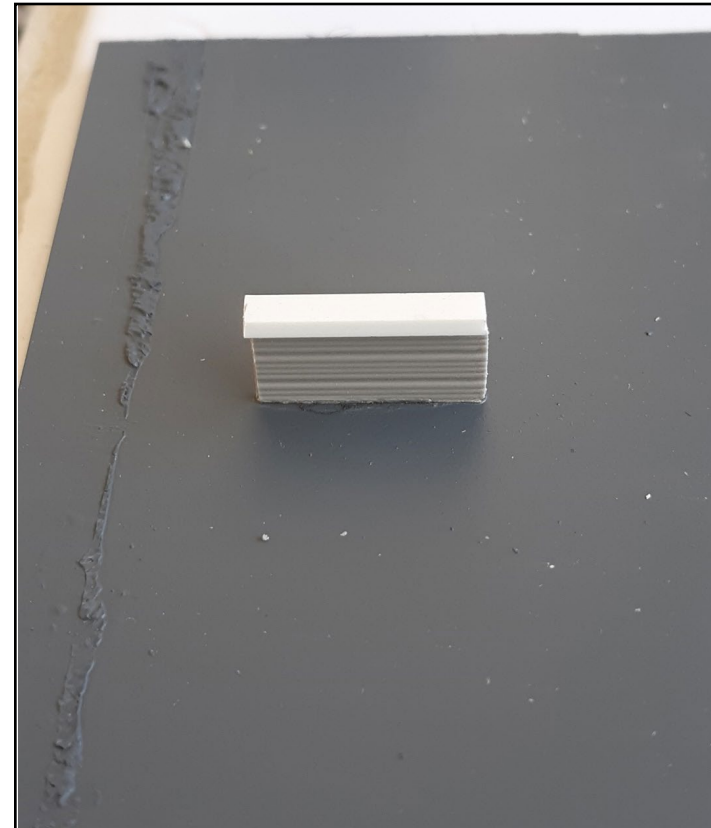
I installed the interior details [10] and added a Ford decal to the interior service wall [11].

Finally, I added a clear styrene main glass window and glued the two exterior wall sub-assemblies together. I placed some figures inside [12] to show life and added a Mobil gas sign to the.

For the sign, I downloaded the logo off the internet, printed it on an inkjet printer, then glued it to a scrap of styrene shaped to match.

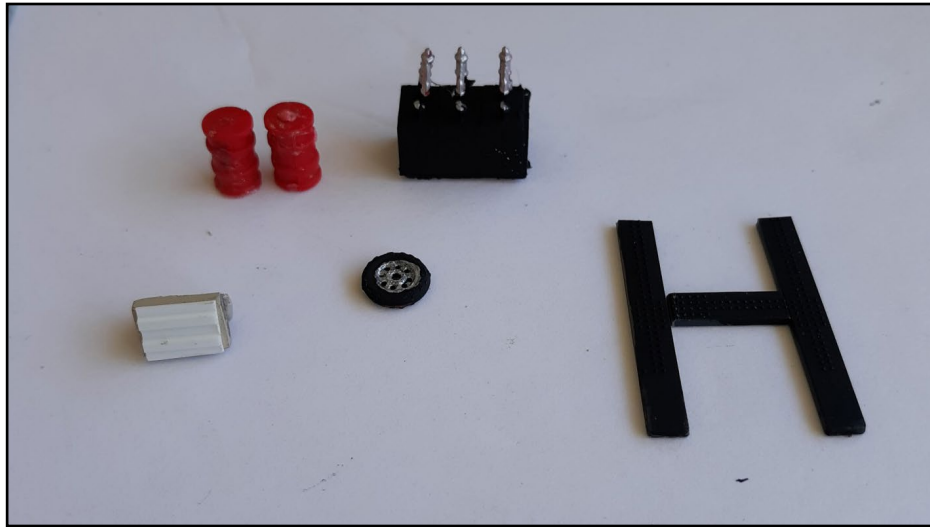


7. The station slowly comes together.



8. I cut a customer counter from scrap and glued it to the structure base. I positioned it to fit into the customer service area. That excess glue on the base has to go!

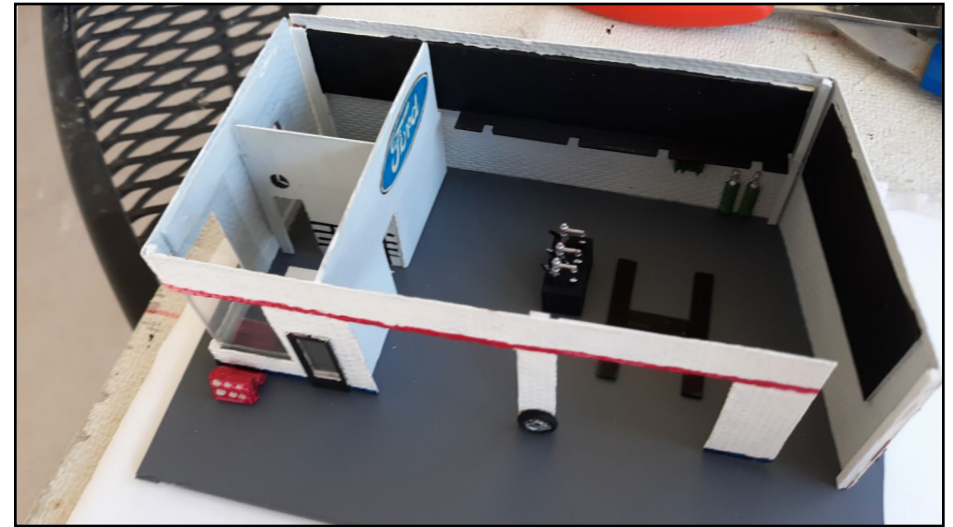
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9. Details I had left over from past kits.



10. I painted detail lines in red and navy blue acrylic paint in colors close to Mobil Oil colors. I cleaned the rough paint lines up later by using some white paint.



11. A top view shows the interior. I added a Ford decal to one shop wall to add realism.

I built a roof with some styrene and painted it medium gray. I added a couple skylights I had in my scrap box as details.

I still need to glue the roof on and add vehicles to the station to show the time period [13, 14], plus I need to add an island out front with a couple 1970s-era gas pumps.

All in all, I believe I accomplished what I saw in the internet photo, with some artistic license, of course. And it didn't cost me much other than a little time. ✓



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J. Fugate

GOING THE NEXT STEP

We occasionally publish simpler construction articles like this to show what "mere mortals in the hobby" can accomplish. This gas station may not win a contest, but it's a good basic gas station structure that can easily be enhanced to become a great foreground structure.

One simple improvement would be to laminate the thin Plastruct brick sheet exterior bay walls with 0.040" styrene and then scribe matching mortar lines on the sides around the doorways to better simulate the thicker walls typical of such a structure.

You can also laminate more Plastruct brick sheet on the interior walls if you want brick texture inside the bays – or you can just leave the smooth styrene as the interior finished walls.

Adding a closed bay door to one of the service bays would also be a nice touch.

And that's just the beginning. With a little ingenuity and some web searches, you should find lots of other things you can do with details and techniques to enhance this build even further.



12. The station with figures added.



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MIKE ROSE builds a bridge scene on his Lehigh Line layout

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13. Here is a photo in direct sunlight.



14. The finished station has the roof and skylights added but not glued in place yet. Next step will be to add a gas pump island and some vehicles.



TIMOTHY F. DUDLEY



When Timothy was a little boy, his dad hid an AHM train set so Timothy wouldn't find it until Christmas morning. That set started his love affair with the hobby.

He and his brother built a four-by-four foot oval layout on a piece of plywood that barely fit under their bunk beds. Since then Timothy has built a dozen or so layouts in N

and HO scales.

Timothy served in the US Navy from 1984-1990 and is now a licensed Assemblies of God pastor (www.newlife-cc.com), co-pastoring a church with his wife Cindy in Hurricane, Utah. He also enjoys playing bass on the worship team, train watching, and writing. ■

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Rails to Richford



Model Railroad Hobbyist | December 2019

1. The classic St. Johnsbury station, built by the Canadian Pacific, is now home to the St Johnsbury Visitors Center. *Steve Alpert photo, www.alpsroads.net. Used with permission*

GEOF SMITH: AN N SCALE LAYOUT FOR THOSE UNDECIDED ON WHAT TO MODEL ...

JIM SIX RECENTLY WROTE ABOUT HIS JOURNEY into downsizing his layout (*MRH Running Extra*, November 2018). Other layout designers have been singing the virtues of similar concepts:

- Lance Mindheim blogs about reality-based layout design
- Kalmbach publishes several books on small and mid-sized railroads

RAILS TO RICHFORD | 2



RATE THIS ARTICLE

- Marty McGuirk's blog asks important questions around how much time, energy, and money we want to devote to a project.

Marty asks questions like:

- How long will this layout be around?
- Formal operating sessions with multiple operators, or mostly running trains solo?
- These are all great questions.

Making a smaller layout forces the reality that we must be willing to narrow the focus of our layouts. Everyone has to make the same decisions to some degree. Jim Six set aside dreams of a four-track main line in favor of a one-town layout concept.

For me it's been an ongoing battle of the layout versus the moving van. A look at my resume reveals the layout loses that fight every six years.

Winning the fight with TOMA

So, as I begin my next layout, in what I hope will be my home for many years to come, I'm committed this time to employing the TOMA approach. I will be using six 18 x 48-inch modules to create a layout that can go with me if there is another relocation.

The benchwork is already up for this layout, and the footprint is a simple 12 x 3 ½ foot rectangle with the potential to add a drop leaf staging yard to one end.

That's nearly half the size of my previous layout, but it fits the room and I'll be able to get beyond the plywood central in a reasonable time.

I've always been attracted to modeling the Northeast Kingdom of Vermont and northern New Hampshire post-1980. While the railroads found in that region may be a shadow of their former Class I selves, the smaller and sometimes short-lived regional carriers have a richness all their own in their stories and in the kaleidoscope of locomotive paint schemes [Table 1].

Plus, the area has a Currier & Ives beauty to it that's hard to beat. In many places, lightly built bridges mean the railroads must employ four-axle power: ideal for a small layout.

But what aspect of this northern New England landscape to model? What would fit into the space I have while still maintaining some sense of plausibility in a story, be fun to build, and provide some level of operating interest? Modeling in N scale, I knew I had room for at most two scenes, but which two?



2. The E.T. & H.K. IDE building. A signature building in downtown St. Johnsbury, Vermont. *Michael Yeager photo*

Table 1: The Cast of Players Keeps Changing

In the 1980s	In the 1990s
In Richford Canadian Pacific Central Vermont Lamoille County In St. Johnsbury Canadian Pacific Boston & Maine Maine Central Lamoille County In Groveton Grand Trunk St. Lawrence & Atlantic Boston & Maine Lamoille Valley / Twin State	In Richford Northern Vermont Canadian American Quebec Southern Bangor & Aroostook In St. Johnsbury Northern Vermont Canadian American Quebec Southern Bangor & Aroostook In Groveton St. Lawrence & Atlantic New Hampshire & Vermont Railroad / Twin State
Into the 2000s	Today
In Richford Montreal, Maine & Atlantic In St. Johnsbury Montreal, Maine & Atlantic In Groveton St. Lawrence & Atlantic New Hampshire & Vermont Railroad / Twin State	In Richford Central Maine & Quebec Vermont Rail System In St. Johnsbury Vermont Rail Green Mountain Clarendon & Pittsford Washington County (all VTR subs) In Groveton St. Lawrence & Atlantic New Hampshire Central

The "A" Side: St. Johnsbury, Vermont

Well, one choice was easy: a given for this layout is to include the shire town of St. Johnsbury, Vermont. St. Johnsbury, locally known as St. Jay, is the commercial center of the Northeast Kingdom. It is 10 miles northwest of the Connecticut River and 48 miles south of

the Canada-U.S. border. Railroading was a major industry in St. Johnsbury, starting in 1850.

Presently, St. Jay is served by the Vermont Rail System's subsidiary, the Washington County Railroad Connecticut River Division. Not long ago, as many as four railroads met in front of the town's railroad station:

- Canadian Pacific and Boston & Maine shared the mainline
- Maine Central's Mountain Division entered town from the northeast
- St. Johnsbury and Lake Champlain Railroad - known as the "St. Jesus and Long Coming" – came into the yard from the west

The days of prototypical interchange activity in St. Jay have faded into the past. But I'm not above re-introducing it with a freelanced railroad, the Pattapaug Transfer Company (a nod to the native name of my hometown) to bring back some interchange switching for operational interest.

The Pattapaug is inspired by the Quaboag Transfer, a contractor that provided intermodal services on a portion of the Central Vermont Railway in the mid-1980's. Quaboag bought two engines from the CV and CV provided the track and operating crews.

According to Robert Jones, a biographer of the CV, this "rent-a-train" concept earned the CV a marketing award from *Modern Railroads* magazine in 1986.

St. Jay has two defining signature structures that identify the town: a gloriously massive, Queen Anne-style train station [1] built by the Canadian Pacific, and the iconic E.T. & H.K. Ide feed mill [2] sitting on the other side of the yard.

A few years ago, when I was building a layout in another home, I commissioned Jim Rindt of Rindt's Relics to custom build a model of the train station – it will proudly crown the new layout.

The other signature building is the E.T. & H.K. Ide feed mill, which should be a fun scratchbuilding project. If the rumors I hear are true, Creative Laser Designs, located in nearby Lyndonville, Vermont may be producing a kit of this mill in N scale. I'll keep my fingers crossed!

There isn't much in the way of industrial switching in St. Jay today, so I'll leave that activity to the other side of the layout.

I'm considering three options, so let's discuss those now.

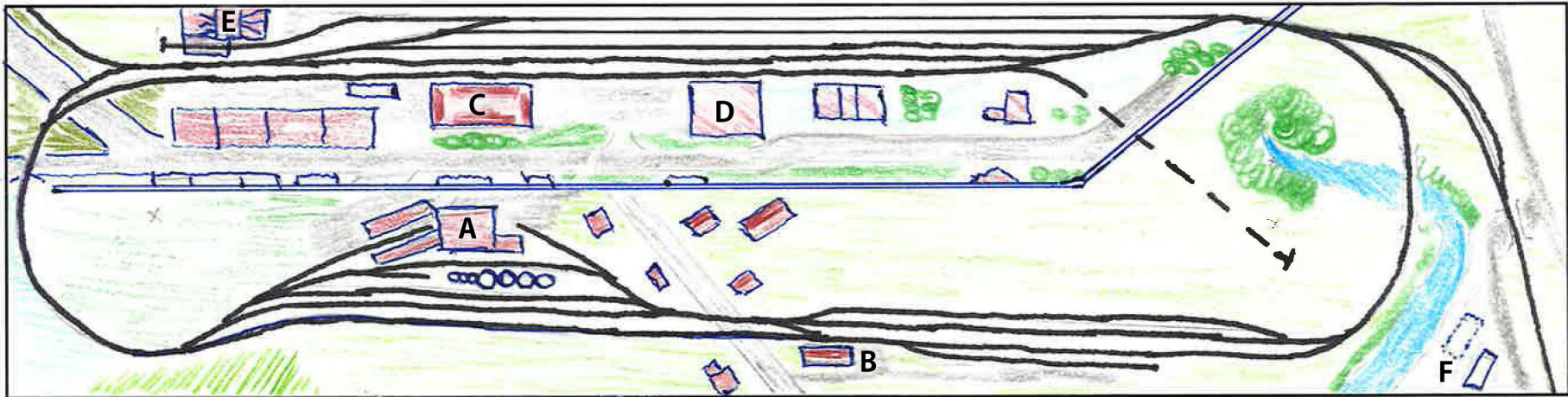
"B" Side #1: Richford, Vermont

The last stop on this rail line before it enters Canada is Richford, Vermont. North of Newport the trackage is now operated by the



4. A Central Maine & Quebec predecessor, the ill-fated Montreal, Maine & Atlantic with borrowed VTR 307 switches the Blue Seal mill at Richford. *Richard Deuso photo, used with permission*

St. Johnsbury



Richford

RICHFORD & ST. JOHNSBURY

Size: 12 x 3 ft.

Prototype: Canadian Pacific | BAR | MMA | CMQ
Central Vermont

Era: 1980 - present

Backdrop: Laminated 0.060" styrene

Min. Radius 13 inches

Scenery: Extruded foam

A = H.K. Webster feed

B = CP station (Richford)

C = St. Johnsbury station

D = Shopping center

E = ET & HK IDE

F = CV station (closed)

Atlas Plywood foundation

3. Option 1 drawing.



RATE THIS ARTICLE

Central Maine & Quebec Railroad but the CMQ often borrows motive power from Vermont Rail for its local to Richford [4].

Richford is a very model-friendly town, with a small three-track yard and a stub-end siding next to a now-closed station. The siding handles an occasional covered hopper of vinyl resin for KayCan, a manufacturer of vinyl siding. Just north of the yard is the primary industry in town: the large Blue Seal Feeds mill [5].

This mill handles 1,000-plus covered hoppers of grain a year, and is a major supplier to dairy, pet, and other livestock growers throughout New England. The Blue Seal feed mill will be a fun kitbash project, using the kraft mill building from the Walthers paper mill, various silos and conveyors from Rix Products kits, and warehouses from Pikestuff pieces.

If I ever want to backdate the layout a few years, it will be a simple project to build two train stations from the same kit— one with the station open for business and the other closed and boarded up as it sits today.

About a half mile south of the station is the interchange with the former Central Vermont Railway. Followers of Marty McGuirk's

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blog on MRH know he is building a layout featuring Richford set in the 1950s and focusing primarily on the Central Vermont Railway's activities.

The CV came into Richford to interchange traffic with the CP, and to serve a large plywood plant in Richford that's now long gone. The CV abandoned the line in 1984, when a derailment severely damaged a bridge spanning the Missisquoi River near Sheldon, Vermont.

With a bit of modeler's license, I could adopt a "what if" scenario and reopen the line for either the CV or its successor, the New England Central, to continue to bring interchange traffic to town.



5. CMQ switches the Blue Seal feed mill at Richford.
Richard Deuso photo, used with permission

"B" Side #2: Lyndon Junction, Vermont

As I've thought about what it might be like to operate a model railroad featuring Richford, I began wondering if a steady diet of covered hoppers might grow stale. That led me to a second concept: creating a fictional small town I'm calling Lyndon Junction. Lyndon is the name of a town just north of St. Johnsbury.

Lyndon Junction would be a small, unincorporated village that features a smaller feed mill or transload facility; a small store with a siding in the weeds, an old freight house now housing a business loading logs onto flatcars, and a fuel oil dealer.

To add an operational wrinkle, I'd run one of the junction tracks out of St. Johnsbury through the backdrop and across a diamond with the WACR trackage that loops the layout.

This gives the Pattapaug Transfer a second opportunity to interchange with the Washington County plus sharing some local switching with the WACR.

The town itself would be classic small-town Vermont. Creative Laser Design patterns many of their kits after actual buildings in Lyndonville. Operationally, in addition to covered hoppers, I could now justify switching bulkhead flats for the logs, a boxcar once a week into the store, and a tank car or two to the fuel dealer, but what if I go still further?

Side "A" #3: Groveton, New Hampshire (#3 Layout drawing)

From St. Johnsbury, the Maine Central ran trains until 1982 on its Mountain Division to Portland, Maine and through a connection with the Boston & Maine, to Groveton, NH.

Since then, several attempts by short-line railroads have kept some traffic flowing. What if I found a new operator, the Pattapaug Transfer Company, to again reopen the line?

If you sneak a peek at the satellite image of Groveton on Google Maps or Google Earth [8], you'll see the footprint of the former Wausau Paper mill in varying stages of de-construction.

You can also see the rebirth of one of its former warehouses into a new site for NSA Industries, the largest machining, metal fabrication, powder coating, and assembly operation in New England.

NSA's primary plant location is in – wait for it – St. Johnsbury. So: instead of modeling the paper industry in Northern New England which has all but been shut down – what if the modeled scene becomes a paper mill in the process of being torn down, with a metal fabricator taking its place?

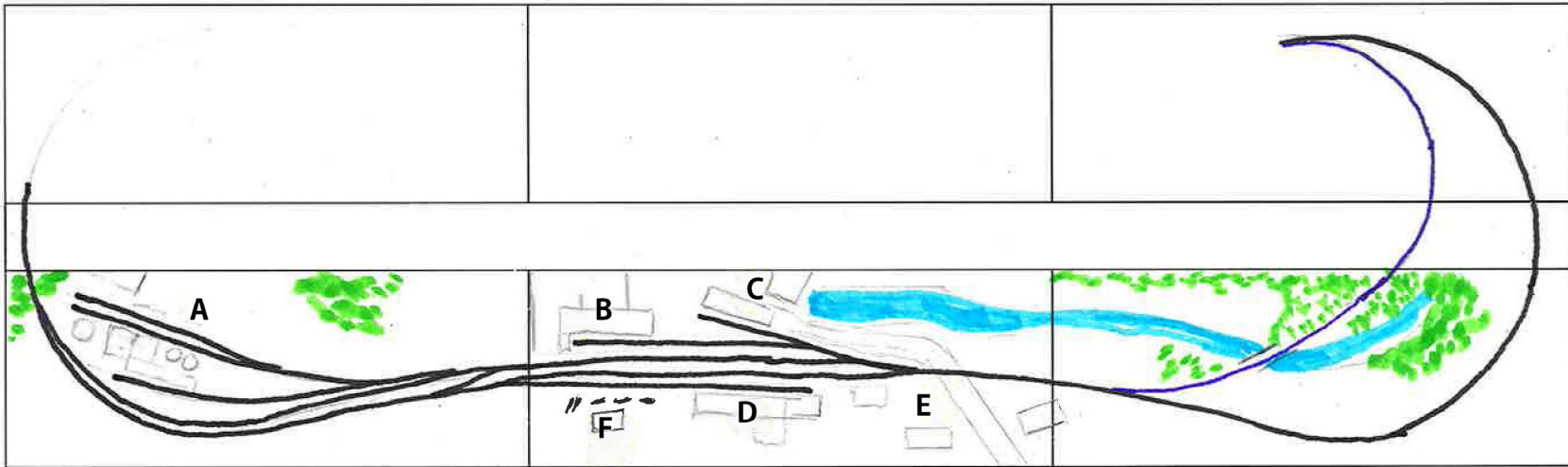
I know paper mills are naturals for model railroads, handling boxcars of paper to and from, and a host of other types of cars for various products.

You can also justify sending boxcars to the metal fabricator for finished products, covered hoppers of coating materials, bulkhead flats of metal plate instead of pulpwood, and open or closed gondolas of rolled metals.

Likewise, the clean-up of the mill site might require gons and former woodchip cars to haul away the demolition debris.

Operationally, this concept makes the Pattapaug Transfer the focus of Side "B," with the re-opened line going directly to St. Jay to move NSA's work in process or inventory to its other plant sites, and finished product being interchanged with the now-Vermont Rail main line.

It's a scenario that might be plausible to those who follow what's



6. CMQ switches Blue Seal feed mill at Richford. Richard Deuso photo, used with permission Option 2 drawing, Lyndon Junction

- A = Blue Seal feed mill (cov. hoppers)
- B = Vermont Wood Products (boxcar & flats)
- C = Lyndon Mills (tank cars)
- D = Purina (boxcars)
- E = Village Stores, homes, business (no rail)
- F = Selberg Forest Products
(timber transload - pulpwood flats)

—— Vermont Railway
—— Passumpsic Terminal RR



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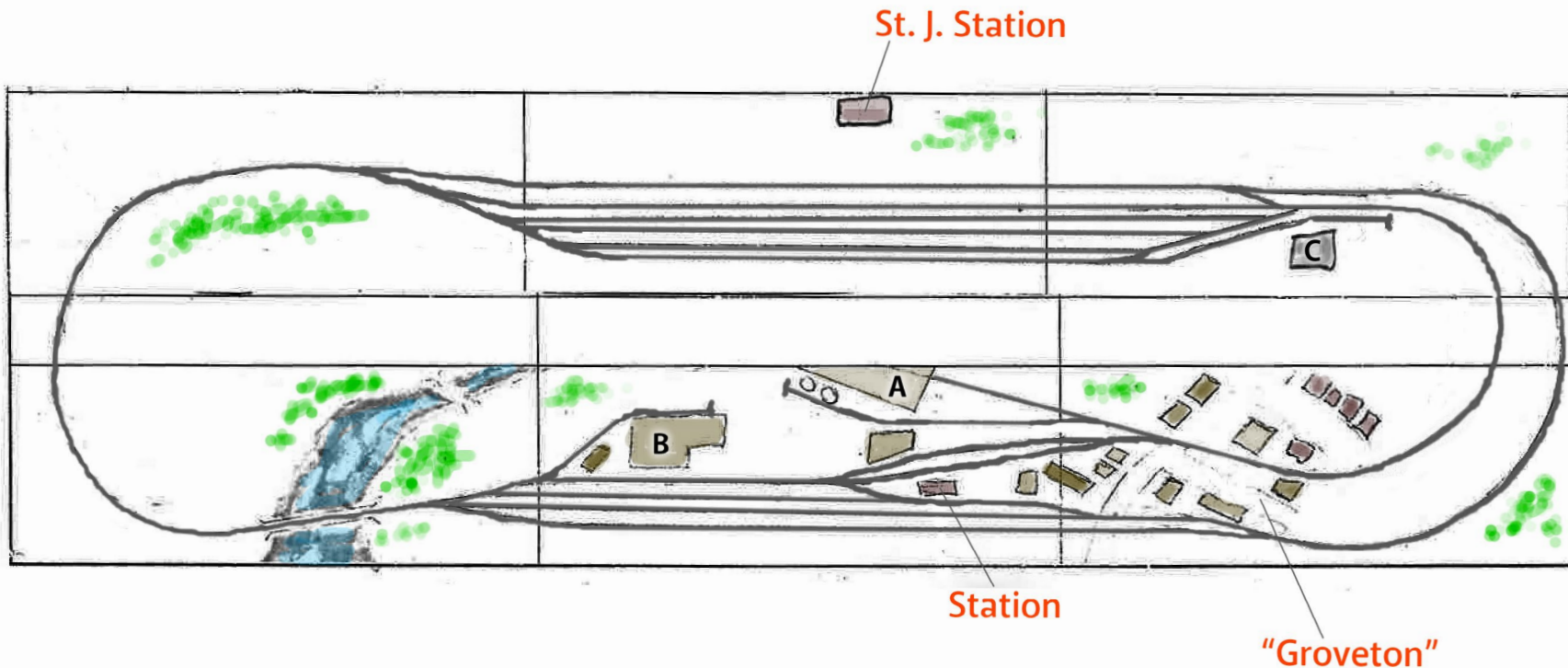
happened to the paper industry in New England, and it would certainly be something different.

Decision time

And there you have it: a layout whose Side “A” structures have remained relatively unchanged over the last fifty years and has

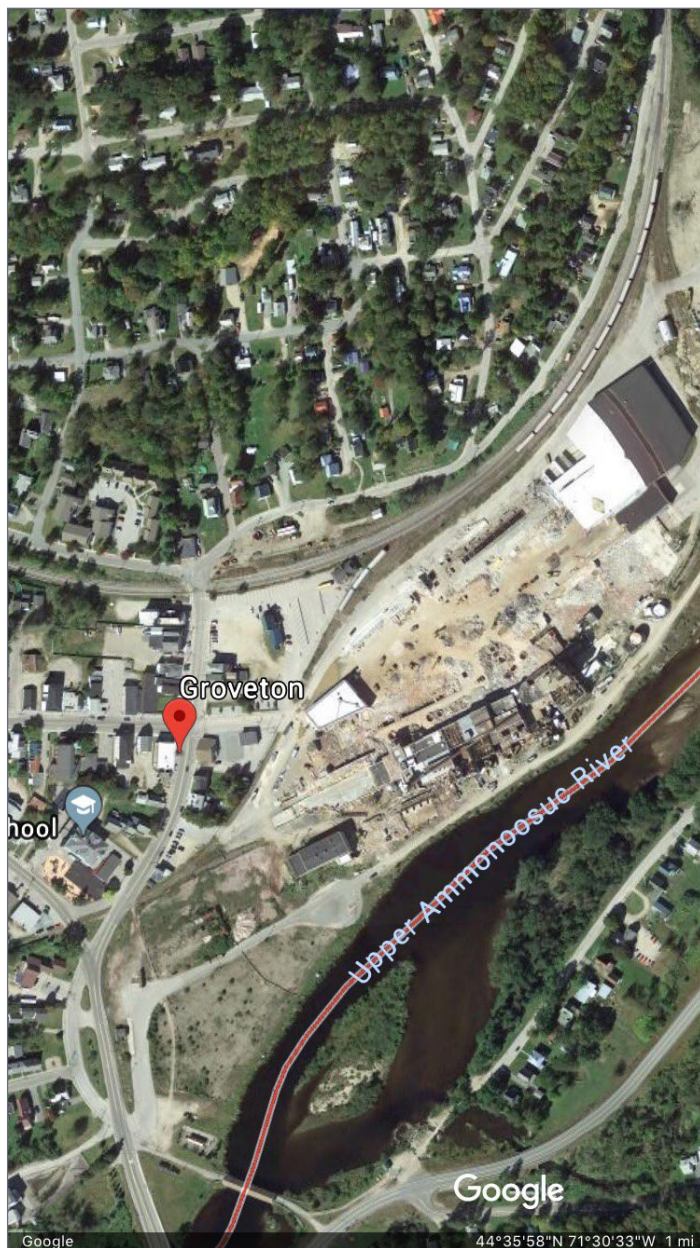
the potential for big city (OK, by Vermont standards) yard activity, plus, at last count, three layout design elements to provide a variety of switching scenarios.

Which would you choose? Or given that the construction is TOMA-style, would you build all three options over time? I'd love to know. As I start laying track, I'll let you know which one I'm going with! ☒



7. Option 3 drawing.





8. Google Maps can be a useful site to gather information on buildings and track arrangements. Here is a satellite view of the former paper mill being demolished, with the warehouse that is now NSA Industries in the top right.

GEOF SMITH



Geof's been hooked on N scale railroading since he was given a Revell train set one Christmas long ago. This layout, which he's dubbed the Lyndonville Sub 2.0, is his fifth layout and hopefully one that will last longer than the others.

All of them have been inspired by some portion of the Central Vermont or the Vermont Railway System.

Geof is a deacon and works for the Episcopal Church. In his spare time, he and his wife enjoy their two children and three grandchildren and singing in local choirs. ■

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**CHECK
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Painting small scale figures

YouTube modeler *marklinofsweden* (also known as Martin T on the MRH forum) made this video showing how he paints smaller scale model figures (S scale and smaller). Martin has a great process he uses that almost anyone can benefit from learning in this five minute video. Martin covers a ton of info in that short time – it's definitely worth a watch! ■



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DECEMBER NEWS column



Model Railroad Hobbyist | December 2019

RICHARD BALE and
JEFF SHULTZ report the
latest hobby industry news

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NEW PRODUCTS FOR MULTIPLE SCALES



ITLA Scale Models has introduced a system of laser-cut wood wall panels that can be combined to create industrial structures of any size and complexity. The walls or panels, identified as the Modular Industrial Wall System, are available in both HO and N scales.

ified as the Modular Industrial Wall System, are available in both HO and N scales.



The ITLA wall panel system includes laser-cut window frames with positionable sash, pre-cut glazing, and broken windowpane filler plates. Separate

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

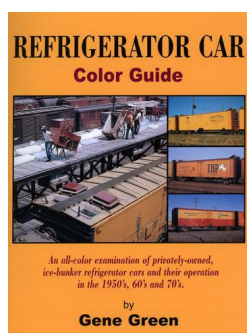
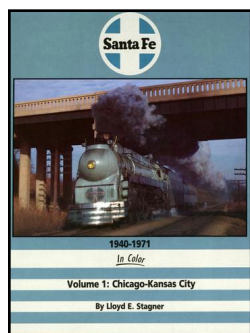
[INDEX](#)

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interchangeable components within each wall panel allow for no-mask painting and the ability to customize window or etched brick insert placement. The walls can be cut and reduced in height or stacked to create a taller structure. Detailed accessories include covered loading docks for rail and truck access, personnel entryways, roof-top HVAC systems, and fire escapes. For additional information visit itlascalemodels.com.



A new illuminated sign from **Miller Engineering** is for Nathan's Hot Dogs. When powered, the rooftop sign drips mustard down the side of the supporting frame. The sign is available in two sizes; 3.9 x 4.4- inches, and 1.95 x 2.2 inches. For additional information visit microstru.com.

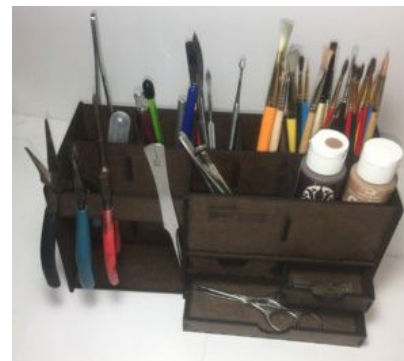


Among the newest digital titles from **Morning Sun Books** is *Santa Fe in Color; Chicago-Kansas City*, by Lloyd Stagner. This is the first in a four-volume series that covers all Santa Fe motive power from 1940 to 1971 including the Blue

Goose, E3s, Baldwin centercabs, and FTs in passenger service.

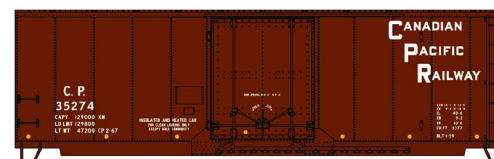
Gene Green's exhaustive coverage of *Refrigerator Car Color Guide* is now available as a digital reprint. Green shows the operation and rosters of privately-owned ice-bunker reefer cars, including

a fascinating sequence of the icing process atop an icing dock in 1962. For additional information contact a dealer or visit morning-sunbooks.com.



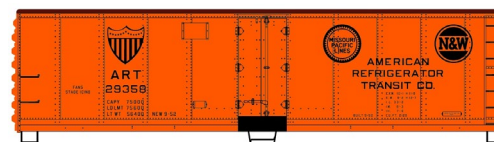
Motrak Models is selling a laser-cut kit for a compact workbench organizer. The easily-assembled organizer has several compartments to hold a variety of tools. For additional information visit motrakmodelsusa.com.

HO SCALE PRODUCT NEWS



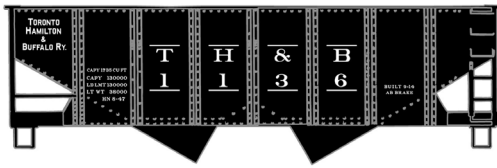
New HO scale freight car kits available from **Accurail** include this Canadian Pacific 40-foot insulated steel boxcar with

9-foot Youngstown plug doors. The model is based on a prototype that entered service in 1959.



This American Refrigerator Transit carries three her-alds: Missouri Pacific, Norfolk & Western, and

the ART shield. Accurail's HO scale kit for the 40-foot steel car with mechanical refrigeration is based on a prototype built in September 1952 with 4-foot wide hinged doors.



Accurail's kit for a USRA twin-bay coal hopper is available decorated for the Toronto, Hamilton & Buffalo Railroad. All

Accurail kits include appropriate trucks and Accumate knuckle couplers. For additional information contact a dealer or visit accurail.com.



R. Bale

ICC CABOOSE

Perhaps one of the strongest images of American railroads is the caboose at the end of the train. Caboose provided an office for the conductor and sheltered the rear end crew. From the cupola or bay windows, the crew could look out for shifting loads, damaged equipment, and overheating axles. As freight cars became larger in the late 1950s and early 1960s, caboose crews needed to have greater visibility. In the extended-vision or wide-vision caboose, the sides of the cupola project beyond the side of the car body. This allowed the crew to see around the taller cars that began to appear after World War II. The Athearn Genesis model is based on a standard prototype introduced by the International Car Company of Kenton, Ohio, that saw service on most U.S. railroads.



Athearn has announced an all-new Genesis series of steel cabooses based on prototypes built by the International Car Company. The HO scale models will be available with a DCC decoder for lighting and sound features.



Decorating schemes include CB&Q Burlington Route class NE-13

and NE-13a with a wide vision cupola, firecracker antenna, and plain-bearing caboose trucks. The CB&Q version does not have screened windows.



Athearn's Seaboard Air Lines ICC caboose features riveted construction, a traditional cupola, rain gutters over the side windows, and

plain-bearing caboose trucks. The SAL model will be available with two different safety slogans, and as-delivered without a slogan.



Athearn has included a Pittsburgh & West Virginia

ICC caboose in this first release. P&WV used a SAL-style body, a cupola-mounted air horn, and roller-bearing caboose trucks.



Completing the initial production run of Athearn's new ICC caboose

will be Union Pacific class CA-8 welded cabooses in both 1960 and 1970 decorating schemes. Four road numbers with unique safety slogans will be available for each era.

A Soundtraxx Tsunami SoundCar decoder will be available for each road name. Sounds include air horn or conductor's whistle, rail joint clickety-clack, brake set and release sounds, emergency brake application sound, hand brake tie-down/release, and adjustable flange squeal. Depending on the prototype road and the

era being modeled, lighting features may include roof- or end-mounted marker lights and interior lights.

All versions of the Genesis caboose will have detailed interior seating, flush window glazing, wire grab irons, axle generator details, etched metal coupler platforms, coupler lift bars, trainline and brake hoses; underframe detail, and machined metal wheelsets. Availability of the Genesis caboose is expected in October 2020.



Athearn plans to deliver another production run of its Genesis series ES44AC diesel locomotive in October 2020. The release will include a Black Widow Southern Pacific model with a large front snowplow, three side window cab, no window in the nose door, and high-adhesion trucks. .



A CB&Q Burlington version of the Genesis ES44AC and a Santa Fe unit in SuperFleet Warbonnet scheme will be available in this production run.

An Amtrak locomotive in “Pepsi Can” scheme will also be available. Details that will be included on all the Burlington, Santa Fe, and Amtrak locomotives include an antenna dome, narrow front snowplow, nose door with window, four side windows in the cab, sunshades, Salem air filter, rear brake wheel, high-adhesion trucks, and a low vertical headlight at the back of the locomotive.

A patched Chessie System ES44AC operated by B&O will feature an antenna dome, large front snowplow, a nose door without a



window, three side window cab, sunshades, rear brake wheel, high

rear vertical headlight, and steerable trucks. This run will also include a Western Maryland and a Burlington Northern unit in Cascade Green.

Features on all versions of the Genesis ES44AC include illuminated ditch lights, low or high front headlight per the prototype, tinted cab windows, small GPS domes, see-through dynamic brake intakes, two dynamic brake exhaust vents with wide spacing and a flush housing, short auxiliary cab rear left-side doors, right side forward electrical cabinet with an X-Panel, and a 5000-gallon fuel tank. Additional features include LED lighting, coupler cut levers, MU hoses, trainline hose, cab interior, walkway tread, Celcon handrails, windshield wipers, lift rings, wire grab irons, sander lines, and fuel tank details including fuel fillers, fuel gauges, breather pipes, and retention tanks.

Sound equipped models have a DCC decoder with SoundTraxx Tsunami2 sound that functions in both DC and DCC mode. DC models are DCC-ready with Quick Plug plug-and-play technology with a 21-pin NEM connector.



Athearn has included Genesis series F89 bi-level and tri-level

autoracks in its October 2020 production schedule. Bi-level versions will be available for Western Pacific (above), B&O, and two schemes for GMO-BTTX.



Rio Grande Western, and SSW-Cotton Belt.

Notable features on the Genesis series autoracks include realistic undulating safety railings, early or late train lines and cut levers per era and prototype practice, wire-formed brake plumbing, wire grab irons, and 70-ton roller-bearing trucks with machined metal wheelsets and rotating bearing caps. Individual bridge plates are included which the customer may install if desired. The model will negotiate a 22-inch radius curve, but a radius of 24 inches is recommended for reliable operation.



Athearn Ready-to-Roll models in the October 2020 production schedule include a 50-foot FMC boxcar fitted with Superior plug-doors. Road names will be Kansas City Southern, Canadian National, Chattahoochee Industrial Railroad, Santa Fe, Stone Container Corp, and Wisconsin Central.



FMC boxcars decorated in Athearn's faded Primed-for-Grime paint will be available for Laurinburg & Southern Railroad and Atlantic & Western. Details include individual grab irons, photo-etched cross-over platforms, and 70-ton roller-bearing trucks with 33-inch machined metal wheelsets.

Road names for tri-Level F89 autoracks will be Wabash (above), Denver &



R. Bale

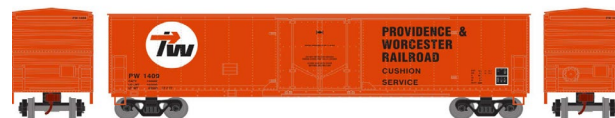
FRUIT GROWERS EXPRESS

FGE was a builder as well as an owner/operator of a large fleet of insulated boxcars. Their specialty was 50-foot smooth-side insulated boxcars built at their shops in Jacksonville, Florida. FGE was owned by a consortium of ten railroads with Atlantic Coast Line and the Southern Railway being two of the largest original owners.



An HO scale version of an FGE 50-foot smooth-side boxcar is listed on

Athearn's October 2020 production schedule. Features of the Ready-to-Roll model include Youngstown plug-doors, and 70-ton roller-bearing trucks with 33-inch machined metal wheelsets.



Road names will be Western Pacific, Chicago & North Western,

Manufacturers Railway, Evans Railcar Leasing, Penn Central, Fruit Growers Express, Northern Pacific, and Providence & Worcester. For additional information contact a dealer or visit athearn.com.



Atlas is promoting Trainkids, a new line of basic products that are specifically designed to introduce youngsters to the fun of model railroading. A Passenger Train Set includes an Amtrak Acela locomotive and battery car, café car, business

class car, an unpowered locomotive, and a remote control for operating the headlight, horn and bell. Sectional track that makes into a 38- x 56-inch oval completes the entry-level Trainkids set.



Additional track, battery powered Acela locomotives, and business class cars are available. Information about Atlas' new Trainkids products can be viewed at [atlastrainkids.com/?utm_source=Atlas+Insiders+E-](http://atlastrainkids.com/?utm_source=Atlas+Insiders+E-News+Flash&utm_campaign=b8a038d425-EMAIL_CAMPAIGN_2019_10_31_07_12&utm_medium=email&utm_term=0_9f9fd5b26c-b8a038d425-80763677&mc_cid=b8a038d425&mc_eid=6bff0ec9ce)

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Atlas also "pre-announced" at Trainfest HO scale models of the GE U28C and U28CG. With an anticipated official announcement date of January 2020, the poster included artwork for Conrail, L&N, Penn Central, PRR, Southern Pacific, and two Santa Fe U28CG paint schemes. The model will feature all new tooling including etched metal grilles, steam generator details on the U28CG, DC and sound versions, and cab and low nose headlight mounts as appropriate. For more information on announced Atlas products, see a dealer or visit atlasrr.com.

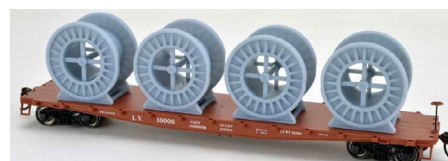
English's Model Railroad Supply, a division of Bowser Trains, has introduced a new line of 3D printed freight car loads. The loads are shown on freight cars for illustration only.



The new 3D loads include a Sherman tank and LCL dry cement containers.

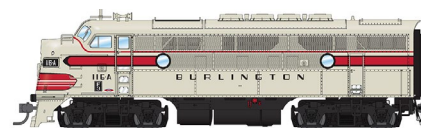


Also new are welded rail racks, and racks of railroad wheels suitable for flat cars as well as highway trailers.



Coiled cable spools are available both empty and with wood covers indicating they are loaded with cable.

Additional items not illustrated include an ice breaker for an open hopper car, hopper style containers, and PRR HB LCL containers. These 3D items are sold through English's Model Railroad supply. Bulk purchases are available with a minimum of 100 pieces per item. For additional information visit bowserorders.com or email to sales@bowser-trains.com.



Broadway Limited Imports plans to release a group of HO scale EMD F3 and F7 diesel units next month.

A and B F3s will be available decorated for Santa Fe (Warbonnet), Chicago, Burlington & Quincy (Grayback freight



Pacific (Black Widow), Union Pacific (Streamliner, Armour yellow), and undecorated.



The major difference between EMD's F3 and F7 involved internal electrical equipment. For modelers, the spotting feature of the F3 is the chicken wire screening over the air intakes along the top of the side. The F7s were built with full-length Farr stainless steel grilles and louvers rather than wire screens on the four square vents between the portholes.



Road names on Broadway Limited's F7 units will be Santa Fe (Warbonnet), Baltimore & Ohio (blue and gray), Denver & Rio Grande Western (five-stripe scheme), Milwaukee Road (maroon band on orange body), New York Central (short lightning strip), Northern Pacific (Loewy North Coast Limited scheme), Pennsylvania Railroad (Brunswick green with single gold stripe), Southern Pacific (bloody nose), and undecorated. All units will feature Paragon3 sound and operation, including Rolling Thunder for operation in DC and DCC. For additional information contact a dealer or visit broadway-limited.com.



New 1:87 scale vehicles coming from **Classic Metal Works** this month include a 1955 Chevrolet stake bed truck decorated for Conoco, Union 76, and Standard Oil.



The '55 Chevy is also available as a tow truck packaged with an island of gas pumps and station signs for Union 76, Conoco, and Standard Oil.



A 1957 Chevrolet step-side pickup is available with a wood boat or a fishing boat on a trailer.



Also coming from Classic Metal Works this month is a 1:87 heavy duty dumper

and a hydraulic excavator. For additional information contact a dealer or visit walthers.com.



Con-Cor has released information on its Annual Christmas Car. Con-Cor's Reindeer series concluded

last year and the 2019 car begins a new series with a Winter Wonderland theme. The colorful HO scale ready-to-run boxcar portrays kids with a snowman and building a snow fort. For additional details visit con-cor.com.



TrainLife.com is selling a special run of ExactRail 66-foot Thrall 3564 steel gondolas in

five decorating schemes. The HO scale ready-to-run models were produced by ExactRail exclusively for TrainLife.com.



Road names include Union Pacific, Norfolk Southern (Horsehead scheme), and

three variations of TTX Rail Gon.



The TTX RailGons with GNTX reporting marks represents a Trinity-built gondola that

stands about 8-inches shorter than the Thrall 3564. TrainLife's Union Pacific model is a stand-in for a slightly larger UP class G-110-006 prototype built by Greenbrier in 2012. The Norfolk Southern model represents similar 52- and 66-foot gondolas delivered with the Horsehead scheme. For additional information visit trainlife.com.



InterMountain has added ONE-Ocean Network Express to its advance reservation list of A-Line 20- and 40-foot corrugated containers. The ONE

containers will be available decorated in magenta with white lettering, and with a white body with magenta lettering. In announcing the ONE containers InterMountain included the following comment: "Currently the Magenta on White paint scheme is being used only on high-cube 45G1 and refrigerated containers. However, we expect it may be used on standard

height corrugated (42G1) and 20' (22G1) corrugated containers in the future. In the meantime, this can be considered a fantasy paint scheme."



The 20-foot ONE containers are added to the previously announced production list that

includes China Shipping, Evergreen, K-Line, ZIM, Mediterranean Shipping, Hanjin Shipping, Cosco, Tropical, Textainer Equipment Management, CMA GGM, Cronos Group, Triton, Pacific International Lines, Maersk, American Presidents Line, Mitsui OSK Lines, Transamerica Leasing, and Safmarine.



Both versions of the ONE 40-foot container have been added to the production schedule that

includes China Shipping, K-Line, P&O Nedlloyd, CMA, Evergreen, Hamburg SUD, Uniglor, Triton, Lloyd Triestino, Orient Overseas, TEX, APL, Matson, CAI, Safmarine, Mitsui OSK Lines, Hyundai, NYK Logistics, Beacon/Horizon, and Container Assoc. Rotterdam. Reservations close December 31. The release date is pending. The containers will be sold in 2-packs.



InterMountain Railway reports that production is under way on several HO scale freight cars including the popular PS2-CD

4785 covered hopper. The majority of road names in this run will have a continuous roof trough fitted with corrugated or replacement flat panel hatches.



Models that depict the early version of the prototype will have either standard or braced

end cages. Late versions will have the characteristic inverted-J end sill plate and side ladder arrangement. Two different gate designs will be applied depending on the practice of the road name being modeled. All cars will feature etched metal roof walks, wire grab irons, Kadee couplers, and appropriate trucks with machined metal wheelsets.



Road names on InterMountain's new PS2-CD 4785 will be New York Central, Penn Central, Conrail, Monfort, Staley, ADM, Transport Leasing, Norfolk Southern, CSX, Milwaukee Road, Central Soya, MKT, Lauhoff Grain, SSW-Cotton Belt, and Golden West.



Also, currently in production at InterMountain is an HO scale 60-foot PS-1 boxcar. Introduced by Pullman-Standard in the mid-1960s, the 60-foot car was designed to haul auto parts such as engines, transmissions, and other heavy auto components.



Pullman-Standard built the cars with cushion underframes and extended draft gear, which InterMountain has duplicated in its HO scale version. Additional features include 10-foot wide Youngstown sliding doors, metal knuckle couplers, and appropriate 70-ton trucks with 33-inch machined metal wheelsets. Road names will be Grand Trunk Western, Union Pacific, Santa Fe, Rock Island, and Illinois Central.



Additional HO scale models currently in production at InterMountain include a

Gunderson 50-foot hi-cube boxcar with double plug doors, 1937 AAR 10-foot IH boxcars with Deco ends, and PFE class R-30-18, R-30-12-18, R-40-19, and R-30-21 wood refrigerator cars. For additional information contact a dealer or visit intermountain-railway.com.



The **Kadee** 2019 Christmas Car is a 50-foot PS-1 boxcar with Pullman-Standard ends and Pullman-Standard six-panel sliding doors. The HO scale model represents a prototype that has had the running board removed and the ladders shortened. Features include detailed grab irons, ladders, and corner steps; a detailed brake wheel with proper curved contour and ribbing, Kadee metal couplers, and appropriate self-centering trucks. For additional information contact a dealer or visit kadee.com.



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R. Bale

THE BEAUTIFUL PA

The Alco PA series locomotives are considered by many to be the most attractive diesel locomotives ever produced. The PA locomotives were built by a partnership of American Locomotive Co. and General Electric between 1946 and 1953. They offered two models, the PA-1 initially, followed by the PA-2. Both were powered by Alco's 16-cylinder 244 diesel engine generating 2,000 hp in the PA-1 and 2,250 in the PA-2.

The PA locomotives competed with General Motors' EMD E-units in the passenger locomotive market. Although they looked great, their 244 prime mover proved unreliable, which relegated the PAs to secondary service on many lines. Most were retired as passenger service declined in the 1960s, and nearly all were scrapped.

Happily for railfans, in 1974 four retired Santa Fe units were bought by the Delaware and Hudson and upgraded with Alco 251 V-12 engines. These four units were used on Amtrak's Adirondack for several years and also saw service on Boston area commuter trains under an MBTA lease. All four units eventually ended up in Mexico.

Two of the ex-D&H units have since been brought back to the US. One is at the Museum of the American Railroad in Frisco, Texas. Doyle McCormack owns the other unit and it is currently at the Oregon Rail Heritage Center in Portland, Oregon, where it is being restored to operating condition.

Rapido Trains is developing what promises to be the most accurate and fully detailed HO scale plastic model of the Alco PA series diesel locomotive ever produced. Rapido plans to offer both PA-1/PB-1 and PA-2/PB-2 versions. The project was



announced at a unique press party held in Portland, Oregon, where the contours of a full-size PA-1 were accurately recorded in a 3D scanning process.

In addition to the fundamental details of the prototype, Rapido plans to offer numerous road-specific variants in its all-new HO scale model. They include full underbody piping and conduit, separate grab irons and handrails, etched-metal grilles, multi-color cab interior, operating Gyalite or red Mars light, dynamic or non-dynamic brakes, illuminated headlights, number boards, and green and white classification lights. DC non-sound units with a 21-pin NEM connector for an aftermarket decoder will be available. DC/DCC/Sound versions will feature sound recorded from a real Alco 244 prime mover.



Rapido's PA/PB sets will be available decorated for Atchison, Topeka & Santa Fe; Denver & Rio Grande Western, New York Central, Southern Pacific (bloody nose scheme), and Pennsylvania Railroad.



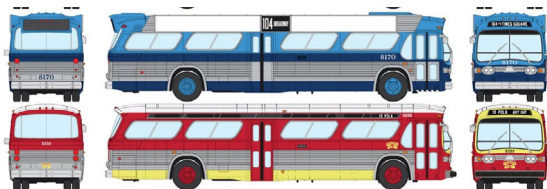
PA units will be available for Nickel Plate, Southern Pacific (Daylight and bloody nose schemes), Lehigh Valley, New Haven, and Delaware & Hudson.

Production of an American Freedom Train version is conditional upon level of pre-orders.



Pre-production, Hand-painted Model

represents the second through fourth generations of the New Look “Fishbowl” bus as produced by GM from the mid-1960s through 1986, will have a single-width rear door in both 2- and 4-window arrangements.

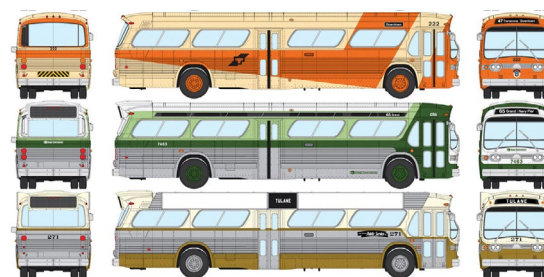


either early 5303 or late 5307 styles, optional left-side emergency exit door, full interior including separate seats with painted seatback handrails and grooved flooring, etched-metal interior stanchions, stamped-metal handrails and separate fare box and steering wheel parts installed, rubber tires with steerable front wheels, printed “metal” window frames and windshield gaskets, and three types of bumpers; steel, water, and rubber. Lighting requires a 12 VDC power supply (not supplied) and includes interior lights, head and taillights, and an illuminated front destination sign.

Additional details, as appropriate to the transit company practice, will include large rear air conditioning housing, Bus-o-Rama advertising panels, route destination signs, rear window Environment Improvement Program (EIP) exhaust and air filters,

In other product news, Rapido Trains has announced plans to produce a second release of the New Look bus. The HO scale model in this release, which

Notable features include the correct tubular profile based on a 3D scan of a full-size prototype, correct rear engine door available in



and various rooftop vents, hatches, communication equipment, and radio antenna.

Paint schemes planned for this release, subject to licensing agreement, will be Rapido Trains #3380, Calgary Transit, Toronto GO Transit, Ottawa OC Transportation, Winnipeg Transit, Chicago CTA, Dallas DTS, Denver Tramways, Kansas City Metro, Milwaukee County, New Orleans Public Service, New York MTA (two schemes), Philadelphia SEPTA, SF MUNI (two schemes), Santa Monica SMMBL, and several painted and unlettered versions. Reservations are being booked now with delivery planned for late 2020. For additional information contact a dealer or visit rapidotrains.com.



Europe-based **Roco** is selling an HO scale Beilhack Rotary Snow Blower based on a modern self-propelled prototype. The HO scale ready-to-run model is fitted with a DCC sound decoder that controls several functions including operating various LED lights, lifting and lowering of the snow cutter, rotating blower wheels, and rotating the blower and body 180 degrees on the propulsion chassis.



In addition to several European railroads, the model is available decorated for three American railroad companies; BNSF, Burlington Northern, and CSX. For additional information, including a list of North American dealers, visit roco.cc.



New models announced at Trainfest by **ScaleTrains.com** include a Greenbrier/Gunderson Multi-Max auto carrier. Both Operator and Rivet Counter versions of the HO scale model are

scheduled for release next summer. Advance reservations are due by December 9, 2019.

The 14 side panels on the Operator series model will be molded plastic. Details include late end doors with “zig-zag” angle panels, individual brake components including cylinder, slack adjuster assembly, air reservoir, and control valve; and ASF low-deck swing-motion trucks. For modelers wanting to add details to the Operator series model, a kit (#SXT81270) that includes door rods, metal grab irons, coupler uncoupling levers, and train line hoses will be available as a separate purchase.

The fully assembled Rivet Counter version of the auto carrier comes in four road-name appropriate body types. Features include numerous separately applied details including photo-etched metal side panels, individual rods for the end doors, two different types of upper and lower side panel mountings, side ladders, brake cylinder, brake beam mounting brackets, and brake rod supports. The ASF low-deck swing-motion trucks on the Rivet Counter version have rotating bearing caps.

The Operator model will be available in seven road names. Modelers choosing the Rivet Counter model will have a choice of 13 decorating schemes.



Decorating Scheme	Rivet Ctr	Operator
BNSF - white	x	
BNSF CTIX - orange	x	
BNSF TTGX - orange	x	x
Canadian National CTTX - white	x	x
Canadian National TTGX - red	x	
CSX (Boxcar logo) CTTX	x	
CSX (Boxcar logo) TTGX	x	x
Kansas City Southern CTTX - white	x	
Kansas City Southern CTTX - yellow	x	
Kansas City Southern TTGX - yellow	x	x
Norfolk Southern (Horsehead) TTGX	x	x
Canadian Pacific Soo	x	x
Union Pacific (Building America) TTGX	x	x



Also coming from ScaleTrains.com next summer is an SD45 diesel in both Rivet Counter and Operator versions. A DC version with a 21-pin NEM connector for an aftermarket DCC decoder will have an MSRP of just under

\$100. A step-up model with ESU-LokSound Essential Sound Unit and DCC decoder will also be available.

Features of the Operator series model include operating LED number boards and headlight, short stepwells with see-through steps, X-patterned tread plate on the walkways, coupler lift bars, detailed dynamic brake and radiator intake grilles, cab interior, Flexicoil-C trucks with low-mounted brake cylinders and Hyatt rotating bearing caps. A detail kit with trainline hoses, MU hose

clusters, uncoupling levers, windshield wipers, and wire grab irons the modeler can install in pre-drilled holes, will be available as a separate purchase. The Rivet Counter series models feature all the details of the Operator series models and road name and number specific details. Additional details include tri-color LED class lights, ground lights, lost wax brass horns appropriate to the model, antennas, Flexicoil trucks with high or low mounted brake cylinders, prototype-specific MU receptacles and hoses, prototype-specific photo-etched ring grilles and radiator intake grilles and many others. The SP model will come with a full SP headlight package and the Chicago & North Western model comes without dynamic brakes. DCC and sound equipped locomotives will include a ESU LokSound 5 decoder with "Full Throttle," dual sugar-cube speakers, and an ESU designed PowerPack with two super-capacitors.



Operator brand road names will be Conrail, Pennsylvania Railroad, Southern Pacific, and Santa Fe in blue and

yellow warbonnet. The Rivet Counter model will be released in Chicago & Northwestern, Pennsylvania, Seaboard Coast Line, Southern Pacific and undecorated.



New HO scale rolling stock coming from ScaleTrains.com includes an Operator series GATC 4180 Airslide Covered

Hopper. Multiple road numbers will be available for BNSF (buffer car service), Corn Products/CCLX, Grand Trunk, MKT, Denver & Rio Grande Western, Rock Island, and Union Pacific.

Special features include detailed gravity outlet gates, separately-applied Airslide plumbing, and detailed one-piece Barber S-2 100-ton trucks with metal wheelsets. A detail kit available separately will have metal grab irons, coupler cut levers, and train line hoses for installation by the modeler.



ScaleTrains.com will also offer a Rivet Counter version of the HO scale 4180 Airslide covered hopper in four body styles with two

different walkways and two types of outlet gates. Depending on the practice of the prototype being modeled, the Rivet Counter cars will have either an Apex (slotted) or Morton (round-hole) walkway and end crossover platforms, and gravity or pneumatic outlet gates. All road names will have Barber S-2 100-ton trucks with rotating bearing caps and machined metal wheelsets.

Road names on the Rivet Counter version will be BNSF, Burlington Northern, and Chicago & North Western (Phase HC body with 4-inch square column side posts and square tube-style horizontal end braces); and Great Northern, Illinois Central, Milwaukee Road, and Southern (Phase TZL body with hat-section side posts and Z-section horizontal end braces). For additional information visit scaletrains.com.



Sylvan Scale Models is taking reservations for a limited rerun of resin kits for a Canadian National 40-foot boxcar with double sliding doors covering a 15-foot opening. The HO scale model replicates

prototypes built during 1947-49 for automobile service. They were subsequently used as general purpose boxcars after being replaced in auto service by higher capacity cars.



Prototype features include Improved Dreadnaught ends, end door, and raised panel roof. Although not shown on this rebuilt model, the kit includes a custom etched-metal running board. Trucks and

couplers are not included in this kit. When ordering, buyers may request Sylvan Decals with the original maple leaf scheme or Black Cat decals with the CN noodle lettering (above). For additional information visit groups.io/g/canmodeltrains/message/75478?p=,,,20,0,0,0::Created,,sylvan,20,2,0,39090432.



R. Bale

GATX 8000-GALLON WELDED GENERAL SERVICE TANK CAR

In the late 1950s, General American Transportation Company began adding extra sheet metal to the top portion of the tank near the dome. This gave the non-insulated all-welded tank cars a unique bulb or raised appearance.

Other refinements introduced in the late 1950s included modernized handrails around the tank, larger tank manway handrail uprights, and welded side tank fixtures to secure the tank to the frame. These tank cars remained in service into the 1990s and were utilized for a variety of services including corn syrup, caustic soda (sodium hydroxide), fatty acid, molasses, sodium chlorate, vinegar, fuel oil and other petroleum products. The smooth appearance of these common tanks with the safety platform gives them a modern look that is similar to tank cars produced today.



Tangent Scale Models has released a new General American 8000-gallon general service welded tank car. The HO scale model, which was unveiled at Trainfest, accurately replicates a car built in the late 1950s, including the thickness of extra sheet metal around the dome.



Tangent's new tank car model is available in two decorating schemes including a GATX silver-bodied Clinton Corn Processing car from 1958. The second new

scheme is for a 1974-era GATX in black lease paint. For modelers wishing to select and decorate their own schemes, Tangent is offering a fully-assembled car that is painted black but lacks any lettering. An undecorated kit is also available with all of the features of the ready-to-run versions including trucks.



Notable features on Tangent's new model include added sheet metal near the dome, see-through running boards that wrap around the under-frame, see-through dome

platform, variations in the multiple appliance dome cap and bottom outlet, correct hazardous material placards, tank strap details, separately applied tank handrail, wire grab irons and coupler lift bars, individual air hoses, Kadее couplers, and ASF spring-plank trucks with 33-inch machined metal wheelsets and separate brake beams. For additional information visit tangentscalemodels.com.



Walthers announced several new products at Trainfest including a high hood version of an EMD GP9. The HO scale model will be produced from

new tooling with correct width hood and contours. Walthers version is based on as-built units produced by EMD from 1955 to 1957 (Phase II). The model will come with or without dynamic brakes as appropriate to the prototype road name which will include Santa Fe, B&M, Illinois Central, New Haven, Precision National, and Rock Island (blue and white scheme).



Features include a heavy diecast metal chassis with a Walthers Proto drive mechanism. The body has drill starter points to assist modelers wanting to add

grab irons using the GP9 Phase II Diesel Detail Kit (#910-258 sold separately). A Walthers Mainline GP9 will be available for DC operation with a 21-pin DCC adaptor plug, and with ESU Sound and DCC. Availability of the GP9 is scheduled for January 2020.



will be released next June. As with the new GP9, this model will have grab iron starter points molded into the body (GE ES44 Evolution Series Diesel Detail Kit #910-250, sold separately).



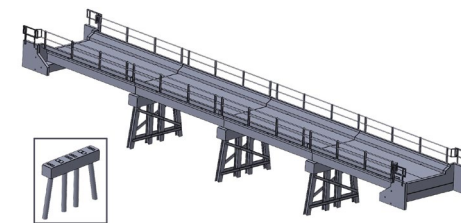
Details include LED lighting, correct profile radiator grilles, and the same drive mechanism as Walthers Proto locomotives.



Road names will be BNSF, Canadian National, Canadian Pacific, CSX (#911 First Responders scheme), Ferromex, and UP (#7400 Breast Cancer Awareness scheme).



Also scheduled for release in June is an HO scale 60-foot Hi-Cube Plate F boxcar. The Walthers Mainline model features both X and diagonal roof panels, separately applied door latch bars, a detailed underbody with cushioned underframe and correct brake gear, and 100-ton roller-bearing trucks with 36-inch machined metal wheelsets.



New Walthers Cornerstone items scheduled for release in January include a kit for a Modern Short-Span Concrete Railroad Bridge. The model is based on post-1960s precast concrete designs frequently

used to replace older structures crossing low-lying creeks, shallow water, and swampy areas. The kit includes parts for four spans that can be extended by combining multiple kits. Both concrete and steel H piles are included. The assembled bridge is 17.875 long x 2.813 wide x 2.875-inches tall.



Although listed as a Modern Police Station, with creative signage this Walthers new Cornerstone kit is well-suited to represent a wide selection of contemporary structures. The assembled kit has a foot-

print of 8 x 7.625-inches.



Walthers is selling a 20-piece kit of Trackside Details that includes battery vaults, telephone boxes, and a variety of signal cabinets. The items are molded in gray plastic.



Walthers has set a February delivery date for two HO scale police vehicles. The SceneMaster Ford Crown Victoria Interceptor Sedan and the

Ford Expedition Special Service Vehicle are suitable for scenes from 1997 forward.



Both vehicles will be available in a variety of decorating schemes including black, silver, white with police decals, white with a blue stripe and police, sheriff, and highway patrol decals; black with white doors and

police, sheriff and highway patrol decals; and red with fire command decals. For additional information contact a dealer or visit walthers.com.

N SCALE PRODUCT NEWS



Athearn has included F89 autoracks in its October 2020 production schedule. Features of the N scale model include a heavy diecast underframe, realistic undulating safety railing, accurate end bridge plates per era and prototype practice, body mounted operating knuckle couplers, and 70-ton roller-bearing trucks with 33-inch machined metal wheelsets.



Road names will be Western Pacific (primed for grime), Gulf Mobile & Ohio,

Baltimore & Ohio, Denver & Rio Grande Western, Wabash, Union Pacific, and SSW-Cotton Belt.



An N scale version of an FGE 50-foot smooth-side boxcar is listed on Athearn's

October 2020 production schedule. Features of the model include Youngstown plug doors, and 70-ton roller-bearing trucks with 33-inch machined metal wheelsets.



Road names include Wisconsin Central, and two Primed for Grime schemes:

Atlantic & Western and Laurinburg & Southern Railroad. For additional information contact a dealer or visit athearn.com.



New 1:160 scale items set for release this month from **Classic Metal Works** include a 1953 Ford Station Wagon decorated in green, ivory, and red.



Also new is a 1954 Ford F-350 Semi Tractor decorated for Santa Fe, Overland, and Old German Beer. The 1:160 scale vehicles are sold in two-packs. For additional information

contact a dealer or visit walthers.com.



Con-Cor has released information on its Annual Christmas Car. Con-Cor's Reindeer series concluded

last year and the 2019 car begins a new series with a Winter Wonderland theme. The ready-to-run N scale boxcar portrays kids with a snowman and building a snow fort. For additional details visit con-cor.com.



The Great Northern Railway Historical Society has released an N scale kit of a Great Northern Standard 30 x 60-foot Combination Depot. The structure measures 4.625

x 2.875-inches and is 5.5 x 3.625-inches when mounted on the trackside platform. Based on a plan used for depot construction between 1909 and 1949, the kit contains walls, soffit, roof, and platform laser-cut from 3-ply birch plywood, laser-scribed siding, wainscoting, and platform deck, and laser-cut peel and stick doors. Windows include glazing and trim, and include the design's angled bay window. Also included is a resin cast chimney. For more information visit gnrhs.org.



TrainLife.com has released ExactRail 66-foot Thrall 3564 steel gondolas in five decorat-

ing schemes. The N scale ready-to-run models were produced by ExactRail exclusively for TrainLife.com.

In announcing this release, TrainLife.com noted that ExactRail's focus on specific prototypes results in similar cars being unavailable

to modelers. To fill these gaps, TrainLife.com will offer stand-in models as long as they represent something close to the real thing. Although these five models and decorating schemes appear to be authentic, they are not exact replicas of known prototypes.



Road names include Union Pacific, Norfolk Southern (Horsehead scheme), and three

variations of TTX Rail Gon.



The TTX RailGons with GNTX reporting marks represents a Trinity-built gon-

dola that stands about 8 inches shorter than the Thrall 3564. TrainLife.com's Union Pacific model is a stand-in for a slightly larger UP class G-110-006 prototype built by Greenbrier in 2012. The Norfolk Southern model represents similar 52- and 66-foot gondolas delivered with the horsehead logo. For additional information visit trainlife.com.



InterMountain Railway reports that production is under way on an N scale version of the distinctive 59-foot 4550 cu.ft. cylindrical grain

car. Between 1972 and 1985 the Canadian government built nearly 20,000 of the distinctive prototypes to assist Canadian-based railways transport large quantities of grain.



Over the years many American grain carriers acquired and operated similar cars in the USA. Road names will be

Canada (red), Canadian Wheat Board, Alberta Heritage, Alberta

(Take a Break), Saskatchewan, Canadian Pacific, Canadian National, Scoular, Potash, Chicago & North Western, and Santa Fe.



Features on InterMountain's N scale version include etched-metal roof walks, appropriate trucks with metal wheelsets,

and body-mounted knuckle couplers. The trough hatches will be smooth, parallel ribbed, or round depending on the practice of the prototype being modeled.

Also, currently in production at InterMountain is an N scale Gunderson 50-foot hi-cube boxcar with double plug-doors. For additional information contact a dealer or visit intermountain-railway.com.



Jacksonville Terminal Company showed a pre-production sample of their first rolling stock car, an NSC

NWF13A 53-foot well car in N scale, at Trainfest. The 9-post version will include a diecast body, etched stainless steel end walkways, separately applied brake system details, and Micro-Trains brand wheels and body-mounted couplers. Five road numbers will be available for the model that is due the 2nd quarter of 2020.

Also announced were 40-foot smooth side containers, modeling a container in common service since the 1960s. Paint schemes in the announcement included OOCL, K Line, Mitsui O.S.K. Lines, NOL, Japan Line, SeaTrain, U.S. Lines, and NYK. The models are expected to be available in the 1st quarter of 2020. For more information contact a dealer or visit jtcmodeltrains.com.



Micro-Trains has released two versions of a 78-foot paired-window heavyweight coach. The N scale model

represents a car built by ACF in the 1920s. A car decorated for the Pennsylvania Railroad has buff colored body stripes and lettering on a Tuscan red body.



The New York Central coach is painted classic Pullman green with gold lettering. Both versions of the Micro-Trains

model ride on six-wheel plain-bearing passenger trucks.



Micro-Trains recently released this 89-foot enclosed tri-level autorack decorated for Canadian National Railway.



This N scale triple-bay covered hopper represents a prototype built by Pullman-Standard in the mid-1960s. Micro-Scale is offering the 4427 cu. ft. car in two road numbers.



This N scale model of a Chesapeake & Ohio 50-foot boxcar represents a car built by Pullman-Standard in the late 1950s with double Youngstown sliding doors.

Micro-Trains Line Company has announced that they will produce a 2003 cu.ft. PS-2 twin-bay covered hopper in N scale which is expected to be available in 2021. Contact an authorized dealer for more information on Micro-Trains Line products.



ScaleTrains.com is accepting pre-orders thru December 9, 2019, for a new PS2-CD 4785 covered hopper. Delivery is

planned for summer 2020. The Rivet Counter series model is based on builder drawings from Pullman-Standard. Road names on the N scale model will be Conrail, Golden West Service, Milwaukee Road, Norfolk Southern, New York Central, and Penn Central.

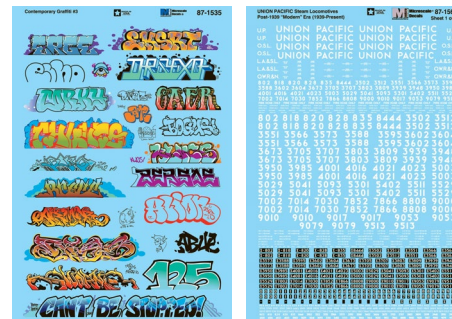
Details including different roof hatches, outlet gates, end cage supports, and end shear plates will vary depending on the practice of the road name being modeled. Additional features include photo-etched stainless-steel see-through Apex (slotted) end cross-over platforms and walkway, ladders with metal rungs, metal grab irons, uncoupling levers, trainline hoses, air reservoir, and control valve. The model will have body-mounted Type E knuckle couplers, and Barber S-2 100-ton trucks.



ScaleTrains.com has also announced that they will release the Tier 4 GEVO as part of their N scale Operator line.

Previously only available in the highly detailed Rivet Counter line, the Operator line GEVO's will share a common cab and long hood configuration, while sharing the same motor and drivetrain as the Rivet Counter version. The models will also feature operating LED ditch lights, printed and lit number boards, walkway treadplate, and factory-applied snowplow, air tanks, fuel tank-mounted electronic bell, brake wheel and exhaust stack. Modeler applied details included are 3-hose MU clusters, trainline hoses, and uncoupling levers. DCC will be available pre-installed. Roadnames available for preorder are CN, CSX, KCS, NS, UP, and BNSF. For additional information visit scaletrains.com.

NEW DECALS, SIGNS AND FINISHING PRODUCTS

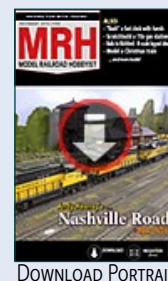


Microscale has water-slide decals for Graffiti (item # -1535) and Union Pacific steam locomotives for the post-1939 to Present era (item # -1563). Both decal sets are available in HO and N scale. For additional information contact a dealer or visit microscale.com.

DISCLAIMER

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! BRIEFLY NOTED AT PRESS TIME ...

New HO scale kits coming from **Accurail** include a Denver & Rio Grande 36-foot Fowler boxcar decorated with a circa 1916 Royal Gorge Herald...

At Trainfest **Accurail** offered a limited run of HO scale kits for three 40-foot double-sheathed wood refrigerator cars decorated for regional private owners including Okray Produce, Packerland Packing Co., and Brewing Corp. of America with a Carling's Canadian Ale herald. Unsold Trainfest-specials are now listed at accurail.com ...

Atlas will announce a release date, road names, and pricing on an all new series of HO scale GE U28 locomotives next month. Both DC and DCC versions of the Atlas Master Line diesel will be produced...

Atlas showed pilot models of an HO scale Trinity 3,230 cu.ft. pressure differential covered hopper at Trainfest. Road names will be Chicago Freight Car, CIT Group, General Electric Rail Services, Roanoke Cement, TXI, and Trinity Industries Leasing. A delivery date for the Atlas Master model is pending...

Kato is planning a new run of HO scale Genesis P42 locomotives in two new road numbers for release next April. Off-the-shelf P42 models will be available in DC only. Locomotives with ESU LokSound DCC and Sound must be pre-ordered through an authorized Kato dealer...

Rapido's HO scale Canadian Pacific D-10 4-6-0 project is a go. Sufficient pre-orders have been received to justify investing in production tooling.

Rapido's Canadian Pacific Hudson, including No. 2816, has also been approved for production. Preorders for the

Canadian National H-6 4-6-0 have not been forthcoming and that project remains on hold...

SoundTraxx has introduced the MC1H104P21, a new mobile decoder that plugs into locomotives equipped with a 21-pin motherboard. The new decoder has a maximum stall current of 1-amp, four function outputs, 15 Hyperlight effects, and a 28 point speed table. The MC1H104P21 operates in NMRA DCC only ...

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SELECTED EVENTS



Model Railroad Hobbyist | December 2019

DECEMBER 2019

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

CANADA, ONTARIO, MARKHAM, December 8, Model Railroad Show hosted by Railview Historical Society at 550 Alden Road, Suite 201. Request info from Mike Clare at mike@theclares.ca.

CALIFORNIA, CROCKET, December 7-8, Carquinez Model Railroad Society Open House, at 645 Loring Ave. Info at www.cmrstrainclub.org.

CALIFORNIA, SAN LEANDRO, December 8, NMRA Coast Division Meet at 1001 Davis Street (Bay Area Boy Scouts of America Council Office). Info at pcrnmra.org/coast.

FLORIDA, PENSACOLA, December 7-8, Railfest Model Train Show & Sale, sponsored by Pensacola Model Railroad Club at Pensacola Interstate Fairgrounds, 6655 Mobile Highway. Info at pmrc.us.

INDIANA, INDIANAPOLIS, December 7, Train Show & Open House at Naptown & White River Model Railroad Club, 1115 McDougal Street. Request info from Steve Handly at naptownmrr@gmail.com.

KENTUCKY, LOUISVILLE, December 23 to January 5 (except 12/24/19, 12/25/19 and 1/1/20) Model Train Show, sponsored by K&I Model Railroad Club, at Southwest Regional Library, 9725 Dixie Highway. Info at kandimrr.com.

SELECTED EVENTS | 2

LONGMONT, COLORADO, December 13-15, Model Railroad Exposition, sponsored by Boulder Model Railroad Club at Boulder County Fairgrounds. Info at www.bouldermodelrailroad-club.org.

MASSACHUSETTS, MARLBOROUGH, December 7-8, New England Model Train Expo, hosted by NMRA Hub Division at Best Western Royal Plaza Trade Center, 181 Boston Post Road West (US 20). Info at hubdiv.org.

MICHIGAN, BLISSFIELD, December 21-22, Open House sponsored by Blissfield Model Railroad Club, at 109 E. Adrian Street (US 223). Info at bmrr.org.

MICHIGAN, SALINE, December 1, Southeast Michigan Model Train Show & Sale, sponsored by Rails on Wheels, at Washtenaw Farm Council Grounds, 5055 Ann Arbor-Saline Road. Info at www.railsonwheels.com/index.shtml#trainshow.

NEW YORK, ALBANY, December 1, Great Train Extravaganza Show & Sale, sponsored by NMRA Hudson Berkshire Division at Empire State Convention Center. Info at gtealbany.com.

OKLAHOMA, OKLAHOMA CITY, December 6-8, Southern Plains N Scale Regional Convention and Oklahoma City Train Show & Swap-a-Rama, hosted by Oklahoma N-Rail at The Pavilion at Oklahoma State Fairgrounds. Info at www.oklahoma-railwaymuseum.org/events/okc-train-show.

January 2020, by location

FLORIDA, COCOA BEACH, January 9, 2020, Prototype Rails, at Cocoa Beach Hilton Oceanfront, 1550 North Atlantic Avenue. Info at www.prototype Rails.com.

INDIANA, NOBLESVILLE, January 26, Train Show, hosted by NMRA Central Indiana Division, at Avon Town Hall, 750 E. US Highway 36. Info at www.cidnmra.org/services.

SELECTED EVENTS | 3

Future 2020, by location

CANADA, BRITISH COLUMBIA, BURNABY, May 1-3, 2020, 5th Annual Railway Modellers Meet of BC, sponsored by the Burnaby Railway Modellers at Simon Fraser University's Burnaby campus. Info at www.railwaymodellersmeetofbc.ca.

NEW ZEALAND, CHRISTCHURCH, April 10-13, National Model Railroad Convention. Info at www.modelrailcon.co.nz.

FLORIDA, TALLAHASSEE, June 27, 26th Annual Model Railroad Show & Sale at Forth Florida Fairgrounds. Info at www.facebook.com/events/564525630749478.

ILLINOIS, EAST PEORIA, May 14-17, NMRA Midwest Region Convention, at Holiday Inn, 101 Holiday Street. Info at www.peo-riarocket2020.org.

KANSAS, WICHITA, February 1-2, Train Show & Swap Meet at Cessna Activity Center, 2744 George Washington Blvd. Request info from Phil at aylward1@cox.net.

MISSOURI, ST. LOUIS, July 12-18, 2020, NMRA National Convention and National Train Show. HQ at Hilton St. Louis at the Ballpark. Info at gateway2020.org.

NEW YORK, ROCHESTER, March 7-8, Open House sponsored by Rochester Model Railroad Club at 120 South Clinton Avenue. Info at RocMRRC.com.

PENNSYLVANIA, MALVERN (Valley Forge), March 27-29 2020, Railroad Prototype Modelers Meet, at Desmond Hotel. Info at rpmvalleyforge.com.

SOUTH CAROLINA, EASLEY, February 7-8, Great CRMHA Model Train Expo hosted by Central Railway Museum at Rock Springs Church Impact Center. Request info from John Johnston at jwjohnston@crmha.org.

TENNESSEE, NASHVILLE, May 31-June 6, National Garden Railway Convention, at Gaylord Opryland Resort. Info at ngrc2020.com.

SELECTED EVENTS | 4

WEST VIRGINIA, St. ALBANS, February 22-23, Model Train & Craft Show sponsored by Kanawha Valley Railroad Association, at The Event Center, 6400 MacCorkle Avenue S.W. Info at kvrail-road.org.

WISCONSIN, MADISON, February 15-16, Mad City Model Railroad Show & Sale, hosted by NMRA South Central Wisconsin Division at Exhibition Hall, Alliant Energy Center. Info at nmra-scwd.org.

WISCONSIN, STEPHENS POINT, February 1-2, 23rd Annual Model Railroad Show, sponsored by Central Wisconsin Model Railroaders at Holiday Inn Convention Center Hotel, 1001 Amber Avenue. Request info from Jim Miller at jimbrow67@gmail.com.

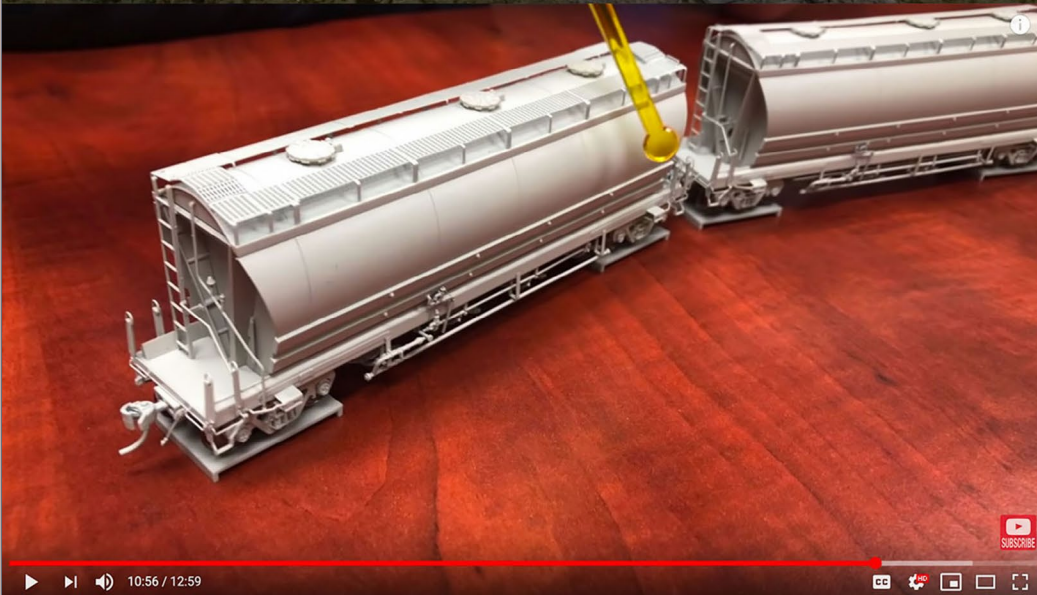
Beyond 2020 by date

CALIFORNIA, SANTA CLARA, July 4-10, 2021, NMRA National Convention and National Train Show.

ENGLAND, BIRMINGHAM, August 14- August 21, 2022, NMRA National Convention and National Train Show. www.nmra2022uk.org. ■



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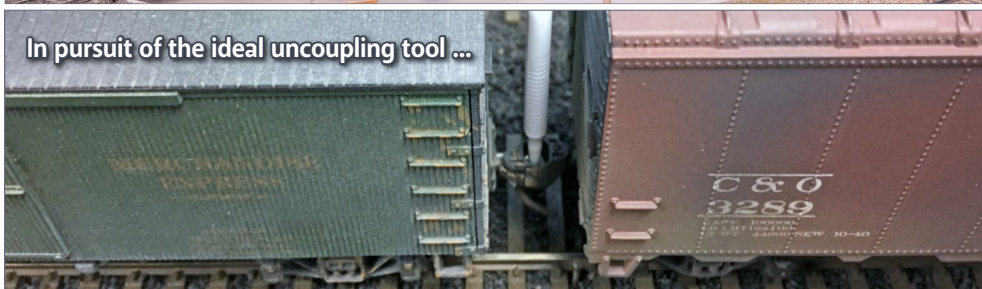
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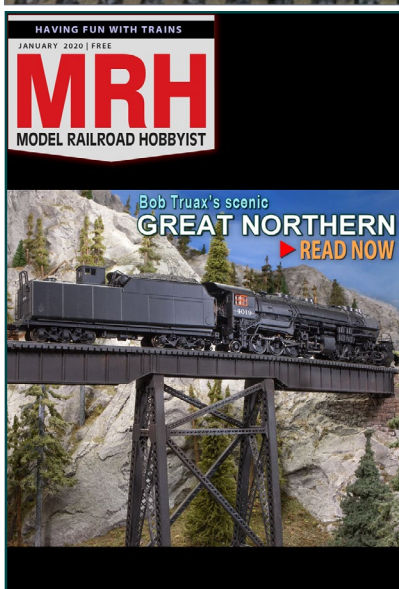
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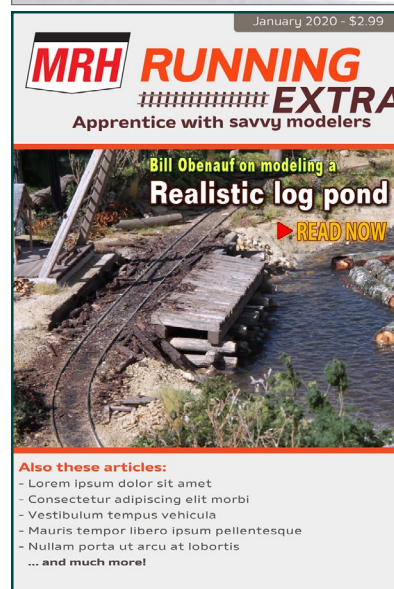
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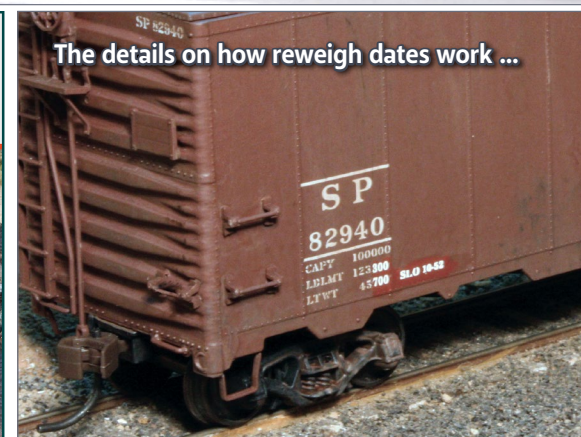


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