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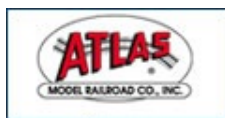
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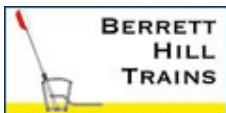
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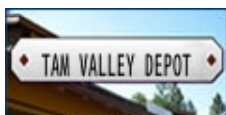
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Compiled by the MRH STAFF



September 2022 news and events

RICHARD BALE and JEFF SHULTZ

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ASST EDITOR'S MUSINGS



Model Railroad Hobbyist | September 2022

**JAMES REGIER: REFLECTING ON HOBBY
EVENTS AS SUMMER 2022 WANES ...**



SUMMER 2022 IS IN THE BOOKS, and an eventful summer it was. Model railroad conventions and shows were back in a big way, locally including the St. Louis RPM meet at the end of July and the Gateway 2022 NMRA Convention in mid-August. Each of these events brought people together to enjoy a common hobby and passion in ways that have not been possible over the past two years of pandemic restrictions.

While there have been prior return shows – St. Louis RPM 2021, Amherst 2022, and Rocky Mountain 2022 come to mind as major examples – Gateway 2022 marked a bookend to the era of canceled shows, which began with the cancellation of Gateway 2020.

It took a monumental effort to make Gateway 2022 happen. Although much of the footwork had theoretically been done for the canceled 2020 show, new venues had to be scheduled, layout tours re-booked. All this had to happen with a considerably smaller planning committee, and on a truncated planning period of about a year, as opposed to the several years committees normally require.

Add to this the general aura of pandemic uncertainty. Until the spring of 2022, many areas of the country continued to operate under pandemic restrictions, and schools around the

country struggled with rolling quarantines. All of this meant that registration numbers for the convention and sponsorships were lagging until late in the game, even to the point of being downright scary.

The committee persevered, registration eventually solidified, and the Gateway 2022 NMRA Convention happened. While there were certainly some foibles, a great convention it was.

A great variety of clinics ran all week long. Among the more memorable presentations I attended was Stephen Priest's discussion of the 1:1 scale modeling project he led to cosmetically restore Santa Fe SD45-2 number 5704 to its 1974 appearance. Aside from sleuthing the colors of a rare paint scheme from nearly 50-years ago, Priest and his team had to restore the locomotive to period specs [1].

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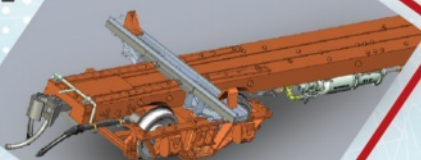
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Self-driven and bus tours put some of the area's finest layouts and railroad-related industries on display. Having been to many local layouts with the local round-robin operating group, I was thrilled that quite a few of these treasures would be on display to visitors [2, 3].

Back at the convention center, the local St. Louis NTrak club teamed up with the Operations Roadshow to provide a hands-on learning experience for timetable and train order operations in the upstairs ballroom. Convention attendees could sign-up for an operations time slot, partner-up, and have fun running a variety of trains from one end of the layout to the other.

I was impressed with how much scenery and train could fit into a relatively small space with N scale. I was also impressed with just how far a cobbled-together, modular layout could go



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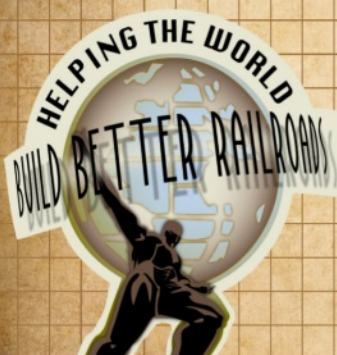
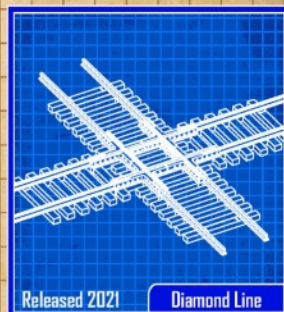
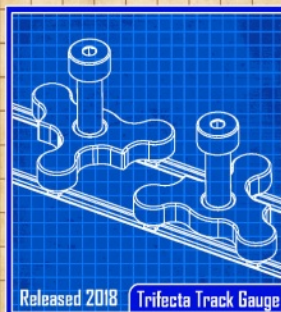
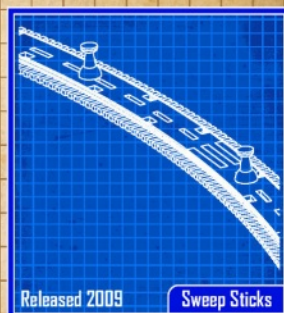
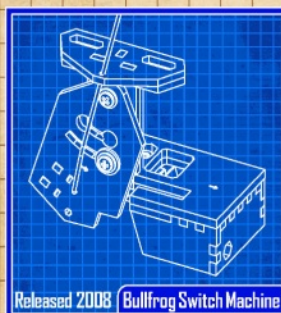
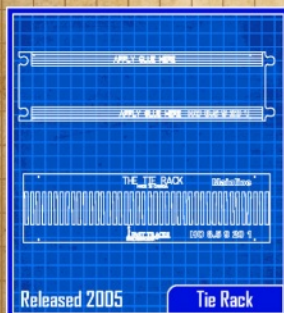
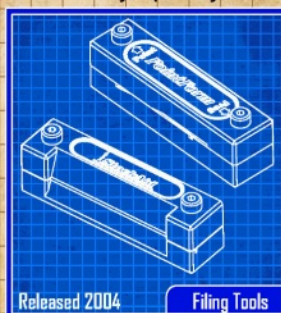
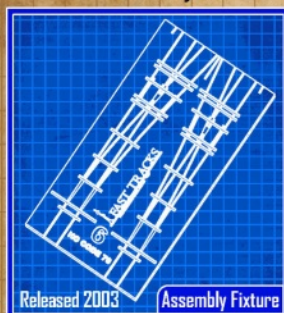
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1. Santa Fe 4704, freshly restored to its Bicentennial colors and configuration, poses at Kansas City's Union Station in June during the Santa Fe Railway Historical and Modeling Society's annual convention.

As an aside, be sure to catch the conclusion of Nick Muff's series on replicating this grand station in HO scale in this month's "Getting Real" column, only in *Running Extra*.



2. The combined Super Chief/El Capitan rounds the curve at Diamond City on the layout at Ken Kroschwitz's K-10's Model Trains. K-10 has long been one of my favorite locations to spend Thursday evenings, cavorting, working, and operating with fellow modelers on a 60' x 80' layout.





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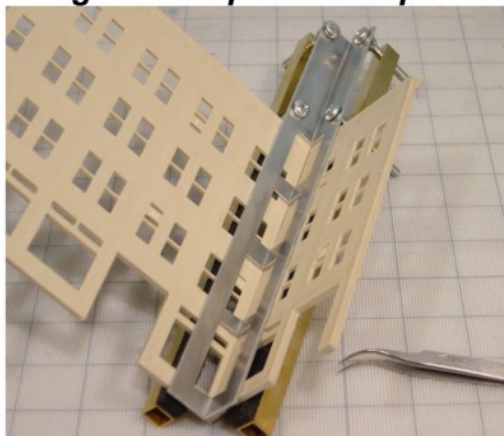
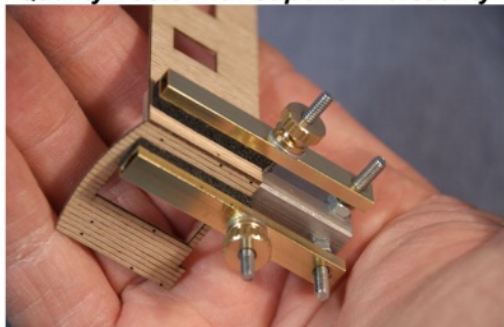
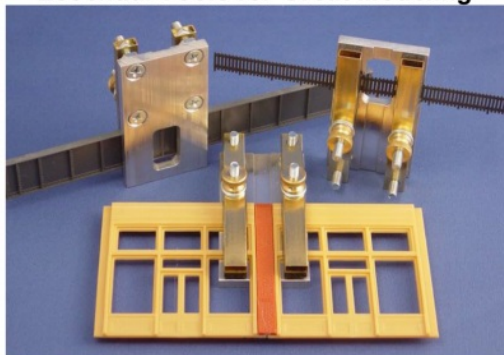
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toward holding passably realistic operations. There might be hope for my future modular layout yet!

In the downstairs ballroom were tables for several of the Special Interest Groups (SIG), including operations and layout design. TCS and RR-Cirkit's teamed up to provide a layout command control demonstration, complete with TCS's all new CS-105 command station.

Among the most exciting initiatives from this convention is a new SIG for women in model railroading, spearheaded by Michelle Kempema, Cinthia Priest, Nancy Workman, and Christina Ganzer-Zambri, [4]. The goal is to form a support group to encourage and connect women involved in our great hobby. Having two daughters of my own who are very much interested in model railroading, I am absolutely thrilled about the opportunities that this will bring.

As with any convention or show, the best part was the

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3. John Peluso's Frisco Lines offers a detailed route along the Cuba Sub between St. Louis and Springfield, representing major towns and Ozark scenery along the way. This scene, representing the flour mills at Rolla, includes such details as weeds in the expansion joints and cracks of the concrete parking lot.

opportunity to meet and talk to people from around the world. With NMRA President Gordy Robinson hailing from the north of Scotland, and convention attendees coming from as far away as Chile, Australia, and New Zealand, it began to occur to me that the organization is rapidly becoming the *International* Model Railroad Association.

I gave three clinics during the convention, all having to do with LED lighting of buildings and of locomotives. I was humbled by the number of people who attended my clinics and came up to talk with me in between clinics, having seen me on What's Neat This Week. I thoroughly enjoyed meeting everyone and making many new acquaintances.

I had looked forward to the National Train Show, which always provides a showcase for some mighty fine modular layouts and





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new innovations from the manufacturers. Unfortunately, a reminder of the times we live in, I came down with Covid on Friday morning, which took me out of it.

Thankfully, I can say it was a mild case, and the worst of it was the frustration at being unable to attend. Although I wasn't there to see the award given, I would be remiss if I did not congratulate Joe Fugate for his well-earned NMRA Lifetime Service Award.

Gateway 2022 was my first NMRA convention – the ink on my NMRA membership was barely dry as I registered – and I did not know what to expect. The sense of community and shared passion was incredible. I can't wait for the next one. ☑

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James



4. Jasmine Trocchia of the That Train Couple (www.youtube.com/c/ThatTrainCouple) YouTube channel, Michelle Kempema of the Colorado State Model Railroad Museum, Barbara Soward of MCR Division 8 in Louisville, KY, and Cinthia Priest, NMRA Magazine editor, operate on the Operations Roadshow NTrak layout. *NMRA Photo*

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Most liked articles in the [August 2022 issue](#) of *MRH* are:

- 1st** Lilacs, crepe myrtles, and roses
- 2nd** The diode matrix revisited
- 3rd** Publisher's Musings: Unexpected benefits of SL2

Most liked articles in the [August 2022 issue](#) of *Running Extra* ...

- 1st** Limited Modeler: Dealing with layout challenges
- 2nd** Modeling eastern white pines
- 3rd** Maine 2-Ft TOMA module and layout design

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Publisher's Welcome: Updated paint thinner formulas
JOE FUGATE



Limited Modeler: Adapting small steamers
JIM SIX



Getting Real: Modeling Kansas City Union Station: 3
NICK MUFF



Adapting store fronts on our structures
RICHARD BRADLEY



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Best of the MRH WEBSITE



THIS
MONTH

Model Railroad Hobbyist | September 2022

Compiled by **JOE FUGATE**



Cabooses

MRH forum member **Graham Line** (Joe B.) started a thread about cabooses by posting this WP caboose photo: *"This started as a Walthers Mainline International bay window caboose in BN Green. Windows were filled and body painted WP Caboose Red. The only added parts are Kadee couplers and curved Tichy caboose grabs."*

Read the full thread for more caboose examples.



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

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



1. *MRH* forum member **mah2506** has a step-by-step thread about how he built this model of a prototype train station in Missouri. Very nice!

Designing and building the Sikeston depot

MRH forum member **mah2506** started a forum thread about a prototype station he wanted to build.

"I'm documenting the drawing and design for laser cutting a model of the Sikeston, MO MoPac depot, just prior to the UP merger. Since I model the MoPac, I've wanted this building for my layout."

"I'm using a 2D CAD program for the laser cutting/engraving drawing. Most of the structure will be 1.5mm MDF. Currently, the building is a museum, so I was able to take an afternoon and physically measure the entire structure."

Check out the full thread for the progress!

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



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2. *MRH* forum member **mah2506** recently reached a milestone on his layout build – his layout now has trains on it!

ATSF/BNSF Southern Transcon layout build journal

MRH forum member **mah2506** has been posts to a blog/journal about his new layout project. Of his layout, he says:

“I bought a lot in Middle Tennessee and built a 100' x 53' pole barn home (“barndominium”) with a 100' x 40' shop area. The shop area was finished out with climate control and will be used as a train room. We’re modeling the ATSF/BNSF Southern Transcon from Willows Springs, IL to Vaughn, NM.”

“The layout has three levels in some places and a separate staging yard. The main level has over 600' of track while the whole layout has over 1,200' total.”

Follow along on this fascinating layout build.

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



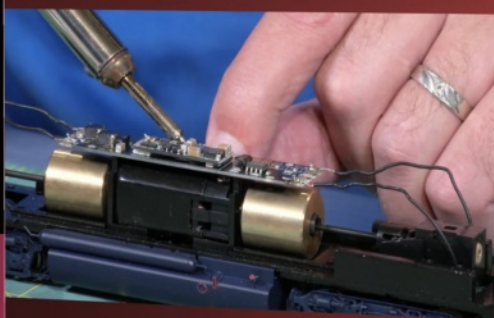
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3. *MRH* forum member **chauens** has been exploring how to make his own wireless DCC throttle. He wanted the flexibility to define the functions that mattered most to him.

DIY wireless throttle

MRH forum member **chauens** has been exploring making his hown do-it-yourself wireless DCC throttle.



“Way back when, Lenz announced a wireless throttle, but knowing how long it would take Lenz to actually deliver I didn’t want to wait. I thought about building one myself and what functions I use most while running trains. For me that is: Whistle/Horn, Bell, Direction, Brake, Coupling and maybe Drive Hold, and perhaps Fade (train moves into distance or through tunnel). Fixed buttons/switches for each of these functions would be something nice to have. During my research I found Geoff Bunza’s blog here on the MRH forum. That was a wonderful kick starter for me, thank you Dr. Geoff.”

He goes on in this thread to detail the entire build of this throttle, and provides downloadable files with the details.

Check out the full thread for more!

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



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Recent Weekly Photo Fun pictures

The *MRH* Forum has a weekly Photo Fun thread with some inspiring images posted. Below are a couple of recent pictures.

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

4. CP Rail Quebec Subdivision (Pierre D.) posted this photo. He says, "Standing beside the Foster's station, RS23 8040 is the substituted power for the regularly assigned RS18U road switcher." Nice!



5. MRH forum member [rjthomas909](#) (Robert T.) posts photos periodically from his steam era layout. For this photo, he says, "This is a new curved trestle over Lightning Creek, and the nearby mining camp is coming along. Hopefully a few more trees this weekend!"



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WHAT'S NEAT

column



Model Railroad Hobbyist | September 2022

KEN PATTERSON COVERS THIS MONTH:

- NEW PRODUCTS FROM BACHMANN AT THE NATIONAL TRAIN SHOW
- THE 15TH ANNUAL ST. LOUIS RAILROAD PROTOTYPE MODELERS MEET
- INTERVIEWS AT THE RPM MEET BY KEN AND JOSHUA BARTON



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PHOTOS AND VIDEO OF SUPERB MODELS

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THIS MONTH KEN INTERVIEWS LARRY HARRINGTON FROM BACHMANN AT THE National Train Show and then drops back in time two weeks to the 15th Annual Railroad Prototype Meet that was also held at the Gateway Convention Center in Collinsville, Illinois.

The National Train Show



1. Ken starts off What's Neat by interviewing Larry Harrington of Bachmann Trains at the National Train Show, which was held August 12-14, 2022.

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2a, 2b. New in 1:29 scale is a 100-ton Bethlehem Steel hopper and an EMD GP40 locomotive.

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3a, 3b. In HO scale, Bachmann had new test samples of what they are calling a chemical tank car, one with a smaller dome, the other with a larger one.



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4. A sample of the upcoming N scale girder bridge was at the show. The model will fit either N scale EZ-Track or any track that can connect using rail joiners.

Info: www.bachmantrains.com/home-usa



5. The What's Neat crew also attended the 15th Annual St. Louis RPM Meet on July 29th and 30th, 2022.



6. Joshua Barton interviewed Jimmy Pottberg of JP 3D Models, a new 3D-printed modeling company. One of the company's first products is this modular grain elevator, which can be extended indefinitely with intermediate silo modules. The 8-foot HO scale model seen here took 41 days to print. It is available from Z scale up to O scale.

Info: www.jp3dmodels.com



7. Ken interviewed Pete Munger, who built a new module for the show this year.



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8. Pete's module features Tangent Scale Models 86' high-cube boxcars, InterMountain coil cars, an Arnold's Drive-In repurposed as a pizza place named after his mother, a steel fabrication company built out of two Walthers grocery warehouse kits, DT&I locomotives and cabooses, and Woodland Scenics built-up structures.

The Railroad Prototype Modelers Meet



9. Railroad Prototype Modelers Meets are really about the models, and there were about 85 tables full of models at this year's St. Louis RPM.



10. Here Ken is with Steve Day of Lunde Studios, which specializes in cast resin structures in HO and N scales. Steve had a surprise for Ken at the end of their interview.
Info: lundestudios.com



11. Dan Darnell and Matt Gentry represented Rapido Trains at the RPM meet with a large display of upcoming products.



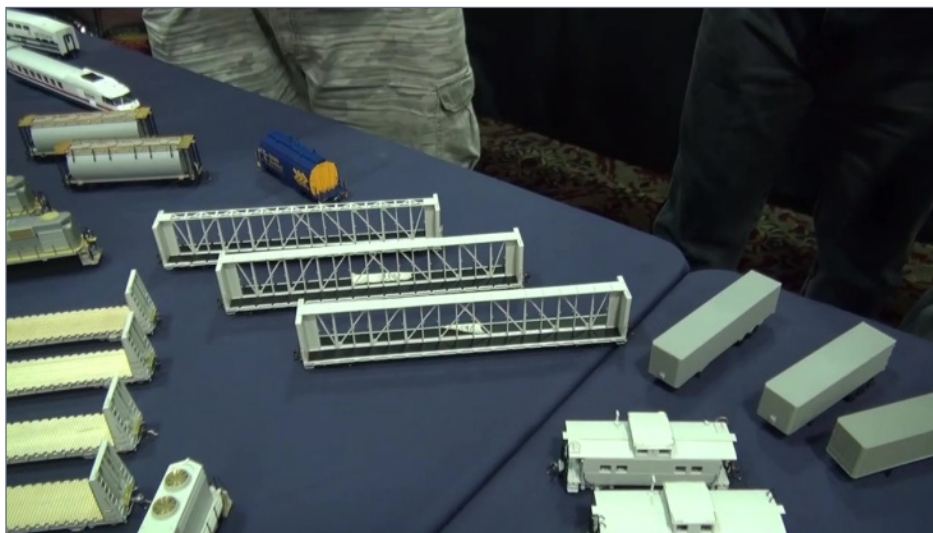
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12a, 12b. Dan introduced the “Day One” anniversary edition Amtrak E8 #4316 with its collector’s case, some of their new Chevy Caprices, the Rohr Turboliner, Bombardier commuter Cars, and sodium chloride cars.



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13a-13d. Among the cars and locomotives Matt showed off were the new NSC Centerbeams, which arrived at his house 20 minutes before he left for the meet, the first samples of both the high-nose (Southern) and low-nose (Santa Fe) GP38s, and HO and N scale Autoflood III coal hoppers.

Info: rapidotrains.com



14. Aaron Piotraschke is the founder of Apogee Locomotive Works, a maker of 3D-printed locomotive shell kits, detail parts, and mechanical components. ALW specializes in small traction and industrial locomotives that are designed to fit over other drives.

Info: www.apogeelocoworks.com



15. Ken interviewed Jim Wiggin of Athearn Trains. Athearn is working on California cars with up to 25 LEDs and sound per car. The Veranda Turbines will be coming with four sugar-cube speakers.

Info: <https://athearn.com>



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16. Steve Hurt makes a new large-scale model or diorama for each St. Louis RPM meet; this year's module has been waiting since 2020. It's a USA Trains wide-view caboose that has been converted into a restaurant, using several photos of a prototype that stood in Buda, Texas.



17. The Mexican restaurant includes empty Corona bottles (w/ limes), menus, and appliances out back and on the platform. The tin roof is removable for visibility.



18. Joshua interviewed Chris Palmieri of HomeShops, a company that sells versions of Tangent Scale Models cars with freelance road names. The introductory product is the Pullman-Standard 4750-cu. ft. covered hopper.



19. Homeshops will also be introducing a Virginian and Ohio maintenance of way tank car soon, as well as 86' auto parts high-cube boxcars.

Info: homeshops.net



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20. After HomeShops, Joshua interviewed David Lehlbach of Tangent Scale Models, which announced for sale FMC Gunderson Brothers 6089 cu ft 50' high-cube boxcars and reflected on how Tangent came out of nowhere at the 2007 National Train Show in Detroit, with boxes full of Pullman-Standard 4740-cu. ft. covered hoppers for sale.
Info: www.tangentscalemodels.com



21. Bill Denton was interviewed by Ken about the Modutrak N scale modular system. There were 25 modules in the RPM layout for a 60' x 10' layout.



22. The modules use Atlas Code 55 rail and connect without using rail joiners. The informal group started in the Chicago area and get together at shows about four times a year to set up and run the layout.



23. Bill's New Lisbon, Wisconsin modules are based on a real location, where the branch line to Wassau, Wisconsin left the mainline. Info: www.modutrak.com

To see the complete interviews by Ken and Joshua, and more of the amazing models at the St. Louis RPM, check out the video at the beginning of the article. ☑

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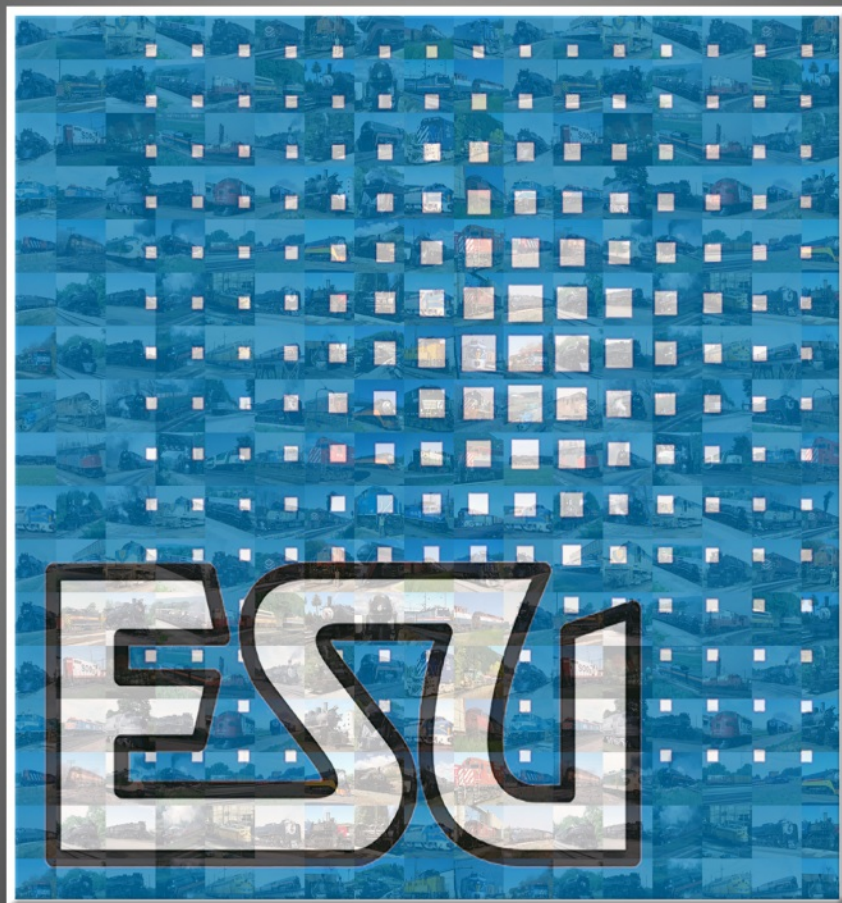
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Add DCC lighting & sound to a CalTrain Bombardier



1. CalTrain runs 5-6 car commuter consists of these Bombardier bi-level cars. Photo from the CalTrain website



Model Railroad Hobbyist | September 2022

ALEXANDER NIETO ADDS DCC TO AN ATHEARN BOMBARDIER ...

BAY AREA CALTRAIN PURCHASED A NUMBER OF BOMBARDIER (pronounced *bum-bah-dee-aye*) BiLevel Coaches from 2002-2008 and runs them in their commuter train consists. One end of the consist has a locomotive, the other end has a control car.

I added the following animation using DCC to an Athearn Bi-Level Bombardier control car:

1. Exterior lighting

- 2 Headlights
- 2 Independent ditch lights (left and right)
- 2 Marker lights

2. Interior lighting

- Upper-level lighting
- Lower-level rear lighting
- Lower-level middle lighting
- Lower-level front lighting

3. Sound

- Horn
- Car track sounds

GETTING STARTED

I used this project to learn new DCC concepts and get back to my electrical engineering roots.

I took four months to complete this upgrade – that may seem like a long time, but I took the time to consider various options, to build some 3D-printed parts by trial-and-error, and so on.

With all the proper parts, and following the steps outlined in this article, the project should take about a week. I estimate it's 10 actual hours work, but there's glue curing and such involved, which will stretch out the time, which is why I say a week.



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2. I modified my Athearn Bombadier control car shown here.



A. Nieto

THINGS TO KEEP IN MIND

Before you embark on this project, here are a few things I recommend.

When you're soldering connections, tin all contacts, pads, and leads before soldering them. Always test the connections afterward.

I recommend heat-shrink tubing for insulating all soldered wire joints.

And lastly, I recommend you *read through this entire article* before starting.

TOOLS AND MATERIALS

Here is the list of tools and general materials I used for the project. For a shopping list, see the link at the end of this article.

GENERAL TOOL LIST

Wiring

- Fine wire stripper (I used a CK 30009 for the very fine decoder wire)

- Heat gun (for the shrink tubing)
- 1/16" heat shrink tubing
- 0.020" heat shrink tubing (for ESU wire)

Soldering

- Soldering station of your choice (I used Weller WT1010N)
- 1/32" (0.8mm) solder tip (chisel) [use for small pads]
- 3/64" (1.2mm) solder tip (chisel) [use for medium pads]
- 1/16" (1.6mm) solder tip (chisel) [use for large pads]
- Solder flux (I used Kester 951)
- Rosin-core solder; I used 0.020" (0.5mm) 60/40
- QuadHands jumbo workbench - 11" x 17" steel base - six magnetic arms

Adhesives

- Gorilla 3oz tube crystal clear grip contact adhesive
- Scotch 1/2" double sided tape
- 3M double sided foam tape (approximately 2mm thickness)
- Kapton tape, 1/4"

Other tools

- #67 drill bit (0.8mm)
- #60 drill bit (1.0mm)
- #56 drill bit (1.2mm)
- Bright light source (e.g., LED flashlight)
- Fine-tip permanent marker (Sharpie)
- Various tweezers
- Razor blade or X-acto knife
- Sharp pencil
- Small alligator clips

Electrical testing

- Digital multimeter (DMM)



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Let's get started!

STEP 1: REMOVING THE SHELL

Remove the four screws on both ends of the cab car in the order shown [3].

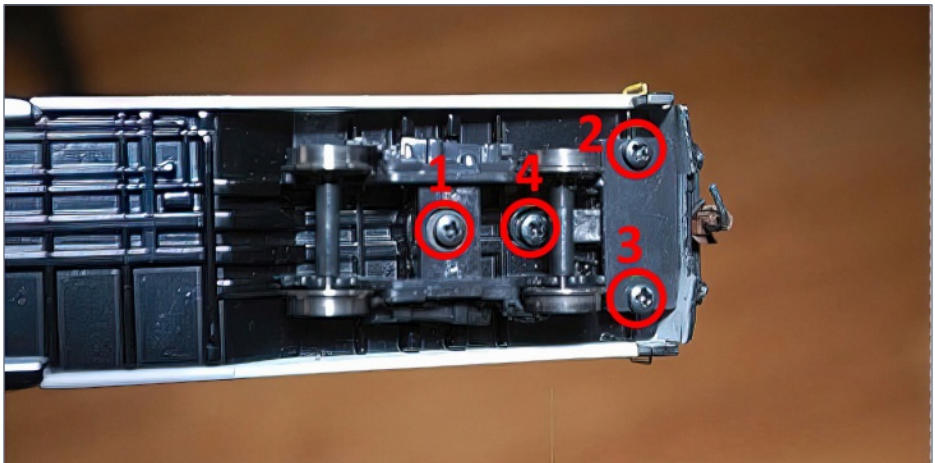
You end up with eight screws and two couplers, so store these somewhere safe. Carefully pry the shell open to remove the chassis. Spread the shell apart from the areas near the doors using both hands.

STEP 2: DECODER BUDDY V5 INSTALLATION

Materials

- Decoder Buddy v5 (plus resistors of your choosing: 1K, 2.2K, and so on)

I used 3D printing to make a custom mount for the Decoder Buddy, but you can also fabricate a mount using a piece of 0.040" styrene and some 1/16" styrene rod.



3. Locations to remove screws. Remove these same screws on both ends.



Place the Decoder Buddy on the mounting plate, as it's easier to handle this way before doing the following procedure. It may take a bit of forcing and bending to get it in the holes. I made the bracket this way so that the board stays in place and doesn't fall out.

Choose an option

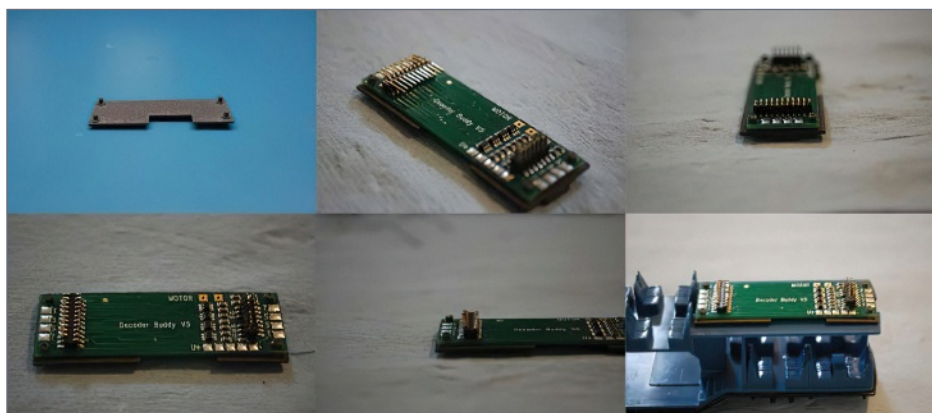
At this point, you have two different install options:

- **Option 1:** Do what I did and go with two SoundTraxx SoundCar decoders each with Current Keeper.
- **Option 2:** You can just use a single 21-pin ESU decoder loaded with custom sounds plus ESU Stay Alive device.

When using Option 1, this wiring can become something of a rat's nest.

2A: Two SoundCar decoders (Option 1 only)

I made some modification to the Decoder Buddy (DB) because I installed two SoundCar (SC) decoders and two Current Keepers (CK) in this Bombardier to give me the ability to control lights *and* sound.



4. Modified Decoder Buddy (21 pins bent 90 degrees and then trimmed) on my 3D-printed mount. You can make your own mount from styrene.

The only way to make space is to fit the second SC plus CK set to sit on top of the Decoder Buddy. This second decoder set serves as the interior lighting module. Unfortunately, there is not enough clearance up top to support a mount of its own for this second decoder plus current keeper.

Take the DB and modify the 21-pin connector so that all the pins are bent approximately 90 degrees. Next, using small wire cutters, clip the metal pins to approximately 1/16" (1.5mm) long.

This will let SoundCar decoder #2 sit nicely on top of the DB. Finally, place the DB opposite the control end. The mount/board assembly should be snug and fit in place.

Set the assembly down near the end and slide it forward to lock in place [4].

STEP 3: TRUCK ELECTRICAL PICKUP INSTALLATION AND WIRING

Materials (see shopping list link, end of article)

- Phosphor-bronze sheet (6" x 5" x 0.008") [Kands Engineering Precision Metals]
- 10" (27cm) 36AWG wire [front truck]
- 10" (27cm) 36AWG wire [front truck]
- 6" (17cm) 36AWG wire [rear truck]
- 6" (17cm) 36AWG wire [rear truck]
- Two lower-level false floor wire conduits made from 0.020" styrene

Drill #67 holes in the truck at the specified locations [5]. Drill slowly to not break the bit.

With the same #67 drill bit, drill through the black metal and blue plastic of the Bombardier base and seating part. You can vary the hole diameter if you have different gauge wire, although using a thicker wire may restrict truck movement.



Take your phosphor-bronze sheet and measure out four pieces, 5/64" x 1.5" (2mm x 36mm) [7]. You can use a sturdy paper cutter or strong scissors to cut the sheet.

Now, solder the wire leads to the metal contacts [8]. This will be your left rail and right rail pickup wires. Left and right doesn't matter when it comes to power. Just be consistent with wiring the left and the right pickups to the Decoder Buddy. It may help to use red and black to differentiate the pickup leads (but I didn't do that; I just was careful to keep them straight when soldering).

I found it helpful to place the electrical pickups into the helping hands holder [8]. Drop a little flux near the center of the metal pickup and place a little bit of solder down at that point. Finally, solder the tinned pickup wire leads to the strip.

Next, I made two 45° bends on the pickups at both ends starting at 1/2" from the center. Each bend will be 1/8" [9].

Feed the wires through the truck holes as shown back in [6].

Place alligator clips on three places on each side of the truck. You will end up with six alligator clips per truck. Wipe any excess glue from the truck/electrical pickup wipers. Leave the clamps on for 24 hours to make sure the glue sets and they remain properly positioned on the trucks [11].



5. Truck hole positions with electrical wire pickups shown.



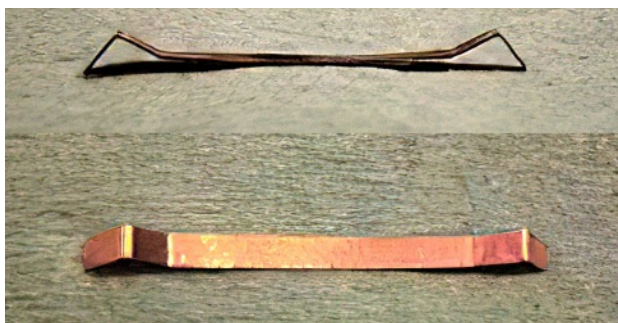
6. Chassis underside electrical pickup hole locations.



7. Phosphor-bronze pickup wiper; cut four of them.



8. Electrical pickup soldering location.



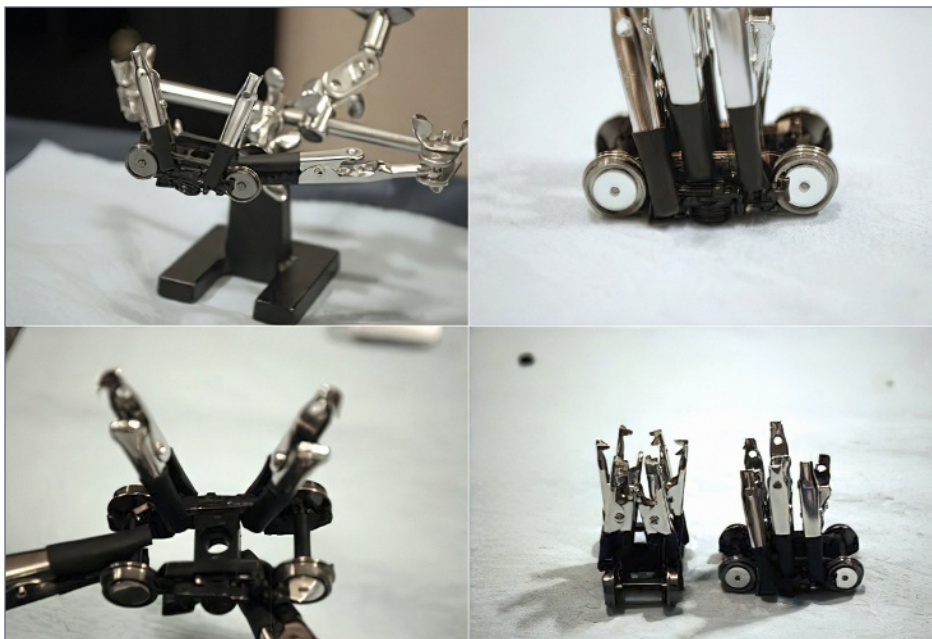
9. Electrical pickup bend geometry (I bent them before soldering in this photo).



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10. Gluing the electrical wipers to the trucks with the helping hands clamps.

Place alligator clips on three places on each side of the truck. You will end up with six alligator clips per truck. Wipe any excess glue from the truck/electrical pickup wipers. Leave the clamps on for 24 hours to make sure the glue sets and they remain properly positioned on the trucks [11].

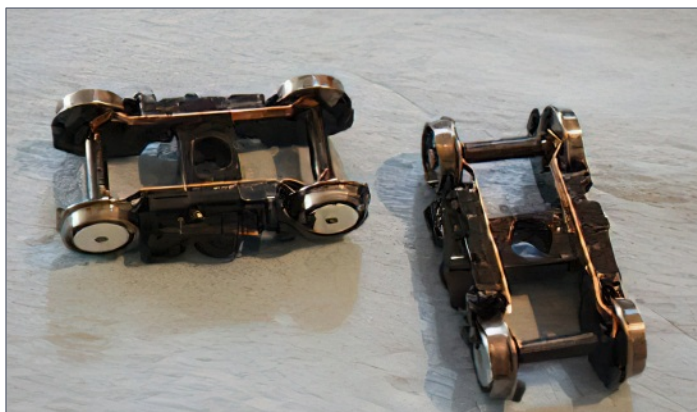
Make sure your trucks roll freely on the track. If needed, adjust the bend in the wipers to account for any friction you encounter. Repeat adjusting and testing until you get smooth truck movement.

Use a digital multimeter to check for continuity between the wheels and the electrical pickups after adjusting the wiper friction [12]. I recommended you place the trucks on track with power on and double-check the pickups wiring using the voltage meter setting.

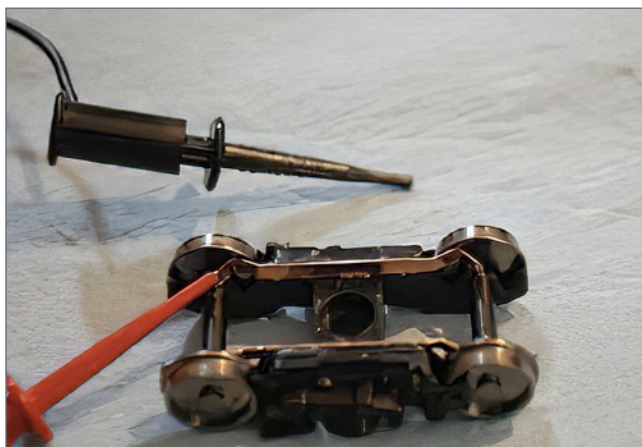
Now, route the truck wires through the car to the decoder buddy track solder pads [13]. I built a channel from 0.020" styrene to contain the wires on the lower deck.

Feed the unstripped end of the wire through each of the pickup holes and through the blue plastic seats into the feeder holes of the false floor. Add some slack to the wire, then feed it up through the stairs on both ends to the pads on the decoder buddy.

The front side pickups should be routed through the upper-level false floor. Apply a little glue to the three flat areas underneath the lower-level false floor and fasten the wires to the passenger floor.



11. Pickup wipers on the trucks after 24 hours of cure time.



12. Testing electrical wipers for continuity: put the red probe on the wiper (as shown) and then I touched the loose black probe to the wheel tread.



Do the rear trucks similar to the front trucks, except through the rear upper-level steps. There is no need to route through the upper-level false floor. Use tweezers to guide the wires through the tiny spaces if needed.

OPTION 1: DUAL SOUNDCAR PLUS CURRENT KEEPER

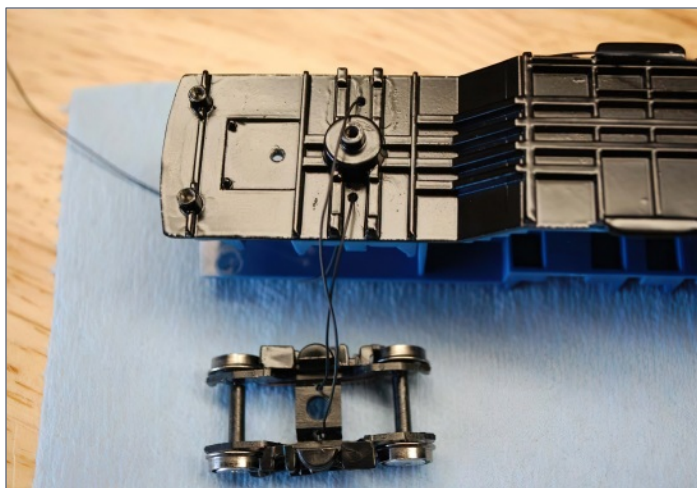
STEP 4A: SOUNDCAR / CURRENT KEEPER INSTALLATION (SET 1)

Materials

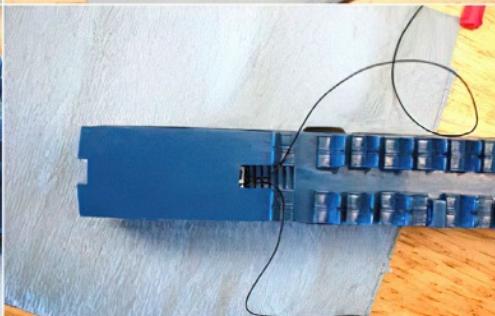
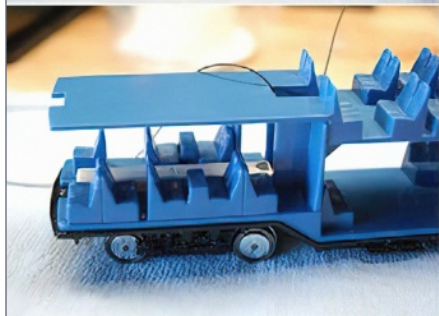
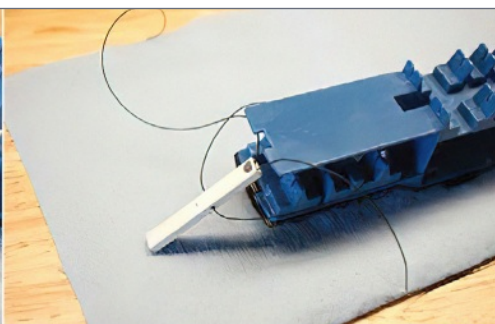
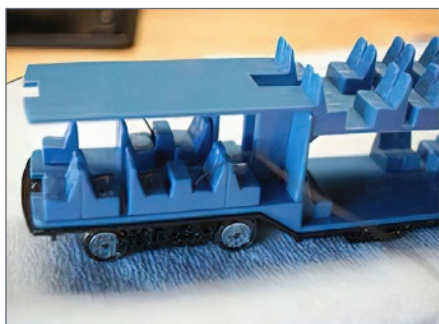
- SoundTraxx SoundCar decoder
- SoundTraxx Current Keeper
- 9" (18cm) 36AWG black wire
- 8" (16.5cm) 36AWG yellow wire
- 7" (15cm) 36AWG white wire
- 6" (13.5cm) 36AWG purple wire
- 5" (12cm) 36AWG blue wire
- 4" (10.5cm) 36AWG purple wire
- 3.5" (9cm) 36AWG brown wire
- 3" (7.5cm) 36AWG green wire
- 2.5" (6m) 36AWG red wire
- 0.020" styrene or 3D printed decoder mounting box

I printed a decoder mounting box on my 3D printer, but you can also make a box from 0.020" styrene. Just make it slightly longer than either the SoundCar decoder or the Current Keeper, and make it the width of the SoundCar decoder plus the Current Keeper. On one end along the bottom, build-in a slot about 1/16" tall and about the width of just the SoundCar decoder. See [16].

Run all the wires from the SoundCar decoder through the slot in the mounting box. I did each one individually because it looks cleaner. Attach the Current Keeper into the two-pin mini JST plug



13. Routing the pickup wires into chassis.



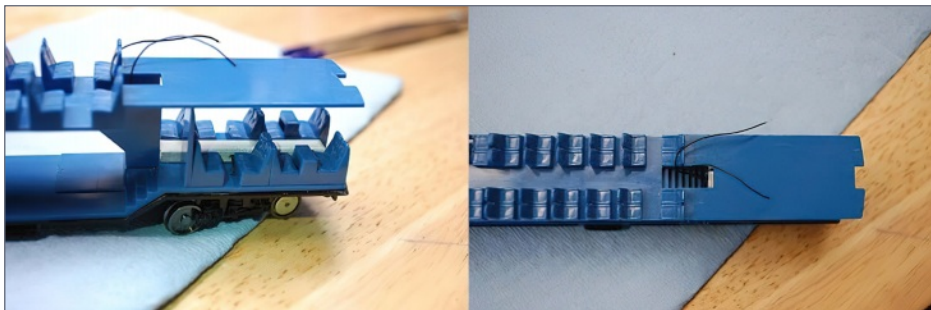
14. Electrical pickup wiring routing, front truck. I built a channel from 0.020" styrene to contain the wires on the lower level.



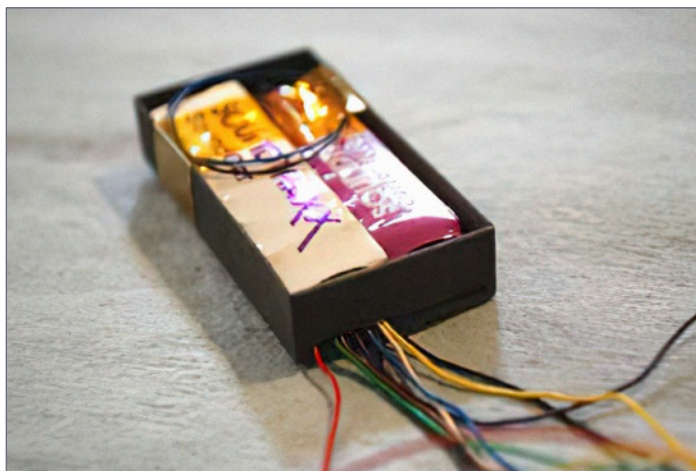
and loop the wire once and secure it to the top of the modules. Affix Kapton tape around the decoder-box assembly to keep things in place.

Cut nine pieces of wire corresponding to the SoundCar wire colors (see materials list) and extend each wire off the decoder by soldering matching colored wire extensions starting from black. In other words, you'll extend the wires to make them staggered in length.

Do this for all nine SoundCar decoder wires. This gives the wires their best fit into the styrene upper-level false floor conduit.



15. Electrical pickup wiring routing, rear truck.



16. Mounting box with slot in one end.

The false floor upper-level conduit is symmetrical, so it does not matter which side you choose. Twist pairs of wires to make the wiring look cleaner.

Place the SC/CK assembly mount on the upper-level front area.

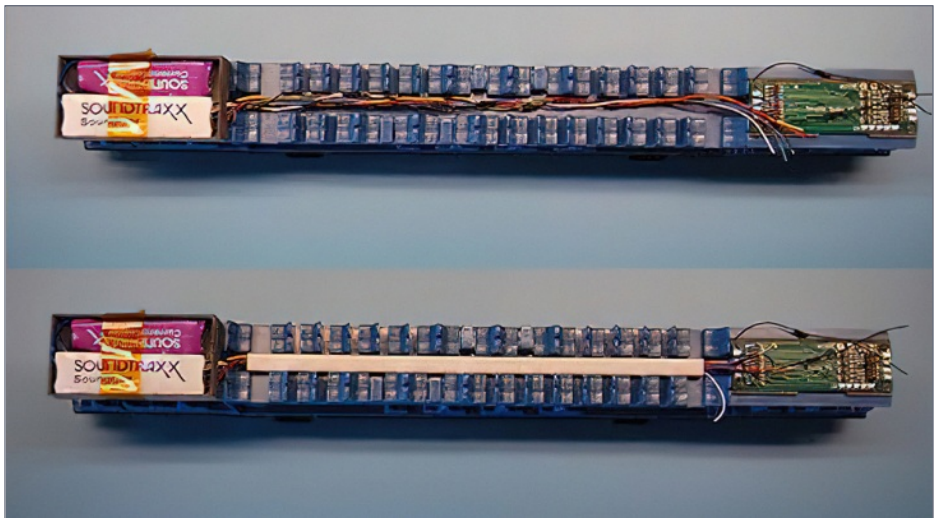
STEP 4B: UPPER-LEVEL FALSE FLOOR INSTALLATION

Place all the wires, including the front truck electrical pickup leads on the center of the upper-level aisle. Make an upper-level false floor conduit from 0.020" styrene and gently tuck the wires inside there down the entire aisle [17].

You can use the Gorilla glue to secure the styrene conduit in place by placing dabs alongside the seats or along the bottom edges of the conduit. Firmly hold in place for a few minutes to let it grab, and then let it cure for 24 hours before continuing to the next step.

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17. SoundCar and electrical pickup wire routing through false floor.



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STEP 4C: CURRENT KEEPER INSTALLATION (DECODER SET 2)

Materials

- SoundTraxx Current Keeper
- 1 SoundCar/Current Keeper (SC/CK) mounting box (optional)
- 1 x 9" (18cm) 36AWG black wire
- 1 x 9" (18cm) 36AWG blue wire
- Double-sided foam tape

Take your Current Keeper wires and cut off half their length. Next, solder the 18cm blue and black wires onto the wires you just cut. If you will not be using the mounting box, then place a 1/2" length of double-sided foam tape on the upper-level front side.



18. Current Keeper wire extension and placement.

STEP 4D: SPEAKER INSTALLATION

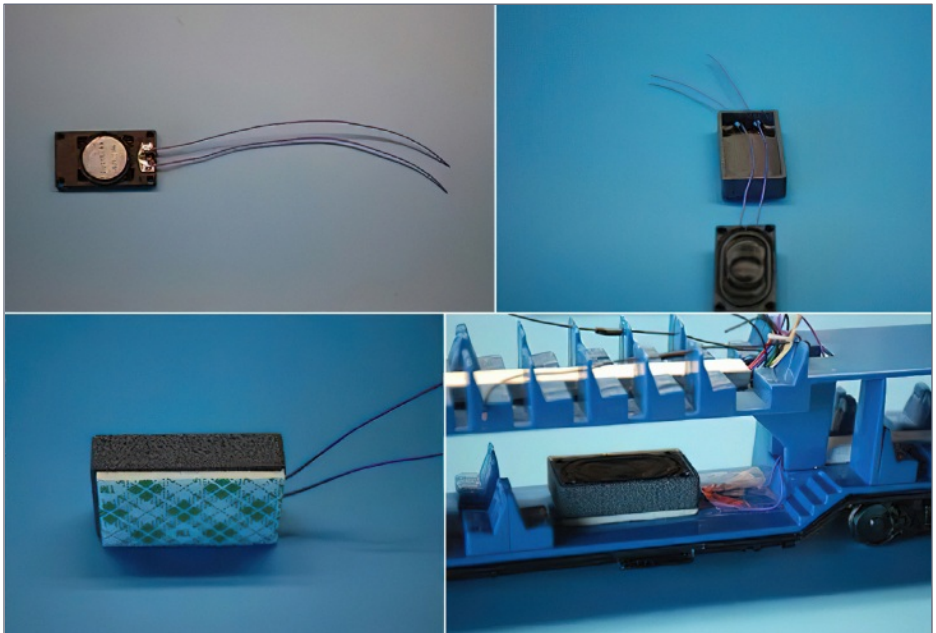
Materials

- 14mm x 25mm SoundTraxx Oval Speaker
- 14mm x 25mm custom oval speaker enclosure
- 2 x 4" (10cm) 36AWG purple wire
- Double-sided foam tape

Solder the purple wires to the speaker contacts.

Route the speaker wires through the hole of the speaker enclosure and slide/push in the speaker until it is in place and flush with the top of the enclosure.

Affix a 1/2" x 1" (14mm x 25mm) piece of double-sided foam tape to the bottom of the speaker enclosure.



19. 14mm x 25m Speaker installation into the chassis.



Route the wires underneath the stairwell, through the stairs, and up into the upper level.

Secure the two purple wires against the floor with tape where they come out of the speaker enclosure.

STEP 4E: SOLDERING SOUND CAR DECODER WIRES TO DECODER BUDDY

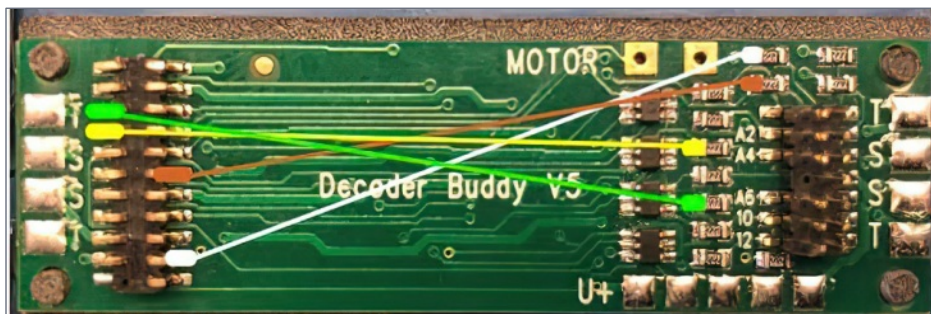
Materials

- 2" (5cm) 36AWG white wire
- 2" (5cm) 36AWG brown wire
- 2" (5cm) 36AWG yellow wire
- 2" (5cm) 36AWG green wire

This step takes some very careful soldering. Take your time and do not rush things.

First, we need jumpers around the AUX3 – AUX6 resistors because those outputs have transistors that require 5V logic. Bypassing these switches is very important when not using a 21-pin ESU decoder.

Fortunately, the Decoder Buddy makes it easy to do this. Solder jumpers as shown in [20].



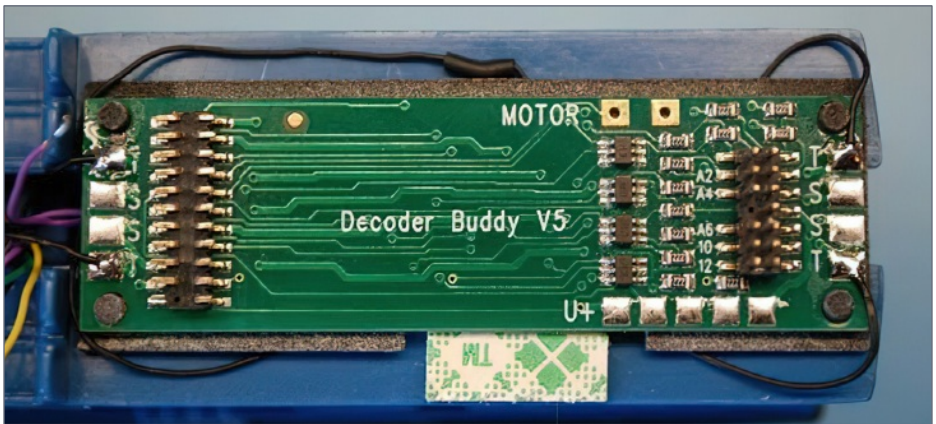
20. Where to solder jumper wires for AUX3 - AUX6.

Next solder the electrical truck pickup leads. Wire them up to each of their respective sides. I placed a piece of foam tape on one side to secure the wire underneath the decoder buddy mount.

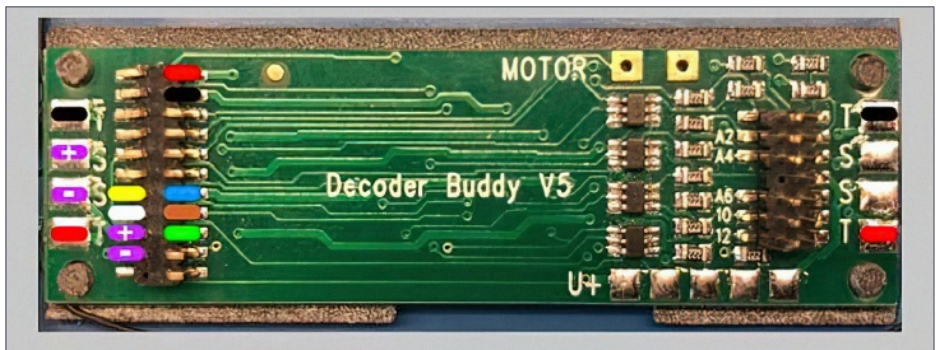
Wire the speakers to the Decoder Buddy pads. It doesn't matter which wire is which if you're using only one speaker. (Note: Hindsight is 20/20. Use two speakers, one per SoundCar decoder.).

I recommend using a 1.2mm solder tip for better soldering accuracy with the Decoder Buddy pins.

Using the solder points diagram in [22], solder each colored wire to its respective pin on the Decoder Buddy [23].



21. Decoder Buddy with soldered truck feed wires.



22. Solder points for the SoundCar decoder wires.



Before continuing, test your wiring by putting the car on a test track. You should be able to play all the sounds with the exception of the lights. If you want to test the lights, use Nixtrainz Decoder Buddy light board tester.

OPTION 2: ESU 21-PIN DECODER

STEP 4: 21-PIN DECODER INSTALLATION WITH DECODER BUDDY (OPTION 2 ONLY)

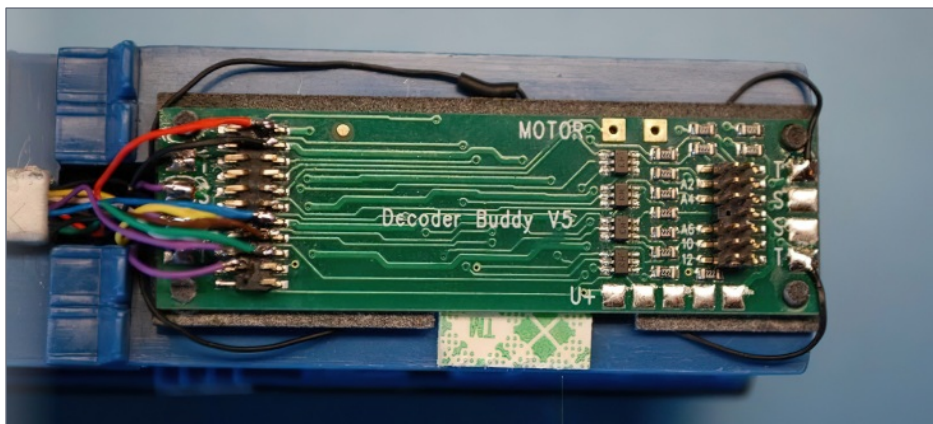
This step assumes you are using a 21-pin ESU decoder with user-programmable sounds instead of the SoundCar decoder(s).

Solder the ESU stay-alive module directly onto the board as well as the A6 (AUX6) lower-level lighting.

Additionally, solder the other connections to the Decoder Buddy.

Install the upper level false floor fixture before soldering the wires. Reference ***STEP 4B: Upper-level false floor installation*** for more details.

Follow the soldering locations in [24, 25].

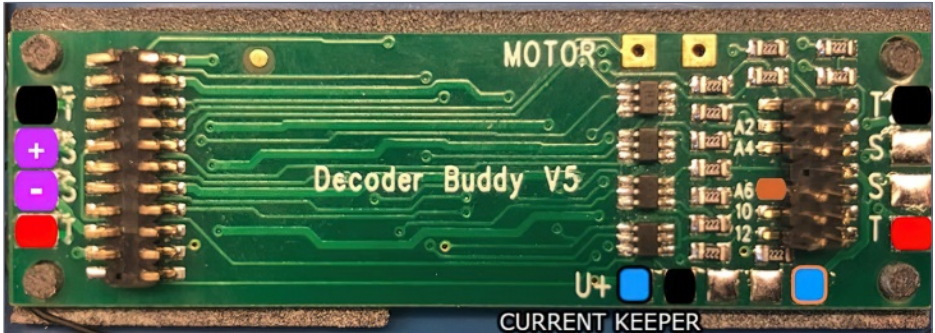


23. SoundCar wires soldered to Decoder Buddy. The jumper wires shown in [20] were not yet soldered in place. In hindsight, I recommend you add the jumper wires shown in [20] *first*.

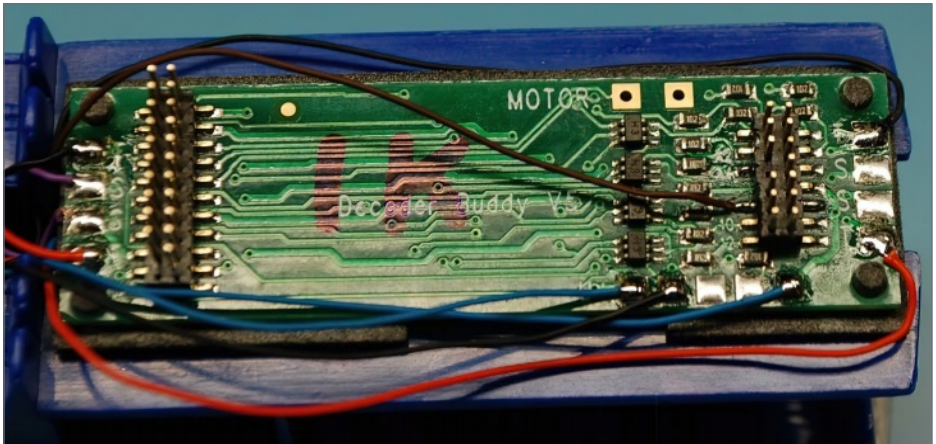
AUX5 (green, upper-level lighting), is not shown. That will be soldered to the Decoder Buddy light board later.

Function F28 activates all interior lighting by default.

Test your work on a decoder test track before continuing.



24. Soldering points when using an ESU decoder. Use A6 (AUX6) for lower-level lighting.



25. Decoder Buddy with wires soldered as per [24].



STEP 5: LED LENS UPGRADE

Materials

- 2 x Red 0402 prewired SMD LED
- 4 x Warm-white 0402 prewired SMD LED

Use your digital multimeter in continuity mode (or diode mode if it has one) to test the LEDs. Just enough current should be supplied to light the LED without posing any harm to it.

Use a bright light (smart phone or LED flashlight) to shine on the Athearn headlight lenses from the outside in. You will see bright spots on the inside where the lenses are located. Use a marker to mark the spots.

Use the #67 bit and slowly drill a hole partway into the lenses. By inserting a piece of 20AWG solid wire into these holes, you should be able to pop the lenses out.

Remove any adhesive residue. These lenses are very tiny, so be cautious as they can fly off somewhere, never to be seen again. Be sure to use a mat underneath your work area that will provide good contrast if the lenses do fly off. Set them aside somewhere safe. See [26].

Once the LEDs are tested [27], it's time to glue them in place.

Place the LED wires between an alligator clip on your helping hands device. Orient the LED so the face is up toward the ceiling,

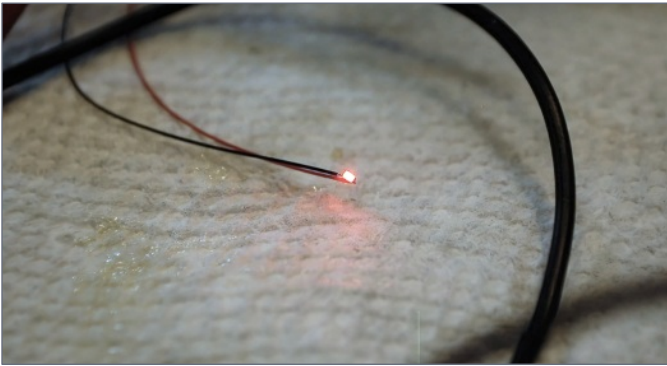


26. Clear and red lenses.

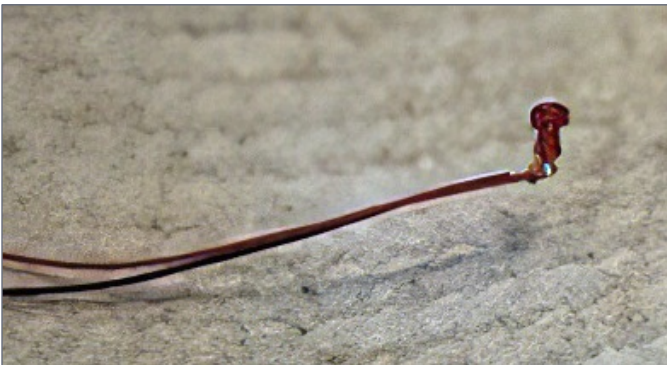
not tilted. Now, connect the leads to your meter. At this point the LED should be on. Put a tiny dab of clear Gorilla glue on a wooden pencil tip and place some on the LED face. Wait about one minute. Next, hold the lens and hover over the LED until achieving full brightness.

Take a tiny dab of clear Gorilla glue on a wooden pencil tip and place some on the LED face. Wait about 1 minute. Next, hold the lens and hover over the LED until full brightness is achieved.

Now place a small flat surface (like a piece of thick stripwood) underneath the LED body and press the lens down into the glue. You will not have much time to re-align the lens, so be quick about it. Hold it there in place for one minute and let go [28].



27. Testing one of the 0402 SMD LEDs.



28. LED glued to bottom of a Bombardier exterior light lens..



If you mess up, you can start the process over. Fortunately, this glue is forgiving and can be removed, even after a few hours. It is much harder to remove after several days, but still possible. Repeat this process for all six lens/LED assemblies.

I suggest leaving the assemblies to set up for 24 hours before feeding them back into the shell. Otherwise, the LEDs may break off the lens. It's probably a good idea to take a twenty-four hour break at that point. I know I needed it!

Fish the LED wires from the exterior into to the shell interior. If the glue swells a little, use the #60 drill bit for the headlights/ marker lights (#56 bit for ditch lights) to get the extra needed clearance. Once all six LED/lens assemblies are in place, glue them in their spots.

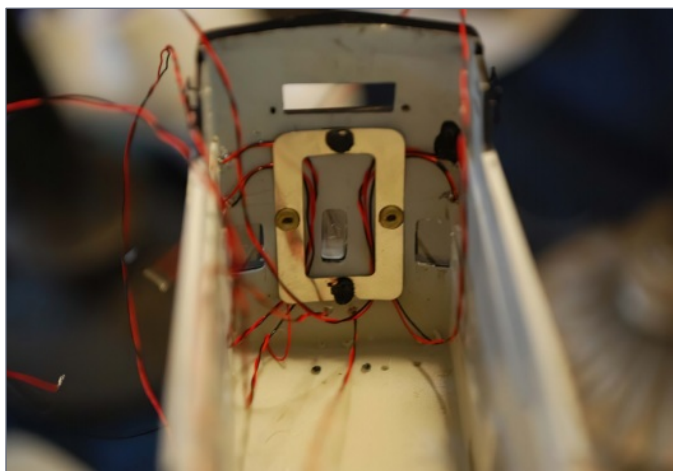
I decided to braid wire pairs to keep things organized.

Optional: Fish the wire through the interior diaphragm frame for a cleaner, and much more manageable, look [29].

STEP 6: WIRING EXTERIOR LIGHTS

Materials

- 1 x 10" (25cm) 36AWG yellow wire [marker lights]



29. Exterior lights fished through shell diaphragm.

- 1 x 10" (25cm) 36AWG white wire [headlights]]
- 1 x 10" (25cm) 36AWG brown wire [ditch light 1]
- 1 x 10" (25cm) 36AWG green wire [ditch light 2]
- 4 x 10" (25cm) 36AWG blue wire [V+ / Common]

Headlights and Marker lights

I connected these lights in series since there are only two LEDs per light type. You can view the online diagrams below and hover over the circuit components to see current requirements and adjust your voltage source accordingly.

[\[Series vs Parallel Power Requirements on falstad.com\]](#)

[\[All Circuits Simulation on falstad.com\]](#)

To form a series connection, take the red lead from headlight one and the black lead from headlight two and place them between a helping hand alligator clip. Remember to insert your shrink tube before soldering. Join the two ends and apply solder.

Connect the white wire to the headlight LED set cathode side, and connect the blue wire to the anode side of the headlight LEDs set. Connect the yellow wire to the marker light LED set cathode side, and connect the blue wire to the anode side of the marker LEDs set.

Ditch lights

Split the ditch lights into two circuits to provide alternating ditch light behavior using the signal crossing logic setting. *Do not wire them in series* like the headlights or marker lights.

Solder the brown wire to one ditch light cathode wire and the green wire to the other ditch light cathode wire. Also solder the blue wires to each of the LED anodes.

Twist each color-coded wire together with its blue common to organize the LED wire feeds. See [30].

Wire routing

Materials

- Double-sided scotch tape



Place 1-1/4" (28mm) of double-sided Scotch tape about 3/4" (20mm) down the roof or alternatively, apply two pieces of the same length all the way down the roof.

Carefully press the wires in place on the tape so they are easier to manage and later solder. Lastly, place more tape over all the wires to hold them in place.

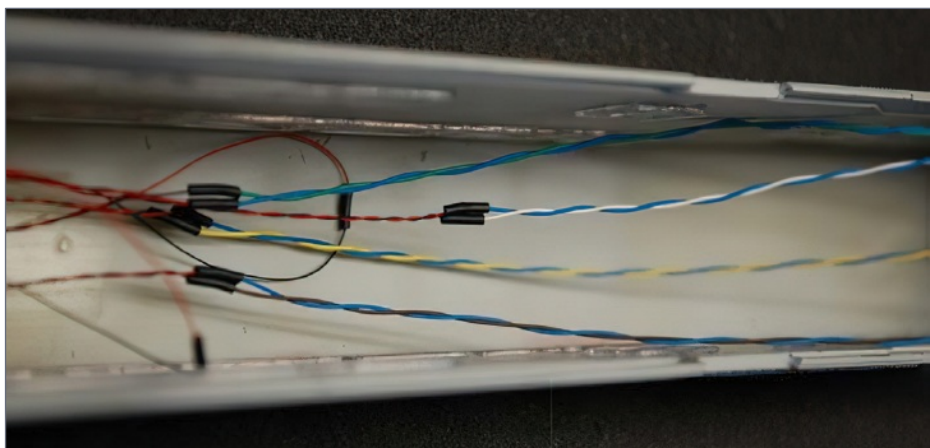
Finally, test the lights with a digital multimeter in continuity mode. You never know what might go wrong and it doesn't hurt to double-check all the connections.

Light scattering – black-out

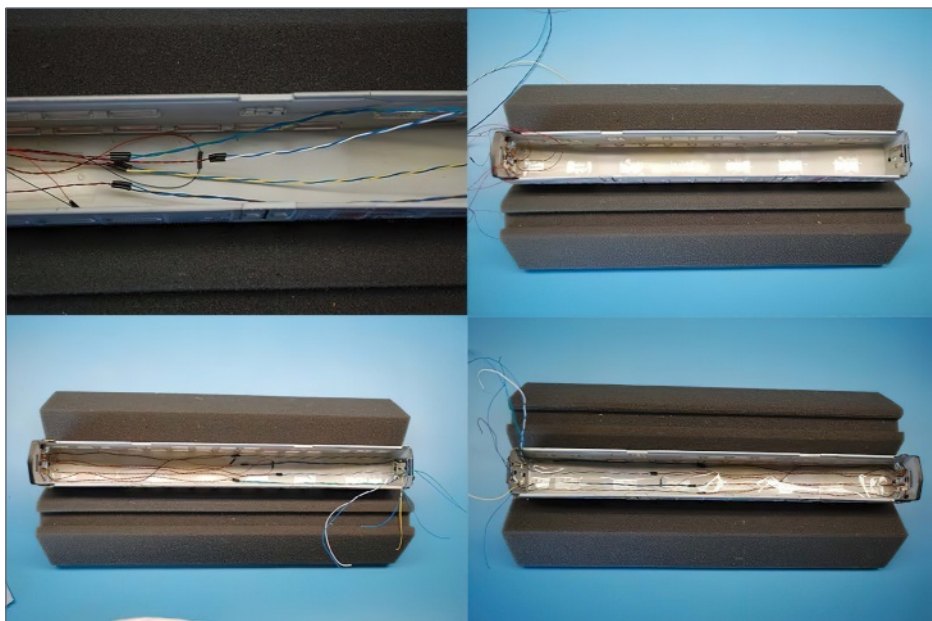
Materials

- Flat black acrylic paint
- Extra-fine tip paint brush

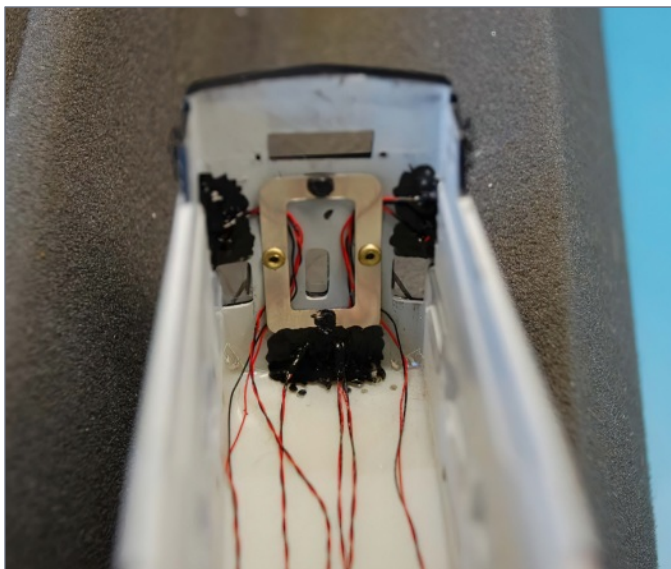
If you see any light leakage from the exterior lights into the interior, paint over those leaks with black paint. How can you tell if there is light leakage? You can connect the leads to your digital multimeter in diode mode OR leave the shell off once you get everything connection and put the car on a test track and turn on each function to find any light leaks.



30. Color-coded exterior lights with each LED pair twisted together for cleaner organization.



31. Exterior light wire routing and organization with tape.



32. Blacking-out light from the exterior lights into the interior.



Paint over any light leaks with as many layers of black paint as needed to cover the light scattering.

STEP 7: SOLDERING EXTERIOR LIGHTS TO DECODER BUDDY

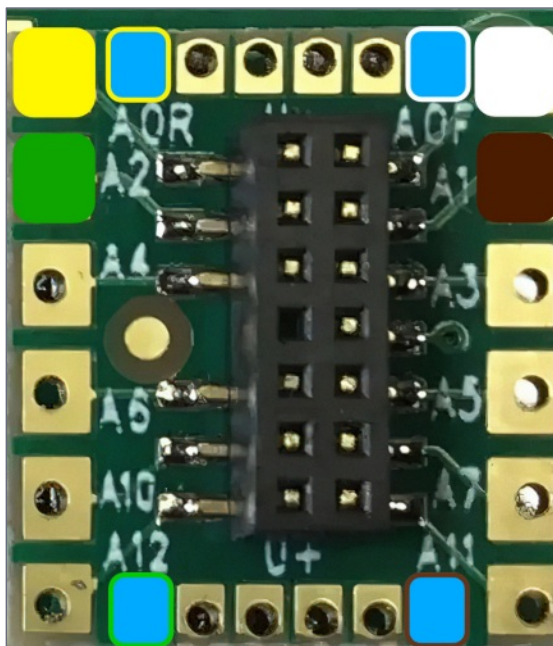
Materials

- DCC test track

Now it's time to connect the exterior LED light leads to the Decoder Buddy function board plug. See [33] for the soldering connections.

Additionally, refer to [38] and insert the upper-level light fixture onto the shell ceiling.

Read the [48] caption and solder the upper-level light green wire to A5, and the blue wire to any of the common pads on the Decoder Buddy function board.



33. Decoder Buddy function board connections.

The end-product should be similar to [34].

Test out the function connections on a DCC test track.

Interior lighting

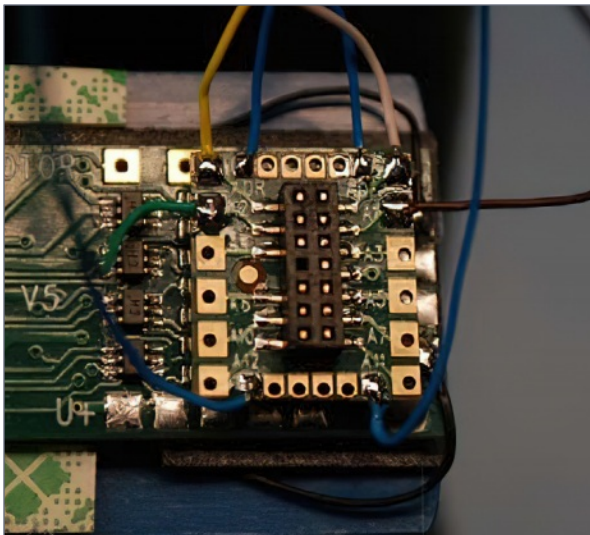
STEP 8: FIBER INSTALLATION

Materials (see shopping list link, end of article)

- Upper-level fixture
- Lower-level rear fixture
- Lower-level middle fixture
- Lower-level front fixture
- 1.5mm diameter PMMA side-emitting fiber
- 16 x 0402 SMD warm-white LEDs

This uses side-emitting fiber optics to light the interior. For another option, see ***ESU light board interior lighting.***

Each light fixture has two conduits for the fiber. These fixtures are supposed to represent to-scale fluorescent lighting, but you'll



34. Exterior lights
LED wires soldered
onto Decoder Buddy
function board plug.



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have to decide if you like this side-emitting fiber method for simulating interior fluorescent lighting.

I fed each hole with some fiber and cut the ends off each fiber so it fits between the hole entry/exit with just a tiny bit of fiber protruding past the entry/exit. Next is gluing 0402 LEDs to each end of the fiber.

Put a dab of the glue on the pencil tip and glue LEDs to each end of the two fibers (four LEDs in all). Do this for all four lighting fixtures. See [35].

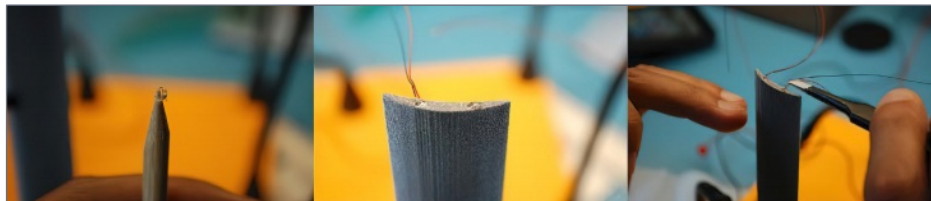
STEP 9: UPPER-LEVEL LIGHTING USING FIBER OPTICS

Materials

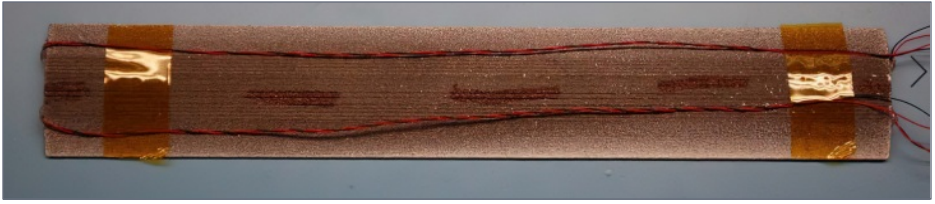
- 6" (15cm) 36AWG white wire
- 6" (15cm) 36AWG blue wire

On the upper-level fixture, connect any of the two LEDs in series (black to red or red to black). Now, connect the remaining pair of LEDs in series.

Next, connect both series-pairs parallel to each other. Solder the white wire to the two black wires (cathode side) and solder the blue wire to the two red wires (anode side). Remember to use heat-shrink tubing for insulation.



35. With the fiber optic threaded into the holes in the interior roof casting, then glue LEDs to the ends with clear Gorilla glue as shown here. Use a pencil tip to apply the glue, then attach the SMD LEDs.



36. Upper-level light fixture with taped wires.

Be sure to use your digital multimeter diode test feature to test and see if all four LEDs are on. If not, there is a bad connection somewhere in that circuit..

To better organize the wires on this fixture, place Kapton tape in the areas shown in [36].

Next, attach the upper-level lighting fixture to the shell. I found I just had to place it inside the shell with no glue needed since it's basically a press-fit. This means it's also removable later, if needed.

I placed the fixture right in the center of the shell between the angled surfaces on either side. This also hides the wires when viewing from the outside.

STEP 10: LOWER-LEVEL LIGHTING USING FIBER OPTICS

Materials

- 12" (30cm) 36AWG yellow wire [Lower-level front fixture]
- 12" (30cm) 36AWG blue wire
- 4" (10cm) 36AWG green wire [Lower-level middle fixture]
- 4" (10cm) 36AWG blue wire
- 4" (10cm) 36AWG brown wire [Lower-level rear fixture]
- 4" (10cm) 36AWG blue wire

As in the upper-level lighting, do the same circuit pairs and procedures. Apply various spots with Gorilla glue to the fixture and affix to the front side under the SC/CK combo box.

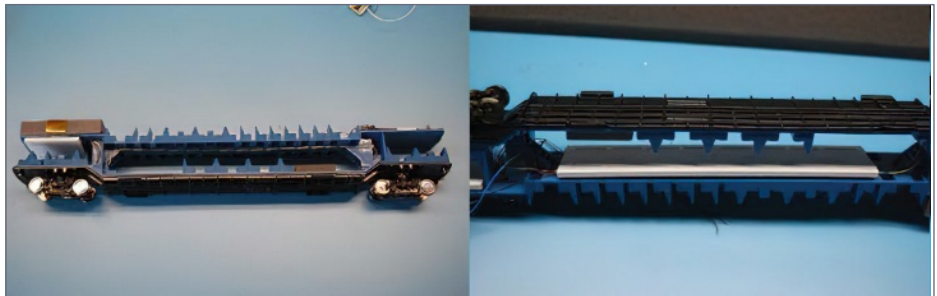




37. Upper-level light fixture installed in shell.



38. Lower-level front/rear lighting fixture installation and wire routing.

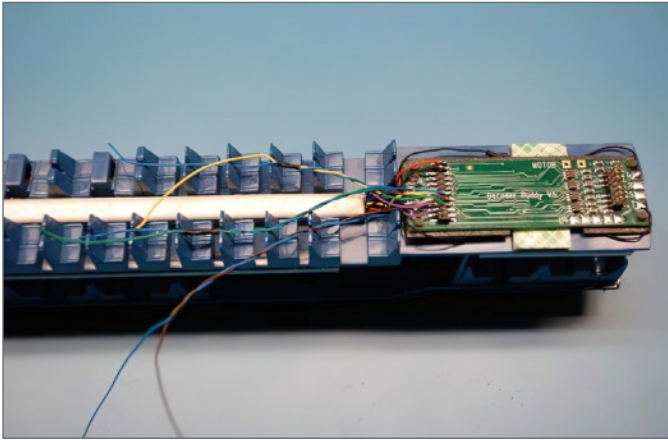


39. Lower-level middle fixture glued and placed.

Next, route the wire across the interior lower-level ceiling, all the way the rear and up the stairwell. Do the same with the lower-level rear light fixture as you did with the lower-level front fixture.

I placed the lower-level middle fixture as shown in [39].

I let all three lower-level fixtures cure over the next 24 hours. With everything set up, I fished the middle fixture's wires (green / blue) up the stairwell.



40. Interior lighting leads braided and prepped for soldering to Decoder Buddy.

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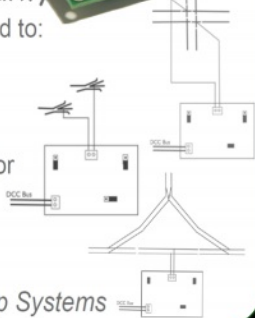
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ESU INTERIOR LIGHTING

As an alternative to the side-emitting fiber optics, you can use ESU's lighting modules instead. Here is how to do that.

Materials

- 2 x ESU Interior lighting modules warm-white
- 2 x 2" (5cm) 36AWG blue wire
- 4.75" (12cm) 36AWG blue wire
- 2 x 2" (5cm) 36AWG brown wire
- 4.75" (12cm) 36AWG brown wire
- 6" (15cm) 36AWG green wire
- 6" (15cm) 36AWG blue wire

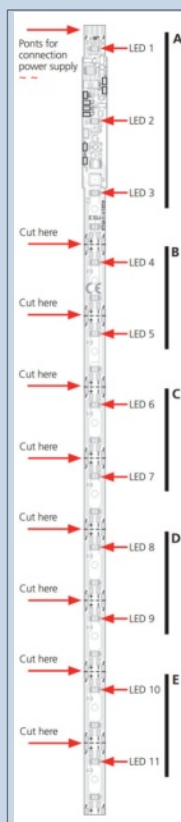
Cut the ESU lighting modules into the following parts:

- 2 x 1.5" (37mm) with 2 LEDs (lower front and rear)
- 5.25" (134mm) with 6 LEDs (lower middle)
- 6.5" (169mm) with 7 LEDs (upper level)

ESU interior lighting boards are made to be cut into separate boards as needed [41].

Next, starting from the front ESU light board, guide the wires between the upper- and lower-level barrier/support and around through the center ESU light board. As with the front, do it similarly to the rear ESU light board.

41. ESU lighting board is designed to be cut to length as needed.



Once you have done that, apply glue to the front board and let sit for five minutes. Then do the middle board, wait five minutes, and finally do the last board [43].

Next, I did the upper-level lighting. I soldered the blue wire to the positive side of the diode located at end of the board and soldered the green wire to the negative side of the diode [44].

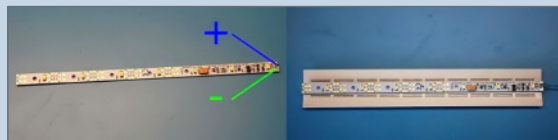
Once soldering is complete, place dabs of Gorilla glue along the middle length of the upper-level light fixture and place the ESU board down the middle. To secure the board in place while the adhesive sets, I used alligator clips [45]. ■



42. ESU boards, cut and wired.



43. ESU light board interior placement.



44. ESU upper-level lighting soldering pads.



45. Affixed ESU board with alligator clips.

I braided the wires together for neatness [40]. Before continuing, I used the digital multimeter to check that I had connected all the fixture lighting correctly.

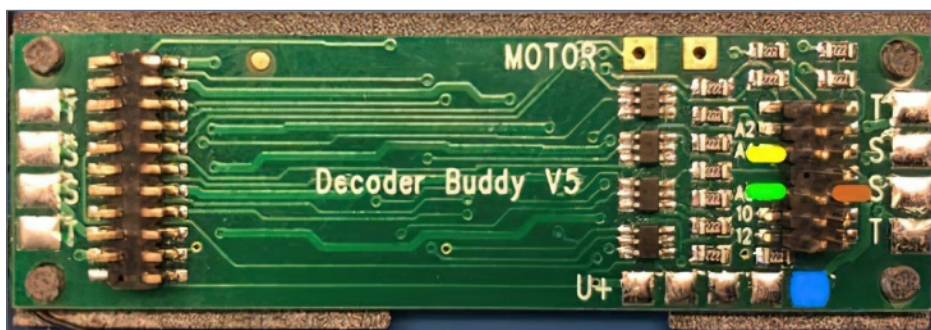
STEP 11: SOLDERING LOWER-LEVEL LIGHTING LEDs TO DECODER BUDDY

This next step can be tackled many ways. Keep in mind the Decoder Buddy function board plug (FBP) allows separating the shell and all the function-driven LED lighting in the shell completely from the chassis. But lighting that's on the chassis interior can't be separated from the chassis, so what to do?

Here are the wiring options:

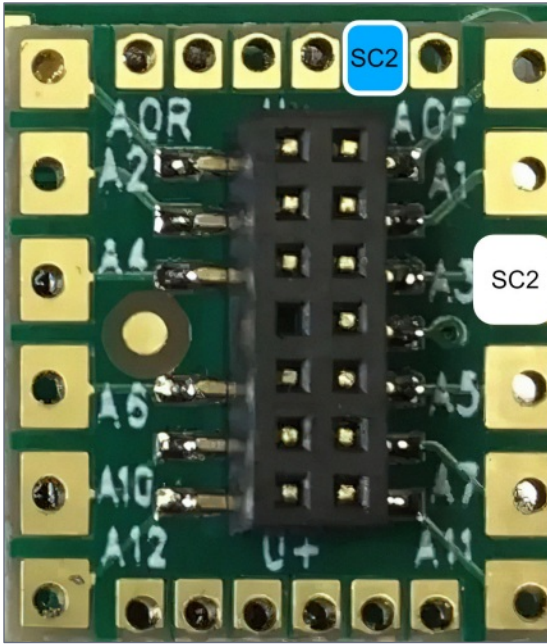
- Hard wire the interior lighting directly to the Decoder Buddy
- Place JST connectors between the FBP and attached interior lighting
- Remove the FBP and use separate header plugs on the pins

Thinking long and hard, I chose option "a" since the Decoder Buddy is basically immovable, and I only need to easily remove the shell without adding extra space to be taken up by JST connectors or a bunch of header plugs.



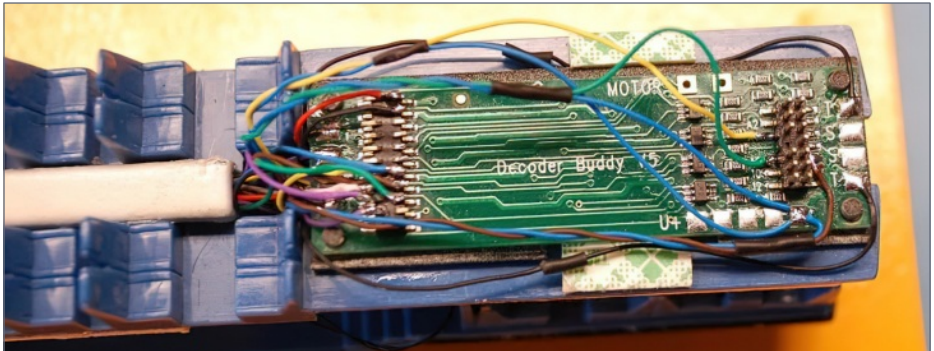
46. Lower-level interior lighting Decoder Buddy function wire solder points (Yellow: AUX4 LL FL, Orange: AUX5 LL RL, green: AUX6 LL ML).





47. Decoder Buddy function board plug pinouts. If using 21MTC decoder, solder upper-level lighting (green wire) to A5.

See [46] for how I proceeded with the wiring. I tinned the pads and used the larger U+ common on the Decoder Buddy for the blue lead.



48. Lower-level lighting leads soldered to the Decoder Buddy main board.

Our next task is to solder the upper-level lighting fixture LEDs to the Decoder Buddy function board plug, and you can use [47] as a reference. If using ESU decoder option 2, use pad A5 (green wire, down one pad) instead of pad A3 as shown here.

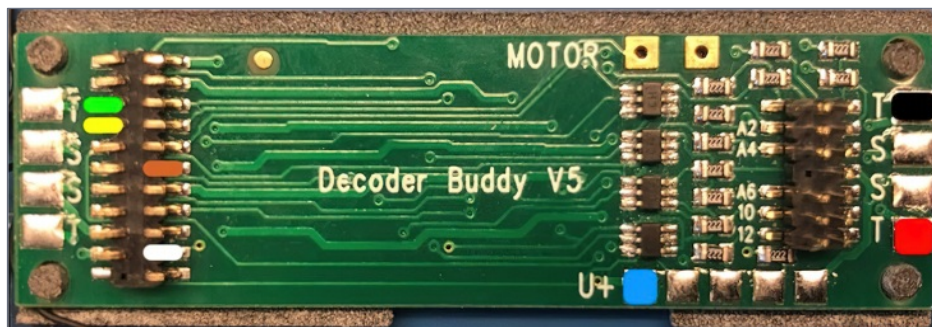
After soldering to the Decoder Buddy, it should look like [48].

SOUNDCAR / CURRENT KEEPER (SET 2) INSTALLATION (OPTION 1)

STEP 12: SOLDERING SC2 TO DECODER BUDDY

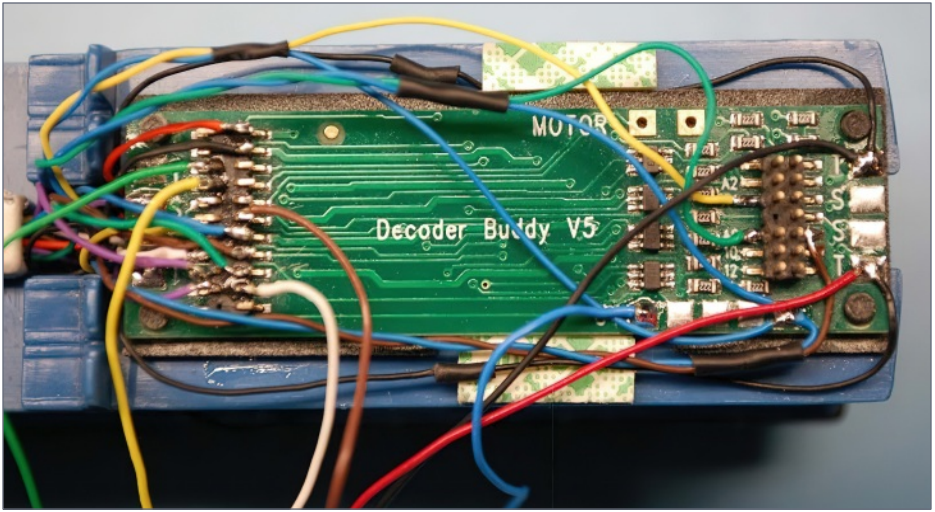
Materials

- 1 x SoundTraxx SoundCar
- 1 x SoundTraxx Current Keeper
- 2" (5cm) 36AWG white wire
- 2" (5cm) 36AWG yellow wire
- 2" (5cm) 36AWG brown wire
- 2" (5cm) 36AWG green wire



49. SoundCar #2 decoder lead soldering points.





50. SoundCar #2 decoder wires soldered to Decoder Buddy main board.

Please follow the diagram below for which SoundCar decoder wires to solder to which Decoder Buddy pads.

Keep the wire leads long as you can hide them later. It is also OK if you decide to shorten the wire lengths as there may be less clutter.

STEP 13A: PROGRAMMING SOUNDCAR #1 CV VALUES (OPTION 1 ONLY)

Materials

- DCC System/Programmer of your choice

You need to program this decoder first so the DCC system, when your cab car is fully integrated, doesn't get confused between two addresses at the same location.

Program with the Current Keeper disconnected on the program track. Otherwise you will not be able to read/write the CV values.

You could also program on the main using Ops Mode.

Here are the steps I did to get the important features I needed.

1. Program your desired short/long address. Make sure this address is different from SoundCar decoder #1.
2. Activate all functions F1-F8 for this cab car while in consist mode
 - a. Set CV 21 = 255 (1111 1111)
3. Activate the front and marker lights, F0(f) and F0(r) respectively, and F9-F12 in consist mode
 - a. Set CV 22 = 63 (0011 1111)
4. Set the headlight, F0(f), functional in reverse
 - a. Set CV 33 = 2 (0000 0010)
5. Set the marker lights, F0(r), functional in forward
 - a. Set CV 34 = 1 (0000 0001)
6. Headlights - Change to LED type
 - a. Set CV 49 = 128 (1000 0000)
7. Marker Lights - Change to LED type
 - a. Set CV 50 = 128 (1000 0000)
8. Ditch light 1 (FX5) - Change to LED type, enable x-ing logic, Phase A, ditch light Type I
 - a. Set CV 51 = 169 (1010 1001)
9. Ditch light 2 (FX6) - Change to LED type, enable x-ing logic, Phase B, ditch light Type I
 - a. Set CV 52 = 185 (1011 1001)
10. Make the ditch lights only work in the reverse direction
 - a. Set CV 57 = 34 (0010 0010)
11. Ditch light Flash Rate (Your preference may vary)
 - a. Set CV 59 = 8 (0000 1000)
12. Change ditch lights to turn on/off using F5 only
 - a. Set CV 39 = 6 (0000 0110)
 - b. Set CV 40 = 0 (0000 0000)



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13. Set Crossing Hold Time to 3 seconds (Your preference may vary)
 - a. Set CV 60 = 3 (0000 0011)

Please verify your desired behavior on your track before moving on to Part III.

STEP 13B: PROGRAMMING SOUND CAR #2 CV VALUES (OPTION 1 ONLY)

Materials

- DCC System/Programmer of your choice

This is the “fun” part that needs some extra thought. By default, the SoundCar uses functions F0(r) and F0(f) for the upper-level lighting and the lower-level front lighting. Additionally, FX5 and FX6 are bound to functions F5 and F6, respectively.

We want to remove any function conflict from the consist and stay within the functions F0 - F12 space.

For this setup, I will be setting my interior lighting to F9 in consist mode and F5 for ditch lights.

1. Set the address of decoder #2 to a different address than decoder #1 so it can be independently configured. Once programmed, you can add decoder #1 and decoder #2 to a consist and control them as if they were a single decoder because all the functions have been set to be fully functional in consist mode.
2. Activate all functions F1-F8 for this decoder while in consist mode
 - a. Set CV 21 = 255 (1111 1111)
3. Activate F0(f), F0(r) and F9-F12 in consist mode
 - a. Set CV 22 = 63 (0011 1111)
4. Upper-level lights (HL) – Change to LED type plus Rule 17 Option. This makes the output directionally independent and now controlled by function F5. FX5 is controlled by this same function.
 - a. Set CV 49 = 192 (1100 0000)



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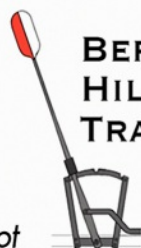
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5. Lower-level front lights (BL) – Change to LED type plus Rule 17 Option. This makes the output directionally independent and now controlled by function F6. FX6 is controlled by this same function.

a. Set CV 50 = 192 (1100 0000)

6. Lower-level rear lights (FX5) - Change to LED type

a. Set CV 51 = 128 (1010 1001)

7. Lower-level middle lights (FX6) - Change to LED type

a. Set CV 52 = 128 (1011 1001)

8. Combine all the interior lights to be controlled by function F5 while freeing up F6

a. Set CV 39 = 6 (0000 0110)

b. Set CV 40 = 0 (0000 0000)

9. Swap functions F5-F8 with F9-F12 so we don't interfere with ditch lights on F5 for the loco and external control car lights.

a. Set CV 60 = 3 (0000 0011)

10. Clear functions F5 and F9 on your main loco so there is no conflict with your consist. Hopefully, it's a SoundTraxx module, which makes things easier.

11. Add decoder 1 and 2 to a consist. You can use the SoundTraxx intelligent consist wand to do this if you wish.

Close up shell and re-install the trucks and couplers. Have fun with this setup.

This specific configuration was used to take advantage of the intelligent consist features of the SoundCar.

You're all DONE!

STEP 13: PROGRAMMING ESU DECODER CV VALUES (OPTION 2 ONLY)

Use the programming track for step 1 only. The rest of the steps should be done on an operating track using programming on the main (Ops Mode) since we have a stay-alive device installed.





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1. Program your desired short/long address.
2. Activate all functions F1-F8 for this cab car while in consist mode
 - a. Set CV 21 = 255 (1111 1111)
3. Activate the front and marker lights, F0(f) and F0(r) respectively, and F9-F12 in consist mode
 - a. Set CV 22 = 63 (0011 1111)
4. Set the headlight, F0(f), functional in reverse
 - a. Set CV 33 = 2 (0000 0010)
5. Set the marker lights, F0(r), functional in forward
 - a. Set CV 34 = 1 (0000 0001)
6. Headlights - Change to LED type and dimmable
 - a. Set CV 49 = 129 (1000 0001)
7. Marker Lights - Change to LED type
 - a. Set CV 50 = 128 (1000 0000)
8. Ditch light 1 (FX3) - Change to LED type, enable x-ing logic, Phase A, ditch light Type I
 - a. Set CV 51 = 201 (1100 1001)
9. Ditch light 2 (FX4) - Change to LED type, enable x-ing logic, Phase B, ditch light Type I
 - a. Set CV 52 = 233 (1110 1001)
10. Upper-level Lights (FX7) - Change to LED type.
 - a. Set CV 55 = 128 (1000 0000)
11. Lower-level Lights (FX8) - Change to LED
 - a. Set CV 56 = 128 (1000 0000)
12. Make the FX7, FX8 and marker Lights work in forward direction
 - a. Set CV 57 = 194 (1100 0010)
13. Make the ditch lights only work in the reverse direction and FX7, FX8 and Headlights work in reverse direction
 - a. Set CV 58 = 205 (1100 1101)



14. Ditch light flash rate (your preference may vary!)
 - a. Set CV 59 = 8 (0000 1000)
 15. Set crossing hold time to 3 seconds (your preference may vary!)
 - a. Set CV 60 = 3 (0000 0011)
 16. Change ditch lights to turn on/off using F5 only
 - a. Set CV 31 = 16
 - b. Set CV 32 = 1
 - c. Set CV 285 = 255 (RPM+)
 - d. Set CV 286 = 255 (RPM-)
 - e. Set CV 259 = 5 (FX3)
 - f. Set CV 260 = 5 (FX4)
 - g. Set CV 39 = 6 (0000 0110)
 17. Change all interior lighting to be controlled by F9
 - a. Set CV 278 = 6 (grade crossing signal)
 - b. Set CV 263 = 9 (FX7)
 - c. Set CV 264 = 9 (FX8)
 18. Set SC1 address to WXYZ
 19. Clear functions F5, F6 and F9 on your main loco so there is no conflict with your consist. Hopefully, it's a SoundTraxx module, which makes things easier.
- Close up shell and re-install the trucks and couplers. Have fun! ☒

Shopping list link:

mrhmag.com/magazine/mrh2022-09/bombardier-upgrade-shopping

Acknowledgements

Much credit goes to DBRX Custom Railroad Models who did this conversion a few years ago. See his YouTube video:

youtu.be/wT0qpQspvbo

This is a good reference, but I wanted a cleaner solution. My hope is that this article provides descriptions of materials, tools and process steps to make this DCC conversion.

Nick Santos of nixtrainz.com provided very useful advice on the Decoder Buddy functionality and how to work through certain install “gotchas” as I call them. A lot of the cab car functionality depends on doing correct thing with the Decoder Buddy. Nick’s willingness to help and stick himself into the mess goes highly appreciated.

Finally, George Bogatiuk from SoundTraxx.com provided me with guidance on how to program the decoders to exactly what I needed for the project to work. Sometimes one might not completely understand the concepts. George was able to answer my questions in a very concise manner. Many thanks to everyone!

CONSTRUCTION NOTES

While building this project, I made these notes of things I would do differently if starting over.

3D-printed / 0.020" styrene parts

- Make the upper-level false floor 3/64" (1mm) taller so the wires can fit more comfortably, specifically to the lower-level front LED leads. This applies to the two SoundCar setup.
- Potentially make notch in lower-level center light fixture to route lower-level front LED leads.
- Make wire pathways in all fixtures so gluing is easier and surface to surface contact is as high as possible.
- Reduce length of SC/CK box by 3/16" (2mm). I did notice that the SC/CK mount box made the upper level bend a bit, so I will need to fix that with Rev C install instructions.
- Change light fixtures to something else to spread light.
- Create separate mount for the lone Current Keeper.

Wiring/soldering

- Use 1mm JST connectors at the rear stairwell for the lower-level lighting going to the Decoder Buddy function board.
- Solder resistors jumpers first when doing the Decoder Buddy soldering process.



- Take more care to clean up the wires being soldered to the Decoder Buddy.
- Modify interior light uniformity by moving two of the lower-level light boards to AUX3 and AUX4. Only applies to ESU decoder setup.
- Place both SoundCar decoders on one mount and put one current keeper on the other side soldered to the Decoder Buddy.
- Use a second speaker for SC2 so you can hear intelligent consist (IC) activation effect when using the IC wand. We can disable every sound except the IC connection sounds. Having 1 speaker in this setup is OK, but it is hard to tell if SoundCar 2 has been intelligent-consisted.
- Use ESU interior lighting parts as a guide for a 3D enclosure.
- To save time, primer and paint 3D printed parts to the desired color before starting the work. ■

ALEXANDER NIETO



Alex ventured into model railroading in 2018. His son requested more cool features, so Alex modified the lighting and functions of his locos and cars.

He is experienced with 3D CAD design and 3D printing, which makes customization simpler. It also results in clean lighting/audio installations. According to him, "there

is no space too tight or loco too small!"

Alex is an Electrical engineer based in San Diego. If you want to see his work in action, check out this YouTube:

www.youtube.com/watch?v=EGW-QrFrFaY&t=12s ■

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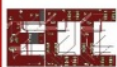
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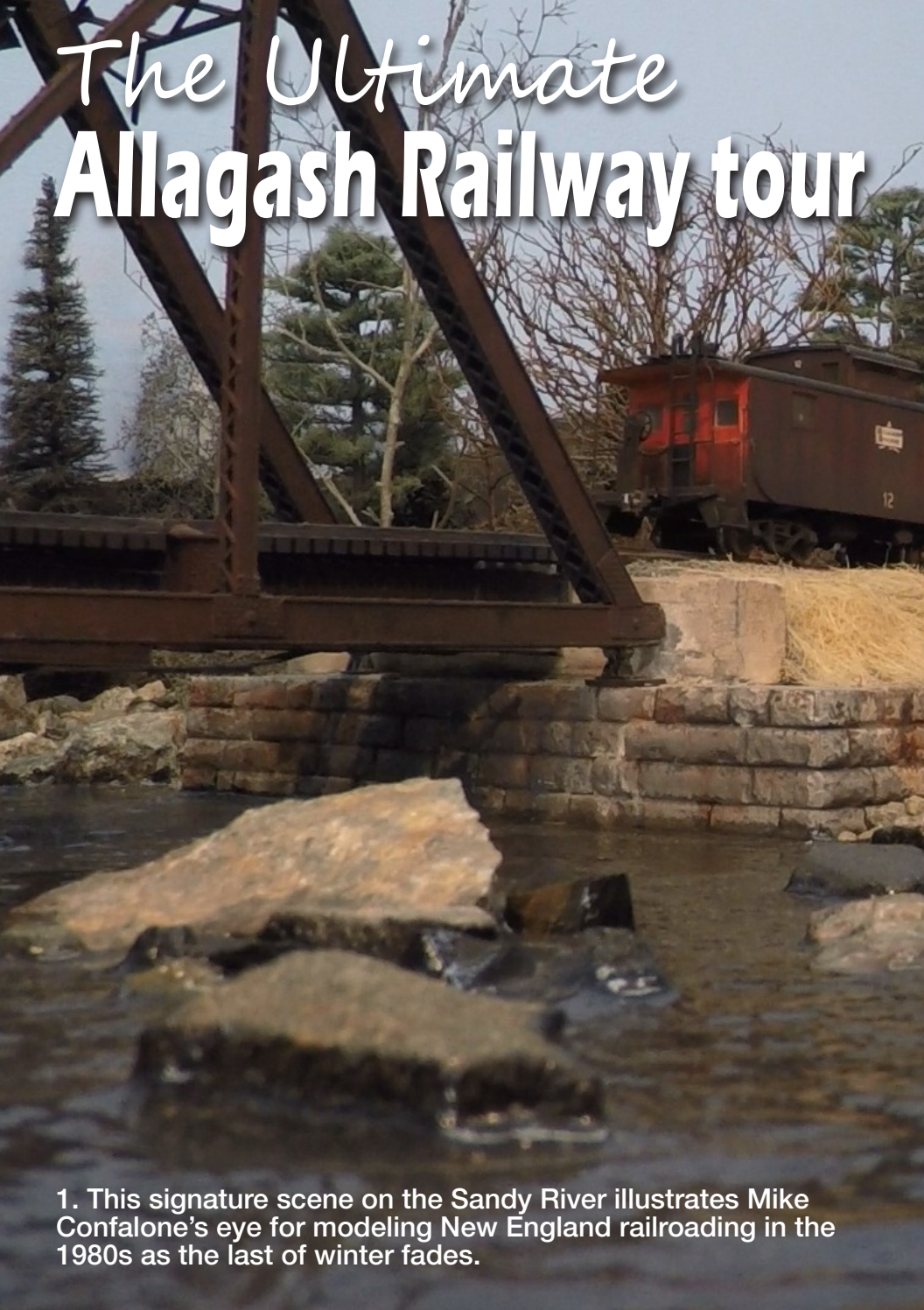
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The Ultimate **Allagash Railway tour**

1. This signature scene on the Sandy River illustrates Mike Confalone's eye for modeling New England railroading in the 1980s as the last of winter fades.



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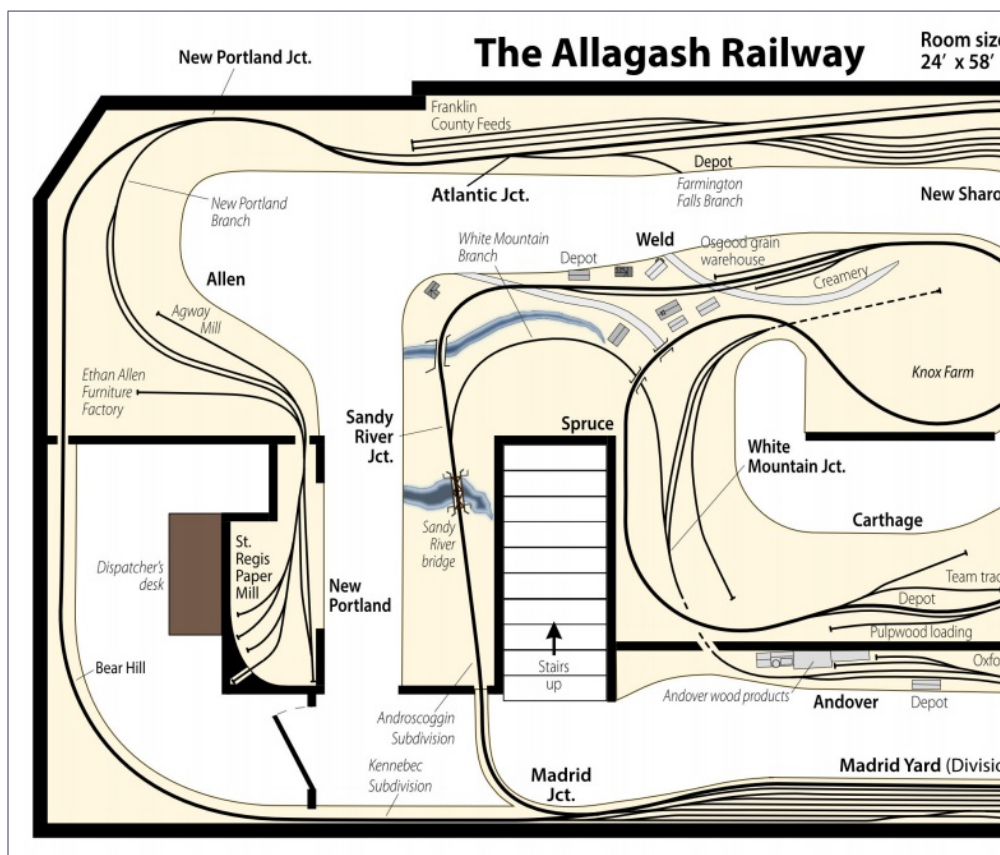
TOURING **MIKE CONFALONE'S** LAYOUT
MODELING 1980S MAINE AT THE END OF
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Model Railroad Hobbyist | September 2022



*Photos and text by Mike Confalone,
with some additional commentary by
Joe Fugate*

WELCOME TO MIKE CONFALONE'S ALLAGASH RAILWAY, a layout that models late winter in the state of Maine during the early 1980s.



2. Most current Allagash track plan.



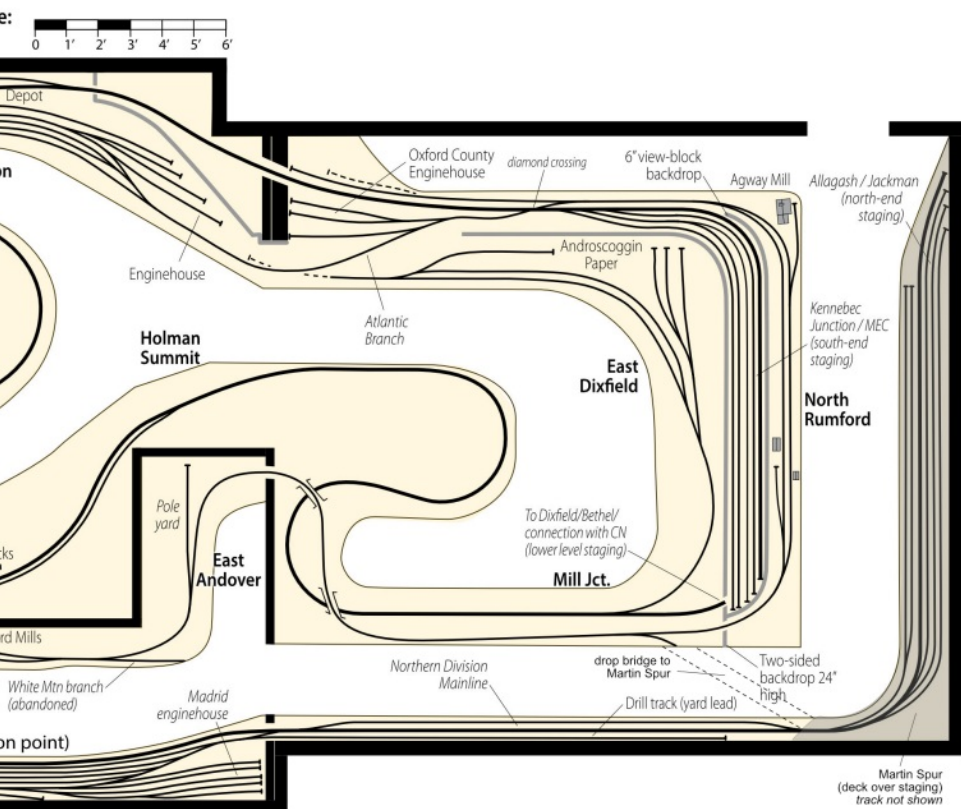
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Joe Fugate: One of my favorite layouts is Mike Confalone's Allagash Railway. Ordinarily to do a layout tour, we interview the layout owner, and we present several "eye candy" photos of finished model scenes. We try to include a track plan if possible to help you get an idea how the layout fits into the room and where the track goes.

With this tour, thanks to *a lot of work* by layout owner Mike Confalone, we're presenting a layout tour that's one of the most thorough ever. We're including over 40 photos, both helicopter views and down close railfan views.



If you want even more, Mike Confalone has produced an in-depth town by town layout tour with lots of running trains and super-detailed closeups as a TrainMasters TV video that runs for over three hours! See trainmasters.tv/programs/allagash-tour-01 for more.

Mike Confalone: In this layout tour, I want to give you a clear and comprehensive view of my railroad as it exists in my railroad room. As part of this tour, I'm also giving you a bird's-eye view of the entire Allagash system in my basement and garage, so you can see where all the pieces of the Allagash puzzle fit together. We've got a lot to cover, so let's get started.



3. Here's the first elevated view of the layout. I'm on a step ladder, just at the entrance doorway. When you come into the room, the first thing you see on the left is the Martin Spur, which is yet to be scenicked. The north-end Allagash staging yard sits underneath. On the right is the Oxford County branch line above, and below sits the south-end staging for the Androscoggin Subdivision.

Also on the right, note a two-tiered backdrop, neither of which goes all the way to the ceiling. We're in the garage, by the way. Let's move the ladder down to around the corner just ahead of us there.





4. There's the entrance door where we just were, and I'm turning back the other direction. That's North Rumford on the Oxford County to the left, and the Martin spur on the right with Allagash north-end staging underneath. To the far left, you can now see another staging yard behind the Oxford County low backdrop. That staging represents Kennebec Junction / Waterville connection with the Maine Central on the Allagash's Kennebec Subdivision.

Around the corner out of view to the left is a cross-aisle hinged bridge that connects the Martin Spur with the rest of the Oxford County. We're still in my garage here.





5. View along the tracks at North Rumford, with an Agway fertilizer blend plant in the distance.



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6. There's a lot going on in this unfinished area. In the front-most track we have the Oxford County, which is climbing through this yet-to-be-finished scene against the backdrop, which is called South Andover. You can just make out a barn in what will be a nice rural scene. The hinged bridge hanging just below the turnout is the cross-aisle bridge to the Martin Spur.

The other track below and behind the Oxford County, is the Androscoggin mainline of the Allagash climbing out of lower level staging, past East Dixfield (on the right out of view). Just beyond the East Dixfield switch, the mainline will dive into a tunnel, wind around under the South Andover scene, and emerge just past the end of the backdrop on the upper right.

Just behind the backdrop on the upper right is the big mountain at Holman Summit. There's a lot going on here, and a lot of scenic treatments need to be done. The Oxford County has the front seat here as it climbs the hill through South Andover and on to North Rumford just to the right of this view [see 4]. Let's move the ladder again.

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7. This gives you a perspective of East Dixfield. The Androscoggin subdivision emerges from staging here, and a long spur branches off to the paper mill at East Dixfield. I'm still finalizing the track alignment here.

The spur here will include an engine facility. I'm planning a yard at East Dixfield, up near the paper mill. We're still in the garage, and we've got another 10-15 feet to go to reach the basement. Let's move the ladder on towards the main yard at Madrid and take a look.

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8. This is Madrid yard on the left. I'm in the doorway entrance between the garage and the basement. This is where Madrid yard starts, the major classification yard on the railroad. On the far left we have an aerial view of the Madrid engine terminal and switchers, frozen in time in the middle of the session. There's also the sanding and fueling area, and the two-stall engine house. The yard sprawls out before us.

In the distance at the south end of the yard there's a duckunder across the aisle that follows the Androscoggin Subdivision to the right out into the main part of the basement. On the left along the wall at the far end of the yard, you can barely make out a train perched on a narrow shelf waiting to enter the south end of Madrid yard – that's the Kennebec Subdivision climbing up a hill through the boiler room. Stairs to the main level of the house are just in front of the duckunder.

To the right across the aisle is Andover and the Oxford County branch. The Oxford County swings through East Andover where there's a pole trans-load [see 9a].

Confused yet? We've just gotten started.

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9. Switching the mill at Andover.

[The photo backdrop combined with the skillfully weathered equipment makes this scene almost look like a prototype photo. – Joe F.]



9a. Pole loads at the trans-load spur in East Andover.



10. Motive power sitting at the Madrid yard engine terminal.



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11. We're looking at the crossing of the Sandy River on the Androscoggin Subdivision here. Off to the right, the tracks disappear into the trees and cross the duckunder over to the yard at Madrid.

Beyond the bridge to the left is a junction for the White Mountain branch curving off to the right. The line on the left of the switch follows the Androscoggin Subdivision on around the corner into the town of Weld.

Across the aisle in the distance is the entrance into New Sharon.

Across the aisle from this scene is the paper mill at New Portland [13].

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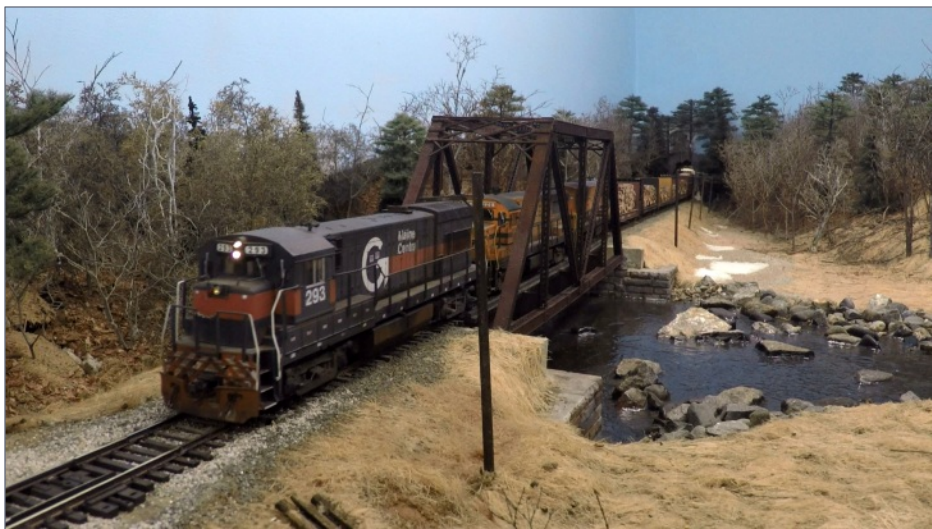
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12. A pulpwood train leaves Madrid and rolls onto the Androscoggin Subdivision as it rumbles across the Sandy River bridge.



13. Here is the paper mill complex at New Portland.
[Note the melting snow piles and the skillful blending of 3D structures and wood chip pile with the photo backdrop. – Joe F.]



14. Switching the paper mill at New Portland.



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15. The paper mill at New Portland.

[Mike's blending of a photo backdrop with some foreground structures makes for an eye-popping industrial scene. – Joe F.]

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16. We're following the Androscoggin Subdivision past mile-post 7 in this view, with the White Mountain branch on the far bank of the river.

The White Mountain branch in back runs to the left and gets enveloped by trees, coming out of the trees on the other side at White Mountain Junction [38]. The town of Weld is off to the left just out of view, along the near bank of the river.

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17. We're looking at Weld from above here. In the distance the Androscoggin Subdivision loops around past Knox Farm and then climbs upgrate to Carthage. That's Holman Mountain in the center distance.

Across the aisle to the left, you can see New Sharon yard. You can just barely make out the Farmington Falls branch heading off the bench on the far left, with New Sharon yard in the distance. Note that Weld and New Sharon are right across the aisle from one another.

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18. Allagash GP7 #500 switches the industries at Weld.

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19. Pulpwood load at Weld awaiting pickup.



20. Just on the other side of the wall from the New Portland paper mill [13], the tracks emerge at a location known as Allen on the New Portland branch. Ethan Allen furniture sits on the left of the branch, and with an Agway feed mill on the right.

In the upper left corner, the Kennebec Subdivision main emerges from the utility room and follows behind the Ethan Allen office and the Gulf station. At that point, the Kennebec Subdivision mainline splits into the main and a passing track.

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21. Sandy River Farm and Building Supply.



22. On the right, we can see the town of Weld. At the upper right, you can see the snow-capped mountain up at Holman Summit, and across the aisle to the left is an aerial view of New Sharon and the sweeping curved yard there.



23. A mixed freight rolls through New Sharon with low-nose Allagash #507, Main Central #572, and Allagash #211 as power.



24. Here at the end of New Sharon yard, we've got a big pile of salt, and in front of that, the engine facility. Here sits a switcher, some road power, and the single stall engine house just barely in view on the right.





25. Road power at the New Sharon engine terminal: aging Allagash F unit #405 and GP7 #577 in a newer yellow Maine Central paint scheme.

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26. The tracks go around a big broad curve at Knox, or Knox Farm in the foreground. The tracks hug the edge of the bench here, with a farm and farmhouse up on the Hill out of the scene on the right.

Across from Knox, stands Holman Mountain and the railroad's big rock cut at Holman Summit. The Androscoggin Subdivision climbs 2% upgrade over this summit. The top of Holman mountain is pretty high – I'm two steps up on a step ladder here, and I'm just above it. The tracks disappear around the corner of the mountain, and head back into the hidden area discussed in photo [6].

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27. A heavy pulpwood train is working the grade near Holman Summit.



28. Looking down through Holman summit, we're in the middle of the rock cut here, with the mainline and passing track climbing a 2% grade. In the distance you can see Carthage with its pulpwood loading and team track. The Androscoggin Subdivision goes out of the scene in the distance to the upper right and loops above White Mountain Junction.



29. We're looking back in the other direction at Holman Summit now. In the distance across the aisle you can see a bit of the paper mill at East Dixfield, and on the upper left, the Oxford County engine terminal.



30. Railfan level view of Holman Summit. Even though there's no trains in this view, it still has a great big time railroading feel to it. In addition, the seldom-modeled melting snowbanks just shout *mountain railroading*.



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31. Another view of Holman Summit with Knox Farm across the aisle, and Carthage barely visible in the far distant alcove.



32. Here is an aerial view of Carthage, with the big wood yard at International Paper in the back for pulpwood loading. In the front stands the Carthage team track. The Androscoggin main disappears in the distance to loop around behind White Mountain Junction.



33. Allagash GP7 #500 and caboose 12 standing on the track in Carthage.



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34. (Bottom left) Switching the International Paper wood yard in Carthage.

35. (Top right) Good overview of Knox Farm loop in the center, with Holman Summit on the left and New Sharon yard on the right. In the far right distance, you can see the turquoise Franklin County Feeds mill complex standing prominently just beyond New Sharon yard.

Tucked in the distant alcove between Knox and Hollman Summit sits the town of Carthage.

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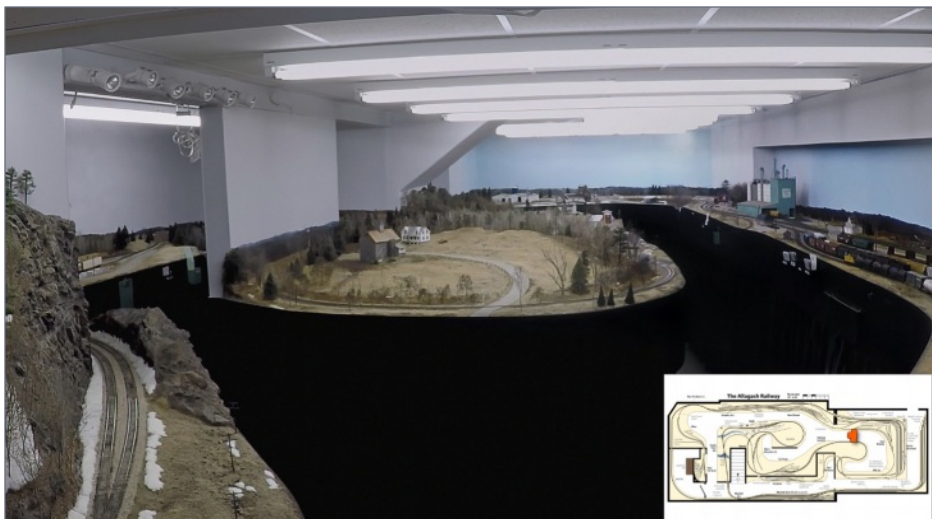
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36. The big curve at Knox Farm.

[Note the excellent use of “empty” or “negative space” here, something that’s not often seen on model railroads. Mike’s scenic execution is superbly minimalist, being little more than a big empty pasture with a barn and house in the distance. A great example of how to take almost nothing as to scenery and really make it into something special. – Joe F.]



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38. We're here at White Mountain Junction, with the Androscoggin Subdivision above in the back. The Oxford County branch runs off to the left.

Off to the right is an area we call no-man's land, also called Spruce on the railroad – it's actually a staging track that runs underneath the farm.

In the back you can see the rail line coming in from mile post 7 and Sandy River [11, 16]. This location serves as a modest junction where the Allagash and the Oxford County interchange. This also serves as the maintenance-of-way base for the Allagash.

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39. Allagash maintenance-of-way equipment and supplies.

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40. Pulpwood trans-loading at White Mountain Junction.



41. Here's the Oxford County engine house tucked away into the corner of the garage. Those tracks in front of the old freight house in the distance are actually the Kennebec Subdivision of the Allagash coming through the backdrop on the left.

The Allagash and the Oxford County share the track barely visible in the lower left foreground for the branch to Lincolnville, called the Atlantic branch, which comes out of New Sharon off to the left out of the picture.

This same line also doubles as the line to Rumford Point for the Oxford County. You have to just use your imagination to separate the two.

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42. This is a good summary view from inside the garage back toward the basement. That's Holman Mountain on the left and Androscoggin Subdivision dropping down a 2% grade.

There's the big curve at Knox barely visible in the distance, and on the distant right sits New Sharon and the Kennebec Subdivision.

I do hope these aerial views give you a good idea of how the railroad is set up. It's difficult to explain sometimes. Even though you're not physically here, these pictures can help you get an idea of how I've laid things out in the space.

Joe Fugate: Just a reminder that Mike Confalone has produced an in-depth town by town layout tour for TrainMasters TV. The video has lots of railfan-level views of trains and super-detailed closeups, running for over three hours total!

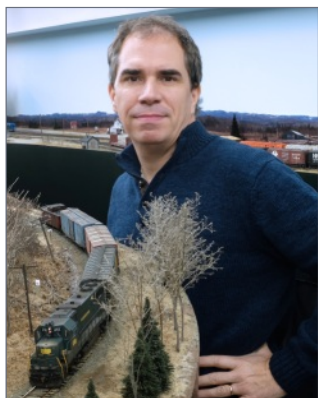
See trainmasters.tv/programs/allagash-tour-01 for more. We're expecting four parts in all, and as of this writing, part 1 has been posted with more to come soon. ☑

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MIKE CONFALONE



Mike Confalone grew up in Smithtown, NY, and got into model railroading at age 10 or 11.

Today, Mike's proto-freelanced, under-construction Allagash Railway occupies a 58' x 24' space – his entire basement and the former two-car garage.

Mike loves all aspects of model railroading, from benchwork on up, but his specialty is scenery and weathering. He also enjoys the challenge of prototypical operations. ■



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43. Railfan level view of the Oxford County engine facilities.

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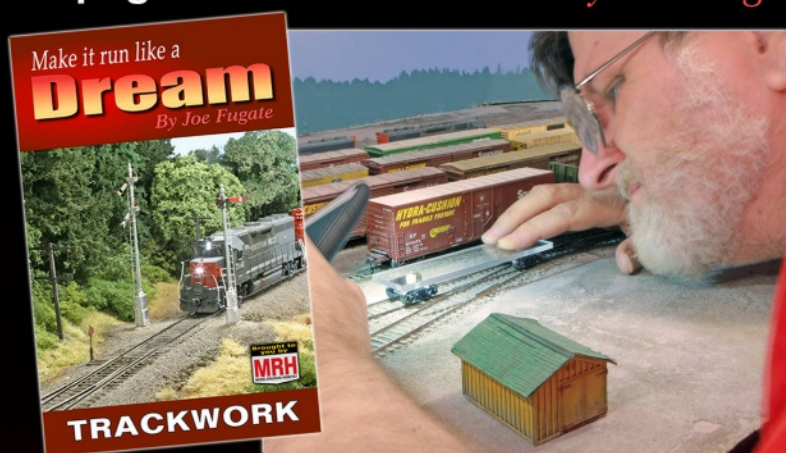
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ULTIMATION SLICER



1.The Ultimation Slicer. *Product photo*



Model Railroad Hobbyist | September 2022

JEFF PALMER REVIEWS ULTIMATION MODELING TOOLS' NEW PRECISION SLICING TOOL ...

MY FRIENDS WOULD TELL YOU THAT I'M A TOOL

"JUNKIE." I linger in the tool sections of many stores, and suffered withdrawal when Sears closed. Al Collins of Ultimation Modeling Tools (www.ultimation.ca) has stepped up to provide me with my current fix: the Ultimation Slicer.

I noticed the weight when the box arrived. This tool has heft. I wasted no time opening the package [2]. As tools go, this is a solid performer.

ULTIMATION SLICER | 2

The Ultimation Slicer is ready for use right out of the box. An adjustable stop arm is included in the box to allow repeatable cuts, but this must be installed [3].



2. This is what I found in the box after making my way through the bubble wrap.



3. The bag for the adjustable stop arm includes the arm, an adjustable stop, mounting screws, hex wrenches, extra blades, and an extra cutting mat.



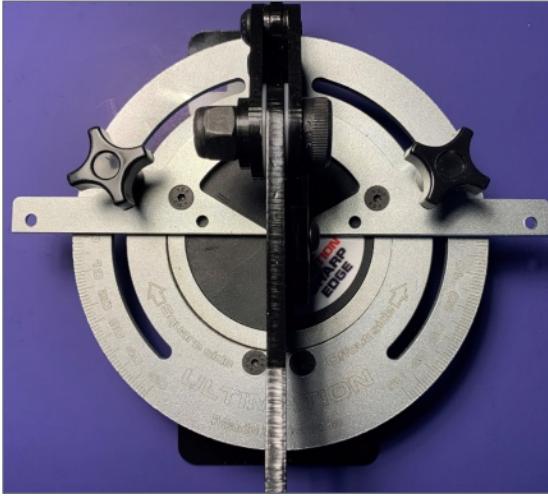
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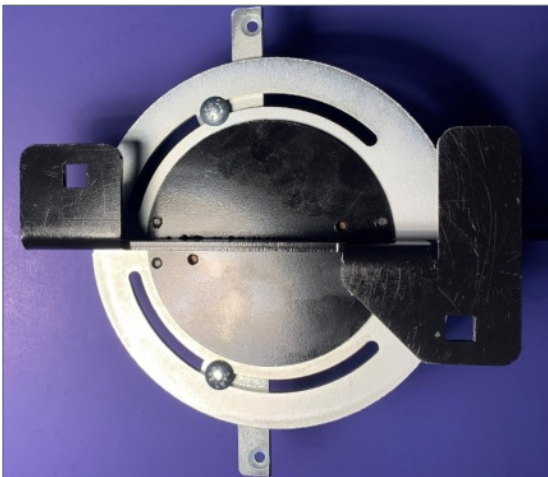
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ULTIMATION SLICER | 3

The fence needs to be removed to install the adjustable arm. To do this, place a finger on the thumb screws holding the fence and turn the adjustment nobs to loosen. There are washers between the thumb screws and the fence, so take care not to lose them [4, 5].



4. The knobs on either side of the slicer loosen to adjust or remove the fence. The holes on the fence are for mounting the adjustable stop arm. Etchings on the surface of the Slicer provide a protractor and denote the square and offset sides of the blade.



5. Thumb screws for the fence on the underside of the slicer.

ULTIMATION SLICER | 4

Once both thumb screw knobs and washers are removed, the thumb screws will drop out and the fence will slip right out. Ultimation provides detailed instructions for installing the adjustable arm [6]. Once assembled, it should look something like [7].

ADJUSTABLE STOP INSTALLATION



- Flip handle over.
- **CAUTION:** Blade fully exposed and very sharp!
- Put tape on blade as a precaution.



- Remove fence.



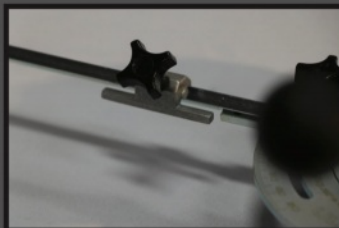
- Turn fence over
- Install rail with screws provided.
- Ensure rail is on the **LEFT-HAND** side when reinstalled



- Tighten screws. (hex key provided)
- **DO NOT OVER-TIGHTEN.**



- **NOTE:** rail on the **LEFT-HAND** side.
- Replace fence.



- Slide stop into place.
- Ready to go to work!

6. Ultimation instructions for installing the repeater arm.



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7. Ultimation Slicer with adjustable stop arm installed.

Let's look at a couple similar products for comparison: North West Short Lines (NWSL) Chopper (www.nwsl.com) and the Precision Measurements (PM) Miter (precisionmeasurementsformodels@gmail.com). I will use each to cut through 12 x 12 scale lumber in O, S, and H0 at 90- and 45-degree angles.

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J. Palmer

THE CUTTING PHYSICS OF CHISELS VS. DOUBLE-BEVELED RAZORS

A distinguishing feature of the Slicer is that it has a heavy-duty chisel blade instead of a razor blade. That got me to wondering, does it make a difference? To answer that question, you need to know the physics of cutting.

A blade acts like an amplifier of applied force, concentrating it along a very narrow edge, which explains why the finer the blade, the easier it cuts. Unlike a saw that removes material (kerf), a knife forces the material it is cutting to fracture with no loss of material.

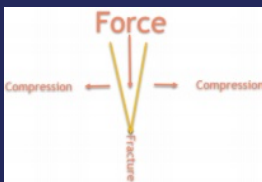
In the process of fracturing the material, compression takes place along the surface of the blade's structure. The fracture is basically a reflection of the shape of the blade, i.e., "V" shape of the razor blade bevel [8].

A chisel, by contrast, is beveled on only one side. The compression is concentrated on the bezel with minimal compression on the flat side. This translates to a flatter cut on the flat side of the blade, but a bevel compression on the beveled side [9].

There are several advantages a chisel blade has over a double-beveled blade: 1) The chisel's shape gives it greater mass and strength than a razor. 2) Because the chisel blade is beveled on one side only, there is less drag, so the blade cuts easier.

For more information, check out this thread on reddit: [www.reddit.com/r/chefknives/comments/mgl8k9/](https://www.reddit.com/r/chefknives/comments/mgl8k9/geometry_cuts_the_physics_behind_why_some_knives)
[geometry cuts the physics behind why some knives](https://www.reddit.com/r/chefknives/comments/mgl8k9/geometry_cuts_the_physics_behind_why_some_knives)

Also check out the information found on this page:
ffden-2.phys.uaf.edu/webproj/211_fall_2018/Chloe_Allan/chloe_allan_physics211/4physicsofacut_chloe_allan.html



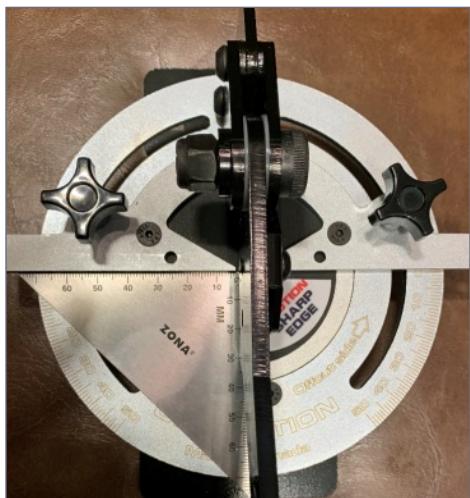
8. (Left) A double-sided razor blade compresses material on either side of the fracture line.

9. (Right) A chisel blade compresses material only on the beveled side of the fracture line.



Another distinguishing feature of the Slicer is its movable fence to set the cutting angle. With the easy-to-read protractor on the surface of the tool, you can set the cutting angle to anywhere between zero and 50 degrees [4]. The Chopper, Miter, and other similar tools have a fixed fence and use triangles to provide cutting angle choices of 30, 45, or 60 degrees.

I believe in the “Trust, but verify” philosophy, so I double-checked the fence alignment at 90- and 45-degrees using a Zona Triangle. I aligned the back surface of the triangle firmly against the backside of the chisel blade and adjusted the fence to align with the base of the triangle. I found the alignment to be perfect on the “square” side, though off by one degree on the “off cut” side [10, 11].



10. Testing the 90-degree alignment with my Zona Triangle.



11. Testing the 45-degree angle with my Zona Triangle.

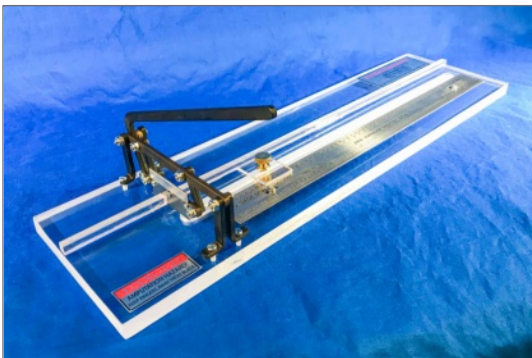
THE TEST

With the Slicer's protractor scale validated, I was ready to do some cutting. I'm a long-time user of the NWSL Chopper, and it seemed appropriate to compare it to the Ultimation Slicer [12]. To make the comparison more comprehensive, I added the PM Miter to the mix [13].

I tested using O, S, and HO scale 12 x 12 lumber to represent some of the largest material used in a craftsman kit or a typical scratch build. The scale lumber is readily available to allow for repeatable testing and results [14].



12. The NWSL Chopper II.



13. The PM Miter.



The process was straightforward:

1. Each board was checked for square
2. Grain was checked to make sure each cut was across similar grain (all were quarter-sawn, and boards were found with similar angle of grain).
3. Each board was squared between cuts.
4. Each cut was made with a slow, steady pressure – no quick chopping motion.
5. Each board was measured at the top of the cut and the bottom [15]. The difference was logged as the deflection.
6. Each cut was made three times and the deflection averaged for each machine.



14. Setting up the experiment.

A machinist square was used to view any blade deflection [16, 17, 18].

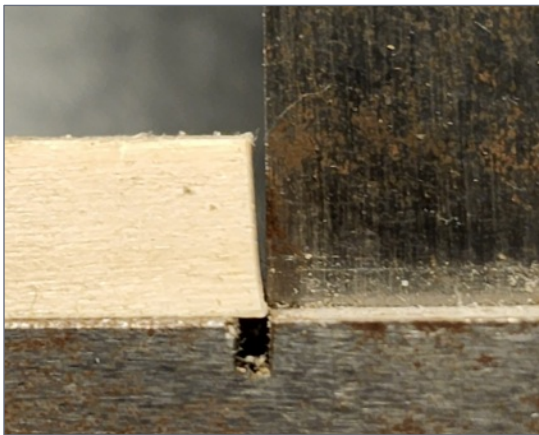
For those who forgot what deflection is, as the material is being cut, the blade bends away from the cut, making the top of the cut narrower than the bottom of the cut. The sharpness, thickness, and shape of the blade all affect the cut.

A dull blade tends to crush the material before cutting it. The thicker the blade, the greater the compression, the wider the resulting deflection. The thinner the blade, the greater the likelihood the blade will bend, increasing blade deflection.

The results from the test are as follows (the measurements were done using a Micro-Mark digital caliper) [19].



15. Measuring the cuts using a digital caliper.

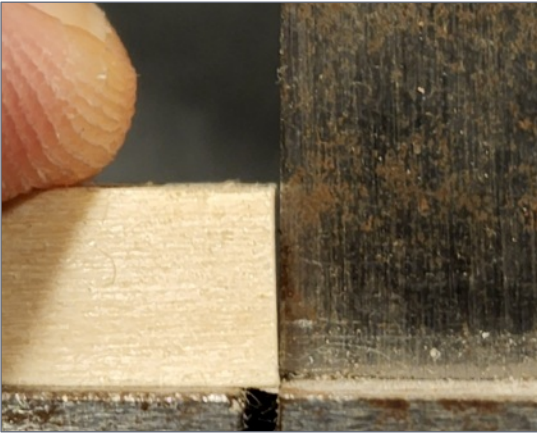


16. Deflection for the Chopper.





17. Deflection for the Miter.



18. Deflection for the Slicer.

CUTTING TECHNIQUE MATTERS

During the process, I learned that the velocity and consistency of the stroke matter. Slamming the blade down on the material being cut will lead to compression before the cut starts. A slow, steady stroke allows the cut to begin closer to the compression, yielding a crisper, cleaner cut.

Al Collins provided a full-page write-up in the materials accompanying the Slicer, and he recommends precisely that smooth, consistent motion to provide a clean cut [20]. The funny part is that the same

slow, steady technique also improved the cuts on the Chopper and the Miter. So, I guess the old statement, “speed kills” has a corollary in the Chopper, Miter, Slicer world: slow and steady works best.

The Slicer provides a square cut that my previous tools did not, but the offside cut is not square. A second, thin cut will square it up.

BLADE REPLACEMENT

One of the unfortunate problems with any cutting device is that the blade dulls and needs replacement. Fortunately, this is easy, requiring the removal of only one screw with a 4mm Allen wrench. The package includes helpful instructions for this [21].

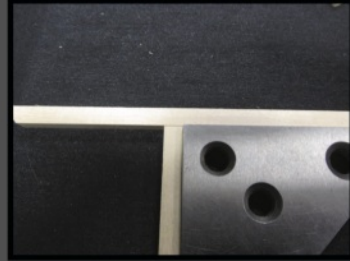
1	<u>O Scale 12"x12"</u>	<u>AVG Deflection</u>
2	NWSL Chopper	0.072
3	Precision Measurement	0.026
4	Ultimation slicer	0.014*
5		
6	<u>S Scale 12"x12"</u>	<u>AVG Deflection</u>
7	NWSL Chopper	0.018
8	Precision Measurement	0.013
9	Ultimation slicer	0.012*
10		
11	<u>HO Scale 12"x12"</u>	<u>AVG Deflection</u>
12	NWSL Chopper	0.029
13	Precision Measurement	0.009
14	Ultimation slicer	0.005*

19. Experimental results.



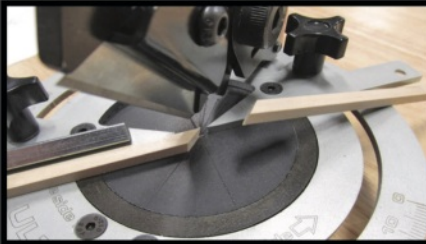
SLICER TECHNIQUES

Performing Right-Angle (and near-right-angle) Cuts



Hold stock firmly against the fence, cut in a controlled manner.
Achieve a precise cut and a perfect joint.

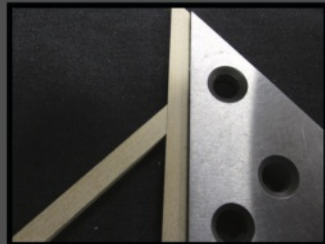
Higher Angle Cuts in Thicker Stock



An imbalance in cutting force is created when slicing more acute angles, this is more pronounced in thicker stock.

As a result initial cuts may not be exactly square.

The Technique...



Cut the piece long, then SLICE off approximately 1/8 in.
A precise angle joint can then be achieved.

For more on this technique visit our YouTube channel "Ultimation Modeling Tools" and have a look at the "Slicer Techniques" video.

20. Ultimation Modeling Tools owner Al Collins included this guide for effective cutting technique. A link to the instructional video can be found here:

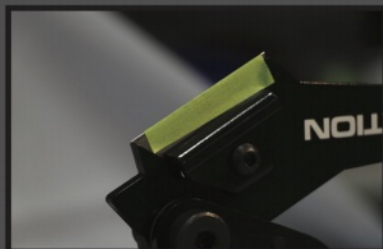
www.youtube.com/watch?v=Ea-xq85B6sE

BLADE CHANGE SUGGESTION

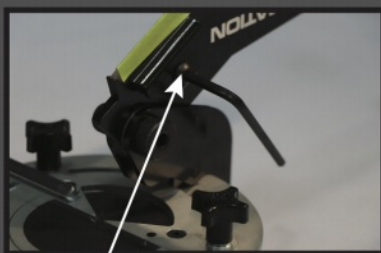
- 10 new blades are included with your Slicer.

- **NOTE: DO NOT USE UTILITY KNIFE BLADES** (they will not work).

- Only use blades supplied or **SPECIALTY BLADES** available from **ULTIMATION**.



- Flip handle over to expose blade.
- **CAUTION: Very sharp!**
- Put tape on the edge as a precaution.



- Loosen clamp screw (hex key provided) just enough to remove blade.



- Remove old blade and insert new sharp blade.
- Make sure **BEVELED EDGE** is to the **RIGHT**.
- Tighten screw just enough to keep blade from falling out.



- Bring handle back down so that the blade contacts cutting mat.
- Apply small amount of pressure to set blade properly.



- Tighten clamp screw.
- **DO NOT OVER-TIGHTEN.**
- Ready to go back to work!

21. Enclosed instructions for replacing the Slicer blade.

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Please remember, the old blade is still **SHARP** and can inflict a nasty wound if handled incorrectly. Covering the blade with painter's tape as shown in the instructions is a good start.

Since it is possible to install the blade backward, pay attention to the orientation of the blade. Use the larger Allen wrench (4mm) included with the Slicer to loosen the blade clamp screw, and the old blade will drop out.

The Slicer includes 10 replacement blades, but more are available on the website, along with replacement cutting pads [22, 23]. Please note that although the Slicer's blades look like utility blades at first glance, they are specially designed single-bevel chisel blades. Because utility blades are dual beveled, they will not work with the slicer.



22. Replacement Slicer blades.



23. Replacement cutting mats.

SOME FINAL NOTES

While the Slicer does not require a base, I made one by cutting a piece of $\frac{3}{4}$ " plywood to 6" x 9" and mounting the Slicer to it. I routed the edges, sanded it, stained it, and finished it with polyurethane. A precision tool deserves a nice base [24].

Especially when cutting large stock, be sure to use the adjustable stop. Hold the stock firmly while slicing to minimize movement. The top will help limit the blade's push back.

To refinish the off-cut, and to guarantee that the square side is perfect, I use the Ultimation Sander (Reviewed in December 2020 *MRH Running Extra*) or NWSL True Sander [25, 26].

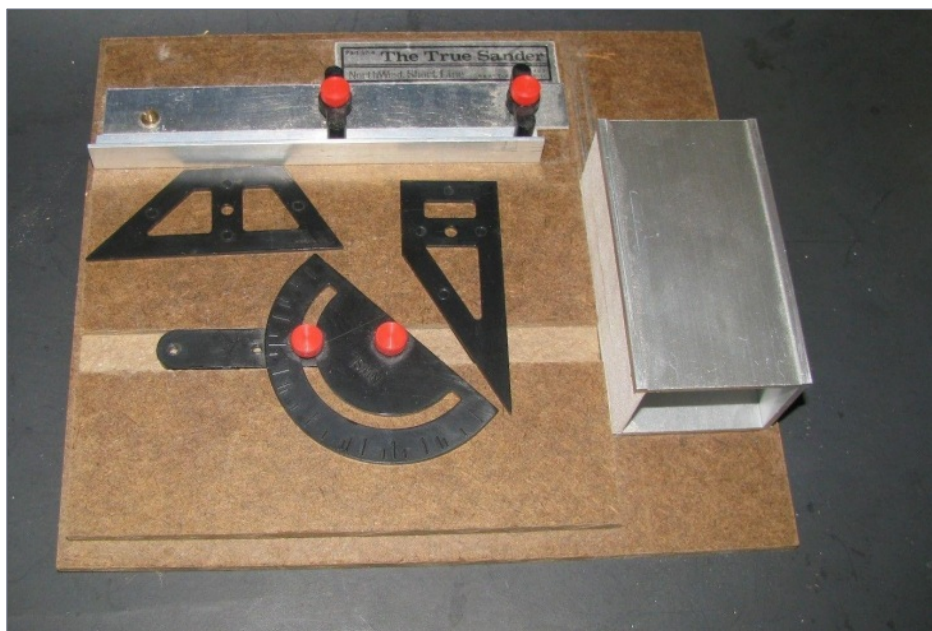


24. The Slicer with its base.





25. Ultimation Sander.



26. NWSL True Sander.

The fact that you can set the fence to 45° and make cuts is a dream come true. I hated having to use a metal or plastic triangle and hold the material while making the cut. Too many things to go wrong.

If I have an issue with the Slicer, it's that the foot of the stop is not wide enough. When I build a car, or a board-on-board building, I have to cut dozens of identical boards. I normally cut five or six sticks of scale wood at a time.

The foot on the Slicer accommodates only two or three sticks at once. I would like to see the foot of the stop widened to match the foot used on the Repeater.

This quality tool will redefine the standard for "chopper" -like tools. It has become my go-to tool for cutting strip wood. ✓

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JEFF PALMER



Jeff spent 50 years developing software, and 25 years as a college professor. During that time, he was a modeler. He loves to build structures, bridges, scenery, and locos, and his interest is in logging and mining (narrow gauge). He enjoys the ruggedness of logging and mining railroads, and the scenery and landscape. Model railroading

allows him to expand his skill set, work with his hands, and share with his friends, the things he has learned.

About two years ago, he completed his MMR (Master Model Railroader) certificate from the NMRA. During that journey, he had the privilege of meeting many modelers he looked up to. He hopes to be a part of that group someday. ■



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Floquil/PollyScale stash running out?



MRH has mapped the old familiar colors to readily-available acrylic paints.



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

Floquil / PollyScale Color Name	Model Market	Color Name	Model Market	Color Name	Model Market	Color Name
Engine Gray	MRH 4063	YMA 71-020	10-12			
Engine White	MRH 4064	YMA 71-021	10-13			
Engine Brown	MRH 4065	YMA 71-022	10-14			
Engine Blue	MRH 4066	YMA 71-023	10-15			
Engine Yellow	MRH 4067	YMA 71-024	10-16			
Engine Red	MRH 4068	YMA 71-025	10-17			
Engine Green	MRH 4069	YMA 71-026	10-18			
Engine Purple	MRH 4070	YMA 71-027	10-19			
Engine Silver	MRH 4071	YMA 71-028	10-20			
Engine Gold	MRH 4072	YMA 71-029	10-21			
Engine Copper	MRH 4073	YMA 71-030	10-22			
Engine Bronze	MRH 4074	YMA 71-031	10-23			
Engine Steel	MRH 4075	YMA 71-032	10-24			
Engine Lead	MRH 4076	YMA 71-033	10-25			
Engine Tin	MRH 4077	YMA 71-034	10-26			
Engine Zinc	MRH 4078	YMA 71-035	10-27			
Engine Nickel	MRH 4079	YMA 71-036	10-28			
Engine Platinum	MRH 4080	YMA 71-037	10-29			
Engine Silver	MRH 4081	YMA 71-038	10-30			
Engine Gold	MRH 4082	YMA 71-039	10-31			
Engine Copper	MRH 4083	YMA 71-040	10-32			
Engine Bronze	MRH 4084	YMA 71-041	10-33			
Engine Steel	MRH 4085	YMA 71-042	10-34			
Engine Lead	MRH 4086	YMA 71-043	10-35			
Engine Tin	MRH 4087	YMA 71-044	10-36			
Engine Zinc	MRH 4088	YMA 71-045	10-37			
Engine Nickel	MRH 4089	YMA 71-046	10-38			
Engine Platinum	MRH 4090	YMA 71-047	10-39			
Engine Silver	MRH 4091	YMA 71-048	10-40			
Engine Gold	MRH 4092	YMA 71-049	10-41			
Engine Copper	MRH 4093	YMA 71-050	10-42			
Engine Bronze	MRH 4094	YMA 71-051	10-43			
Engine Steel	MRH 4095	YMA 71-052	10-44			
Engine Lead	MRH 4096	YMA 71-053	10-45			
Engine Tin	MRH 4097	YMA 71-054	10-46			
Engine Zinc	MRH 4098	YMA 71-055	10-47			
Engine Nickel	MRH 4099	YMA 71-056	10-48			
Engine Platinum	MRH 4100	YMA 71-057	10-49			
Engine Silver	MRH 4101	YMA 71-058	10-50			
Engine Gold	MRH 4102	YMA 71-059	10-51			
Engine Copper	MRH 4103	YMA 71-060	10-52			
Engine Bronze	MRH 4104	YMA 71-061	10-53			
Engine Steel	MRH 4105	YMA 71-062	10-54			
Engine Lead	MRH 4106	YMA 71-063	10-55			
Engine Tin	MRH 4107	YMA 71-064	10-56			
Engine Zinc	MRH 4108	YMA 71-065	10-57			
Engine Nickel	MRH 4109	YMA 71-066	10-58			
Engine Platinum	MRH 4110	YMA 71-067	10-59			
Engine Silver	MRH 4111	YMA 71-068	10-60			
Engine Gold	MRH 4112	YMA 71-069	10-61			
Engine Copper	MRH 4113	YMA 71-070	10-62			
Engine Bronze	MRH 4114	YMA 71-071	10-63			
Engine Steel	MRH 4115	YMA 71-072	10-64			
Engine Lead	MRH 4116	YMA 71-073	10-65			
Engine Tin	MRH 4117	YMA 71-074	10-66			
Engine Zinc	MRH 4118	YMA 71-075	10-67			
Engine Nickel	MRH 4119	YMA 71-076	10-68			
Engine Platinum	MRH 4120	YMA 71-077	10-69			
Engine Silver	MRH 4121	YMA 71-078	10-70			
Engine Gold	MRH 4122	YMA 71-079	10-71			
Engine Copper	MRH 4123	YMA 71-080	10-72			
Engine Bronze	MRH 4124	YMA 71-081	10-73			
Engine Steel	MRH 4125	YMA 71-082	10-74			
Engine Lead	MRH 4126	YMA 71-083	10-75			
Engine Tin	MRH 4127	YMA 71-084	10-76			
Engine Zinc	MRH 4128	YMA 71-085	10-77			
Engine Nickel	MRH 4129	YMA 71-086	10-78			
Engine Platinum	MRH 4130	YMA 71-087	10-79			
Engine Silver	MRH 4131	YMA 71-088	10-80			
Engine Gold	MRH 4132	YMA 71-089	10-81			
Engine Copper	MRH 4133	YMA 71-090	10-82			
Engine Bronze	MRH 4134	YMA 71-091	10-83			
Engine Steel	MRH 4135	YMA 71-092	10-84			
Engine Lead	MRH 4136	YMA 71-093	10-85			
Engine Tin	MRH 4137	YMA 71-094	10-86			
Engine Zinc	MRH 4138	YMA 71-095	10-87			
Engine Nickel	MRH 4139	YMA 71-096	10-88			
Engine Platinum	MRH 4140	YMA 71-097	10-89			
Engine Silver	MRH 4141	YMA 71-098	10-90			
Engine Gold	MRH 4142	YMA 71-099	10-91			
Engine Copper	MRH 4143	YMA 71-100	10-92			
Engine Bronze	MRH 4144	YMA 71-101	10-93			
Engine Steel	MRH 4145	YMA 71-102	10-94			
Engine Lead	MRH 4146	YMA 71-103	10-95			
Engine Tin	MRH 4147	YMA 71-104	10-96			
Engine Zinc	MRH 4148	YMA 71-105	10-97			
Engine Nickel	MRH 4149	YMA 71-106	10-98			
Engine Platinum	MRH 4150	YMA 71-107	10-99			
Engine Silver	MRH 4151	YMA 71-108	11-00			

* Indicates a color has not been made. MRH 4020/21 are a warning flag. YMA Model 4020, YMA Model 4021 are a warning flag. YMA Model 4022, YMA Model 4023 are a warning flag. YMA Model 4024, YMA Model 4025 are a warning flag. YMA Model 4026, YMA Model 4027 are a warning flag. YMA Model 4028, YMA Model 4029 are a warning flag. YMA Model 4030, YMA Model 4031 are a warning flag. YMA Model 4032, YMA Model 4033 are a warning flag. YMA Model 4034, YMA Model 4035 are a warning flag. YMA Model 4036, YMA Model 4037 are a warning flag. YMA Model 4038, YMA Model 4039 are a warning flag. YMA Model 4040, YMA Model 4041 are a warning flag. YMA Model 4042, YMA Model 4043 are a warning flag. YMA Model 4044, YMA Model 4045 are a warning flag. YMA Model 4046, YMA Model 4047 are a warning flag. YMA Model 4048, YMA Model 4049 are a warning flag. YMA Model 4050, YMA Model 4051 are a warning flag. YMA Model 4052, YMA Model 4053 are a warning flag. YMA Model 4054, YMA Model 4055 are a warning flag. 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Model Railroad Hobbyist | September 2022



Modeling moving water in a stream

YouTuber **Daniel Szakaly** shows how he modeled this running water river scene, step-by-step. The results turned out stunning and it's definitely worth a watch. Running time: just under 10 minutes.

We are especially intrigued by how Daniel models white water foam with baking soda, of all things! Daniel also uses a clever method for adding ripples to the water, so give it a watch and learn some cool tricks. ☑



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SEPTEMBER NEWS

column



Model Railroad Hobbyist | September 2022

RICHARD BALE AND JEFF SHULTZ

REPORT THE LATEST HOBBY
INDUSTRY NEWS ...



INDUSTRY NEWS



Joe Fugate Presented NMRA Distinguished Service Award

MRH publisher Joe Fugate received the 2022 Distinguished Service Award from the National Model Railroad Association. The presentation was made during the National Convention

in St. Louis by NMRA president Gordy Robinson. The NMRA Distinguished Service Award is presented annually to an individual who, in the judgement of NMRA officials, has given outstanding service to the hobby. Congratulations to our boss and founder. Kevin EuDaly, author and founder of White River Publications was also awarded the Distinguished Service Award for 2022.

Stacey Walthers Naffah Receives Bobbye Hall Award

The Hobby Manufacturers Association has selected Stacey Walthers Naffah to receive the 2022 Bobbye Hall Award. The award is given annually in recognition of an individual's outstanding service to the model railroad industry. Stacey is

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president of Wm. K. Walthers, Inc. a leading supplier of model railroad products in North America. The business was founded by her great grandfather in 1932. In addition to managing Walthers, Stacey is past president of the Model Railroad Division of the Hobby Manufacturers Association and is currently serving as the president of the World's Greatest Hobby, Inc, a non-profit organization working to introduce and promote the hobby. The award is named for Bobbye Hall, a vivacious entrepreneur who founded Hallmark Models and operated a successful hobby store in Dallas, TX for more than 50 years.



Hubert Clifford Mask Jr. 1947-2022

Hubert Mask, personable founder of Mask Island Decals, died August 8, 2022 at 74 years of age. He had just returned home from the St Louis RPM. Hubert started Mask Island Decals in the late 1990s, building it into an important line of more than 500 carefully researched HO scale water slide decals of mostly Midwestern

and Southern railroads. After service in the U.S. Air Force, Mask began his law enforcement career in 1968 as a Special Agent with the Chicago Rock Island Railroad police. In 1974, he joined the Atchison, Topeka & Santa Fe Railway Police Department, retiring at the rank of Captain-Special Agent. In 1987, Hubert moved to Ontario, Canada where he worked for the United Parcel Service as Loss Prevention Supervisor. He later worked for a Chicago bank as a certified fraud investigator. After retirement Hubert moved to Pittsfield, NH where he focused on expanding his line of decals. Hubert Mask is survived by his wife Faizah, four children and six grandchildren. (Photo courtesy of John Golden).

In recent years Mask Island Decals have been produced by Highball Graphics using an OKI C942 1200dpi Laser Printer.



The Mask family has made arrangements with Highball Graphics to continue making Mask Island Decals available to modelers. Details are pending.

Warbonnet Enterprises acquires Micro Engineering

Ron Rands has reported that the assets and inventory of Micro Engineering has been purchased by the Jack Dwiggins family, dba Warbonnet Enterprises of Fenton, MO. The company will operate under the Micro Engineering name and will continue to offer the complete line of Micro Engineering products. Established in 1964 by Bob Rands, Micro Engineering has focused on producing American made turnouts, track products, and bridge and building kits.

Info: www.microengineering.com

Archer Transfers Closing

Archer Transfers, well-known to model railroad hobbyists for its extensive line of textured resin rivet decals, is going out of business. The founder of Archer Transfers, Woody Vondracek, has announced that after 30 years of operating the business it is time to retire. The Youngville, NC company will continue to accept and process orders on a first come first served basis until November 30, 2022.

Info: www.archertransfers.com

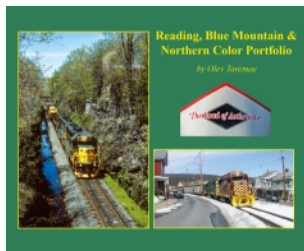
NEW PRODUCTS FOR ALL SCALES



Logic Rail Technologies has introduced a new LCC Fast Clock. Like the LocoNet and Cab Bus Fast Clocks it is being offered in two sizes, with 0.8" and 2.3" digits. As LCC nodes they can be used to trigger time-based events, such as turning lights on and off. MRH staffer Jeff Shultz saw these at the NMRA National Convention in St. Louis and noted that they integrated

seamlessly into the LCC demonstration network being displayed as part of the LCC Special Interest Group table.

Info: www.logicrailtech.com



New books from **Morning Sun** include *Reading, Blue Mountain & Northern*, by Olev Taremae. The 96 page softcover color portfolio traces the Route of Anthracite from its humble beginning in 1990 to becoming an award-winning hauler of coal, passengers, and general freight in eastern Pennsylvania. The R&N

serves northeastern Pennsylvania over 300 miles of track once operated by many historic railroads including the Reading, Lehigh Valley, Jersey Central, Pennsylvania, and Lackawanna.

Info: morningsunbooks.com



SoundTraxx has introduced a new line of wireless Digital Sound Decoders. Named Blunami, the unit adds the ability to control the decoder wirelessly through a

smart phone or other mobile device using the free Blunami App. Blunami model BLU-2200, which measures 41.9 x 18.8 by 6.8 mm, offers six function outputs and 16 sound channels with a 2 watt, 8-ohm load audio amplifier. The Blunami is available in two different EMD versions, Alco Diesel, GE diesel, Baldwin & other diesels, and the Steam-2 version. An engineering sample of the upcoming BLU-4400 for large scale models was demonstrated at the National Train Show and the National Narrow Gauge Convention.

Info: soundtraxx.com

A manufacturer's catalog of Heisler Locomotives is available now from **Silver Lake Images**. The Heisler is covered in detail in Volume 2 of Geared Locomotives. The 118 page softcover book reproduces three Heisler catalogs with detailed information and



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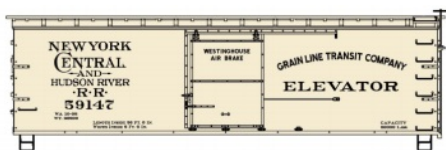
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illustrations on the design, boiler, gearing, trucks, and various appliances of the unique locomotives.

Info: www.ronsbooks.com

HO SCALE PRODUCT NEWS



New HO scale kits coming from **Accurail** this fall include this New York Central & Hudson River 36' wood boxcar. The model will be available

individually and in three-car sets with different road numbers.



This Rock Island twin-bay covered hopper is based on an ACF Center Flow prototype with a capacity of 2970 cu. ft.



This 40' Chicago Burlington & Quincy stock car has wood sides and steel ends. The HO model is based on a prototype

built in 1944 and rebuilt in 1962.



Accurail's HO kit for this 40' Pennsylvania single-sheathed six-panel wood boxcar has a steel underframe and

Dreadnaught ends. The lettering indicates the car was built in 1913 and rebuilt in 1939. All Accurail HO scale car kits come with appropriate trucks with Delrin wheelsets and AccuMate knuckle couplers.

Info: www.accurail.com



Athearn is working on a second production run of its Genesis series EMD SD70ACU diesel.



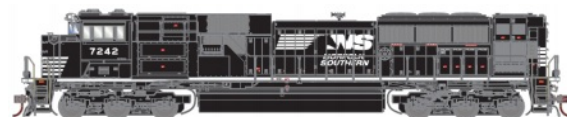
Four Canadian Pacific schemes will be in this release including two CP Military Heritage units decorated in Atlantic Treaty green and two-toned gray.



Additional Canadian Pacific units with alternating ditch lights at both ends will be available in maroon and gray and in CP Red with a gold Beaver logo.

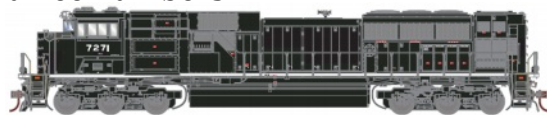


All versions will have illuminated truck lights.



A Norfolk Southern locomotive with a large plow and alternating ditch lights will be available in

three numbers.



Completing the release of Athearn's Genesis SD70ACU diesels is an ex-NS unit patched for PRLX-Progress Rail Leasing.



Athearn's October 2023 production schedule includes

Genesis series SD9043MACs. The models are being updated with rotating roller-bearing trucks, and illuminated ground



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R. Bale

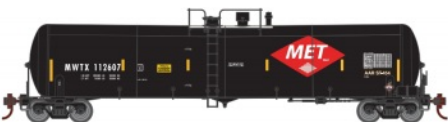
EMD SD9043MAC LOCOMOTIVES

During the horsepower race of the 1990's, EMD offered an "upgradable" SD90MAC. The Union Pacific needed power quickly, but at the time, EMD's 6,000hp 256H prime mover was still being tested for reliability. As a temporary solution, EMD offered the SD90 with the 4,300hp 710 prime mover until the new 256H was fully proven and ready to be installed as a replacement to the 710. Unfortunately, the 256H was deemed too problematic and the conversion was never completed. UP classed these as SD9043MACs and assigned them to coal drag service.

roller-bearing trucks, and illuminated ground lights and number boards.



Three Union Pacific numbers will be available and three ex-UP units patched for Canadian Pacific. Athearn's Genesis SD70ACU and SD9043MAC locomotive models will be available for DC operation and with an onboard DCC decoder with SoundTraxx Tsunami2 sound with two sugar cube speakers.



The list of new freight cars coming from Athearn in late next year includes a 30,000 gallon Ethanol tank car. In

addition to this MWTX-Midwest Ethanol Transport car, decorating schemes will include Archer Daniels Midland, Abengoa Bioenergy, CHS, CTCX, and Union Tank Car.

Details include photo-etched metal walkways and end platforms, wire safety rails and end handrails, and 100-ton roller-bearing trucks with 36" machined metal wheels.



Detroit, Toledo & Ironton; Burlington Northern, Baltimore & Ohio, Chicago North Western, Winchester & Western, and Missouri-Kansas-Texas.

Athearn has included a PS-2 2600 cu. ft twin-bay covered hopper in its October 2023 production schedule. Road names on the HO scale ready-to-roll model will be



will have separately applied wire grab irons and a removable gravel load.

A 40' ballast hopper car with discharge bays parallel to the rails is also in the works at Athearn. The HO scale model



Road names will be New York Central, Santa Fe, Frisco, Norfolk Southern, Southern Pacific, and Union Pacific.



A 52' mill gondola produced from upgraded tooling completes Athearn's list of

HO scale freight cars scheduled for release in October 2023. Refinements from earlier releases include improved end detail, additional rivet detail, new top-chord details, corrected grab iron placement, and new jack reinforcement pad details. The model will have individual wire grab irons.



Road names will be Frisco, Norfolk Southern, Conrail, GONX-RailGon, RailGon-

Chesapeake & Ohio, and RailGon with a Denver & Rio Grande Western patch. The C&O and NS cars will feature Athearn's faded primed for grime paint look. All Athearn rolling stock in this report will come with machined metal wheelsets and McHenry knuckle couplers.

Info: www.athearn.com



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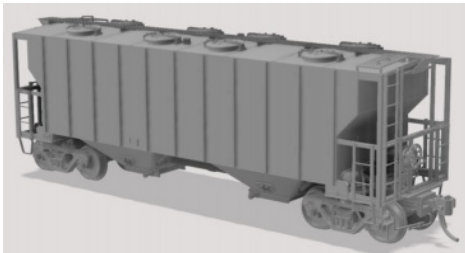
Atlas showed pre-production samples of two new HO scale freight cars at the National Train Show, including this MasterPlus CNCF 5000 cu. ft. boxcar.

Spotting features on the prototype-based model include triangular supports above the door post, wrapped end sheets, and distinct notches in the sill near the stirrups.



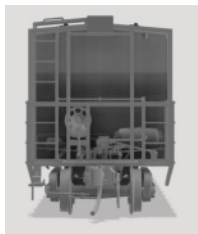
Features include full under body detail with brake rigging, and wire grab irons. Variations include early and late body styles, three-

section Dreadnaught ends and bifurcated X pattern ends, and five different doors including Youngstown, Youngstown with a pick lever, modified Youngstown, Superior, and ICG shop door. Pre-order information including road names and availability is expected to be announced soon.



Atlas also showed 3D printed engineering test samples of an HO scale Portec 3000 cu. ft. covered hopper. The model is based on prototypes built by Portec Incorporated

between 1979 and 1984.



Production units of the Master series model are planned for release during the second quarter of 2023. Variations will include two body and roof types, two different roof walks, and two types of vibrator brackets.



Preproduction samples of Atlas' MP-36 locomotive were also on display at the National Train Show.

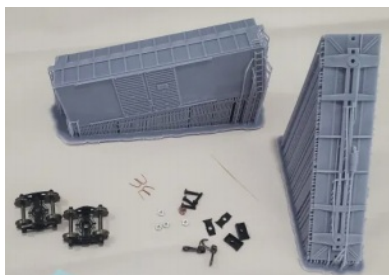


As announced in the August edition of MRH, road names for the HO scale model will be Metra, Metra (Milwaukee Road Hiawatha), Metra (Rock Island Heritage), MBTA, Metrolink, and West Cost Express.



3D-printed engineering samples of the Nippon Sharyo Type 8500 commuter cab cars and trailers were also on display.

Info: shop.atlasrr.com



Berkshire Design has released a 3D printed HO scale kit for a 40' Pere Marquette series 90350-91849 series boxcar. Features include 12' double doors, a Hutchins roof and three-section Dreadnaught ends. The kit is based on a series of cars Pullman built for the PM in 1930 primarily to carry automobiles and furniture. The

body, including the underframe, ladders, grab irons and running board, are all 3D printed. Additional parts include appropriate decals, Tahoe 40-ton ARA trucks, InterMountain 33" machined metal wheelsets with .110" treads, Kadee #158 couplers, Kadee Equipco brake wheel, and miscellaneous 2-56 hardware.

Info: berkshiredesign.net



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R. Bale

ALCO RS-3 HAMMERHEAD

The American Locomotive Company introduced the 1,600hp RS-3 road switcher locomotive in May 1950.

Designed specifically to compete with EMD's GP7, the RS-3 would become the most commonly seen Alco locomotive across the country. Unique among the 1363 RS-3s built by the Schenectady-based Alco and its Canadian counterpart, Montreal Locomotive Works, were five units ordered by the Pennsylvania Railroad in 1953 with dynamic brakes and a steam generator. The DBs qualified the units for helper service on the Harrisburg-Buffalo line. The steam generator was added to permit the modified RS-3s to protect the passenger schedules between Emporium and Erie in the event of a failure by the normally assigned E8s. The RS-3s short hood was raised to accommodate the additional equipment. The larger front end of the modified RS-3s earned the modified locomotives their Hammerhead nickname.

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Bowser Trains has announced plans to produce an HO scale model of Alco's RS-3 Hammerhead locomotives. Both DC analog

and DCC sound versions of the locomotive will be available. Reservations are being booked through September 30, 2022 with delivery scheduled for fall 2023.



This release includes four different PRR schemes both with and without a Trainphone antenna.



Additional road names include Lehigh Valley and an ex-Lehigh Valley unit patched for Conrail.

Info: www.bowser-trains.com



Broadway Limited plans to release an HO scale version of a Pennsylvania Railroad 6-8-6 S2 turbine steam locomotive. Availability is

expected late this year or in early 2023. Three versions of the S2 will be available including an as-delivered model without smoke deflectors. The HO scale model will also be available with both small and large smoke deflectors.



This is a hybrid model with a brass boiler, cab and tender body mounted on diecast locomotive and tender chassis. In addition to the

standard paint scheme, the S2 will be available painted in a brass color and in a fantasy Tuscan red scheme.

in the **SEPTEMBER 2021 MRH RUNNING EXTRA!**

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R. Bale

NYC'S COMMODORE VANDERBILT

In 1934, New York Central's three-year-old class J-1e steam locomotive No. 5344 was sent to the Central's shops in West Albany where it was fitted with streamlined shrouding designed by Henry Dreyfuss. Hinged panels provided access for maintenance and a recess along the top of the cowling aided the updraft of smoke. Painted gun-metal gray with aluminum trim, the 4-6-4 Alco-built locomotive was named Commodore Vanderbilt, in honor of the former owner of the New York Central Railroad. A few months after entering service in 1935, the locomotive was returned to West Albany where the side rods were fitted with roller bearings and disc drivers replaced the original spoked wheels. In the summer of 1939 the inverted bathtub shrouding was replaced with a bullet nosed shroud also designed by Dreyfuss. No. 5344 was scrapped in 1957.



Broadway Limited has also scheduled a late 2022 release date for a New York Central Commodore Vanderbilt 4-6-4 Hudson locomotive. The HO scale model will be available

with the original spoked drivers and in her subsequent appearance with disc drivers and roller-bearing side rods.

To allow the model to operate on 18" radius curves, BLI has removed two small pieces of shrouding at the front of the locomotive and the model will have a modified rear trailing truck. For hobbyists with broader track curves, the two shroud pieces and a prototypically accurate trailing truck will be included with the model.

Both the PRR S2 and the NYC Commodore Vanderbilt will be equipped with BLI's Paragon4 DC/DCC Sound system with



synchronized puffing smoke and integral GoPack capacitors.

Info: www.broadway-limited.com



In a surprise announcement at the National Train Show, **ClassOneModelWorks.com** revealed that it is working on an HO scale GP40 with a Phase 1A3 body. Road names are tentative, but the current list includes Baltimore & Ohio, Burlington

Northern, Conrail, BNSF, Union Pacific, Milwaukee Road, Rock Island, and Denver & Rio Grande Western. The brand new model is expected to be available sometime in 2024.



Also under development at ClassOneModelsWorks.com is a GSC depressed center flatcar. The HO scale model will be based on a prototype introduced in the early 1950s

by General Steel Casting. Many of the iconic cars are still in service. The model will be available with alternative upper deck treatment which on the prototype ranged from wood to steel diamond plate to open grating. Variations will also be available in jack pad styles and locations. The company plans to offer a variety of loads specifically for the depressed center flat cars.



Models on display in ClassOneModelsWorks.com's NTS booth included early production samples of the new TWF10 DTTX well car.

The exceptionally well-detailed HO scale model is based on a group of 75 single-unit prototypes Thrall Corporation built in the early 1990s.



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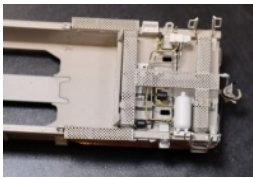
The models, like the prototype, will be equipped with unique Waggon Union

trucks that support the car weight on the sides of the truck through a series of leaf springs. This was the only well car design to utilize these distinctive short wheel base trucks.



Four car numbers will be available for as-delivered and intermediate life

versions of the car. Two road numbers will be offered for weathered in-use versions of the model. Orders are being booked now with availability scheduled for fall 2022.



ClassOneModelWorks.com also displayed samples of their new 48' Hyundai and Monon exterior post containers. The detail, especially on the rear doors, is impressive. Hyundai

versions of the container will be available decorated for Alaska Marine Lines, American President Lines, BNSF/HUB Group, Equipment Management Pool, Hercules Forwarding, North American Container System, and Transamerica Leasing.

The Monon-built containers – similar to the Hyundai with the exception of the notched roof overhang and the lowered corner posts – will be available for American President Lines, Equipment Management Pool, Norfolk Southern, Santa Fe, Southern Pacific, Transamerica Leasing, Union Pacific, and Alaska Marine Lines.

Info: www.classonemodelworks.com



InterMountain has released another run of its S.F.R.D. refrigerator cars. The highly-rated HO scale models are decorated with the names of

various Santa Fe passenger trains on one side with the

opposite side having a Ship and Travel slogan or a straight or curved system map.



curved maps. Grand Canyon cars, and those decorated for The Chief, have straight line maps.

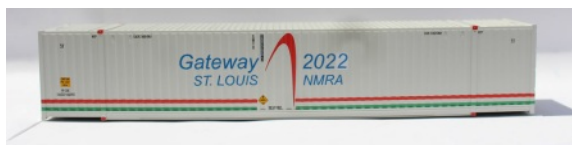


Super Chief cars are available with a straight map and with a Ship and Travel slogan. El Capitan cars are available with a choice of a straight or

curved maps. The Scout cars have a curved map. An undecorated kit with plastic wheelsets and no couplers is also available.

InterMountain is booking reservations for another production run of HO scale Evans 100-ton coil cars. Six numbers each will be available for cars decorated for Illinois Central, Norfolk Southern, MKT (with UP hoods), Ohio Central, Indiana Harbor Belt, Southern Railway, C&O/B&O, and two BNSF schemes.

Info: www.intermountain-railway.com



Jackson Terminal Company unveiled a 53' Commemorative container at the National Train Show.

The specialty item celebrates the NMRA's 2022 Gateway National Convention held in St. Louis. The container is available in both N and HO scale.

Info: jtcmmodeltrains.com



Kadee has released an HO scale 40' PS-1 boxcar in a special patriotic decorating scheme. The ready-to-run model comes with



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a 7' Superior seven-panel door and the usual Kadee features including finely cast grab irons, ladders, and stirrup steps; see-through running board and brake step, and Bettendorf-style solid-bearing trucks with metal wheels.

Info: www.kadee.com



Moloco has completed another production run of its excellent HO scale PCF 50' boxcars with 10' offset plug doors. The HO scale model is

based on prototypes built in the early 1960s as RBLs. Decorating schemes currently available include TPF-X-Triangle Pacific in a 1973 repaint.



Western Pacific and NIRX-Erie Lackawanna cars are available in their 1962 as delivered schemes.



Completing this release are three Southern Pacific cars in various 1979 repaints.

Info: www.molocotrains.com



The **Professional Car Society** is selling five custom decorated car kits produced for the Illinois Chapter of the Society by Accurail. The HO scale cars include a pair of 34' twin-bay open hopper cars operated by the Chicago & South Bend Railroad, a short-line subsidiary owned by the Studebaker Corporation. The cars have different lettering.



sheathed boxcar, was acquired by the Wabash in 1926.



The Sydney & Louisburg Railway was formed in 1910 by the Dominion Coal Company to haul coal out of Cape Breton, Nova Scotia. The line was sold and renamed Devco Railway in 1967 with some rolling stock retaining the S&L name for several years.



The Lemp Brewery was founded in 1840 and by the late 1800s was the largest brewer in St. Louis. This 40' wood reefer represents a Lemp-Falstaff car in use just prior to Prohibition which made beer production illegal after January 17, 1920. Each of the kits in this report includes appropriate trucks with Delrin wheelsets and AccuMate knuckle couplers. For pricing and ordering information send an inquiry to Patrick Martin at: superior1980@yahoo.com



R. Bale

EMD GP38 ROAD SWITCHER

The GP38 was introduced in 1966. It represented the latest version of EMD's highly successful line of four-axle Geep locomotives. The new 2,000hp non-turbocharged locomotive used the new 645 prime mover, was longer than its GP35 predecessor, and featured a new style radiator grille, a straighter sill and a redesigned fuel tank. The GP38 was a popular engine, filling a niche for railroads requiring a locomotive for lighter duty and for use on trackage that was often not for high-speed mainline trains.



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Rapido Trains has released photographs of pre-production samples of its all-new EMD GP38 diesel locomotive. Features on the HO scale model include full

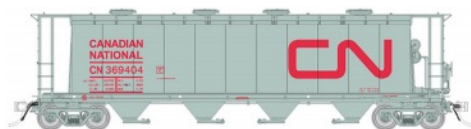
underframe detail including traction motor cables, air filters, and road specific fuel tank sizes.



Additional road specific items include battery box doors, cab interior, and various pilots and stepwells.



Road names on this initial release will be Santa Fe (Yellow Bonnet both with and without class lights), Baltimore & Ohio, CSX, Penn Central, Conrail, Burlington Northern, and BNSF. GP38s with a full height nose will be available decorated for Norfolk Southern and the Southern Railway.



Rapido Trains plans to release a new production run of its 3800 cu.

ft. cylindrical covered hopper cars this month. The HO scale model replicates the 3800-3850 cu. ft. prototype built in the 1965-1975 period by three Canadian car builders: Marine Industries, Hawker-Siddeley, and National Steel Car.



Detail on Rapido's 3800 cu. ft. hopper include round or trough hatches, 6 or

11 body side panels, etched running boards and brake platforms, and prototypically correct 100-ton Dofasco S-2 trucks with metal wheelsets.



In this release six road numbers each will be available for three Canadian National

schemes (as delivered, Noodle, and CNLX), three Canadian Pacific schemes (as delivered Script, Multimark, Multimark in silver repaint), TH&B, Procor, Potash Corp, Canpotex, and Cementos Anahuac del Golfo. A Toronto, Hamilton & Buffalo car with a mid-1980s patch is available exclusively from Credit Valley Railway.

Info: www.rapidotrains.com



ScaleTrains displayed pre-production samples of a GE AC4400CW at the National Train

Show. The HO scale Rivet Counter model is scheduled for release early next summer. Road names will include three Union Pacific locomotives with number boards in different positions and a choice of yellow or red sills. Two Southern Pacific speed lettering schemes will be available. One will also have an SP Sunset logo on the inverter cabinet.



ScaleTrains AC4400CWs decorated for Ferrosur (Ferrocarril del Sureste

Railroad) will have protective rock guards on the cab windows. CSX units will be available in both YN2 and YN3 paint schemes.



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will also have an RCMP Musical Ride logo on the side of the cab.



scheme. All units in this release will have operating ditch lights, LED front, rear and side walkway lights; and ground lights on both sides of the locomotive.



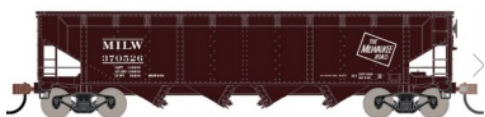
HO scale Rivet Counter model adheres closely to a 68' 100-ton prototype introduced by Bethlehem Steel Co. in 1969.



Road names will include two Trailer Train cars (yellow and oxide red), and six TTX cars with different logos and patches. Special features on the Rivet Counter model include recessed deck tie-downs, metal grab irons, coupler cut levers, trainline hoses and pipes with silver gladhands, and 100-ton trucks with rotating bearing caps and hydraulic snubber and bracket details.



ScaleTrains is developing an HO scale kit for a classic 40' 70-ton quadruple-bay open hopper. Scheduled for release late next year, the model is loosely based on a popular prototype built in the late 1920s.



The HO scale model will be produced from tooling acquired from MTH in early 2021. Marketed under

ScaleTrains Kit Classics, the model will require simple screwdriver assembly.



Road names will be Baltimore & Ohio, Boston & Maine, Chesapeake & Ohio, Erie, Milwaukee Road,

Missouri-Kansas-Texas, and Montour Railroad.

Info: www.scaletrains.com



Tangent Scale Models has completed the fourth release of its ICC B&O I-18 steel bay window caboose. The HO scale model accurately replicates numerous road number and era

specific details. Models available now include a B&O caboose decorated in the 1968-era blue scheme with an unpainted silver roof and protective window screens.



Upgraded in 1982 with toilet retention tanks, Chessie box-style markers, and FRA red end lights, three slightly different Chessie System B&O cabooses (No. 903002, 903008 and

903040) are still wearing their 1973 yellow scheme.



Chessie System B&O caboose No. C-3028 is available in a 1973 blue and silver safety



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scheme. Era specific details include Pyle lanterns, a battery box and toilet dump pipe.



The orange safety scheme was applied to Chessie System B&O Caboose No. C-3093 in 1979. Completing the assortment of painted HO scale I-18 cabooses is a yellow Chessie System B&O

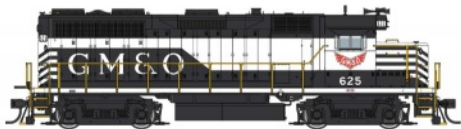
scheme from 1979. Undecorated kits with no electronics or lighting are also available.

Info: www.tangentscalemodels.com



Walthers is working on a Proto series GP35 diesel road switcher with production scheduled for spring 2023.

Models decorated for Santa Fe will have a working rotary beacon, etched metal sun shades and a modern pilot with no footboards.



A GP35 decorated for Gulf, Mobile & Ohio will have AR-B trucks with a 9'4" wheelbase. All others will have

Bloomberg B trucks. A Southern Pacific version of the GP35 will have an SP style bell, a front pilot plow, and a 5-light package with Pyle dual sealed beam headlights. GP35's decorated for Norfolk & Western will have high nose hood.

A Southern Railway unit will also have a high nose hood and a smaller 2300 gallon fuel tank. All other versions will have a 2600 gallon tank.



Details shared by all units include see-through steps and radiator fans with etched

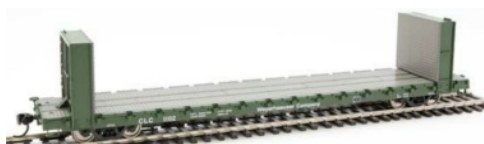
brass grilles; photo-etched metal lift rings, and full cab interior including crew figures. DC models will be available as well as DCC units with LokSound 5 Sound & DCC decoder.



Walthers has scheduled a fall 2022 release for a Proto series 89' Bethlehem flush deck flatcar. Road names will be Santa Fe, Southern Railway, TTX, TTX-KTTX, TTTX-RTTX and TTX-WTTX.



The model represents a prototype introduced in the 1970s without the deep channel side sills that served as rub rails when trailers were driven on or off the cars. Designed to handle 40' trailers, these units were later upgraded for 45' trailers by repositioning the hitches. ACF or P-S style hitches are included as appropriate to the road names being modeled. Details include bridge plates and 70-ton roller-bearing trucks with 33" metal wheelsets.



A 60' Pullman-Standard bulkhead flatcar is scheduled for release this fall. The Walthers Mainline series model will have 8'6" tall bulkhead with bolt attachment details. In addition to the Weyerhaeuser car shown above, road names for this release will be Canadian Pacific, Canadian National, Indiana Harbor Belt, Trailer Train, and TTX-PTTX.



A Walters/Chooch pulpwood load for this car will be available as a separate purchase.



Also coming from Walthers this fall is a 50' ACF exterior post boxcar. The Mainline series HO scale model represents a Plate B prototype introduced in the 1970s with many still in service.



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Road names will be Railbox, BNSF, Canadian National, CSX, Norfolk Southern, and Wisconsin Southern.

Info: www.walthers.com



Yarmouth Model Works has released four HO scale resin kits for 37' Denver & Rio Grande Western stock cars. Variations include a double deck car built in 1939 with wood running boards and a Duryea underframe. The prototypes were numbered 36000-36099.

A group of single deck stock cars numbered 39100-39199 were completed in 1940. They had Duryea underframes and wood running boards. Double-deck cars with wood running boards and an AAR underframe went into to service in 1942. They were numbered 36100-36199.

The final version of D&RGW's 37' stock car were numbered 39200-39399. They were built in 1945 with a Duryea underframes and Apex Trilox metal running boards. The main body parts of the craftsman-style kit are composed of pressure cast urethane. Details are a combination of laser-cut, photo etched, 3D printed parts. The kit includes custom decals by Black Cat Publishing and Tahoe Model Works truck frames. Info: www.yarmouthmodelworks.com

N SCALE PRODUCT NEWS



Athearn has included four new N scale freight cars in its October 2023 production schedule. At the top of the list

is a 30,000 gallon Ethanol tank car. In addition to this MWTX-Midwest Ethanol Transport car, decorating schemes will include

Archer Daniels Midland, Abengoa Bioenergy, CHS, CTCX, and Union Tank Car. Details include photo-etched metal walkways and end platforms wire safety rails and end hand rails.



chester & Western, and Missouri-Kansas-Texas.

Road names on this N scale PS-2 2600 cu. ft twin-bay covered hoper will be Detroit, Toledo & Ironton; Burlington Northern, Baltimore & Ohio, Chicago North Western, Win-



changes include improved end detail, additional rivet detail, new top-chord details, corrected grab iron placement, and new jack reinforcement pad details.

Athearn is upgrading the tooling for this N scale 52' mill gondola. Scheduled



Road names will be Frisco, Norfolk Southern, Conrail, GONX-RailGon, RailGon-

Chesapeake & Ohio, and RailGon with a Denver & Rio Grande Western patch. All Athearn N scale rolling stock in this report will come with body mounted McHenry knuckle couplers and metal wheelsets.

Info: www.athearn.com



Preproduction samples of **Centralia Car Shops'** Superdome passenger cars were on

display in InterMountain's booth at the National Train Show. Advance reservations are being booked now for the N scale cars with a release date expected to be announced soon. Road names on this release will be Great Northern (Empire Builder, Big Sky Blue and Cascade green), Canadian National, Ontario Northland, and two Milwaukee Road schemes.



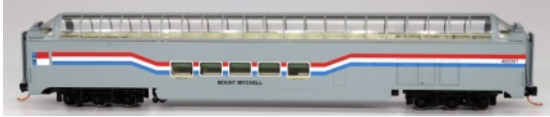
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and Chicago & North Western's Powder River car.



Dot Mount Mitchell, and a car decorated in Fall Foliage.

Info: www.intermountain-railway.com

This release also includes Holland America Westours, VIA Rail, CSX (Safety Train),

Completing this run are three Amtrak cars including Phase 1 scheme, Phase 1 N.C.



R. Bale

FT DIESEL ELECTRIC LOCOMOTIVES

The EMD FT diesel electric freight locomotive was produced from 1939 to 1945. It marks the introduction of the EMC/EMD *Bulldog* nose. An FT locomotive consisted of an A cab unit connected by a semi-permanent drawbar to a cabless B unit with each unit powered by a 12-cylinder 1,350hp diesel engine. The two units were marketed as a single 2,700hp locomotive. In addition to the A-B arrangement, A-B-B-A sets were also available as a single 5,400hp locomotive. To increase flexibility a few roads, including ATSF, ordered A-B-B-A units with AAR couplers. FTs were equipped with the newly designed Blomberg 2-axle freight trucks geared for maximum starting traction and a top speed of 65mph. Spotting features for FTs include four closely spaced portholes on each side. B units equipped with hostler controls had a fifth window near the hostler position. Both A and B units had four exhaust stacks along the centerline of the roof. The presence of dynamic brakes was identified by a square box structure on the roof. Trucks adjacent to the drawbar connection were positioned close to the end of the body.



InterMountain is taking advance reservations for

N scale EMD FT A/B units. Road names on the reservation list include two Santa Fe schemes (Warbonnet and Cigar Band Yellow Bonnet), SSW Cotton Belt (Black Widow), Chicago & North Western, and Northern Pacific.



Additional road names include Baltimore &

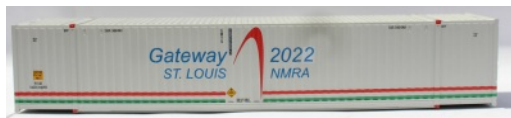
Ohio, Southern Railway, Lehigh Valley, Southern Railway, Reading, Missouri Pacific, and Chicago Burlington & Quincy.



Completing the list of road names for

InterMountain's N scale FT units are NYO&W, SL-SW, Erie Lackawanna, EMD Demonstrator, and two Milwaukee Road schemes. A release date is TBA.

Info: www.intermountain-railway.com



Jackson Terminal Company unveiled a 53' Commemorative container at the National

Train Show. The specialty item celebrates the NMRA's 2022 Gateway National Convention held in St. Louis. The container is available in both N and HO scale.

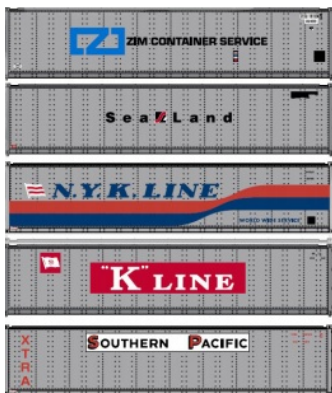
Also introduced during the NTS was a new series of N scale 40' standard height (8' 76") riveted containers. Decorating schemes on the initial release will be Zim, Sealand, NYK, K Line, and Southern Pacific. The models will feature JTC's



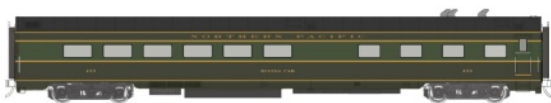
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magnetic/IBC pin connection system.
Info: www.jtcmodeltrains.com



Lowell Smith-RailSmith has opened pre-orders for 1947

Northern Pacific Dining car #450. Built by Pullman-Standard it served as part of the consist of the Streamlined North Coast Limited. Built as a lunch counter-diner it was later converted to a full diner.



Also due in first quarter 2023 from Lowell Smith is SP Diner

#10204. Built by Pullman-Standard in 1949, the #10204 was the last car of its class delivered in the two-tone gray scheme. Used as protection on the Cascade and the Lark, this car also appeared in consists on the City of San Francisco and the San Francisco Overland, eventually going to Amtrak. The car will be produced with the skirts that were seen in photos as late as 1962 and dome style roof vents.



Coffee Shop-Lounge #10405 was built in 1949 by Pullman-

Standard for the Southern Pacific for use in the City of San Francisco (COSF). Part of an order of five cars, three went to

the Golden State and two to the COSF. The #10405 was leased exclusively to Union Pacific for use on the COSF until 1955 when it was replaced by two UP cars. The model will feature an antenna, correct roof exhaust vents, and skirting.



Produced in the same order as Southern Pacific Coffee-Shop-Lounge

#10405 in 1949, Hamburger Grill #10402 originally served on the Golden State, but was converted to a Hamburger Grill-Lounge car after being replaced on the Golden State by Rock Island food service cars in 1955. Wearing the Southern Pacific red & silver paint scheme, these cars served into Amtrak's "Rainbow Era" prior to their retirement in 1973.

Info: lowellsmith.net

Rapido Trains has announced plans to produce an N scale version of the unique ACF PS3500 FlexiFlo covered hopper. Rapido's N scale version promises to be an accurate replica of the FlexiFlo prototype American Car & Foundry built in the mid-1960s.



Although initially built for the New York Central, by the 2000s mergers and equipment resales resulted in a wide range of patches and repaints.



Road names will include two New York Central, two Penn Central and three Conrail schemes, MDTX-Merchants Despatch, LAHX-Lafarge Concrete. Penn Central and Conrail scale test cars will also be available.

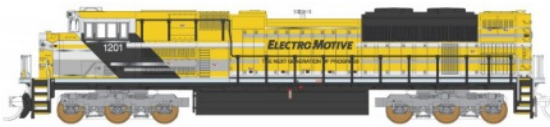
Info: www.rapidotrains.com



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At the National Train Show in St. Louis, **ScaleTrains** announced plans to release Fox

Valley Model's EMD SD70ACe diesel locomotive with factory installed DCC and sound. The N scale models will be produced by ScaleTrains and marketed under the Fox Valley brand.



Road names on this release will include four variations of EMD demonstrators: Yellow,

two Blue schemes, and a Canadian National former-EMD Demonstrator.

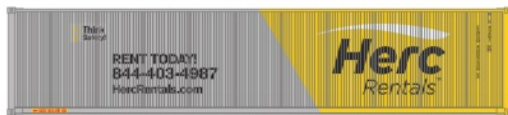


Additional decorating schemes will be BNSF Heritage III, Kansas City Southern, and Union

Pacific. Features on all units include wire grab irons, a 3-hose MU cluster, uncoupling levers, windshield wipers, sunshades and individual brake wheels.

Info: www.scaletrains.com

NEW STRUCTURES & SCENIC SUPPLIES



Athearn's October 2023 production schedule includes a group of 40' scale containers

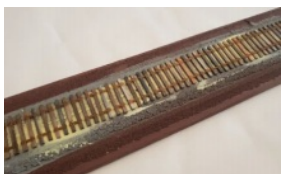
intended for use as portable storage on construction sites, traveling events and large industries. Both N and HO scale containers will be available. In addition to the Herc Rental unit, decorating schemes will be Textanier, Capital, Ocean Network Express, and Mobile Modular.

Info: www.athearn.com



Banta Model Works has introduced HO and O scale kits for the Sandy River & Rangeley Lakes Railroad depot in Strong, Maine. The craftsman style kits feature laser-cut wood and an inner support box of flat MDF to eliminate warping.

Info: www.bantamodelworks.com



Berkshire Design has developed an affordable and quick method to add tie plate detail to HO scale hand laid track. The clever product

consists of an injection molded tie plate jig into which 8' 6" scale wood ties (sold separately) are glued. When dry, the wood ties are cut away from the jig, leaving a flexible strip of ties with tie plates attached. Each package includes enough jigs for 18' 1.5" of track. A tutorial on using the Berkshire tie plate strips is available at: berkshiredesign.net/?cat=16



B.T.S. has released an O scale kit for this vertical tank. This laser-cut kit features a wood tank standing a scale 17' high with a diameter of just under a scale 8'. Recognized as a component of the Hyde Pulp Mill Pump House kit, the unusual tank is now available as a separate item.

Info: www.btsrr.com

East Coast Circuits announced several new products at the 2022 National Train Show. The first is a selection of HO scale photographers equipped with LED camera flashes. The normal photographer has an on-off switch and the railfan photographer is equipped with a sensor that can be installed



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between the ties to trigger the flash when a train approaches.



Also released are two different HO scale traffic control devices, a set of orange traffic barrels both with and without LED lights, and red and white interlocking "Jersey Barriers" used as temporary traffic dividers or barriers.



The last item is an HO scale Arrow Stick Board kit that can be used to add an LED arrow display to construction or highway department vehicles or signs. It is programmable through seven flashing or moving arrow and line displays and will remember the last

setting it was on when the power is turned off. All the announced products have an anticipated availability of October 2022.

Info: www.eastcoastcircuits.com

Fos Scale Models limited-run HO scale kit for 2022 is Axle Row: a complex of nine automotive related structures. The hint of gasoline and grease hang in the air along with tires, hubcaps, welding tanks and dozens of auto related details in this major craftsman complex. The structures on Axle Row include Stotts Automotive Precision Cast Parts, Vernon Auto



Springs, Kravet Hose and Belts, Corbett Tires, Warren Auto Radio, Krug Auto Finishing, MacReady's Lubritorium, Dixie's Café, a gas station and repair garage.

Info: www.fosscscalemodels.com



miniprints has available an HO scale 3D-printed model of a mid-drive PTO-drive Mayrath 8-31 grain auger conveyor. Found in agricultural areas, this type of portable grain auger is

used for transferring grain from railcars to trucks or trucks to bins. One or two can make up a small trackside transloading industry for transferring grains from covered hoppers to trucks.

Info: miniprints.com



Monster Model Works has introduced a cracked concrete insert for a turntable pit. The two-piece 3D engraved lazerboard is designed for Walthers 130' N scale turntable. The item measures 8.9" in diameter with a 1.1" center hole. The

lazerboard material is .025" thick.

Info: www.larkspurlaserart.com



Multiscale Digital has released four new 3D scenic details that can be used as car loads or in industrial scenes. HO scale items include a Willamette Iron & Steel McGiffert 200hp electric yarder.



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Also new is this HO scale Shell and Tube Heat Exchanger (flatcar not included). An Ingersoll-Rand rope drive air compressor is available in O, S, HO, and N scale.

Info: multiscaledigital.com



Walthers has completed new tooling on a standard 40' flatbed trailer. The Walthers

HO scale SceneMaster model has a wood grain detail on the deck and positionable landing gear with hand crank detail. The trailer is undecorated and will be available this fall in blue, yellow and dark gray.



In N scale, Walthers is releasing a Pole Barn and Sheds kit. Including one pole

barn, a large shed, a single car garage and a small shed, the kit represents typical metal buildings suitable for the 1950s to current day. Equipped with rollup doors, man doors, sliding doors, and windows, the models come molded in four colors. The pole barn measures 4-7/8" x 3-11/16" x 1-15/16", the large shed 1-3/4" x 1-3/8" x 15/16", the medium shed/single car garage 1-1/2" x 1" x 7/8", and the small shed 1" x 7/8" x 5/8".

Info: walthers.com



Woodland Scenics has announced a new structure in the Built & Ready Landmark Structure line, Toy & Hobby Junction. A two-story building, it features an interior with a grand staircase in the center

and a selection of games and hobby items on the shelves and hanging from the walls and railings. The exterior of the building includes double entry doors, windows on all sides, and a train mural. The building includes pre-installed LEDs for use with the Just Plug lighting system.

Info: woodlandscenics.com

NEW DECALS, SIGNS AND FINISHING PRODUCTS

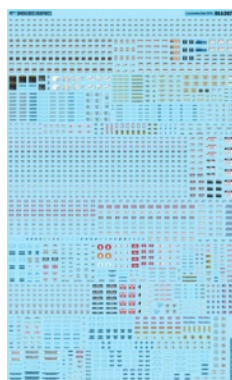


National Scale Car has issued several updated HO scale decals including this lettering set for a Fruit Growers Express and Western Fruit Express refrigerator car. The set includes National Car Company and FDEX reporting marks.



Also available are decal sets for Northern Pacific 1937 AAR boxcars and Southern Pacific/T&NO F-70-6/7/10 flatcars. All National Scale Car decal sets are printed by Cartograf.

Info: nationalscalecar.com



Smoke Box Graphics is selling Locomotive Data 2010+ (p/n DL6387) that includes different styles of diesel locomotive data and labels such as Auto Start, Caution, Electrical, Fire Extinguisher, etc. The HO scale water slide decal includes 340 different labels for both EMD and GE locomotives. A full color 11x17" fold-out guide sheet is included.

Info: www.smokeboxgraphics.com



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BRIEFLY NOTED AT PRESS TIME ...

New HO scale freight car trucks from **Moloco** include 70-ton Barber S-2-C with HB-6 snubbers and 50-ton Barber and Ride Control trucks with solid bearings. The side frames are available separately or with wheelsets ...

Morning Sun has released Volume 3 of *SOO Line Power in Color: Modern Road Power 1966-2020* ...

Motrak has announced a laser-cut wrought iron fence in HO, S and O scale. Each pack includes four sections 36' long by 53" tall. An N scale version is under development ...

Otter Valley Railroad is working on an NSC 6400 cu. ft. gondola with high sides. A release date for the HO scale model is early 2023 ...

ScaleTrains has released both N and HO scale versions of a Gunderson 5188 cu. ft. covered hopper. Multiple road names are available for the Rivet Counter models ...

New HO scale items coming this fall from **Walthers** include a Proto series 40' Ortner 100-ton open aggregate hopper. Due for release this winter are an 85' G85 General American flatcar, an all-new 53' reefer container, and a pair of two-story residential kits. Pre orders are being booked now for a WalthersProto EMD SW9/SW900/SW1200 set for release in the spring of 2023 ... ■

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SELECTED EVENTS



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SEPTEMBER

Please check with any organization hosting an in-person event for the latest status of the event.

Ongoing 2022

ONLINE, Zoom, dates vary, see website. Operation Special Interest Group Meetups – limited attendance available.

Info: www.opsig.org/Virtual

Archive: www.opsig.org/Virtual/Past

ONLINE, Zoom & YouTube, Wednesday & Saturday, see Facebook page. “New Tracks” Meetup, hosted by Jim Kellow, MMR.

Info: newtracksmodeling.com

YouTube: [www.youtube.com/channel/](https://www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA)

[UCMA_VhPb5pjdkAYTdXLceJA](https://www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA)

ONLINE, Facebook & YouTube, dates vary, see Facebook page. “NMRAX” organized by Gordy Robinson, Martyn Jenkins, Gert Muller, Jordan Kramer.

Info: www.facebook.com/groups/nmragroup

ONLINE, YouTube, every other Saturday. 4th Division, Pacific Northwest Region, NMRA hosts online layout tours and clinics.

Archive: www.youtube.com/c/4DPNRMovies

ONLINE, Zoom, Second Tuesdays, 8pm Eastern. "Off the Beaten Track" featuring Narrow Gauge layouts, clinics and manufacturers.
Info: groups.io/g/NNG

AROUND THE USA, IN-PERSON, Various dates.
ScaleTrains.com Road Trip.
Info: www.scaletrains.com/roadtrip

September-October 2022

CANADA, MANITOBA, WINNIPEG, September 24-26, 2022.
Manitoba Mega Train, sponsored by the Winnipeg Railway Museum. Red River Exhibition Place, 3977 Portage Avenue.
Info: www.facebook.com/ManitobaMegaTrain

CANADA, ONTARIO, BRESLAU (Kitchner-Waterloo), September 18, 2022. 2022 Breslau Train Show. Breslau Community Centre, 100 Andover Drive.
Info: www.youtube.com/watch?v=B2iMihfR0GE

UNITED KINGDOM, CRAWLEY, September 17, 2022. Seaboard Southern Railroad Show, The Charis Centre, West Green Dr.
Info: www.facebook.com/events/402107138604975

CALIFORNIA, LOS ANGELES, September 24-25, 2022. Pasadena Model Railroad Museum Open House. 5458 Alhambra Ave.
Info: www.pmrrm.org

CALIFORNIA, ROSEVILLE, October 22-23, 2022. International Railfair. @The Grounds, 700 Event Center Dr.
Info: internationalrailfair.com

COLORADO, COLORADO SPRINGS, September 17-18, 2022.
TECO Model Train Show. Colorado Springs Event Center, Hall A, 3960 Palmer Park Blvd.
Info: tecoshow.org

COLORADO, PUEBLO, October 15-16, 2022. Rail Fair at the State Fairgrounds. Livestock Pavilion @ State Fairgrounds, 1001 Beulah Ave.
Info: tecoshow.org



CONNECTICUT, WINDSOR, September 15-18, 2022. Connecticut Yankee, Northeastern Region Convention 2022. Marriott, Hartford/Windsor Airport, 28 Day Hill Road.

Info: ner-conventions.org/connecticut-yankee

ILLINOIS, ST. CHARLES, October 16, 2022. 31st Annual Chicago Railroadiana & Model Train Show and Sale. Kane County Fairgrounds (Front Building) 525 S. Randall Rd.

Info: www.rrshows.com

IOWA, IOWA CITY, October 23, 2022. Iowa City Train Show and Swap Meet, sponsored by the Hawkeye Model Railroad Club. Johnson County Fairgrounds, Building C, 4261 Oak Crest Hill Rd S (Old Hwy 218).

Info: hawkeyemodellrrclub.com/2022-train-show

MARYLAND, HUNT VALLEY (Timonium), October 13-16, 2022. Mid-Atlantic RPM meet. Delta Marriott Hotel and Conference Center, 245 Shawan Road.

Info: www.marpm.org

MARYLAND, TIMONIUM, October 15-16, 2022. Great Scale Model Train and Railroad Collectors Show, Maryland State Fair, 2200 York Rd.

Info: www.gsmts.com

MASSACHUSETTS, GARDNER, September 24, 2022. Southern New England Model Railroad Club Open House. Chestnut Street United Methodist Church, 161 Chestnut Street.

Info: snemrr.org/train-show--open-house.html

MASSACHUSETTS, ORLEANS, Wednesday evenings, July-August, 2022, Nauset Model Railroad Club Open House. Rear of Hilltop Plaza, 180 Route 6A.

Info: www.nausetmodellrrclub.com

MASSACHUSETTS, TAUNTON, September 18, 2022. Old Colony Model Railroad Club's 22nd Model Train Show. Clarion Hotel, 700 Myles Standish Blvd.

Info: oldcolonyrailroadclub.com

MICHIGAN, KALAMAZOO, October 28-29, 2022. NMRA NCR Division 9 Fall Convention, The River Church, 417 Wallbridge. Info: www.ncr-div9.com/conventionHome.php

MISSOURI, KIRKWOOD, October 8-9, 2022. Greater St. Louis Metro Area Train Show. Kirkwood Community Center, 111 S. Geyer Road. Info: [www.seetrains.com/See Trains%21/See The Trains%21.html](http://www.seetrains.com/See%20Trains%21/See%20The%20Trains%21.html)

NEW YORK, BATAVIA, October 16, 2002. The Great Batavia Train Show, sponsored by the Genesee Society of Model Engineers. Richard C. Call Arena, Genesee Community College. Info: gsme.org

NEW YORK, MASSENA, September 24-25, 2022. 13th Annual St. Lawrence Valley Model Train, Toy & Collectible Expo. Massena Arena, Route 37. Info: www.facebook.com/NorwoodModelRRClub

NORTH CAROLINA, CHARLOTTE, October 20-23, 2022. Carolina Special Look South 2022, Mid-Eastern Region Regional Convention. Hilton University Place, 8629 M Keynes Drive. Info: www.carolinasouthern.org/MER2022.html

OHIO, CAMBRIDGE, October 23, 2022. 4th Annual NMRA Buckeye Division Train Show. Pritchard Laughlin Center, 7033 Glenn Hwy. Info: div6-mcr-nmra.org/trainshow.html

OHIO, FOSTORIA, September 24, 2022. 20th Fostoria Rail Festival. 1001 Park Ave. Info: ohio.org/festivals-and-events/events/20th-fostoria-rail-festival

OHIO, MARION, October 13, 2022. 2022 Central Ohio Railroad Prototype Modelers Meet. Marion Union Station, 532 W Center St. Info: www.facebook.com/events/394841682028478

OHIO, MIDDLEBURG HTS., 1 October 2022. The Great Berea Train Show. Cuyahoga County Fairgrounds, 19201 Bagley Rd. Info: thegreatbereatrainshow.org



OHIO, WEST CHESTER (Cincinnati), October 8-9, 2022.

Cincinnati Model Train Show sponsored by the Cincinnati Ohio Division 7 NMRA. Lakota West High School, 8940 Union Centre Blvd. Info: cincy-div7.org/2022%20Show%20Flyer%20v2.pdf

OHIO, YOUNGSTOWN, October 15, 2022. Iron and Steel Autumn Leaves Railfest. St Mary's Assumption Social Center, 356 S. Belle Vista Ave.

Info: www.cleveshows.com/PDFS/2022%20Iron%20City%20Sept.pdf

OREGON, BEND, September 17, 2022. Eastern Cascades Model Railroad Club 25th Annual Open House. 21520 Modoc Ln.

Info: www.facebook.com/events/447651223835336/447876803812778

OREGON, PORTLAND, October 1, 2022. Bridgetown Railroad Prototype Modelers (RPM) Meet. Shilo Inn Portland Airport, 11707 NE Airport Way.

Info: www.brpmm.com

PENNSYLVANIA, DUNMORE, October 9, 2022. The Great Northeast Model Train Show by Bernie's Model Railroad. Holiday Inn Scranton East, Intersection of I-84/380/81.

Info: www.facebook.com/events/1895028337365344

PENNSYLVANIA, EASTON, October 2, 2022. 44th Annual Lehigh Valley Region Train Show & Expo. Charles Chrin Community Center, 4100 Green Pond Road.

Info: www.lehighlines.org/events.html

PENNSYLVANIA, HAMBURG, September 16-18, 2022. Reading Railroad Modelers Meet X, hosted by the Reading Company Technical & Historical Society and the Anthracite Railroads Historical Society. Reading Railroad Heritage Museum, 500 S. Third St.

Info: readingrrmm.com

TENNESSEE, MURFREESBORO, October 8, 2022. Music City Mini-Meet hosted by the Cumberland Division, SWR, NMRA. Rutherford County Agricultural Building Auditorium, 315 John R Rice Blvd #101.

Info: hansmanns.org/mini-meet

TEXAS, PLANO, October 1-2, 2022. Plano Fall Train Show, Plano Event Center, 2000 East Spring Creek Pkway.

Info: dfwtrainshows.com/page/fall-plano-train-show-oct-1-2-2022

VERMONT, WHITE RIVER JUNCTION, October 16, 2022. Upper Valley Model Railroad Show, sponsored by the Connecticut Valley Model Railroad Club. Connecticut Valley Auto Auction Building, 1567 VT-14.

Info: cvrr.railfan.net/cvmrr

WASHINGTON, BATTLEGROUND, September 24, 2022. 50th Annual Model Railroad Swap Meet, sponsored by Southwest Washington Model Railroaders. Battle Ground High School, 300 East Main St.

Info: www.facebook.com/events/1191095515044290

WASHINGTON, SPOKANE, October 9, 2022. River City Modelers Fall Train Show. Spokane County Fair & Expo Center, Buildings A, B, & C, Gate G – 404 North Havana.

Info: www.rivercitymodelers.org/rcm-train-show-info.html

WISCONSIN, WEST BEND, October 9, 2022, Kettle Moraine Railroad Heritage Assn. 20th Annual Show/Swap. Washington County Fair Park, Hwy 45 & Pleasant Valley Rd.

Info: www.kmbsrrclub.org/id3.html

Future 2022-2023 by location

UNITED KINGDOM, CREWE, November 4-6, 2022, Crewe North Junction 2022, British Region NMRA Regional Convention. The Heritage Center, Emperor Way, Crewe Business Park, CW1 6BD.

Info: convention.nmrabr.org.uk

ILLINOIS, CHICAGO, December 3, 2022. Lake Shore Model Railroad Association Open House. 9801 South Avenue G.

Info: www.lakeshoremodelrr.org/index.html



ILLINOIS, ST. CHARLES, June 11, 2023, Kane County Railroadiana & Model Train Show and Sale. Kane County Fairgrounds (Front Building), 525 South Randall Rd.
Info: www.rrshows.com

KENTUCKY, LOUISVILLE, November 12, 2022. Division 8 Train Show and Sale, sponsored by Division 8, Mid-Central Region, NMRA. Holy Family Parish Saffin Center, 3938 Poplar Level Rd.
Info: www.div8-mcr-nmra.org/site/index.htm

MAINE, BREWER, November 19, 2022. Eastern Main Model Railroad Club Annual Show. Jeff's Catering, 15 Coffin Ave, East West Industrial Park.
Info: dahak@roadrunner.com

MICHIGAN, FARMINGTON HILLS, January 22, 2023, 2nd Annual Model Railroad Sale, hosted by Division 6, NCR-NMRA. Costick Community Center, 28600 W Eleven Mile Rd.
Info: www.ncrnmra.org

MICHIGAN, NORTHVILLE, November 12, 2022. 44th Annual Model Railroad Show and Workshop. Ward Church, 40000 Six Mile Rd.
Info: www.ncrnmra.org

NEW YORK, ALBANY, December 4, 2022. Great Train Extravaganza. Empire State Convention Center, underneath The Egg.
Info: gtealbany.com

NEW YORK, HAMBURG (Buffalo), November 19-20, 2022. WNYRHS Train & Toy Show. Fairgrounds Event Center, 5820 South Park Ave.
Info: www.trainweb.org/wnyrhs/trainshow.htm

TENNESSEE, CROSSVILLE, November 5-6, 2022. CMRC Swap Meet. Crossville Outlet Center, Landers Crossroads, 228 Interstate Drive (next to the Buc-ee's).
Info: crossvilletrains.org/welcome

TEXAS, GRAPEVINE (Dallas Area), Summer 2023. NMRA National Convention, Gaylord Texan Resort & Convention Center, 1501 Gaylord Trail.

Info: www.2023texasexpress.com

TEXAS, PLANO, January 21-22, 2023. Dallas Area Train Show, 2000 East Spring Creek Parkway.

Info: dfwtrainshows.com/page/dallas-area-train-show-january-21-22-2023

WISCONSIN, MILWAUKEE, November 12-13, 2022. Trainfest. Wisconsin State Fair Park.

Info: www.train-fest.com ■

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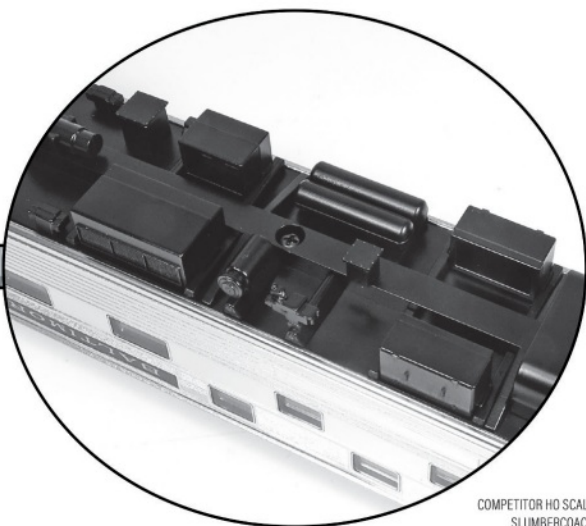
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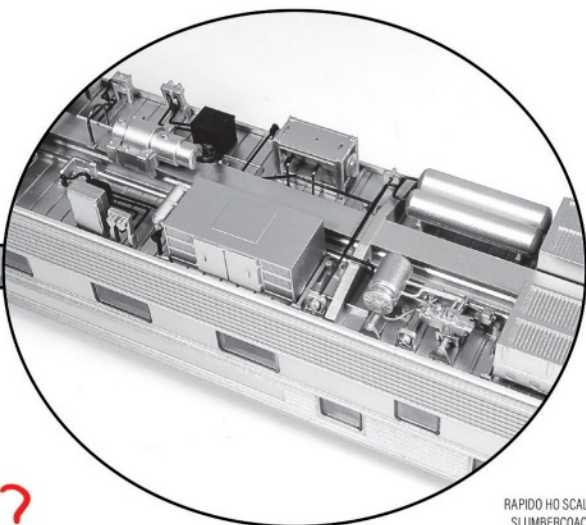
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Barry Silverthorn models stratified rock ...



Updated DIY static grass applicator ...



Modeling this quaint St. Paul station ...

... coming October 15th in the
October MRH



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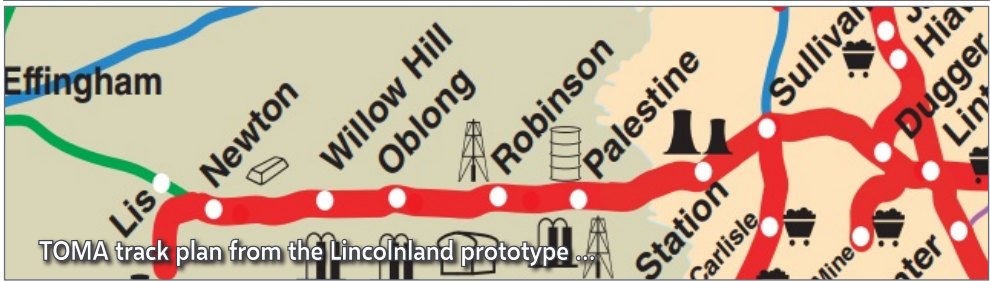
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