HAVING FUN WITH TRAINS

JULY 2025 | FREE

MRH

MODEL RAILROAD HOBBYIST

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- DIY dual power DCC circuit breaker: 2
- Beginner ops: yard limits
- Rebuilding a layout section, trackwork
- Bridge installation examples

... and more inside!

Mike Tylick *and* Ken Belovarac ...

Tale of two water tanks

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MRH
MODEL RAILROAD HOBBYIST

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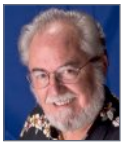
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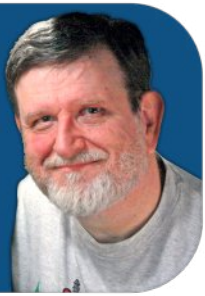


Model Railroad Hobbyist | July 2025

Joe Fugate on NMRA conventions: past, present, and future

View reader comments

As I write this, we leave for the 2025 NMRA National Convention in Detroit just a few days from now. As I thought about what to write in the July editorial, I decided to count up how many NMRA National Conventions I've attended. To date, it's been twenty.

Let's look back at a few of the past conventions, talk about this year's convention coming up in a few days, and also look ahead to see what's coming for future national conventions we know about so far.

Past NMRA National Conventions

Eugene, Oregon, 1987: My very first NMRA National convention ever was the 1987 convention in Eugene, Oregon. Given I grew up just 50 miles south of there, I figured no NMRA National was ever going to get any closer, so I just had to attend.

This convention set me on my path: modeling the SP Siskiyou Line. I met several notable figures in the hobby, among them Andy Sperandeo and Doug Gurin. From this I ended up being on a first name basis with them over the years.

This relationship lead to Andy talking me into doing a cover story on mushroom layouts in the Jan 1991 *Model Railroader.*

1. The first MRH advertiser was Craig Martin of BLMA. Here Jeff Shultz is interviewing him on video at the 2008 NMRA Convention in Anaheim, CA.

Looking back, this convention was rather small compared to later National Conventions. I would call it a larger regional meet by today's standards.

Valley Forge, 1993: I had moved to Portland, Oregon and was on the 1994 NMRA Convention committee for Portland. The committee recommended we attend the 1993 NMRA National Convention to get a feel for what to expect for the 1994 convention, so that's what I did.

All I could say is *wow!* The National Convention had grown considerably over what I saw in 1987. The train show was on ballroom-sized spaces on three different floors – it was massive!

I first saw Ken Patterson there, but he didn't know me from Adam in those days.

Publisher's musings | 3

Portland, OR 1994: As part of the committee for this convention, I was deeply involved in this convention at many levels. I helped plan layout tours, I helped set up the LDSIG room, and I gave clinics as well as had my new Siskiyou Line layout on tour for the first time.

My first name basis circle grew, adding more folks in the hobby such as Tony Koester and David Popp. I also got to know more LDSIG folks such as Seth Neumann, Travers Stavac, and Bruce Morden.

San Jose, CA 2000: A couple of my Siskiyou Line op session regulars Bruce Qualman and Bill Murphy decided to attend this convention with gusto, so we drove a nice RV from Portland to San Jose, railfanning all along the way. We stayed in the RV and drove a "dingy" Jeep we had towed along to the

convention and to layout tours. I also gave clinics and renewed acquaintances with the folks I knew in the hobby. Sadly, we lost Bill Murphy recently from surgery complications.

Seattle, WA, 2004: Seattle was in my neck of the woods, being just four hours from Portland, so I could not pass up this convention and train show. I remember the Tsunami sound decoder was coming soon and they had a big crowd at the SoundTraxx booth checking out the demo.

Model Trains Video (precursor to MRH) had a table as well, selling some of our Siskiyou Line series DVDs.

Anaheim, CA, 2008: This is the convention at which we announced Model Railroad Hobbyist. I gave clinics and each clinic included a preview of MRH with the first quarterly issue projected for January 2009.

Lots of buzz went around this convention about our new eZine we had announced. We also courted and picked up our first advertisers here.

Conventions 2009-2023: Over the next years, we began attending each NMRA National as Model Railroad Hobbyist with a booth and me giving clinics. I've gotten to know a lot of folks in the hobby through these events, and each year we get to renew our friendships again as we see many folks who populate the hobby's national convention circuit.

We did sit out the 2024 Long Beach convention mainly due to its high cost and the less-than-great location. Thankfully, the 2025 convention venue has changed all that for the better.

This year's convention in Novi, Michigan

I'm looking forward to the upcoming convention in Novi this year. We visited a number of layouts to be on tour back in March and had a total blast. Easily these are some of the hobby's finest layouts, a real plus if you attend this year's convention.

I'm giving two clinics this year, giving each one two times.

Wed, July 16, 9:00 AM – *Make It Run Like a Dream: Locomotives*

Thu, July 17, 2:30 PM – *Painting In a Post Floquil World*

Thu, July 17, 7:00 PM – *Painting In a Post Floquil World*

Thu, July 17, 8:30 PM – *Make It Run Like a Dream: Locomotives*

Notice, I'm giving a clinic on the Locomotives book for the first time! The book is now at 70-some pages, and ***I expect to finish the Loco book this fall,*** so we're close enough I can highlight some of the book's content in a clinic.

The content that's in the *MRH Acrylic Painting Guide* remains as relevant as ever, now that modeler's Floquil stash is dwindling away.

Plus I've added some new tidbits over the years with some stuff that never made it into the MRH paint book, so it might be worth attending even if you have the book already.

We also have a booth at the National Train Show, in space 405 J-L.

2. We have a booth at the National Train Show each year, and as you see here, it can get busy at times. We're in space 405 J-L this year.

It looks like 84 vendors and 23 layouts at the National Train show this year. Some of the more notable vendors at this years show include our advertisers East Coast Circuits, LogicRail, ESU, Walthers, Bachmann, SoundTraxx, Model Rectifier, and ScaleTrains.

One notable no-show this time is Firecrown Media (previously Kalmbach). I'm guessing this is temporary – and that they almost certainly will be at next year's National in Chatanooga, TN, since that's where their headquarters is located!

Future NMRA National Conventions

Looking ahead to future NMRA National Conventions, here's the ones we know about.

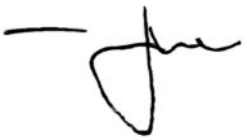
Chattanooga, TN, 2026: Next year's NMRA National will be in Chattanooga. As mentioned, given this is Firecrown Media's HQ location, I'm expecting a notable presence from them.

Tacoma, WA 2027: Even though we now are located in Tulsa, OK, we still have a lot of relatives in the Portland, OR area, and Tacoma is just three hours from Portland. One scenario that could work for us is flying into Portland, renting a car, visiting all our relatives and friends, and then driving to the convention from Portland.

Then we would just do the reverse at the end of the convention, drive back to Portland, say goodbye to the relatives, and then fly back to Tulsa.

Raleigh, NC 2028: Rumor has it that the 2028 NMRA National will be in North Carolina. Stay tuned!

Future conventions: I'm hearing rumors of a 2030 NMRA Convention in Honolulu, HI. Could be interesting, if true – maybe you could convince your spouse or significant other to attend that one if it comes about? ☑



Last issue likes

Most liked articles in **June 2025 issue** of *MRH* are:

1st John Depauw's EJ&E layout
2nd Electrical Impulses: DCC dual power breaker: 1
3rd Let's talk ops: Coordinating train movements

Most liked articles in **June 2025 issue** of *Running Extra* ...

1st Limited Modeler: Why I love modeling steam
2nd Getting Real: Building a box shook factory
3rd Ron King's Erie Railroad

If you want more of this type article, then like the article! Click the *Give us a like* or *comments* button on each article and press the like button on the article's forum page if you want to see more articles like these. ■

Best of the MRH FORUM THIS MONTH

Model Railroad Hobbyist | July 2025

Compiled by JOE FUGATE

Solve passenger car tracking issues

VIEW READER COMMENTS

New *MRH* forum member **LMACKATTACK** lamented tracking problems with his new Walthers passenger cars and asked if anyone had some recommendations for ways to help them run better.

Several chimed in with great suggestions. One of the most comprehensive comes from **bear flag models** (Jeff B.) – it's worth a read just for the expert insights on passenger car tuning in general.

Check out the full thread for all the juicy details!

View the full thread on the MRH website

▶ *MRH'S* MONTHLY GREAT MODELER POSTS

1. MRH forum member **blindog10** (Scott Chatfield) posted a photo of Nevada Northern's new 250th birthday paint scheme they've just unveiled. Nevada Northern also posted this diagram of the paint scheme on their Facebook page, shown here.

Celebrating America's 250th birthday

MRH forum member **Lawrence K** started a thread for showing off new US "Quarter Millennium" birthday railroad paint schemes celebrating the coming year, 2026.

A number of folks posted photos of US birthday railroad paint schemes, some quite handsome and others really busy or even a bit on the ugly side.

But **blindog10** (Scott Chatfield) posted a nice photo of the Nevada Northern SD9 paint scheme just unveiled recently. Nevada Northern posted the diagram above [1] on their Facebook page. It's an elegant paint scheme, and the loco number 250 is a nice touch.

View the full thread on the MRH website

2. MRH forum member **dirty diesels** (Robert B.) posted this top photo of his freelanced truck trailer. Much to everyone's surprise, **P51** (Lee B.) posted the bottom photo of the prototype repurposing a hopper just as Robert had modeled!

Model came first, then a prototype found!

On a forum thread by *MRH* Author Bill Gill asking for photos of modeled truck loads, forum member **dirty diesels** posted the top photo [2] of his freelanced truck trailer repurposed from a railroad hopper.

Much to everyone's astonishment, **p51** (Lee B.) shortly thereafter posted the bottom photo [2] of an actual truck trailer repurposed from a railroad hopper, just as **dirty diesels** had done.

Proof there's a prototype for everything!

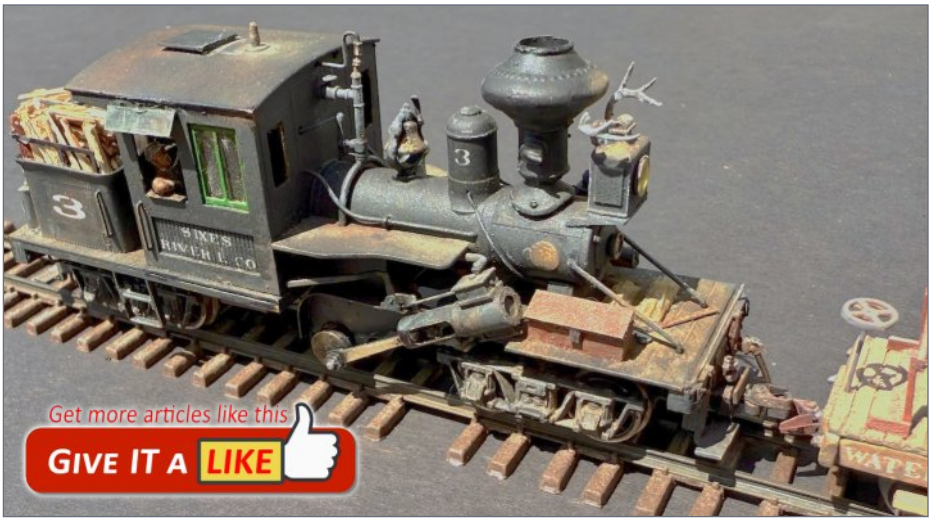
View the full thread on the *MRH* website

Recent photo fun thread

These images posted on a recent *MRH* forum Photo Fun thread show some some fun narrow gauge modeling.

View list of recent Photo Fun threads

3. MRH forum member **thewizard1** (Charles D.) posted this shot of an abandoned narrow gauge scene he's adding to his layout. He posed the DRGW loco temporarily for this shot. Looking forward to the final layout scene!



4. Forum member **ChrisFrissell** posted this HOn30 logging Climax photo. Chris says, "I lettered this loco for my freelance Pacific Coast logging line that feeds my 30-inch narrow gauge, located in the coastal mountains of southwest Oregon."

Model Railroad Hobbyist | July 2025

Getting started with realistic ops: How yard limits works

Last time in this column I discussed the importance of using a dispatcher to coordinate train movements and avoid mishaps. While it's true you need a dispatcher to manage overall train movement across the road and to set up opposing train meets, is that always the case across the entire railroad? No, it's not.

Real railroads have a special train movement zone they call "yard limits" designed to allow trains some measure of freedom from having to always talk to the dispatcher before you move anywhere.

Yard limits may or may not have a yardmaster assigned. Regardless, within yard limits, locomotives and trains are allowed to move at restricted speed and to verbally coordinate with other trains nearby to avoid collisions. On certain parts of the railroad, this license to move and do work eases the burden on the dispatcher.

Without designated areas on a railroad allowing the back and forth and short distance movement of trains without special permission, the train crews would need to constantly pester the dispatcher for clearance to move anywhere. That's not a very efficient use of the dispatcher – to bog them down with short distance train movement minutia.

One interesting example of how yard limits solves this problem happened on Andy Keeney's Nashville Road. An industrial area across the aisle from Gresham yard known as North Gresham was originally dis-

1. A train approaches Roseburg yard limits on my Siskiyou Line 1. Note the yellow SP-correct yard limits sign marking the start of yard limits. Trains approaching this sign would contact the Roseburg yardmaster for instructions.

patcher territory. Dispatch was getting pestered a lot to provide train clearance through North Gresham as switchers worked the industries and mainline trains tried to make their way past.

Instead, Andy's guys suggested they make North Gresham yard limits, essentially extending the yard limits around Gresham yard proper out across the aisle past the last turnout off the main in North Gresham. As a result, the dispatcher got some significant relief and all the trains passing through North Gresham just needed to proceed at reduced speed and to coordinate with other traffic there. Worked like a charm!

If the yard limits is coordinated by a yardmaster, then it's considered common courtesy to give the yardmaster a heads up that you're about to enter yard limits and to ask for their guidance.

Once they have a heads up, the yardmaster will often give you instructions on how and where to enter yard limits. They may also alert you about other traffic to watch for. ☑

WHAT'S NEAT column

Model Railroad Hobbyist | July 2025

KEN PATTERSON COVERS THIS MONTH:

VIEW READER COMMENTS

- A NEW 4-8-8-4 BIG BOY FROM BLI
- BACHMANN'S NEW BL2 LOCOMOTIVE
- LAYOUT CONSTRUCTION PART 4 – FROM BENCHWORK TO RAIL

click to play video

PHOTOS AND VIDEO OF SUPERB MODELS

FOR THE JULY "WHAT'S NEAT," Ken shows a new model of UP #4014 he's just received from BLI, and promises it will be the first locomotive to run on the new mainline. Bachmann's new BL2 locomotive makes an appearance. Ken continues working on rebuilding the corner of his basement, getting the original diorama base squared off, salvaging turnouts from an old diorama, and laying enough track to run the first train in three months.

1. Unless you have the reflexes of a cat – please stay off the rails.

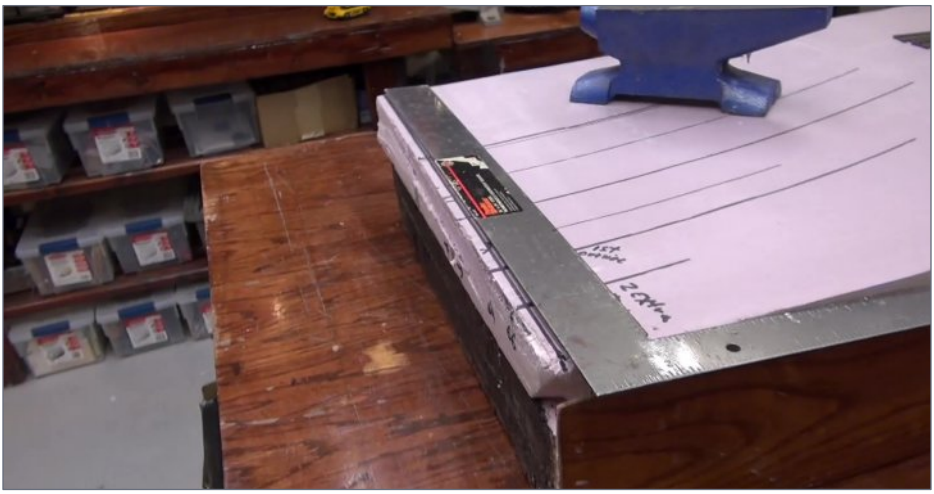
VIEW READER COMMENTS

2. Broadway Limited has released a new model of 4-8-8-4 Big Boy #4014 in HO scale. We'll see it again at the end of the show.
Info: broadway-limited.com

Bachmann's new HO scale BL2

3. Bachmann sent two of the new HO scale BL2 locomotives to Ken for photography. Here are the Monon and Western Maryland versions.
Info: bachmanntrains.com

Layout Construction Part 4 – from benchwork to rail



4. Ken continues working on his basement layout by squaring-up the foam on the end of the diorama, and removing about 1/16 inch of foam to make room for plywood framing.

5. To secure the plywood fascia and structure to the foam, Ken routs a slot in the foam and uses Gorilla Glue to firmly secure small lengths of 1/2″ x 1/2″ wood inside the slots as a base to staple the fascia to.

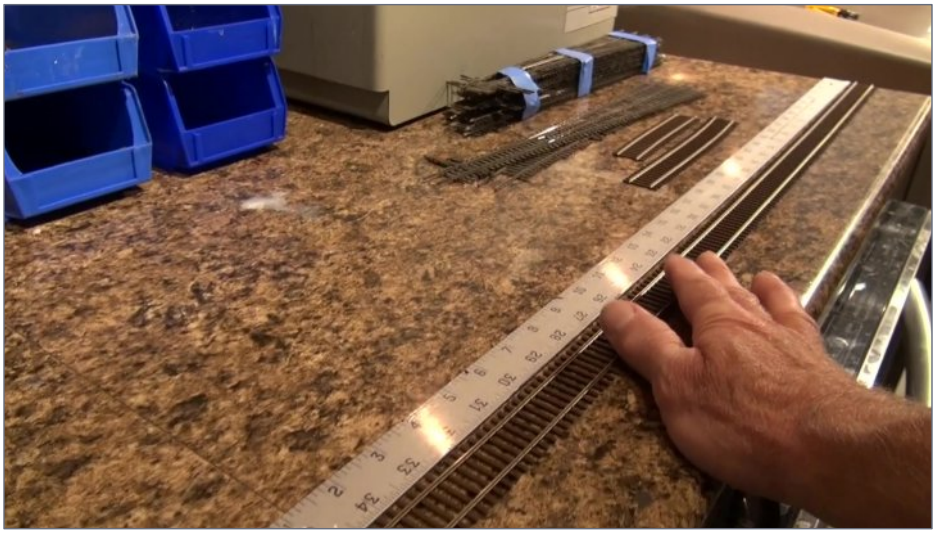
6. On the end of the diorama Ken uses a longer piece of 1/2″ square wood as the backing for the end piece.

7. After stapling the plywood onto the foam, Ken paints the wood and foam with latex paint. It seals the wood and gets rid of the pink color of the foam. It will also help highlight any areas that are carved for geographic features in the future.

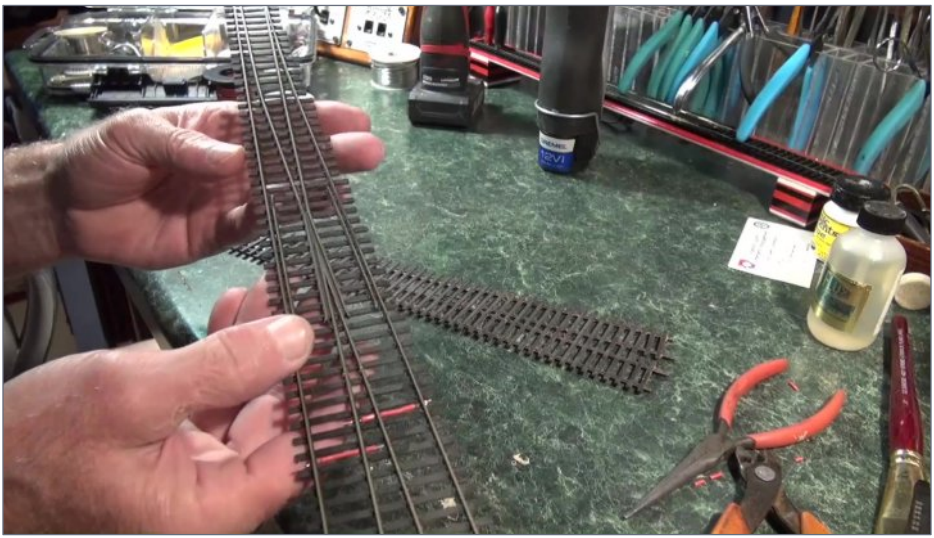
8. When it comes to the track he'll be installing, Ken is taking a something-old, something-new approach. He's salvaging #10 Shinohara turnouts from an older diorama that he created for a Walthers photos shoot and has used quite a bit since then. He'll also be using new Micro Engineering Code 83 flex track. Info: www.MicroEngineering.com

9. The turnouts are soldered together and encrusted with old ballast and glue. Between the ultrasonic cleaner and a lot of elbow grease with a brass brush, Ken will get them clean.

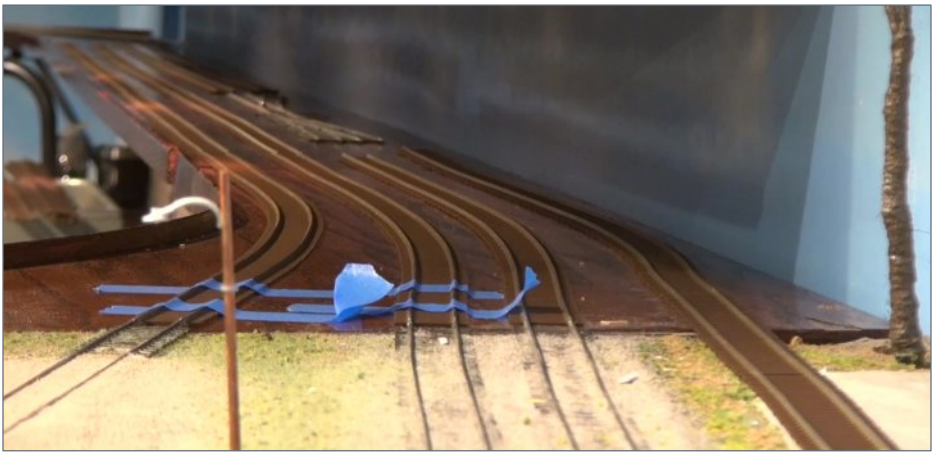
10. Ken uses a laser on a jury-rigged mount to lay out a straight line in Sharpie that he'll use to align the track he is installing.



11. To straighten out the Micro Engineering flex track, Ken uses a straightedge.



12. With the turnouts clean, Ken shows how he modifies the isolated-frog turnouts to turn them into live frogs, powered by the points. He also shows how he modifies a new Walthers turnout to behave in the same manner.
Info: walthers.com



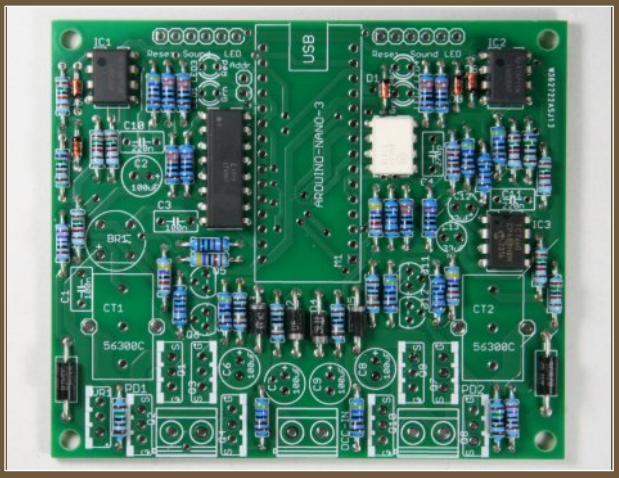
13. Working from the other end of the new section, Ken tapes down the ends of the flex track to help shape the curves required to blend the new track into the existing track.

14. It's time to glue down the track. Ken is experimenting with Dap Clear Caulk, which will dry clear and be paintable – important when it comes time to ballast the track.

To see the Bachmann BL2s, full details on prepping the foam and cleaning up some seriously nasty track, and to watch #4014's triumphant run across the new section, click on the video link at the beginning of this article. ☑

15. As promised, the BLI Big Boy #4014, complete with smoke, is the first locomotive to run across the new section of layout. The salvaged turnouts required additional cleaning, which Ken demonstrated to close out this episode of "What's Neat."

A Fully-Configurable DCC Dual Power Breaker Part 2



Electrical Impulses

1. Starting assembly of Dual Power Breaker board.

VIEW READER COMMENTS

Model Railroad Hobbyist | July 2025

All photographs and diagrams by the author

DR. TERRY CHAMBERLAIN WALKS THROUGH BOARD BUILDING AND TESTING ...

IF BUILDING A DUAL POWER BREAKER (DPB) SPARKED YOUR INTEREST in Part 1, hopefully you now have a printed circuit board (PCB) and a bundle of components ready to be assembled, and have practiced your soldering technique for electronic components.

If you do not have any experience soldering electronic components, have a look at some of the guides available on the internet. MakerSpace has a good one, for example (www.makerspaces.com/how-to-solder). There are also many videos on YouTube.

Nothing beats getting some copper stripboard from one of the component suppliers, and practicing soldering wires and a few spare components to it before tackling the real DPB printed circuit board.

Use rosin-core solder in wire form only. Never use solder with an acid flux as sold for plumbing purposes. Use a fine-tip soldering iron with a maximum power rating of 50 watts.

All joints should be made as quickly as possible to avoid damaging the PCB and components. The greatest enemy of electronics is heat.

The position and reference number of each component is printed on the top surface of the PCB. Most resistors and capacitors also have their value shown, but refer back to the component tables in Part 1 to make sure you fit the correct component in each position.

ASSEMBLING THE DUAL POWER BREAKER

Fit the components with least height to the PCB first. These are the diodes D1-D9 and resistors R1-R43, as shown in the title picture [1], so that, when you turn the PCB over and lay it down to solder the component wires on the underside, the components do not fall out of the holes.

Ensure the diodes are aligned correctly, with the end marked with a stripe aligned with the line on the PCB. It does not matter which way the resistors are placed on the PCB.

You can also fit the two transient voltage suppressors (TVS1 and TVS2) at the left and right edges of the PCB at this time. These components are not polarized, so can be fitted either way.

Solder just one wire from each component, turn the PCB over, and check that all components are still flush with the PCB. If not, make them so by briefly melting the one soldered joint while pressing the component flat. Watch your fingers – soldered wires are hot!

Once everything is flush, solder the remaining wire(s) of the component. Clip the excess wires flush with the soldered joints on the underside of the PCB using a small side cutter.

The next step is to fit the three integrated circuits (IC1-IC3) and the two optocouplers (OK1 and OK2 – also called optoisolators), as the next tallest components. Ensure the notch, dimple or dot at one end of each package matches the board markings, and that all pins are through the PCB holes, with none having been bent under the devices.

The pins of integrated circuits often are splayed-out. Squeeze them together or against a flat surface for a good fit.

Solder two diagonally opposite pins on the chips first. Check that the devices are still flat on the PCB. If not, it is easy to melt the solder on the appropriate corner pin while pushing the device down into the correct position before soldering the remaining pins.

The next step is to fit the Arduino Nano-3 module to the PCB. Before you do, install and configure the Arduino IDE software for the Nano-3, as described in Part 1.

Carefully connect the module to one of your computer's USB ports using a standard USB-A-to-USB-mini-B cable, and check first that the module powers up correctly. For the Nano-3, you will normally see two LEDs lit – one constant (labeled POW) and one flashing (labeled L) for a short period, depending on the current internal state of the Nano module.

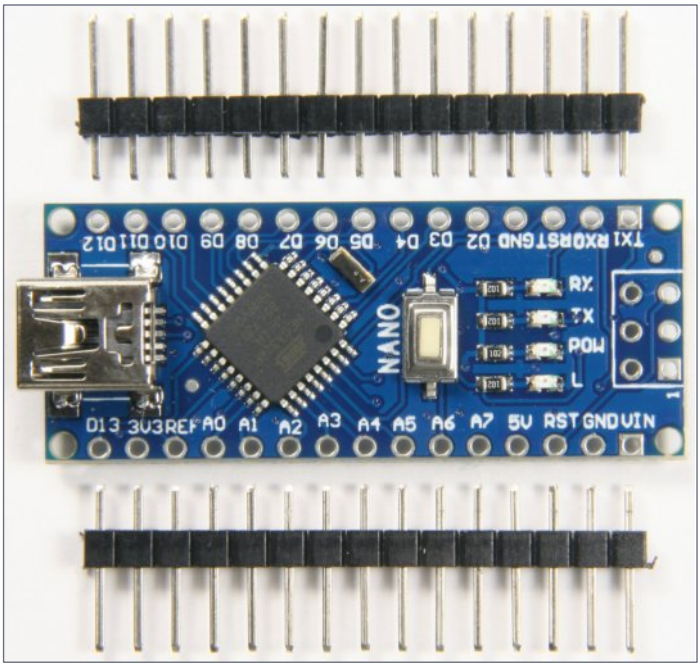
Next, load the sketch for the DPB (DualPowerBreaker_3-8.ino, available from my ATrain Systems website at www.a-train-systems.co.uk/dpb-download) into the Arduino IDE. After checking that the appropriate settings in the Tools menu are selected, try uploading the sketch to your Nano module.

If the upload succeeds, you can carry on with the assembly of your DPB. Otherwise, you will have to try some of the possible fixes outlined in Part 1 – which are much more easily done before the module is soldered into the PCB.

If you purchased the Arduino Nano-3 module "unsoldered" you will need to attach the supplied pin header strips [2] to the module before fitting it to the PCB.

To ensure you fit the header strips square and flush, hold the PCB horizontally above your bench, in a vise or a "third-hand" jig. Drop the pin headers through the respective rows of holes in the PCB, long pins down.

Now fit the Arduino module onto its header strips, and solder it to the header pins. Generally, start with the corner pins, and check that the module is sitting square on the header strips before soldering the rest. With the Nano-3, make sure that you don't fit any



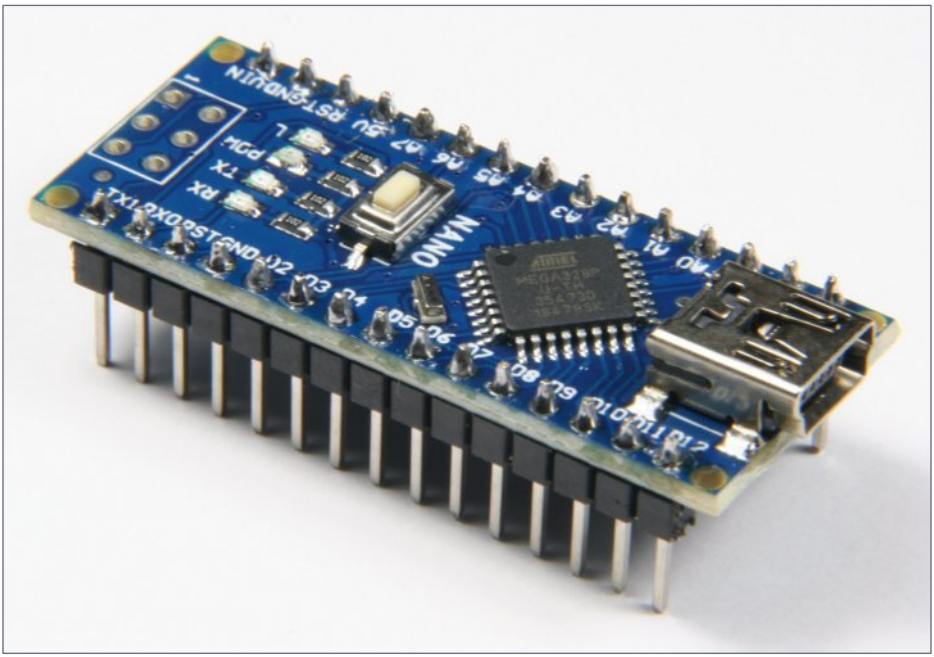
2. Arduino Nano with supplied pin header strips.

of the corner holes on to the header strips by mistake – each header pin must come through a solder pad [3].

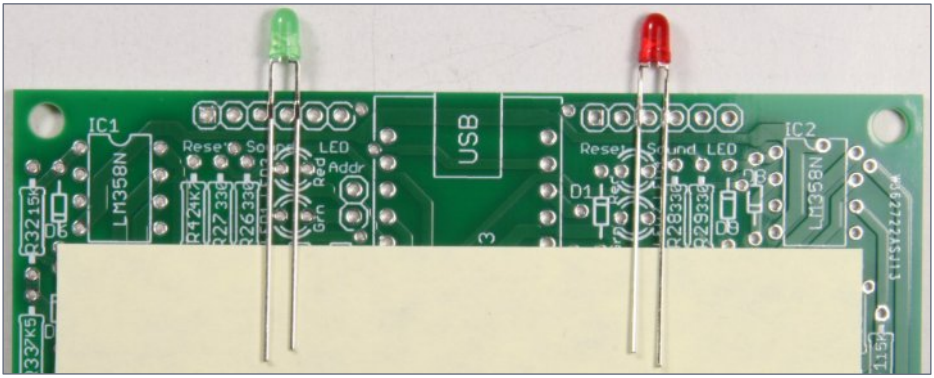
There is no need in this application to fit the additional 6-pin header, which is usually supplied with the Nano, to the end of the module furthest from the USB connector.

Fit and solder the Nano module on to the DPB PCB, making sure that the module's USB connector is toward the edge of the board, followed by the four LEDs (LED1-LED4). The LEDs are fitted with their short leads closest to the Nano module, as indicated in [4].

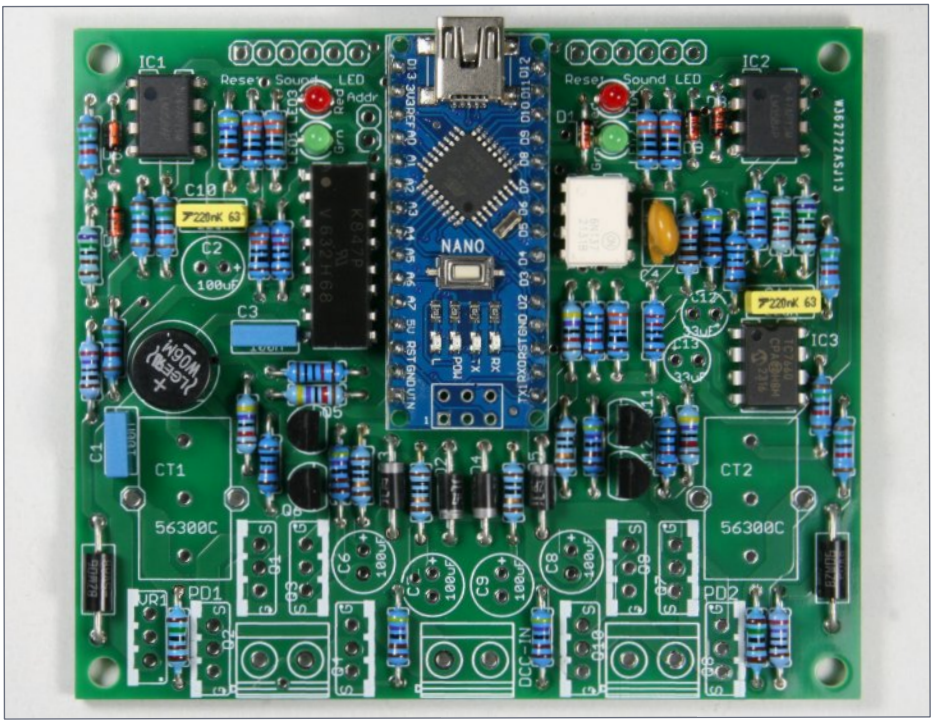
Next, fit the small capacitors (C1, C3, C4, C10, and C11), the bridge rectifier (BR1), and the four 2N3906 transistors (Q5, Q6, Q11, and Q12), ensuring the flat sides of the transistor packages face inwards toward the center of the PCB, as indicated by the PCB markings. Your PCB should now look like [5].



3. Arduino Nano – pin header strips fitted.



4. LEDs – correct orientation – short lead toward Nano module.



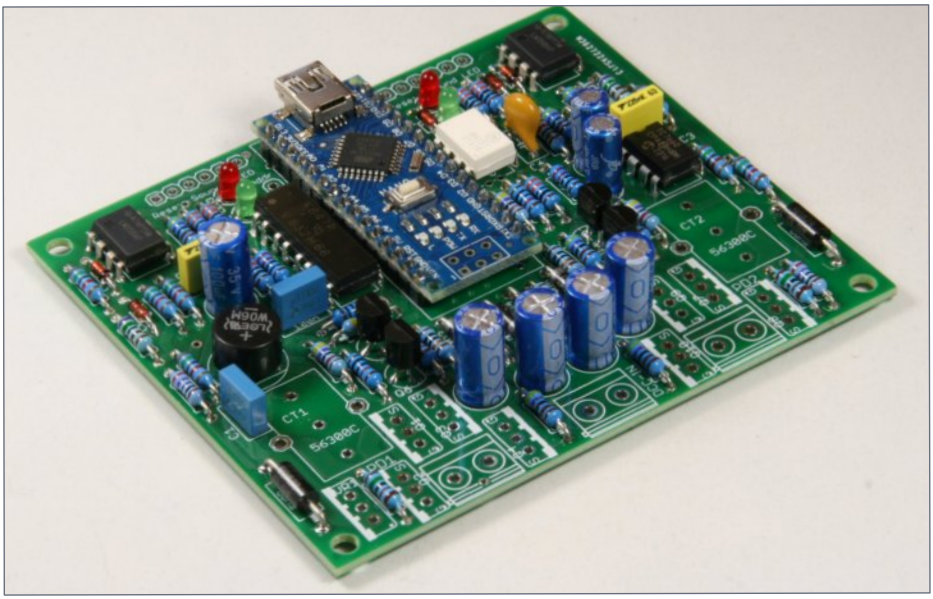
5. Second stage of Dual Power Breaker assembly.

The electrolytic capacitors (C2, C6-C8, C12 and C13) are next. These components are polarized, so fit them the right way since a reversed capacitor could explode.

All of these capacitors, except for C12, are fitted with their negative (–) connection (normally denoted by a stripe on the package) facing outward toward an edge of the PCB. C12, one of the smaller 33uF capacitors located near IC3, and nearest to capacitor C11, is fitted with the negative (stripe) connection toward the center of the PCB.

You can see the correct orientation of all of the electrolytic capacitors in [6].

The next recommended step is to fit the three 2-way terminal blocks for your DCC connections to the PCB, followed by the two current transformers (CT1, CT2). However, before actually soldering the current transformers to the PCB, you need to make the current loops which pass through the hole in the transformers. Take a



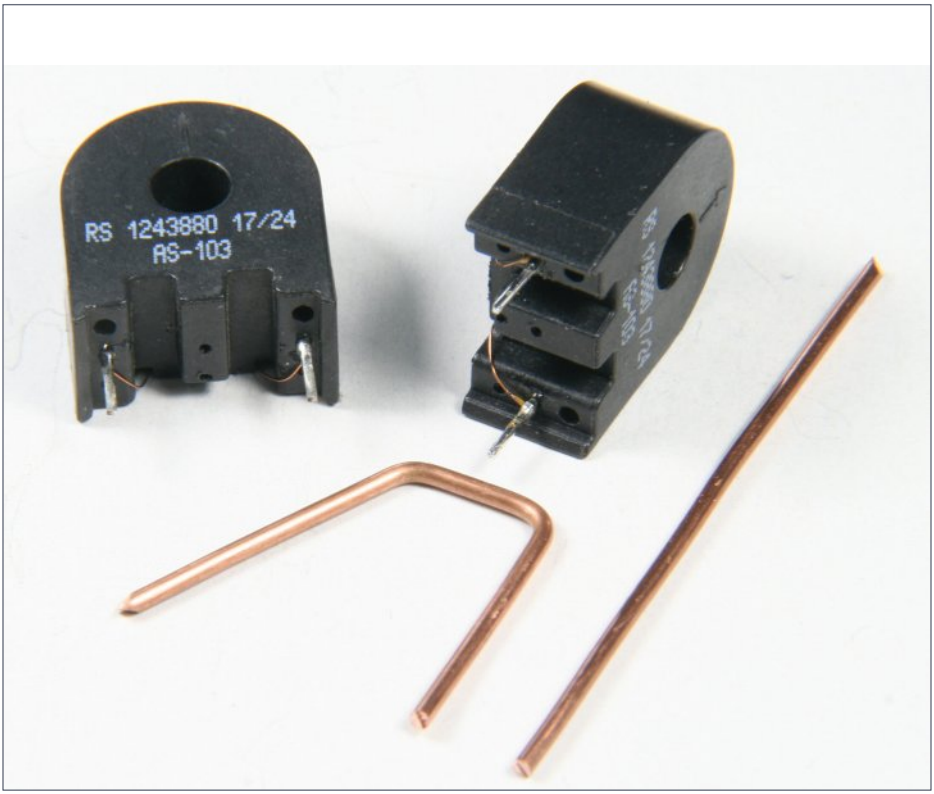
6. Fitment of electrolytic capacitors to PCB.

2" piece of 16AWG copper wire and bend it as shown in [7] for each loop.

Having bent two pieces of wire as shown, you can pass each one through the hole in one of the transformers, as shown in [8], and then complete the bend in each wire to bring the "legs" parallel to the transformer sides so they fit into the relevant holes in the PCB.

After soldering the transformers and loop wires into the PCB, you should end up with an assembly like [9].

Once you have fitted the 2-pin address header (Addr) next to the Nano module, you have a choice of options for the DPB auxiliary connectors. You can fit simple vertical or right-angle male 6-pin



7. Preparation of the loop wire for current transformers.

headers, vertical or right-angle female 6-socket headers, or 6-way screw terminal blocks, as shown in [10], [11] and [12].

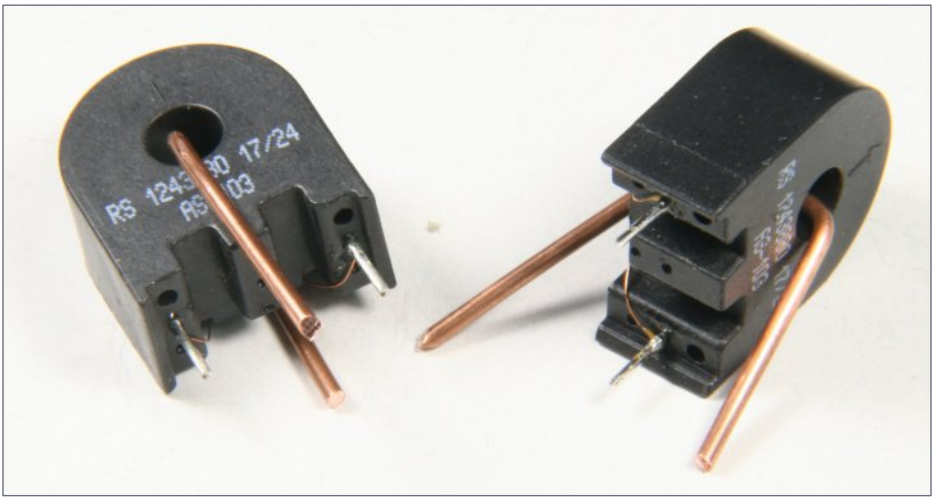
You can also simply choose to solder wires to the PCB using the header holes and take the wires directly to whichever external devices (LEDs, sounders, or pushbuttons) you have selected to install.

I prefer to use screw terminal blocks, although they are more expensive than the alternative headers shown.

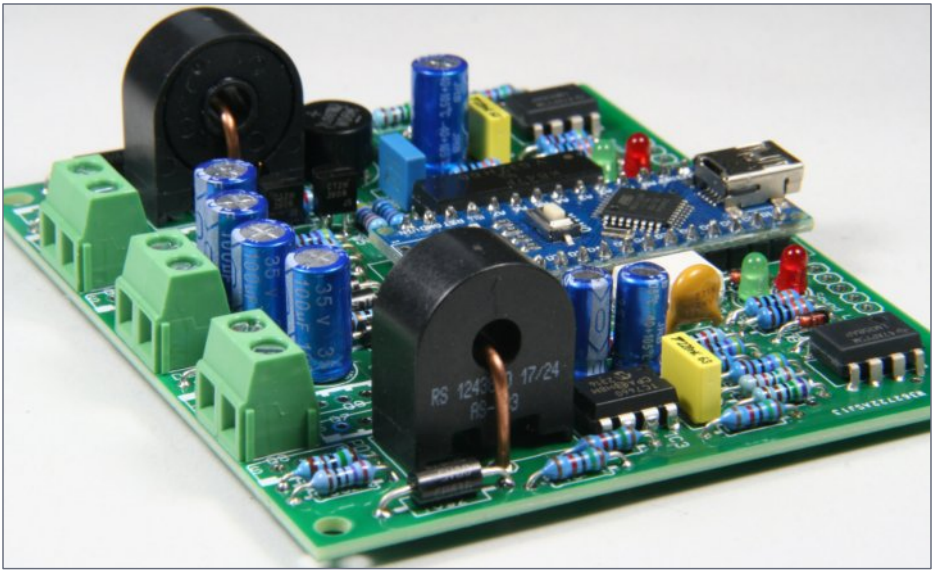
The final components to fit to the DPB are the eight power MOSFETs, which are the devices that actually perform the breaker function of switching the DCC outputs on or off. There's also the voltage regulator that supplies power from the DCC input to all of the control circuitry, including the Arduino Nano and the two current sensing blocks.

The power MOSFETs and voltage regulator are all 3-pin devices, each with a metal tab that must be aligned with the broad white markings on the PCB. The final assembly is shown in [13].

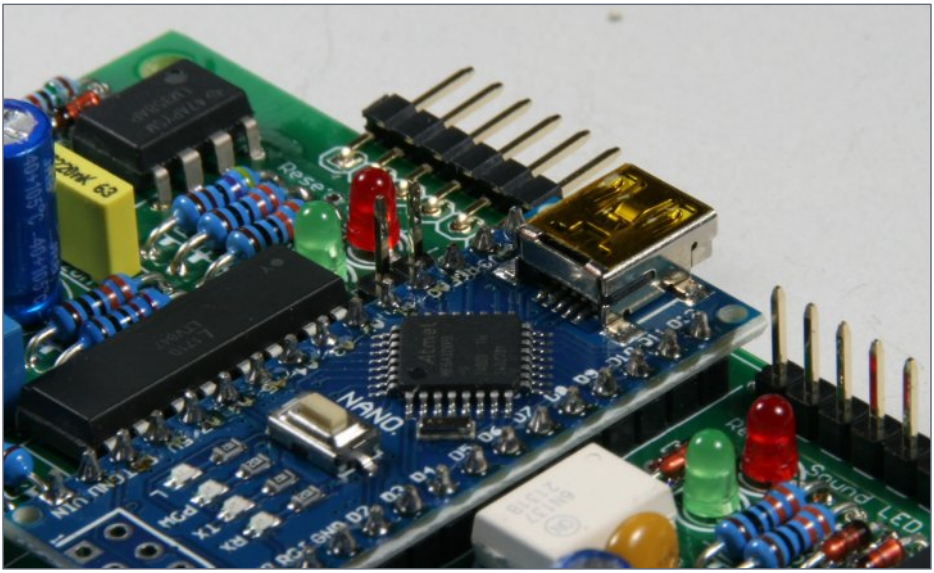
Although the power MOSFETs are positioned on the PCB so there is no danger of their metal tabs touching if they get bent out of



8. Completion of bends in current loop wires.

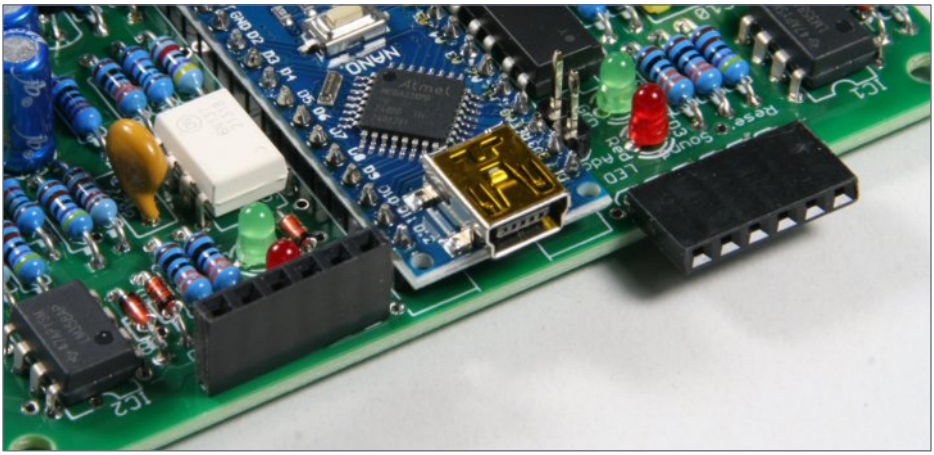


9. Current transformers and main terminal blocks fitted.

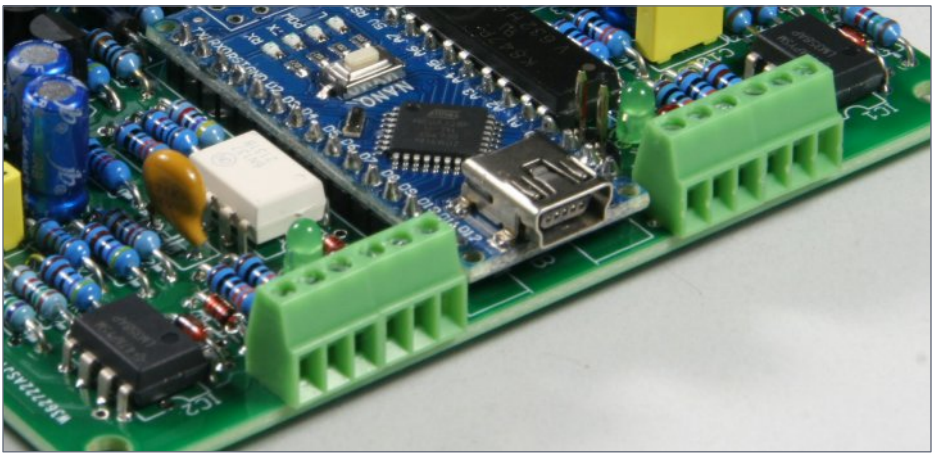


10. Male 6-pin headers for auxiliary connections (vertical or right-angle).

position, these tabs are still "live," carrying the full DCC voltage. There is danger that the tabs could accidentally get shorted together by a stray wire or piece of metal, especially if the unit is mounted out of sight under your layout. Such a short could do a lot of damage not only to the Dual Power Breaker but also to your command station or booster.



11. Female 6-socket headers for auxiliary connections (vertical or right-angle).



12. Terminal blocks for auxiliary connections.

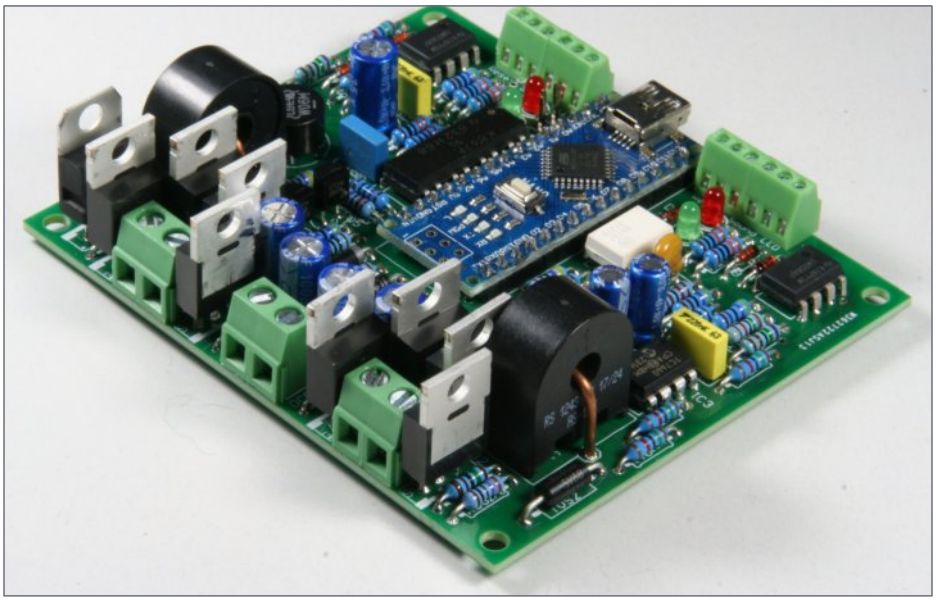
For safety then, you must insulate the exposed tabs. You can do this either by buying commercial insulating caps or boots (search eBay or Amazon for "TO220 silicone insulation caps") as shown in [14] – or you can avoid this expense by slipping some heat-shrink tubing over each power MOSFET and shrinking it in place [15].

The tab of the voltage regulator (lower left) is at ground (0V), so it does not require insulation.

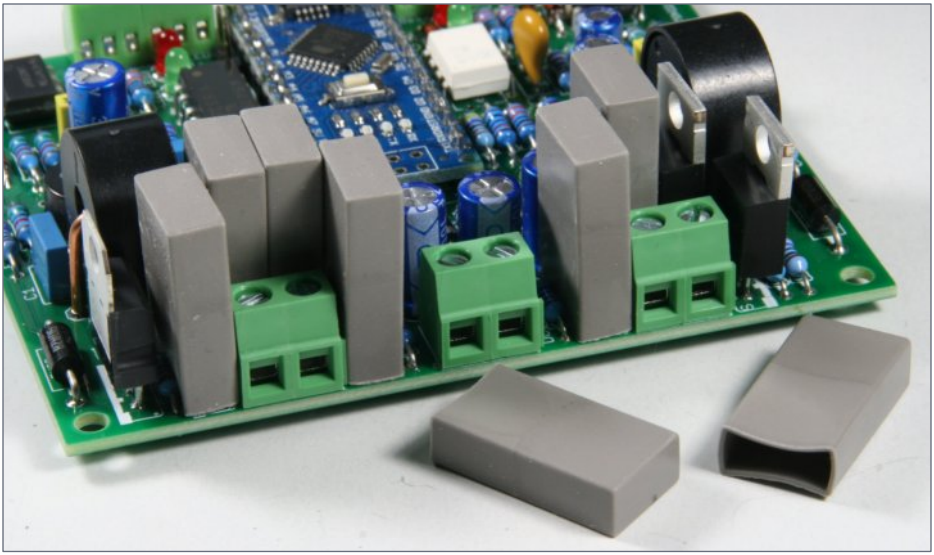
In normal operation, with power district currents up to 3A, neither the voltage regulator nor the power MOSFETs become more than slightly warm. Even when a power district carries the maximum rated current of 5A continuously (not recommended) the temperature rise in the MOSFETs will be less than 30 degrees C (54 degrees F), so no heat sinks are required.

CHECK YOUR HANDIWORK

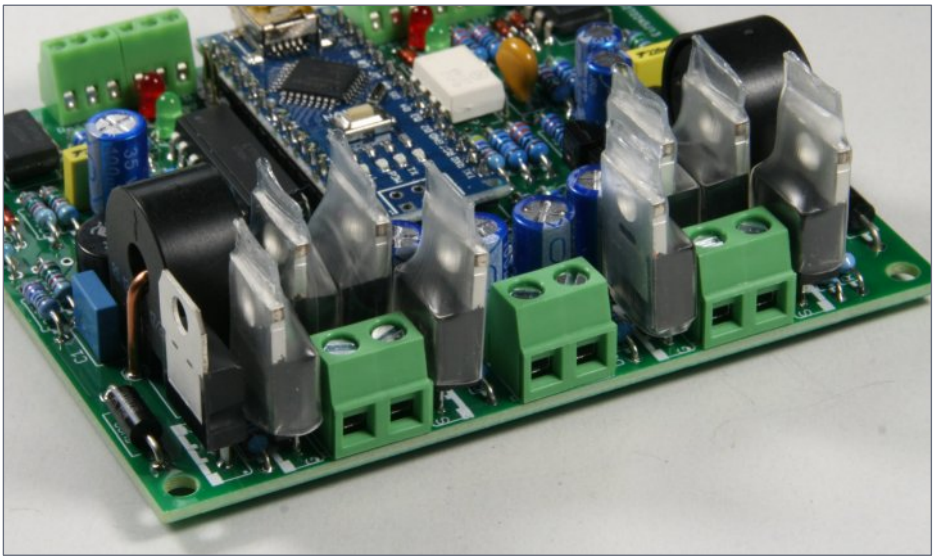
Carefully inspect the completed DPB board to ensure that all of soldered joints are bright and shiny, and that the solder has flowed



13. Fully assembled Dual Power Breaker.



14. Insulation caps for the power MOSFETs.



15. Insulation by adding heat-shrink tubing to the power MOSFETs. The tab of the voltage regulator (lower left) is at ground (0V), so it does not require insulation.

through the PCB holes to the component side. Check also that there are no solder bridges between copper pads or component pins anywhere on either side of the PCB. I highly recommend the use of a 5X or 10X hand lens or jeweler's loupe for this inspection.

Next, before applying power to the DPB, use your multimeter, set to a low resistance range like 2K or 20K, to check the DCC connections for short circuits.

Between the terminals of the DCC In terminal block you will probably see an open circuit if you are using a modern digital multimeter – momentarily you may see a reading on your meter as various capacitors on the board are charged, but thereafter it should show an infinite resistance.

However, if you are using an older analog meter, you will see a resistance of between 3K and 15K depending on which way you connect the probes when measuring resistance.

The resistance between the terminals of each power district DCC Out block should be 1.5K ohms. If you see a different value, check your soldered component values, especially around the loops through the current transformers.

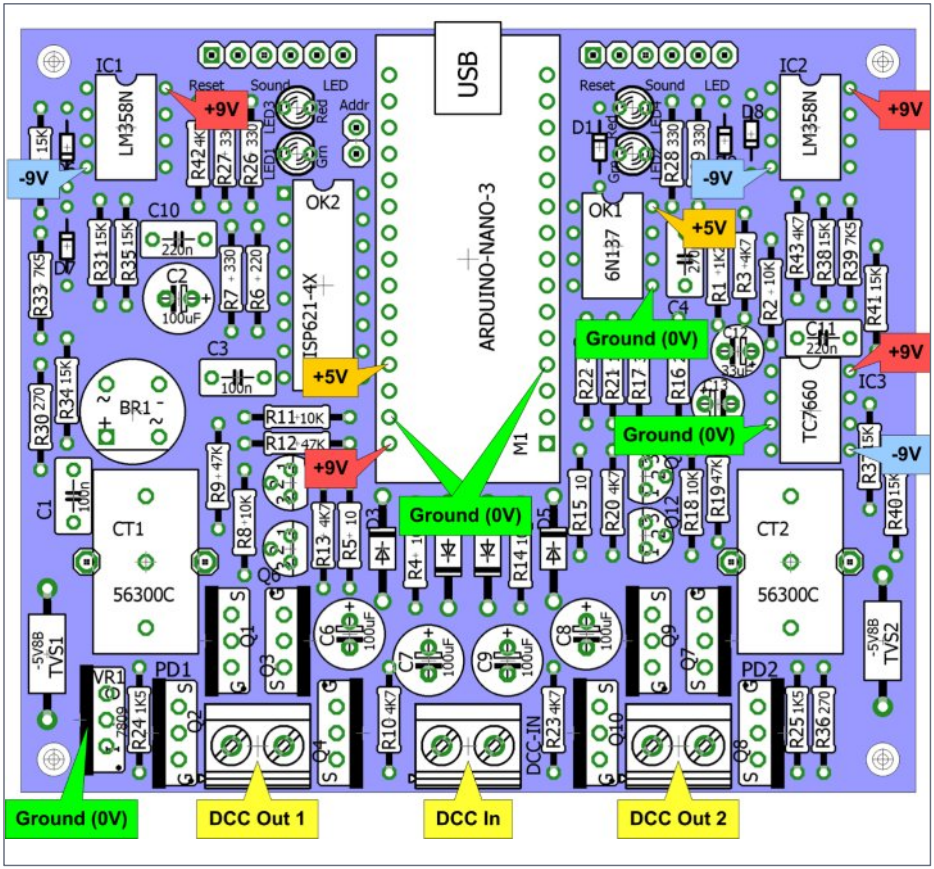
Take care also, if you use the terminal block screw heads as contacts for your meter probes, that the screws are tightened first – loose screws tend to make poor electrical contact and may give you false readings.

You can now connect the DPB DCC In terminals to the track output of your command station or booster. This should light up the POW LED on the Arduino Nano together with the two green LEDs on the DPB itself. Using an AC voltage range on your multimeter, check that the voltage at each DCC Out terminal block is the same as the voltage you measure at the DCC In terminal block.

Switching to a DC voltage range on your meter, next check that the right supply voltages are reaching the various integrated circuits on the DPB. The metal tab of the voltage regulator (see [15] and [16]) is at ground (0V) so clip one of your multimeter's probes to it

as a convenient reference point. Touch the other probe to check the voltages to the integrated circuit pins indicated in [16], being careful not to short any of the pins you are probing to an adjacent pin or nearby component.

The measured voltages should be within 0.25 volts of the nominal values. If you see any significantly different values, disconnect the DPB from DCC power. Check the DPB for components with the wrong value or in the wrong place, and re-check the quality of your soldered joints.



16. Check the DPB integrated circuits for correct voltages.

CONNECT THE DPB TO THE ARDUINO IDE

If, as described in Part 1, you have installed the Arduino IDE and are familiar with its operation, you are ready to compile and upload the necessary sketch (software program) to the DPB. You can download the sketch (DualPowerBreaker_3-8.ino) from my ATrain Systems website (www.a-train-systems.co.uk/dpb-download) to any convenient folder on your computer. Then open it from the File menu in the Arduino IDE.

Connect a Mini-B USB cable from your computer to the Nano USB socket. This will power the Nano whether or not you have DCC track power connected to the DPB. Next, if you have not already done so by following the steps outlined in Part 1, set the correct board type for the sketch by opening the Tools menu and following the various options appropriate to the type of Nano you have fitted to the DPB.

Now click the Upload ( ) button to transfer the compiled sketch to the module. You should see the Tx and Rx LEDs on the Nano flash as the transfer proceeds. Once the sketch has been uploaded, the Nano will retain the code even when it is switched off.

If everything is working correctly, both green LEDs should light, showing that both power districts are enabled. If you have DCC track power connected to the DCC In terminals, you also should have DCC power available from both DCC Out terminals.

CONFIGURING THE DUAL POWER BREAKER

The DPB operates as a DCC accessory and is controlled by the set of configuration variables (CVs) listed in Table 1 [17].

The default values of these CVs are set as soon as you load the sketch to the DPB, so that you can use the DPB immediately if these parameters meet your requirements:

- Current limit for each power district = 1.5 amps

- Time current has to exceed limit before switching off = 25 milliseconds
- Time after breaking before an automatic reconnect is attempted = 3 seconds

Each power district operates independently so an overload in one district has no effect on the other. If, after a re-connection attempt, the district current still exceeds the limit for 25 ms the DPB will switch that district off again – and the cycle repeats until the district overload is removed.

You can use one of your DCC system's handheld controllers to set the DPB CVs to alternative values. Simply issue a program-on-the main (POM) command to the default DPB address (31) to change

CV Number	Default Value	Description	
41	31	Power Breaker Address LSB	Address can range from 0001 to 2043
42	0	Power Breaker Address MSB	
43	6	District 1 Current Limit	Set in 0.25-amp steps, from 0.25A to 5A
44	6	District 2 Current Limit	Step values 1 to 20
45	25	District 1 Trip Delay	Time before breaker acts, from 5 to 255 msec
46	25	District 2 Trip Delay	
47	12	District 1 Reconnect Delay	Time before breaker attempts to reconnect
48	12	District 2 Reconnect Delay	Steps of 250msec, 0.25s to 60s (1- 240)
49	0	Use Dual Power Breaker as Autoreverser if CV = 90	
50	0	Set all CVs to default values if CV50 = 0 – otherwise CV50 = 173	
51	0	Not used at present	
52	10	Auto reconnect District 1 if CV52=10, else reconnect with Manual pushbutton	
53	10	Auto reconnect District 2 if CV53=10, else reconnect with Manual pushbutton	
54	0	Enable output of current values measured by Nano ADCs to the Arduino IDE Serial Monitor if CV54 not zero	
55	0	Enable output of sketch debug messages to Serial Monitor if CV55 not zero	
56	0	Not used at present	

17. Table 1 - Dual Power Breaker configuration variables.

the value of any of the CVs in Table 1 [17]. Consult the system manual for your DCC system if you are unsure of how to program CVs in this way.

Be aware that the NmraDcc library code used by the sketch does not check that the value you set for any CV using a POM command is within the allowed range. Please take care that you only set CV values within the ranges defined in Table 1 [17].

If the default DPB address (31) conflicts with an address you are already using on your layout, or you have built several DPBs and wish to give them different addresses, you can set the address to any new value in the range 1 to 2043.

With the DPB connected to your DCC system, fit a jumper across the 2-pin header labeled "Addr," next to Nano pin A0. Both green LEDs should go out and the red LED of District 1 should light.

Now send an accessory command from a handheld controller, as if you were throwing a turnout, using the address you want to give to the DPB. You can throw the "turnout" in either direction, straight or diverging.

If successful, the lit red LED will start flashing as a signal that the address has been accepted, and that you should remove the "Addr" jumper to return the DPB to normal operation with both green LEDs lit – and now responsive to the new address.

Unfortunately, although you get this positive confirmation that the new address has been set, the DCC system does not give you any feedback to verify that any of the other CV values have been set .

To remedy this, I included a facility within the Arduino sketch to handle the reading and writing of all CV values (including the DPB address) by using the Arduino IDE Serial Monitor and a set of simple typed commands – as listed in Table 2 [18].

Assuming that you still have the Arduino IDE open with the DPB sketch loaded, and the DPB connected to your computer with the USB cable, click the Serial Monitor icon ( ) in the top right corner of the IDE window [19].

This action opens the Serial Monitor in the lower part of the IDE window where the first thing you need to do is to set the baud rate to 38400. You can then type each required command, with its parameters, into the Message box. Leave the terminating selection at "New Line." Press the Enter/Return key to send the complete command to the DPB.

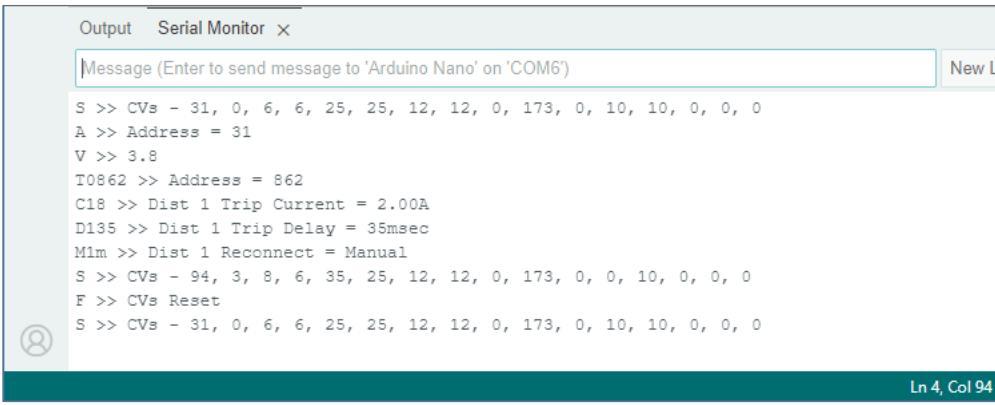
You can use either upper- or lower-case letters for all alphabetic commands and parameters. All numeric parameters and result

Description	Command	Notes	Response
NOP	N	Clears Debug and Output ADC Flags	"OK"
Return CV Status	S	Displays 16 values, comma separated	"CVs - " + CV41–CV56 values
Return Address	A		"Address = nnnn"
Read Version	V	Displays Major.Minor version	eg. "3.8"
Enable Debug Messages	G		"OK"
Enable ADC Display	K	Displays ADC values, 5 times/sec	"OK" followed by "Dist 1 ADC = " xxx – "Dist 2 ADC = " xxx
Set Address	Tnnnn	Replace 'nnnn' with up to 4 digits for new address – error message is displayed if outside range 1 - 2043	"Address = nnnn"
Set Trip Current District 1	C1nn	Replace 'nn' with Index value 1 - 20	"Dist 1 Trip Current = x.xxA"
Set Trip Current District 2	C2nn	(Trip current = Index x 0.25A)	"Dist 2 Trip Current = x.xxA"
Set Trip Delay District 1	D1nnn	Replace 'nnn' with delay value in range	"Dist 1 Trip Delay = xxxmsec"
Set Trip Delay District 2	D2nnn	5 to 255ms	"Dist 2 Trip Delay = xxxmsec"
Set Reconnect Delay Dist 1	R1nnn	Replace 'nnn' with Index value 1 – 240	"Dist 1 Reconnect Delay = xx.xxsec"
Set Reconnect Delay Dist 2	R2nnn	(Delay = Index x 0.25sec)	"Dist 2 Reconnect Delay = xx.xxsec"
Set Auto Reconnect Dist 1	M1A		"Dist 1 Reconnect = Automatic"
Set Manual Reconnect Dist 1	M1M		"Dist 1 Reconnect = Manual"
Set Auto Reconnect Dist 2	M2A		"Dist 2 Reconnect = Automatic"
Set Manual Reconnect Dist 2	M2M		"Dist 2 Reconnect = Manual"
Reset CVs to Factory Default	F		"CVs Reset"
Break Power District 1	B1	If in Autoreverser Mode these commands just generate an error message – with no change of which power district is enabled	"Dist 1 Switched Off"
Break Power District 2	B2		"Dist 2 Switched Off"
Break Power Both Districts	BB		"Dists 1 & 2 Switched Off"
Resume Power District 1	P1		"Dist 1 Switched On"
Resume Power District 2	P2		"Dist 2 Switched On"
Resume Power Both Districts	PB		"Dists 1 & 2 Switched On"
Enable Autoreverser Mode	UE	Dist 1 enabled, Dist 2 disabled	"AutoReverser Mode Enabled"
Disable Autoreverser Mode	UD	Leaves both Districts disabled	"AutoReverser Mode Disabled - Both Districts Switched Off"

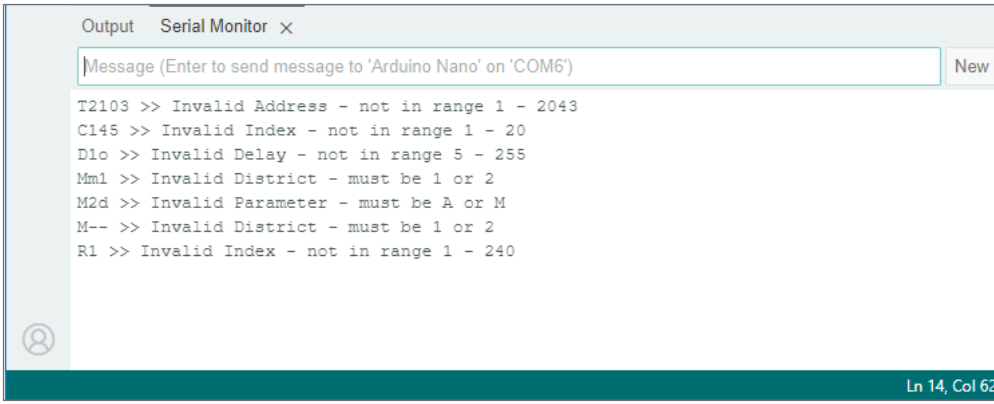
18. Table 2 – Dual Power Breaker interface command set.

19. Opening the Serial Monitor from the Arduino IDE.

values are decimal. Note also that, in the case of the numeric parameters which follow the T, C, D, and R commands, leading zeros are ignored.



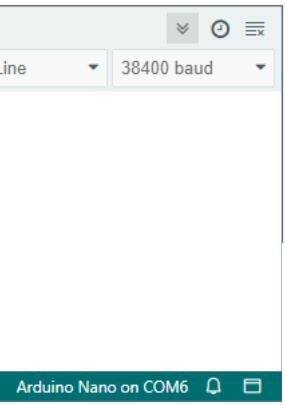
20. Command display in the Serial Monitor.



21. Error responses in the Serial Monitor.

Once a command is accepted, you will get a response in the Serial Monitor window as shown in Table 2 [18]. If you mistyped the command, you will get an error message instead, with some indication of what was wrong with your entry.

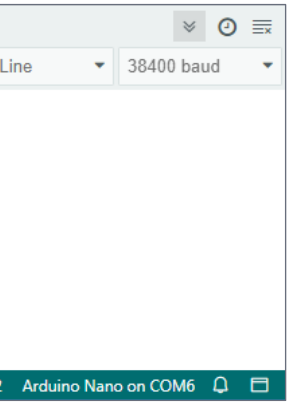
An example of what you will see in the Serial Monitor window after a sequence of commands is shown in [20]. Here, the entered command is "echoed" in the Serial Monitor, with the command character always displayed in upper case, followed by the actual parameter characters that you typed in. The response from the DPB is then displayed following the ">>" symbols.



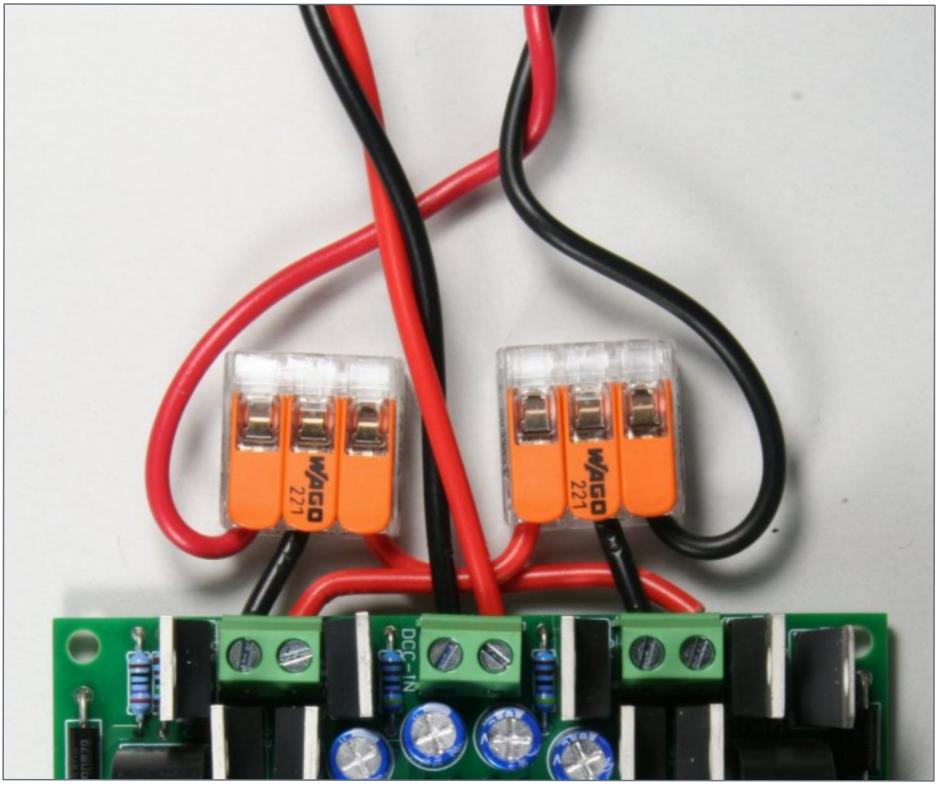
Generally, the response will confirm that your change to the DPB settings is what you wanted. If not, it is a simple matter to try again. Where you enter a command with invalid parameters, you will get an error message such as those shown in [21]. None of the CV values will be changed in these cases.

USING THE DUAL POWER BREAKER AS AN AUTO-REVERSER

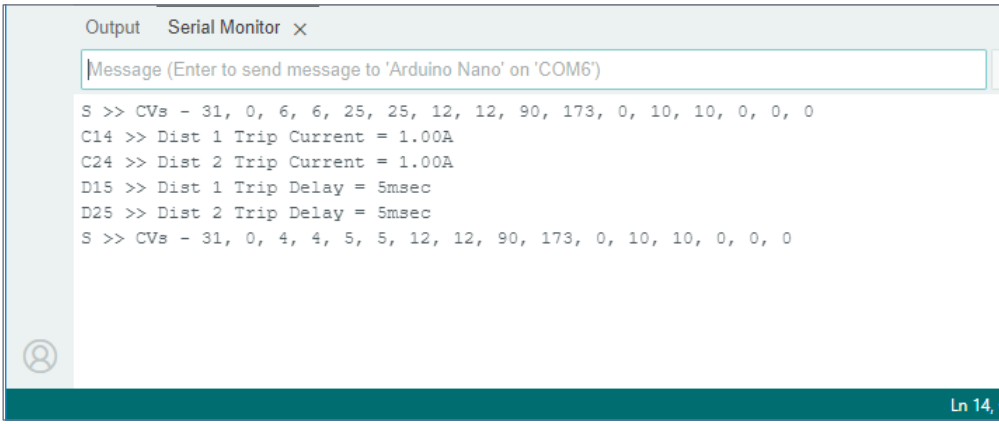
As mentioned in Part 1, you can use the DPB as an auto-reverser. In this mode both channels are used to control the DCC phase applied to the reversing loop or wye, while still providing fully programmable over-current protection for the district represented by the loop or wye.



Before making any connections to the DPB from your command station or booster, or from the power district outputs to the track, first connect the DPB Nano to your computer. Use the Arduino Serial Monitor to send a 'UE' command to the DPB to enable the auto-reverser mode. In this mode, the DPB will have District 1 enabled (green LED lit) and District 2 disabled (red LED lit).



22. Dual Power Breaker connected as auto-reverser.



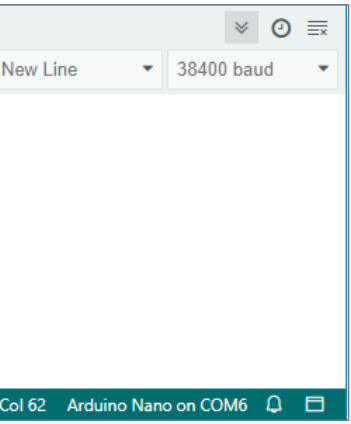
23. Setting Auto-reverser parameters.

You can now link the terminals of the two power districts together as shown in [22], with the left terminal of power district 1 going to the right terminal of power district 2, and vice versa. Connect these terminals to the track of your reversing loop or wye, and connect the DCC In terminals to your command station or booster as usual.

The auto-reverser works by detecting the momentary short-circuit, and associated surge in track current, when your locomotive bridges the gap between the main track and the reversing section whenever these sections of track have different DCC polarities (or, more strictly, phases). The DPB reacts by disabling the presently active power district, and enabling the other power district, effectively swapping over the connections (and DCC phase) to the reversing section.

Obviously, you don't want the current surge as the locomotive enters the reversing section to trigger the power breaker protecting the mainline track, so I recommend setting the trip current for the auto-reverser a little lower. You should also set the auto-reverser to trip faster than your main circuit breaker.

Setting the auto-reverser to trip more speedily is not only to prevent tripping any upstream breaker, but also to allow the auto-reverser to handle any other current overload within the reversing section.



When the auto-reverser detects a current load higher than its trip setting it will first switch to the other district. Then, if the overload lasts longer than four times its set trip delay, it will cut off all power to the reversing section, i.e. both districts are switched off.

After the set reconnect delay the auto-reverser will attempt to apply power from the last enabled power district. If the overload is still present, the cycle repeats until you fix whatever is causing the problem.

If you have your mainline DPB set to the default values (1.5A trip current and 25ms delay), I suggest you set a DPB in auto-reverser mode to trip at 1.00A after a 5ms delay, using the Serial Monitor commands shown in [23].

Note here the value of CV49 = 90, denoting that the DPB is in auto-reverser mode, as a result of having previously sent a 'UE' command to the DPB. The final display of CV values, using the 'S' command, shows the trip currents and delays set as required.

If you wish to return the DPB to normal operation, simply send it a 'UD' command. This will leave both power districts switched off to prevent any damage if you still have the power district terminals wired together. Now, disconnect the cross-coupling, and set up whatever parameters you want in order to use the DPB as a normal power breaker.

With that, your new DPB is complete and ready to keep your circuits safe. ☑

TERRY CHAMBERLAIN

Terry got into model railroading almost by accident in the 1990s when he responded to a request from some modelers in California to build a DCC system based around an Atari personal computer – and he had to build a simple layout to prove that it all worked. Eventually the project evolved into A-Track, a Windows application to provide full computer support for the complete range of NCE DCC systems, with facilities like JMRI's Decoder Pro and Panel Pro.

Terry is a professional electronics engineer, and spent most of his career in the UK defense industry designing and managing the development of large real-time computer systems for the Royal Navy. Now that he is fully retired, he is beginning to make progress building the small logging and mining layout he has been planning for many years, following several visits to Colorado, but keeps getting distracted by new computer and electronics projects for model railroading. ■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Fine speed control with a larg
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Off/On switch, uses AA or BP6
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DigiT30 12 Trk
Fn0+0 1 2 3 4 5 6 7 8 9
sp
50
0002
F
S
0 1 2 3 4 5 6 7 8 9
X

MRH Marketplace

Mike Tylick MMR shows his approach to building a tapered water tank ...

INDEX TABLE OF CONTENTS

A tale of two water tanks: Water tank #1

Model Railroad Hobbyist | July 2025

VIEW READER COMMENTS

MY ON30 STEAM LOCOMOTIVES NEEDED A COUPLE OF WATER TANKS to quench their thirst. Without water, the locomotive boiler could explode, so prototype railroads made certain to have many tanks along their right-of-way.

A water tank model takes up little room, but provides considerable interest as a lineside structure. The TV show *Petticoat Junction* helped make the water tank an iconic railroad image in the minds of the general public, perhaps second only to the wooden highway crossbuck.

My Marshfield and Old Colony had already installed a water column just west of the Marshfield Hills depot, and a second one was planned for Scituate Junction. I planned a tank for the future engine facility in my Green Harbor extension. I'd built an HO tank many years ago, and I'd always wanted to build another.

As I was planning the project, I visited Ken Belovarac's model railroad, and was impressed with his tapered water tank model based on a standard Pennsylvania design. The idea of building something more elaborate than the usual cylinder fascinated me. A tapered wooden tank would be a rather difficult build in full scale, let alone in any model scale.

I drew inspiration from Ken's model, but developed my own approach. In writing this article, I thought it would be of interest to compare our two methods to building these tapered water tanks. For the first section, I'll discuss my approach, and for the second section, Ken will offer his.

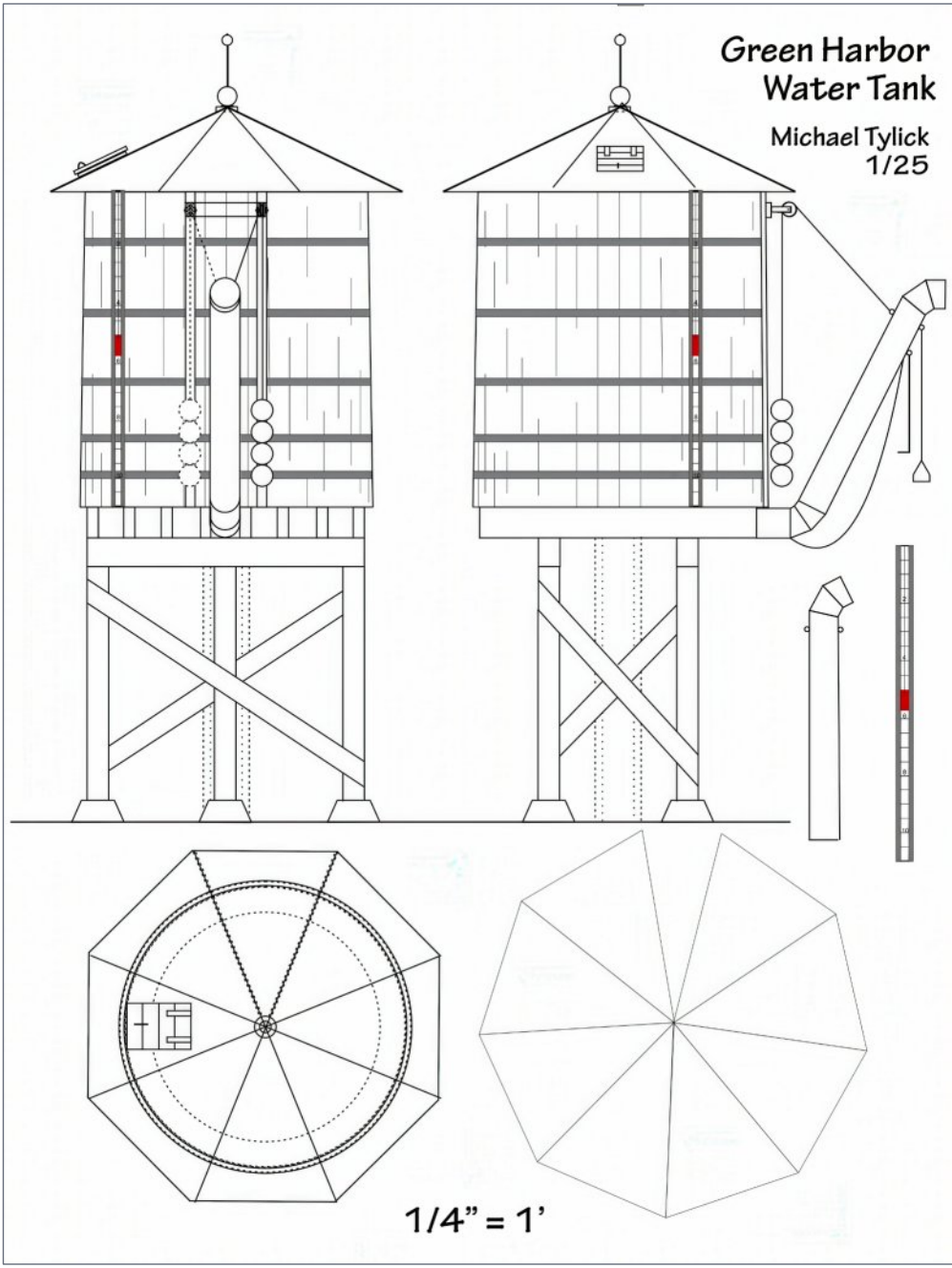
1. Wrapping and gluing bands of 120-lb. cover stock.

MIKE'S APPROACH

I contemplated how I would approach this unusual water tank. I had a piece of two-inch plumbing pipe left over from other projects, and its length of 2-1/4 inches was perfect for making a nice small water tank.

If my math proved correct, this tank would hold no more than 20,500 gallons, but my locomotive tenders could only hold about 500 gallons each.

Although Ken explained the geometry involved clearly, I decided to try an empirical shortcut to building my taper, since my tank could only be seen from the front. Rather than laying out a correctly shaped cone, I wrapped and glued bands of 120-lb. cover stock (1/64″ thick) to the top and bottom of my 2 ¾″-tall pipe, one thickness to the top, four thicknesses to the bottom. I left the raised end joints as they were, since they would be in the back of the tank [1].


Green Harbor
Water Tank
Michael Tylick
1/25
1/4" = 1'

The outside diameter of the nominal 2-inch pipe is actually 2-3/8 inches. The bands brought the diameters to 2-13/64 inches on the bottom and 2-9/16 inches on the top. This was enough for a noticeable taper without looking exaggerated [2].

Once I had the top and bottom diameters established, the next step was to sheath the sides of the tank with staves of 1/8-inch x 1/32-inch stripwood. The stripwood was not tapered. I started by gluing the first stave plumb at the center of the tank's front, and then I worked around from there [3].

This way the non-tapering error would not be obvious until I reached the rear of the tank, which would be out of view. About halfway around the tank, the error was beginning to show, but it was already far enough to the back that it was not readily noticeable from the normal viewing angle [4].

From there, the error continued to multiply with each additional stave. By the time I approached the rear of the tank, the staves were obviously at an angle [5].

I then glued staves working the opposite way from the center of the tank's front. By the time the tops of the staves met at the rear, the error created a 1/8-inch gap on the bottom, or the width of one stave [6].

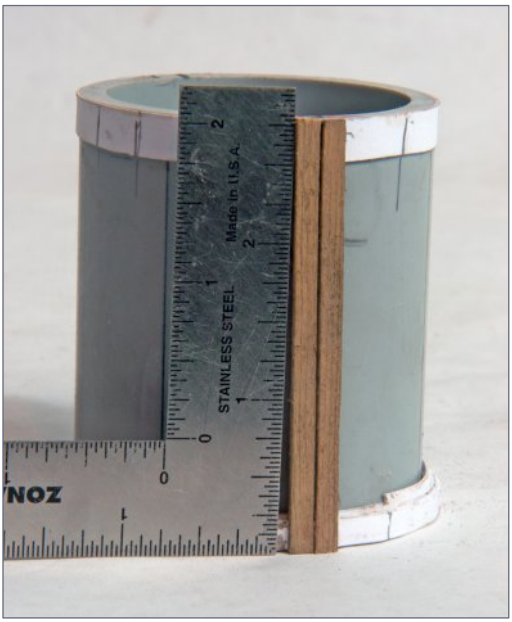
Although it did not turn out perfect, it was also not as bad as I thought it might have been. It was certainly not a contest-quality model, but quite suitable for my layout. Besides, the error would be centered at the back of the tank and out of view.

Untreated timber is rare in the northeast so I decided to paint my tank. White and yellow seemed to be common colors, but I suppose any color would do.

The pre-stained staves were first sprayed with a clear gloss finish to help prevent a liberal coating of Vallejo Chipping Medium

1a. Water tank plans.

2. The pipe with the completed taper bands.



3. The first staves were the center-front of the tank.

4. The error begins to show about halfway toward the back of the tank. The first stave is plumb, but the last stave is now noticeably out of plumb.

5. The error is obvious at the rear of the tank.

VIEW READER COMMENTS

(75.550) from seeping into the porous wood. After the chipping medium had dried, I brushed on a coat of white acrylic craft paint.

Several coats of white paint would have been necessary for a perfect paint job, but the imperfect coverage of the first coat contributed to an aged look. When the paint was dry, I used a piece of scrap stripwood to make the chipping medium work its magic [7].

Ken pointed out there was an engineering controversy over round versus flat tank bands. I chose flat bands since they seemed easier to make. I used pre-painted Glide Dental Floss. I began and ended each band from the rear so there would be no worries about mating the ends perfectly [8].

Water pressure is greater at the bottom of the tank than the top. Accordingly, I spaced the bands at the bottom of the tank

6. The gap at the rear of the tank turned out to be about the width of one stave.

7. The painting process and chipping medium gave the tank an aged, weathered look.

8. Wrapping bands made from dental floss. It's a good thing nobody will see the back.

VIEW READER COMMENTS

close together, and increased the distance between bands as I worked my way up [9]. To finish things off, I created a water level gauge using 120-lb. cover stock [10].

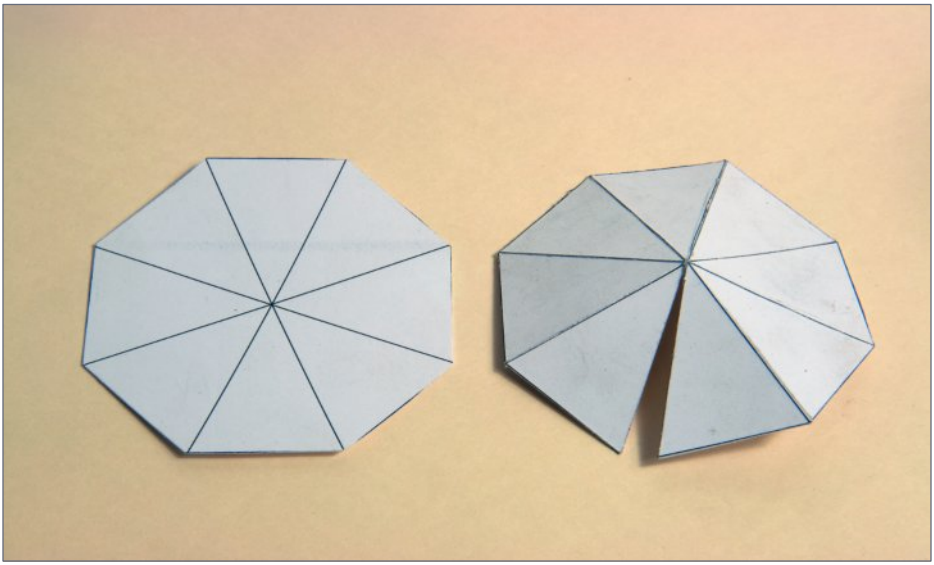
While there are formulas for laying out an octagonal roof, I opted for empirical methods here, too. I used Corel Draw to draw a triangular roof panel. To arrive at the correct size, I took the short leg measurement from the top view and the two long legs measurements from the side view. I then laid eight triangles next to each other to create the correct octagonal shape. The drawing was printed on 120-lb cover stock and cut out [11].

I was uncertain how to fasten the roof ends together but to my surprise and delight, simple edge-gluing did the trick. Narrow strips of cover stock were used as seams [12].

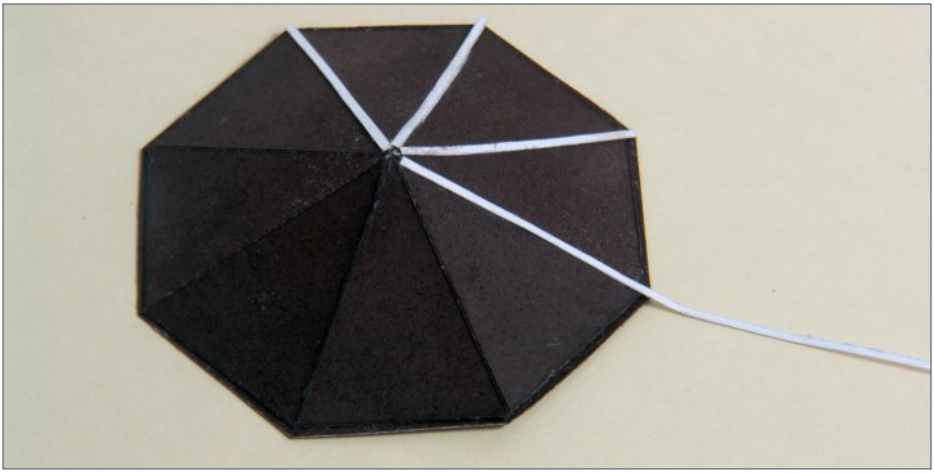
For the finial base 1/8-inch and 3/32-inch paper disks were made using paper punches [13]. A length of 0.025″ wire and several craft beads completed the finial [14].

9. The band spacing steadily increases form bottom to top. The bands look fine in this view from the front. I never could see the point of modeling what I can't see.

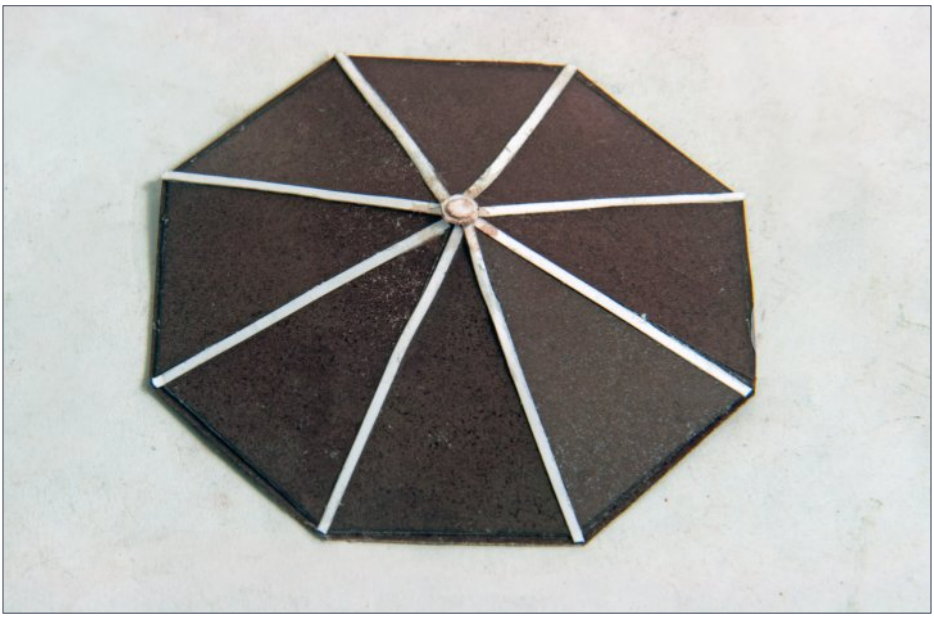
10. The water-level gauge.



11. The top view octagon to the left will be the base; the octagon to the right was carefully scored and folded to create the roof.



12. Applying cardstock seams.



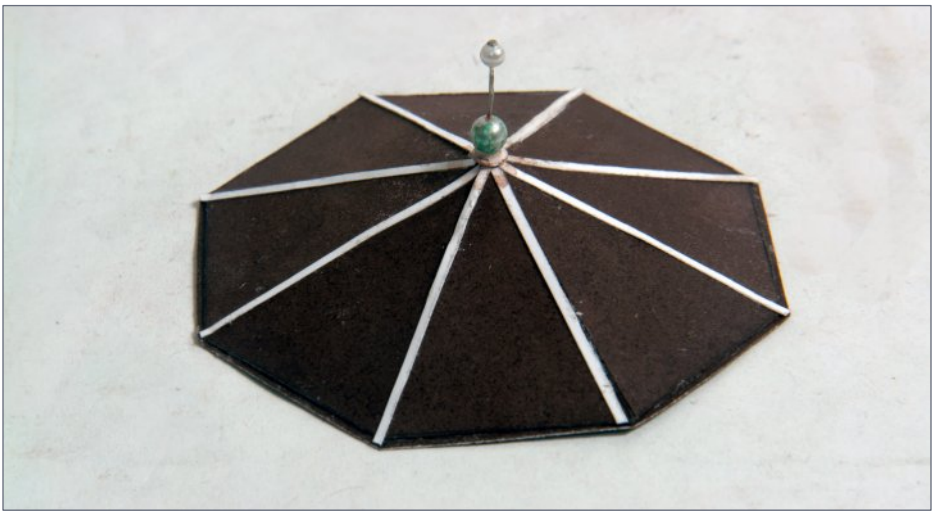
13. The finial base is installed.

Rather than trying to install shingles or roofing paper to this small octagon, I opted for the much simpler to build oxidized copper roof. This treatment also provided a color spot for the model.

A 120-lb cover stock base was cut for the tank bottom. Water is heavy, so numerous 3/16″ x ¼″ wood strips were glued to the bottom to support the tank [15]. It is easier and neater to use oversize pieces and cut them to length while in place. My Mitre Master cutting sheers made quick work of this [16].

I assembled the timber supporting stand over a paper template. I did not have any waxed paper on hand, so I substituted a scrap plastic bag to prevent the wood sticking to the drawing. Push pins held the wood while the glue dried [17].

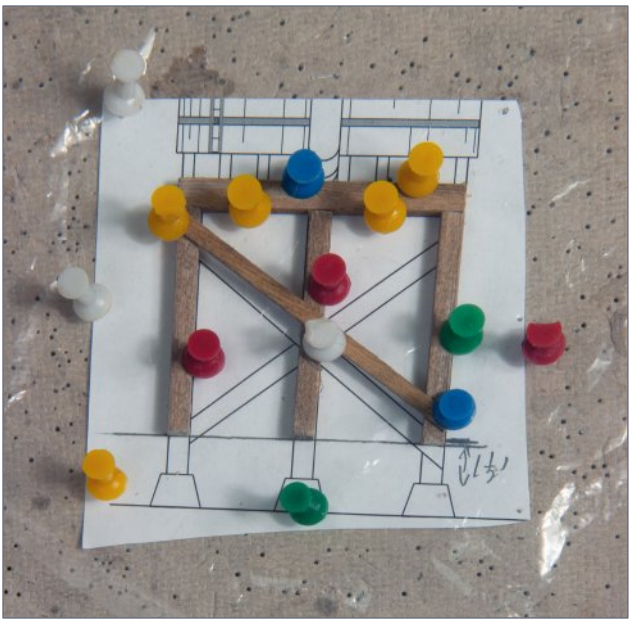
I used a square as I glued the stand to the tank to ensure that the two support assemblies were plumb and parallel to each other [18]. When the glue dried, I connected the two assemblies to each other with cross-braces [19].



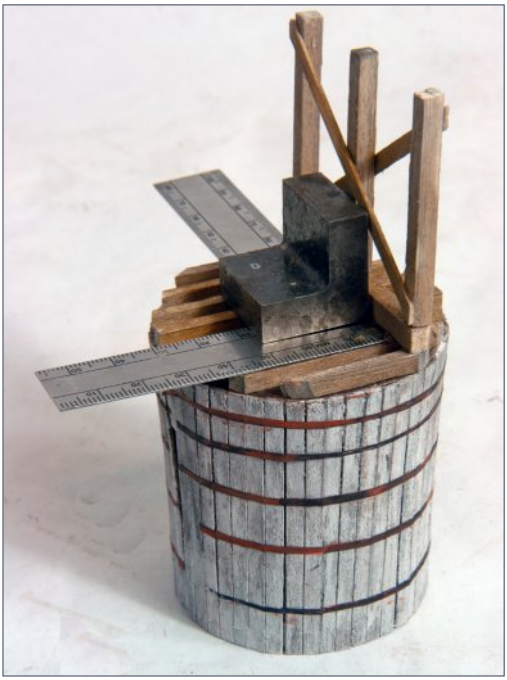
14. The finial was made from wire and beads.

15. Water tank base under construction.

16. The completed tank base.



17. Building the support stand.



18. Gluing the first side of the stand to the tank.

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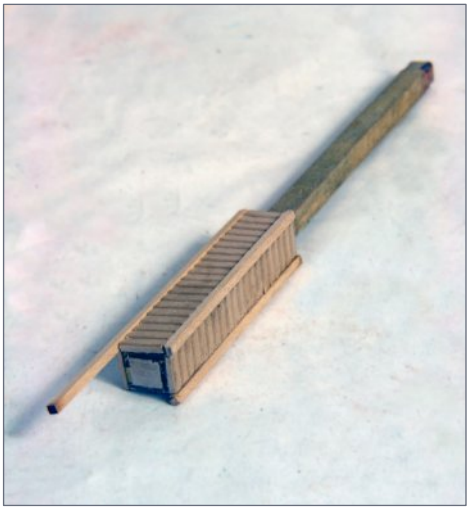
19. The stand is tied together with cross bracing. As with the support timbers at the tank's base, I installed the cross bracing uncut. I later trimmed it with my Mitre Master.

20. Finishing up the tank stand. No one will ever notice the missing concrete footings on the rear legs.

It gets cold in coastal Massachusetts, but we are near the ocean, so frost is a rarity. We do not need a fully enclosed feed pipe, but an insulated cover should do the trick.

I started to build the casing by gluing scrap 1/8-inch clapboard siding around a scrap from the tank legs [21]. I used 1/16-inch square stripwood for the corner posts [22]. I then gave the stand pipe sheathing the same chipped paint treatment I used for the tank [23].

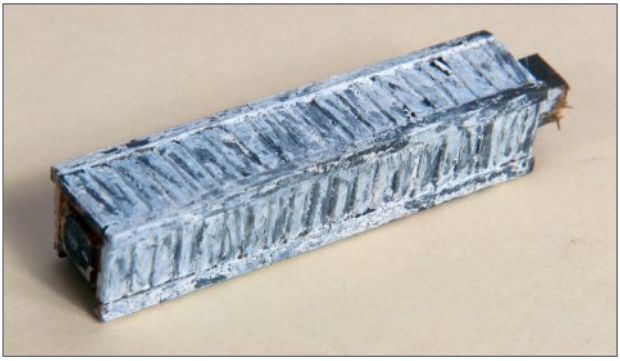
21. Beginning the water column. Again, I find it easy to trim oversize pieces once they are in place.



22. Installing the corner posts for the water column. I kept a short length of the core for easy attachment between the legs of the tank base.

VIEW READER COMMENTS

A tapered spout was more than I wanted to do, so I followed some of my research photos that showed a straight spout. I easily built it from 1/8″ Evergreen styrene tubing (EVG224) [24].

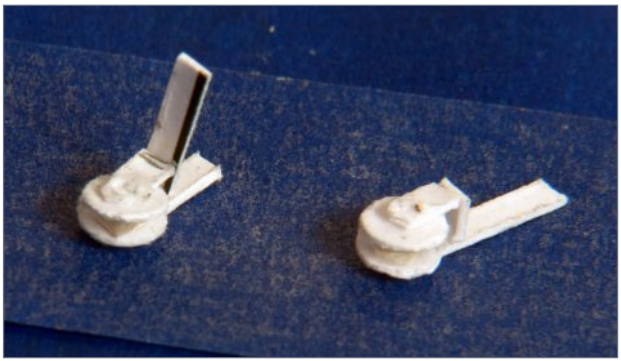


23. Add some paint, and the filler pipe assembly is complete.

24. The water pipe is in place.

Next came the rope, weights, and pullies to raise and lower the spout. The pulleys were made from 75-lb. cover stock using a 1/8″ paper punch and some narrow strips. In retrospect, 0.020″ styrene would have been easier to work with and to attach with CA cement [25].

I added two support staves for the water spout made from strip-wood, and attached the pulleys. I used wire to represent the ropes for maneuvering the water tank and the valve control, and beads for the counterweights [26]. Adding the roof completed the tower [27].



25. The assembled pulleys.

26. The water tank with its complete spout mechanism.

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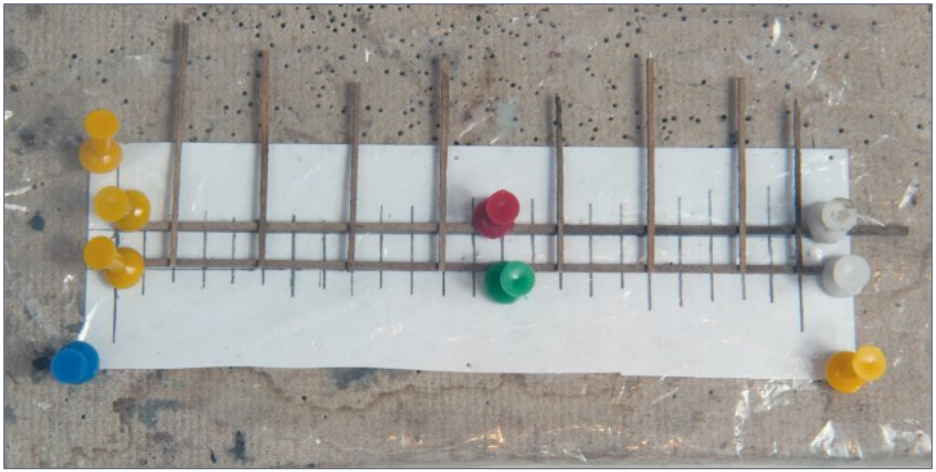
The only thing left was a ladder. The layout terrain was uneven, so I had to measure the ladder's length after installing it.

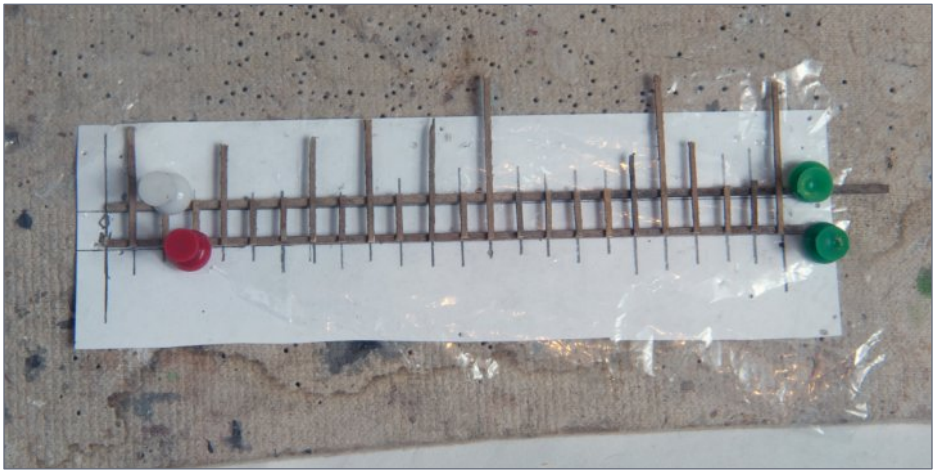
I assembled the ladder over a paper template using 1/6″ x 3/32″ spines and 1/6″ x 1/32 rungs. I attached every third rung first to avoid disturbing the drying rungs [28]. After the first set of rungs dried, I progressed to the next, and so on until the ladder was complete [29].

Adding the ladder to the water tank completed the scene at Green Harbor on the Marshfield & Old Colony Railroad, where it stands between the turntable and the depot [30]. ☑

27. The completed tank.



28. Every third rung is attached. I trimmed them to size after the glue dried.



29. All the rungs are in place, but some still need trimming.

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30. The tower stands in its place.

MIKE TYLICK MMR

Michael has been fooling with electric trains for as long as he can remember. Never one to commit to a single large project, he has instead built a number of smaller layouts of various types and in various scales over the years. He is a "skipped generation" in a railroad family. Mike's grandfather was a carpenter for the Jersey Central, his father a marine engineer for the Erie, his son an Associate Vice President with BNSF. Michael is a retired inner-city art teacher. He has been a long time contributor to many publications including *Model Railroader, Classic Toy Trains, Railroad Model Craftsman,* the *National Model Railroad Association national, regional and division publications,* and most recently *Model Railroad Hobbyist* and *Garden Trains Annual.* He also has delivered numerous clinics and presentations on various railroad and historical subjects on all levels in different parts of the country.

Railroad interests are leaning toward prototype rail and architectural photography, and Mike is becoming keenly aware of what can be observed outside the basement. Much of his hobby time is now spent employed as a custom builder specializing in railroad structures and rolling stock, and has worked with several businesses who build custom model railroads. He formed RailDesign Services, focusing on the design and visual aspects of model railroading.

Michael now lives in eastern Massachusetts and is working on an On30 layout loosely based on the New Haven Railroad's Old Colony Lines. He is honored to be named NMRA Master Model Railroader #523. ■

A tale of two water tanks: Water tank #2

Model Railroad Hobbyist | July 2025

VIEW READER COMMENTS

KEN BELOVARAC BUILDS HIS VERSION OF A TAPERED WATER TANK ...

AFTER SEEING MY HO SCALE MODEL OF A WOODEN PENNSY 50,000-gallon spoutless water tank based on a 1909 prototype plan, Mike Tylick suggested I write about how I built a water tank with a slight taper. I am covering only the tank part here, because the base was complicated, and would require a separate article.

We felt it best to focus on how to build a taper into the tube portion of a water tank [1]. The PRR tank had a top diameter of 24′-1″, a bottom diameter of 25′-0″, and a tank depth of 16′-0″ [2, 3]. The taper was barely visible at 11/16″ per foot, but is still noticeable. Here is a step-by-step procedure for building a tapered tank. A copy of the prototype plan and a photo of the prototype appear as follows:

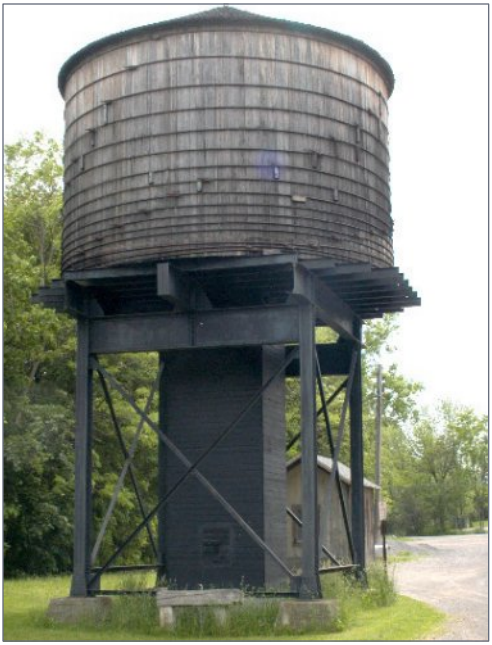
My completed tank fed a water column rather than having a spout, which simplified construction.

Step 1:

The first step is to make a flat, two-dimensional elevation drawing of the tank, using either CAD or pencil and paper. CAD is better (and probably easier) because of the precision. Draw the tank, making sure to include precise top and bottom tank diameters and the vertical, not tapered, tank depth.

Extend the lines of the slanted sides of the tank in an upward direction until they meet at an origin point. From this origin point, strike two arcs, one beginning from the top corner of the tank and the other from the bottom corner of the tank as shown in [4].

1. My completed model of PRR 50,000-Gal water tank. *Michael Tylick photo*



2. This PRR water tank that still stands in Orleans, NY was built from the same company plans the author used. Bob Stripe photo, *Robert Schoenberg collection (prr.railfan.net/cgi/photo/index.cgi?album=/Structures/Orleans_NY_Water_Tower&mode=viewpicture&picture=Orleans_NY_Water_Tower_4.jpg) used with permission.*

The two arcs will automatically be spaced apart by a distance equal to the tapered side of the tank. The length of the top arc must be drawn equal to the circumference of the top of the tank, and the bottom drawn equal to the circumference of the bottom of the tank.

Calculate those distances using the formula for the circumference of a circle given the radius, which is (3.1416 x 2 x radius). Then connect the free ends of the two arcs with a straight line which will be equal to the length of the tapered side of the tank [4].

Step 2:

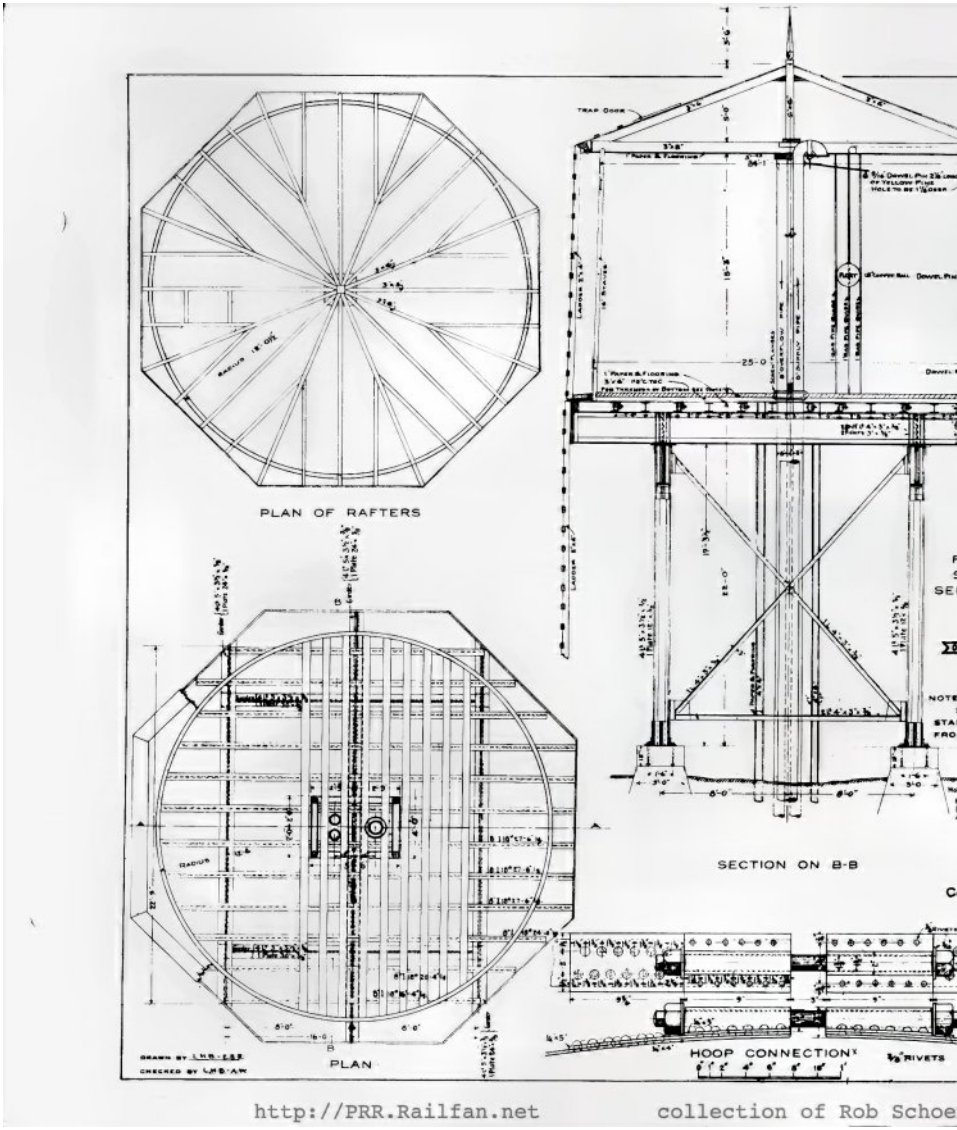
Draw several radial rays from the origin point along the outside of each of the arc lines. These will be used later as guides for scribing the staves– the long wooden interconnected boards that make up the side of the tank. Cut out the curved space between the arcs to create the template to be used to cut the wood for the tank [5]. The radial guidelines extending beyond the edge of the arc lines in the figure. These are important.

I used 1/16″ thick basswood for the tank sides. Do not use bass plywood- it will be too stiff. Use a basswood sheet large enough to fit within the template opening, and make sure the wood grain of the sheet is parallel to the short dimension of the template.

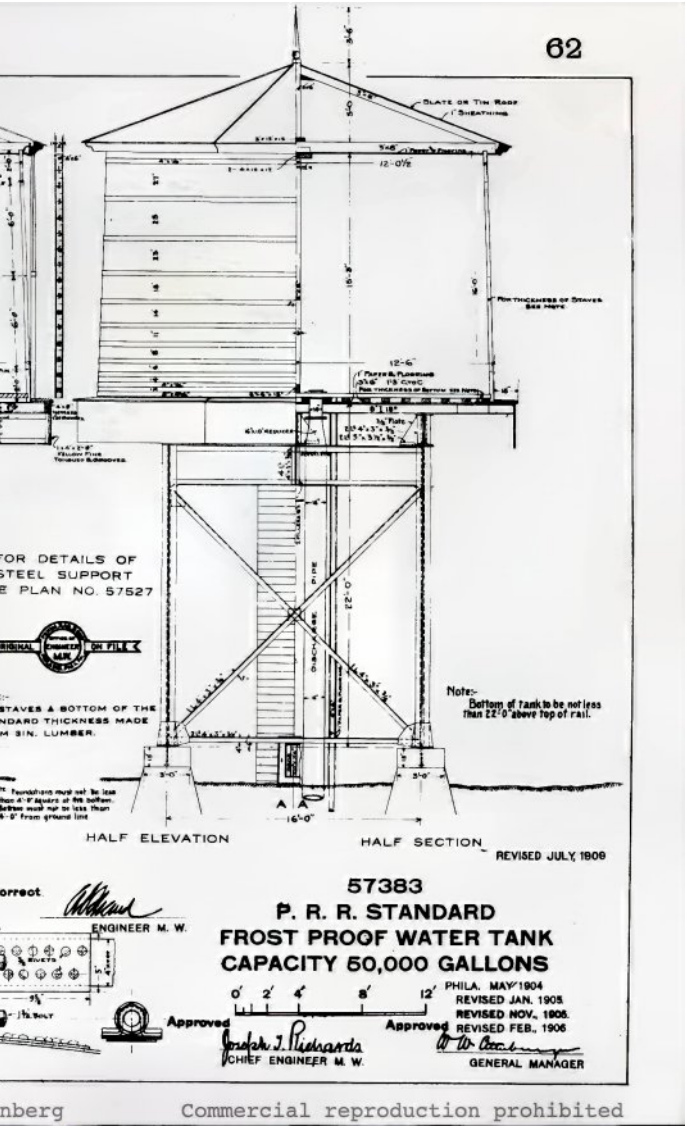
Cut a piece of the basswood to completely fit into the smile-shaped template. Then cut it into roughly four equal sections in the direction of the short dimension using an X-Acto knife.

Number and position each piece so the grain is as parallel as possible to the radial ray lines outside the template. You will have to angle each separate section slightly along the length of the template to match the radial lines.

Cut any overlap to make sure each piece butts against its adjacent section. This will make the grain of the wood as parallel as possible to the radial lines along the length of the template. All the wood should align neatly as in [6].



3. Official PRR standard plan for frost proof, 50,000 water tanks. *Rob Schoenberg collection (prr.railfan.net/standards/standards.cgi?plan=57383-D) used with permission*



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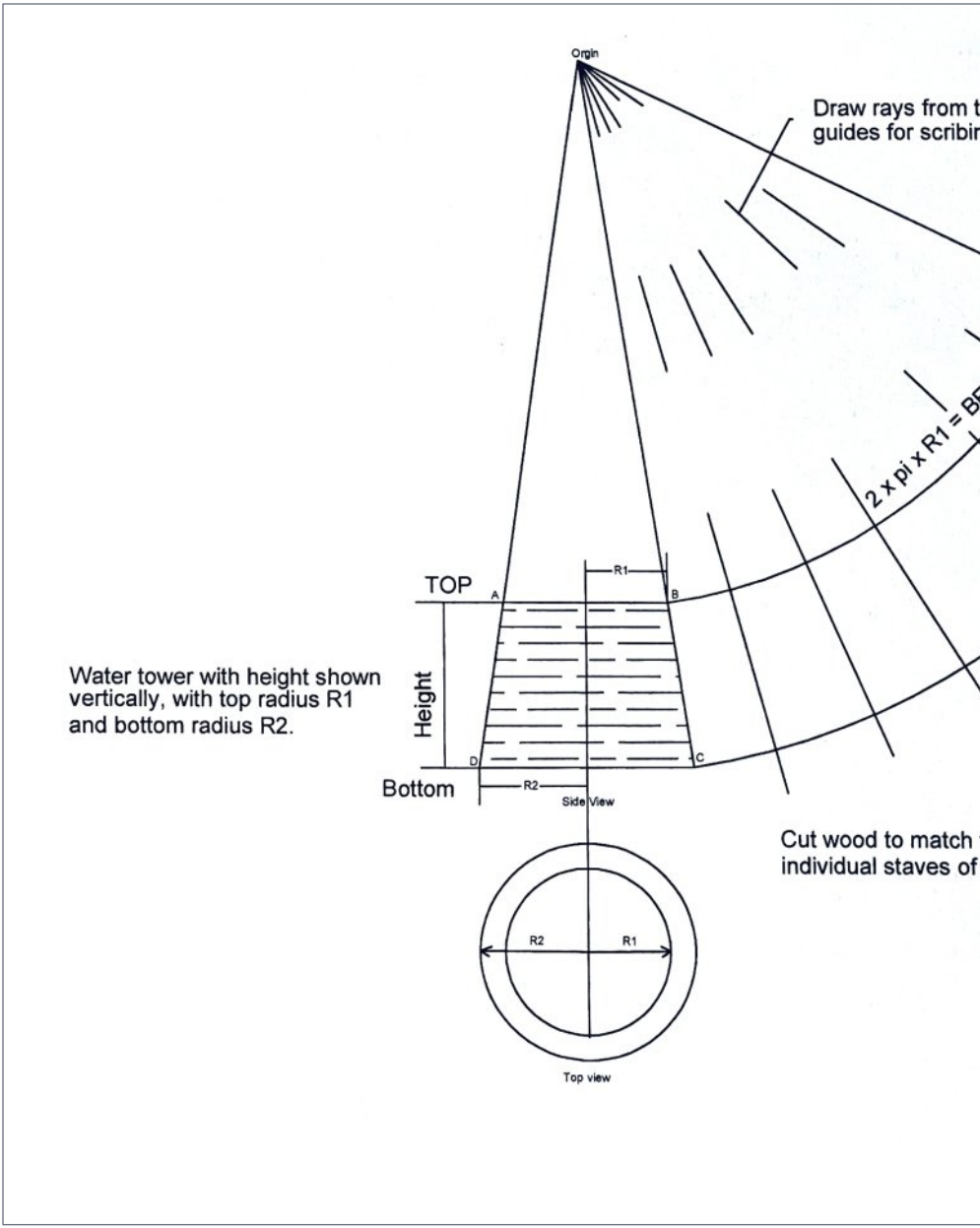
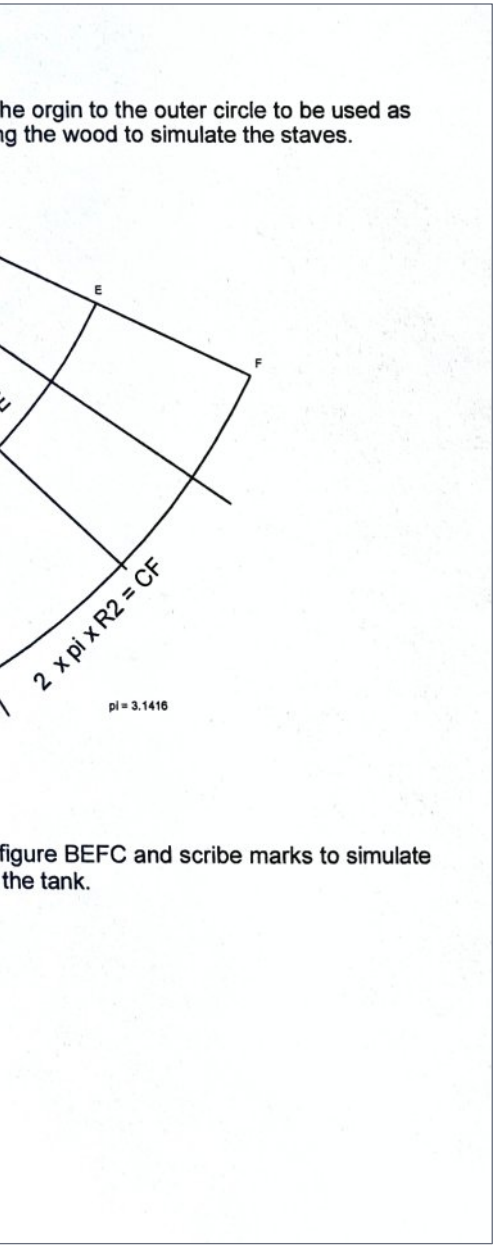


4. Schematic showing how to make the template for the tapered tank.



Step 3:

Using a sharp hobby knife, scribe slits into each basswood piece, using the radial lines as guides. These scribe marks should be separated by the desired width of a stave typically about 6″ scale.

Pass the cutting blade about two to three times along each scribe line, taking care not to cut too deeply into the wood to avoid accidentally slicing it. If that happens, use a narrow piece of electrical tape on the back side to keep it together. With the simulated staves on the outside of each piece, the wood should now be pliable enough to be curved without snapping.

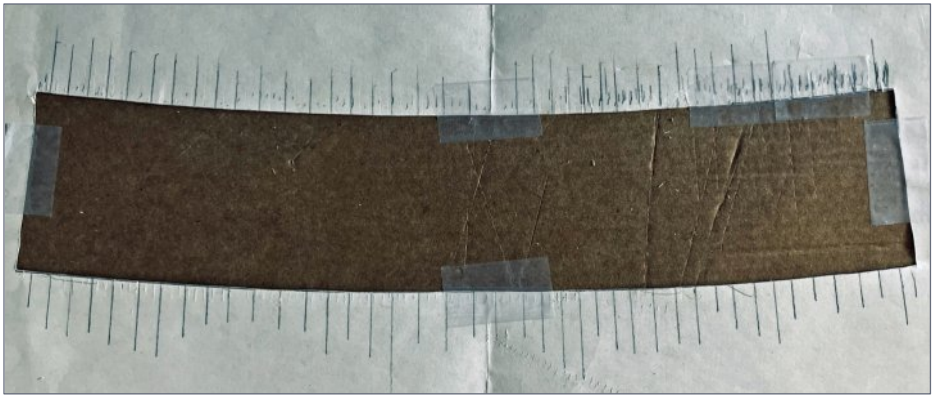
Each piece should have a slight trapezoidal shape. The wide part will be the bottom section of tank, and the opposite side would be the top section [6].

Step 4:

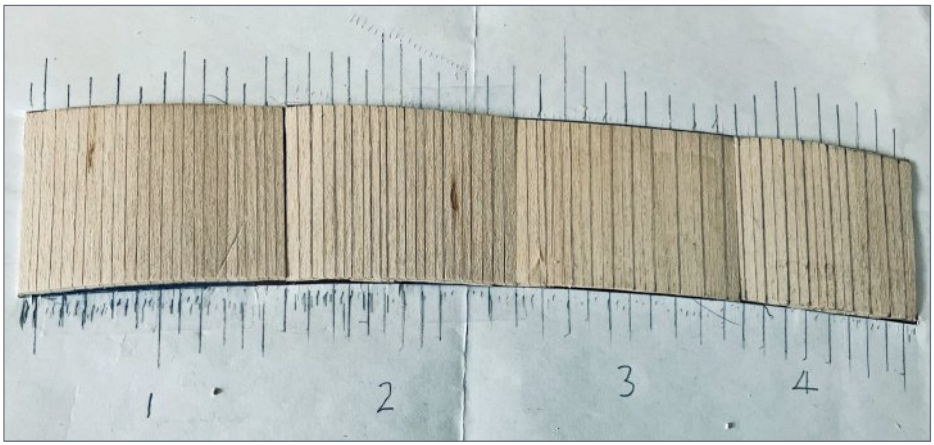
Next, cut a 1/16″ basswood disc that conforms to the radius of the bottom of the tank [7].

Step 5:

Curve the first section and glue the bottom to the base with Elmer's white glue or other wood glue.



5. Template from which to cut out the tank. Note radial lines along the edges to use as scribe guides.



6. The four slightly trapezoidal panels are lined up on the template. Each has been scribed along the template markings.

Use weights to support the section in place because it will tend to spring back straight even though it is full of slits. Keep it supported until the glue hardens enough to hold firm [8].

Continue to glue the next pieces one by one, butted-up and glued against one another [9]. Continue this process until all pieces have

7. The bottom of the tank.

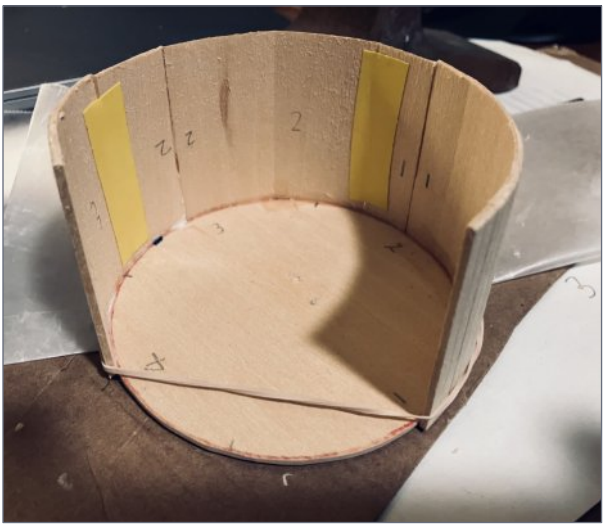
8. The bottom of the tank with the first side attached.

been glued in place and set. Use rubber bands for support after enough sections have been attached.

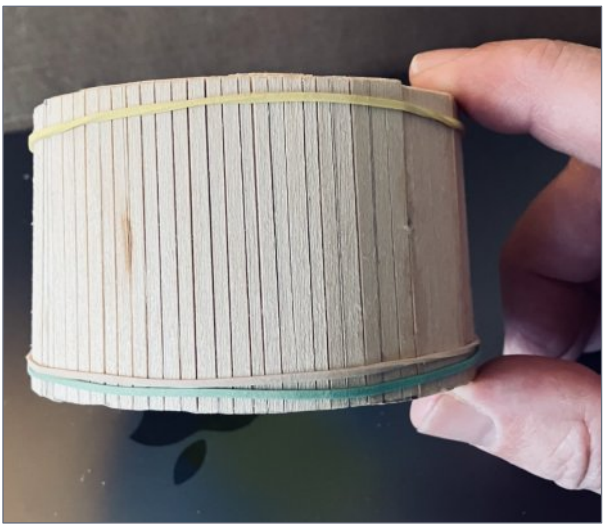
If a small space exists between the last piece and the first piece after all sections are in place, simply measure and cut a single separate stave or two and glue into place to fill the empty space. This will complete the tank [10].

The completed tank has a visible taper. Reinforce the insides with tape where needed so the shape remains smooth and round. Sand any uneven areas along the top so a roof can be attached.

Prime and paint the tank, and use it for building a more complete model adding hoops (described next), a roof, and a base structure.



9. First three segments glued to the base.



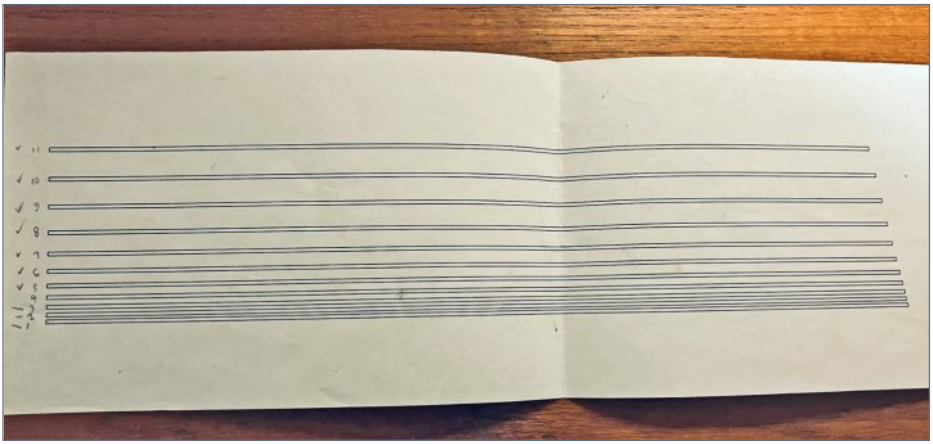
10. Completed tank showing the slight taper.

There are many ways of hooping a wood water tank. The PRR prototype used 11 hoops made of 4″ x ¼″ steel straps placed specific distances from each other and connected to a clamping device to allow tightening adjustment. However, I could not find a brass shape that small. The closest I found was a brass shape 0.017″ x 0.034″.

To determine the length of each hoop, I started with the circumference length of the bottom hoop, then the circumference of the top hoop, and drew these lines the scale distance apart on paper. Then I used the hoop spacing on the PRR plan and drew lines longer than the bottom hoop at distances representing the intermediate hoop spacings.

Lastly, I drew a line connecting the end of the bottom hoop with the end of the top hoop. The intersection of that line with the other lines gave me the length of each intermediate hoop on paper [11].

In cutting and connecting the hoops, I added at least ¼″ of length to each to allow for the hoops to be connected on the ends using ordinary solder. Then I fitted each one over the tank and adjusted the length if needed. If they did not follow the prototype spacing, I positioned them approximately where they were to go.



11. Pattern for the hoops.

DISCUSSION OF TAPERED WOOD TANKS

I was curious why some water tanks were tapered while others were not, so I did a little research. The best information I found supporting tapered tanks was in a book on railway engineering published by the International Library of Technology in 1903 (no specific authors given) which stated in Section 1817 on Standard Water Tanks, "The sides of the tank flare outwards at the rate of ½ inch to the foot, so that the hoops will drive tight."

This would be like the shapes of ordinary barrels where the narrow tops facilitate sliding rounded hoops or straps down toward the wider part of the barrel body to hold the staves in place.

However, Walter Loring's Railroad Construction, Theory and Practice, a railroad engineering book written 14 years later, stated the opposite. Webb, C.E. published by John Wiley and Sons in 1927, page 373, stated, "Cylindrical tanks are recommended, rather than tapered."

There was no explanation given for this. But I suspect that, by 1927 railroads were building tanks out of steel which precluded the need for hoop-supported staves. ☑

KEN BELOVARAC

Originally from Erie, PA, Ken is a professional transportation civil engineer, and a lifetime modeler. He retired as a civil and track design engineer for the Massachusetts Bay Transit Authority (MBTA) in Boston. Ken is currently working for a transportation consulting firm. He lives with his wife Marilyn in Quincy, MA and has two grown sons. He also owns and operates an antique rail motor car. Ken has previously published in *Model Railroader* and the *NMRA Bulletin.* This will be his first article in *MRH*. ■

12. The completed tank.

Savvy Modeler Online

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Bridge installation example

YouTuber **The HO Scale Union Pacific Railroad - Evanston Sub** *(Daryl Kruse)* gives some examples of how he's installing bridges on his HO layout.

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Bridge installation seems to be a "black art" in the hobby, with not many detailed examples provided. Daryl pulls back the curtain in his video by showing you exactly how he's mounted these bridges as well as a freeway bridge. Learn helpful insights by checking out what Daryl is doing on his little-known YT channel. ☑

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JULY NEWS column

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VIEW READER COMMENTS

NEW CLUB MODELS

An HO scale model of SP&S Alco FA-1 No. 857 will soon be available from the **Spokane Portland & Seattle Historical Society.** The model replicates the one-of-a-kind experimental paint scheme No. 857 wore from 1964 until 1972, after which it was retired by Burlington Northern. The limited-edition model is being produced for SP&SHS by Rapido Trains. Both standard DC and DCC units with ESU LokSound will be available. The deadline for pre orders is August 15, 2025.
Info: www.spshs.org

LARGE SCALE PRODUCT NEWS

New G scale models coming from **Piko** this fall include a 2-6-0 Mogul steam locomotive and wood cupola caboose decorated

THE LATEST MODEL RAILROAD PRODUCTS, NEWS & EVENTS

for Denver & Rio Grande Western. Also scheduled for release this fall are Christmas themed models including a North Pole Express 0-6-0T tank engine, hopper car, and caboose.

The locomotives will be available with Piko Tri-Mode Sound that generates smoke and digital sound and provides remote control of speed, direction, emergency stop, bell and playable whistle with the included PIKO R/C remote. The models will be ready for operation on DC track power, DCC digital layouts, and onboard battery using ten AA rechargeable cells (not included). An aftermarket lithium battery pack will also work.
Info: www.piko-america.com.

O SCALE PRODUCT NEWS

Atlas has announced a first quarter 2026 release date for a group of O scale streamline passenger cars. Baggage, coach, sleeper, diner, dome, observation, and a Skytop observation car will be included in this release.

Road names will be Delaware & Hudson, Erie Lackawanna, New York Central, Milwaukee Road, Atlantic Coast Line, Canadian National, Illinois Central, Union Pacific, and Maine Eastern. Every car type will not be available in all road names.

Separate items added to the ABS bodies include a metal floor with

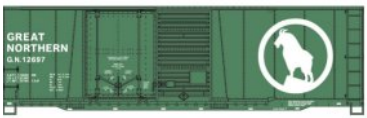
undercarriage details, metal handrails, individual brake wheels, and sliding baggage car doors. The interior includes full details and constant LED lighting.

Additional details on the Atlas Premier series cars include diaphragms, and die cast four-wheel passenger trucks with fast-angle wheelsets. The cars will be available singly and in two-car and four-car sets. Several of the road name/car type combinations are already sold out at the factory, so check with your favorite dealer for availability.
Info: www.atlasrr.com

Prototype Couplers has released accurately scaled Sergent EC48TK and EC48BK couplers compatible with Kadee O scale draft boxes. O scale couplers designed for Protocraft draft gearboxes are expected to be available soon.
Info: www.prototypecouplers.com

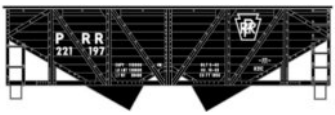
HO SCALE PRODUCT NEWS

New HO scale car kits coming from **Accurail** include this USRA twin bay hopper decorated for the Virginian Railroad. The model is based on a VGN class BL-4 coal hopper. It is available as a single kit and in a money-saving 3-car set.



Scheduled for release soon is this Great Northern 40′ riveted steel boxcar with the combination of a plug and sliding door. A 50′ version is also on the way.

The HO scale kit for this FMC Corporation triple bay covered hopper is based on a prototype built by ACF in May 1964.



A variety of composite gondolas and hopper cars with steel frames and wood sides were built during World War II. This Pennsylvania composite twin bay hopper was built in May 1942. It is available singly and in a 3-car set. All Accurail car kits come with appropriate trucks with Delrin wheelsets and Accumate knuckle couplers.
Info: accurailinc.com

R. Bale

SD90MAC-H

EMD introduced the SD90MAC and SD80MAC in 1995. The SD90MAC was designed to utilize the new 16-cylinder 256H or H-engine, while the SD80MAC was designed to use the 20-cylinder version of the existing 710G engine. However, technical problems with the 6,000hp H-engine resulted in the first locomotives being shipped with 4,300hp 16-cylinder 710G engines, making them similar to the SD70MACs. Buyers had option to re-engine them with -H engines when they became available. This upgrade program, however, was never taken advantage of by SD90MAC buyers due to reliability issues with the newer engine. The SD90MACs cabs are mounted on shock absorbers to lessen vibrations. Spotting features include radial steering trucks, the isolated cab, and a wide radiator section that is nearly the entire width of the locomotive. In 1996 EMD entered full production on their 6,000hp 16-cylinder H-engine, and all SD90MACs made from then on used it as their prime mover. These units were designated SD90MAC-H locomotives. Since the -H had such a large prime mover, it didn't offer the same operational flexibility as smaller units, limiting its possible customer base to only the largest railroads. Unfortunately, the SD90MAC-H did not prove popular with fewer than 70 being built, including Electro-Motives demonstrator units.

Athearn is planning to deliver a Genesis series SD90MAC-H in nine paint schemes in December 2026. The production schedule includes four Union Pacific locomotives with variations in the Phase 1 body as rebuilt with revised hood doors and walkway on the conductor's side.

Several UP units were in lease service with locomotive No. 8500 wearing EMLX stenciled ahead of its road number.

Fantasy schemes in this release of SD90MAC-H units will be available for British Columbia Railway, Missouri-Kansas-Texas, Frisco and Rock Island.

Athearn's SD90MAC-H will operate on a minimum track radius of 18″ but a 22″ radius is recommended.

VIEW READER COMMENTS

R. Bale

EMD MP15AC

The EMD MP15 series is a 1,500hp light road switcher locomotive built from 1974 until 1984 by General Motors, Electro Motive Division. It was developed as an updated replacement for EMDs popular SW1500. The standard practice of recycling components was comprised by using a new AR10 alternator on these locomotives instead of a trade-in DC generator. In the MP15AC, the DC generator was replaced with an alternator that produced AC power, which was converted to DC for the traction motors using silicon rectifiers. The alternator-rectifier combination proved more reliable than a generator, and became the standard for new diesel-electric locomotive designs.

Athearn plans to offer its Genesis series MP15AC in seven road names with variations in decorating schemes and era-specific details. The opportunity for placing preorders ends July 31, 2025, with delivery scheduled for December 2026.

Road names will include Southern Pacific, Soo Line, and WSOR.

Additional road names for Athearn's MP15AC include TFM-Transportacion Ferroviaria Mexicana, Carload Express, Seaboard System, and Tacoma Rail.

Athearn recommends a minimum track radius of 18″ for its MP15AC.

Athearn has included an EMD F45 diesel locomotive in its December 2026 production schedule.

Details on Santa Fe units include a Stratolight, a can-type antenna, and a passenger-style front pilot.

F45s decorated for Susquehanna, Utah and a fantasy CP Rail scheme will have a winterization hatch and a front snowplow. Athearn's Susquehanna F45s will also have a cab air conditioning unit and a passenger-style front pilot.

Another fantasy scheme is the Copper State Railway, a freelance model railway created by Brian Banna and now owned by Matt Martin.

Models decorated for Utah Railway will have a cab-mounted headlight while all other road names will have the headlight in the nose door.

The locomotive can negotiate a track radius of 18″, however, Athearn recommends a 22″ radius for both appearance and reliable operation.

Also coming from Athearn in late 2026 is an SD40-2 locomotive decorated in six road names. Burlington Northern units will have a firecracker antenna, horn mounted on the long hood, strobe-type ditch lights, and a small EMD-style plow.

Union Pacific models will be detailed with early chicken wire grilles, a firecracker antenna, an RS3L horn mounted on the cab roof, and a snow plow up front.

Details on the BNSF version of the SD40-2 include front and rear ditch lights, a small EMD pilot, an RV-style air conditioning unit, and a strobe light mounted on the roof.

Norfolk Southern models will come with the early chicken wire grilles, front and rear ditch lights, and an air conditioner unit on the cab. The headlight will be positioned in the nose.

Details on Chicago & North Western versions of the SD40-2 include a small EMD front pilot, a strobe light and RS3L horn mounted on the cab roof, and a Sinclair antenna.

Athearn SD40-2 models decorated for LLPX-Locomotive Leasing Partners, will feature front and rear ditch lights, a Sinclair antenna, and a UP-style flat top plow. A minimum track radius for this model is 18″ with a recommended radius of 22″.

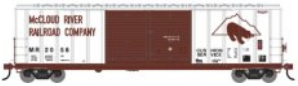
Features on all of Athearn's SD90MAC-H, MP15AC and F45 Genesis series models include flexible rubber trainline and MU hoses, etched metal see-through steps, lift rings, lit number boards, truck lights and ground lights; sander lines, see-through steps, wire grab irons, windshield wipers, uncoupling levers, walkway tread, Celcon handrails, and detailed fuel tanks with fuel fillers, gauges, and breather pipes. Athearn locomotives in this report will be available with a choice of standard DC operation. DCC versions of the SD90MAC-H, MP15AC, and F45 models will come with a SoundTraxx Tsunami 2 sound system. The economy-priced SD40-2 will have a SoundTraxx Economi system with a single cube speaker.

In rolling stock, Athearn's December 2026 production schedule includes a PS-2 2893 cu. ft. covered hopper with round roof hatches, a photo-etched metal roof walk , wire grab irons,

uncoupling bars, trainline and brake hoses, and appropriate trucks with 33″ machined metal wheelsets.

Road names for this release will be Southern Pacific, Santa Fe, Atlantic Sugar, Monon, Missouri-Kansas-Texas, and Soo Line.

Also scheduled for release in late 2026 is a retooled 50′ FMC 5077 cu. ft. boxcar with double sliding doors.



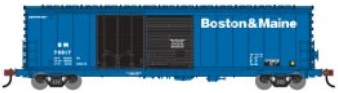
The grab irons, ladders, and brake wheel are all separately applied details. Road names on this release will be Union Pacific, Western Pacific, McCloud River Railroad, Sierra Railroad, Seattle & North Coast, Camino, and Placerville & Lake Tahoe.

BETHGON COALPORTERS

The Coalporter was developed in an effort to create a higher capacity, more efficient coal car. Built by Bethlehem Steel's Johnstown American Corporation, the BethGon features all-aluminum construction and a unique trough-style bottom for added carrying capacity. This bathtub design increased the cubic capacity of the car and gave the added advantage of a lower center of gravity for better tracking. Coalporters generally operate in solid unit trains. One end of each car is equipped with a rotary coupler, to allow a train to be fed through a rotary unloader without uncoupling the cars. *Athearn*

Athearn has included a new release of BethGon Coalporters in its December 2026 production schedule. The HO scale models will be available in 5-packs decorated for Norfolk Southern/Conrail,

CIT Group (ex-DJJX), CIT Group, Minneapolis & St. Louis, and Entergy Corporation. Details include wire formed grab irons, etched metal coupler platforms, 36″ machined metal wheelsets and a removable coal load.



This HO scale version of a 50′ 6″ ACF boxcar with a combination of 8′ Youngstown sliding and plug doors is coming from Athearn late next year.

The list of road names on Athearn's production schedule includes Boston & Maine, BNSF, Great Northern, Missouri Pacific, Missouri Pacific/Texas & Pacific, Santa Fe, and Southern Pacific. Three data-only *Cushion Car* models will be available in a choice of Tuscan, green, or yellow.

Completing Athearn's December 2026 production schedule is a 5-unit Maxi I well car. The HO scale model is based on Maxi-Stack 5-unit articulated well cars introduced by Gunderson in 1988. The Maxi-Stack (also called Maxi-Stack I or Maxi-I) boasted a lower tare weight (accomplished in part by the elimination of the bulkheads of the Twin-Stack), greater capacity, and greater versatility in regard to container lengths and widths that could be carried.

Decorating schemes on this release include TTX, K-Line, Evergreen, SeaLand, and Ocean Network Express.

All Athearn models mentioned in this report will come with McHenry operating knuckle couplers.
Info: www.athearn.com

EMD SD35 LOCOMOTIVE

The EMD SD35 is a 6-axle diesel electric road switcher built by Electro Motive Division between 1964 and early 1966. The SD35 was one of EMD's first second-generation locomotives and among the last road units to use the 567 prime mover. Among the new features of the 2,500hp SD35s was the introduction of a standard cab design nicknamed the spartan cab. A stock SD35 weighed 360,000 pounds, but many roads chose to add weight to increase the locomotive's tractive effort. A total of 360 SD35s were built, plus an additional 35 SDP35s that had steam generators for passenger service.

Atlas has released an HO scale model of the EMD SD35. Atlas Silver series versions of the model are set up for DCC/DCC ready operation including an NMRA compliant 8-pin plug for installation of an aftermarket decoder. Atlas Gold series versions of the SD35 come with factory installed DCC/ ESU LokSound decoder.

The HO scale model features directional lighting with golden-white LEDs, walkway safety tread, detailed cab interior with crew, separately-installed scale windshield wipers, metal grab irons and fine scale handrails, marker lights with separate lenses, scale fans, and a snowplow (included but not installed).

Road names are Norfolk & Western, CSX, Cargill, B&O, CSX, Guilford, Montana Rail Link, Great Lakes Central, Southern Pacific, and a high nose Southern Railway unit.

Among the newest HO scale freight car models from Atlas is a Master series 50′ boxcar. The model is based on a prototype built by ACF in the late

1960's and early 1970's. Both smooth side and rib side versions of the car are in this release. Features include realistic ladders, brake wheel, see-through end crossover walkways, sliding doors, and 70-ton roller bearing trucks

Road names are Conrail, Union Pacific, BNSF, Canadian National, Chicago & North Western, Montana Rail Link, and Rock Island. All Atlas models come with Accumate knuckle couplers.

Check with a dealer for availability of the boxcar and the SD35 as the factory is already sold out of several road names.
Info: www.atlasrr.com

GP16 LOCOMOTIVES

In a successful effort to avoid the cost of purchasing new motive power in the late 1970s, Seaboard Coast Line remanufactured 155 aging GP7, GP9, and GP18 locomotives. The program included removing dynamic brakes and installing a new type 26L air brake system, installing a new high-voltage cabinet, refurbishing the Blomberg B two-axle trucks, generators and traction motors; improving visibility by lowering the nose of the car body, retrofitting the cab with a standard AAR control stand and upgrading the prime mover with EMD 645 components, resulting in a 1,600hp rating which gave rise to the GP16 designation. In the late 1960s the Missouri Pacific repowered their entire roster of high-hood Alco RS-11s with EMD 567 series diesel engines. MP designated them GP16 presumably to reflect their new horsepower rating. In 1978 the ICG shops at Paducah rebuilt six GP7s for Clinchfield and named them GP11. When the CSX merger occurred in 1973 the GP11s were grouped as GP16s.

InterMountain Railway is booking reservations through July 31, 2025, for a second production run of its HO scale GP16. Nine of the paint schemes on this run are new.

Road names will be CCR-Family Lines, SCL-Family Lines, Palmetto, Canton Steel, Rail Link Commonwealth Railway, Pioneer Rail Mississippi Central, Pioneer Rail Decatur Junction, BTR Grain, Webb Asset Management, GATX Leasing, CSX (Ex Family Lines Seaboard), and RJ Corman.

All of the GP16s will be factory equipped with an ESU LokSound sound decoder or an ESU LokPilot non-sound DCC decoder. An optional DC-only plug will be available upon request. Availability is TBA.

New HO scale freight cars coming from InterMountain include a group of cylindrical covered wheat hopper cars.

The models are based on colorful prototype cars introduced in the 1980s, with several decorated in distinctive Canadian wheat schemes. The cars will have etched metal walkways, separately applied grab irons, metal knuckle couplers, and appropriate trucks with machined metal wheelsets.

Road names scheduled for this release will be ALNX (*Take An Alberta Break* slogan), ALPX (*Take An Alberta Break*), CN (Rainbow scheme), Canadian Wheat Board, Industrial Grain

Products, Soo Line (ex-Pillsbury), BNSF, Kansas City Southern, Potash, and Procor.

The deadline for ordering is July 31, 2025.

New InterMountain models just released to dealers include this Trinity 5161 cu. ft. triple bay covered hopper. The HO scale model is based on a prototype Trinity introduced in the mid-1990s. Road names on this release include Dakota, Minnesota & Eastern; AGP, Potash Corp, Union Pacific, Kansas City Southern, BNSF/Northern Pacific, BNSF/Burlington Route, BNSF/ Colorado & Southern, BNSF/Santa Fe, and Imperial Sugar.

The ready-to-run models have etched metal walkways, formed brass wire details, Kadee metal knuckle couplers, and appropriate trucks with 36″ machined metal wheelsets.
Info: www.intermountain-railway.com

Kadee has released a 40′ PS-1 boxcar decorated for the Buffalo Creek Railroad, a storied short line that, before being absorbed by Conrail in 1976, served as a terminal and switching railroad in Buffalo, New York. The HO scale model is based on a car built by Pullman Standard in 1953 with 7′ five-panel Superior sliding doors. The model is painted boxcar red with black ends and a galvanized roof.

Also new from Kadee is an undecorated 50-ton AAR flatcar. The well-detailed model represents a range of

prototypes built from the early 1940s through 1955. Both the flatcar and BCK boxcar come with Kadee couplers and Bettendorf-type plain bearing trucks.
Info: www.kadee.com

New product announcements from **Rapido** include HO scale Montreal Locomotive Works S-13 and RS-23 locomotives. Based on the earlier S-11 and S-12, the S-13 and RS-23 locomotives featured a 1,000hp Alco 251c prime mover. The primary difference between the two models was the trucks – the S-13 was equipped with Type A switcher trucks and the RS-23 rode on Type B or MLW lightweight trucks.

The S-13 will be produced in three BC Rail and three Canadian National (CN) schemes, plus an unlettered ex-CN version in black and red/orange. The RS-23 will be available in five Canadian Pacific (CP) schemes, Minnesota Commercial, Canada Atlantic Railway, Devco, Windsor & Hantsport, Industrial Yellow, and Industrial Red.

An exclusive run of S-13s will be available from **Otter Valley Railroad,** with three numbers for Ontario Southland & two Waterloo Central numbers.
Info: www.ovrtrains.com

Both models will be available with a dual mode DCC/Sound decoder, with sound files recorded from an S-13, or DC/DCC ready. Details will include photo-etched radiator grilles, road-

specific fuel tanks, traction motor detail, prototypical walkway tread patterns, Rapido dead-straight metal handrails with plastic stanchions, rubber air sanding lines; and other typical Rapido details. A minimum radius of 18″ is recommended.

A conditional release of the Canadian Light Rail Vehicle (CLRV) in HO scale has also been announced, including a 5% early bird discount for ordering prior to September 15, 2025. Entering service in 1979, a year after the first models were delivered, the CLRV continued in operations on the streets of Toronto, Ontario for the Toronto Transit Commission (TTC) through 2019.

Paint schemes for the CRLV include TTC early, TTC late, UTDC Boston, UTDC Demo, CLRV "Original Concept", and fantasy schemes for Boston, Buffalo, San Francisco, and Philadelphia. Special "Happy Birthday" schemes that were on TTC 4000 and TTC 4005 are also planned.

The models are scaled from 3D scans and prototype drawings, and the trolley pole will be optionally functional. The models will feature all-wheel pickup, truck mounted motors, a highly detailed interior including seats and operator controls, a functioning "Short Turn" flag sign as appropriate, factory applied destination signs and decals to change the destination sign display, a MoPower capacitor system, and either ESU LokSound DC/DCC or a 21-pin DCC ready socket. The brake lights, turn signals and other lighting features will work under DCC.

Another conditional release is the Halliburton Pneumatic Rail Car in HO scale. Commonly

referred to as the Halliburton Cement Car, this car also comes with a 5% discount for orders prior to October 15, 2025. Featuring three cylindrical tanks mounted vertically, the cars were designed and built in cooperation with Pullman Standard and used to transport dry bulk materials such as cement, pozzolan, and fly ash. A total of 75 of these cars were built.

At 43′-7″ in length, the 70-ton capacity cars had a volume of 2,400 cu. ft. Originally built in 1961, they lasted in service over 40 years. Currently planned versions include the 1960s era, the 1970s era, the 1990s era, and painted but unlettered. The cars will include the typical full underbody details and piping, separate metal grab irons, stainless steel metal roofwalk, free-rolling trucks with profiled metal wheelsets, and semi-scale metal knuckle couplers. The cars will be available singly or in six-packs. A minimum radius of 18″ is recommended.

Rapido continues to accept reservations for an EMD SW9 switcher locomotive. Pre-production samples are being evaluated now with approval for production expected soon. Rapido's HO scale model of the SW9 will have LED operating beacons or flashing lights as appropriate, a detailed cab interior, numerous see-through etched metal parts, heavy diecast frame, diecast gear housing, metal couplers and Rapido's MoPower capacitor. The model will be available for DC silent operation (DCC ready with a 21-pin connector) or DC/DCC/Sound with an ESU LokSound V5 Decoder.

Road names will be Santa Fe, Boston & Maine, Canadian National, Canadian Pacific, Erie-Lackawanna, Illinois Central, Louisville & Nashville, New York Central, and Union Pacific. Unlettered models will be available painted in a choice of red or yellow. Availability and an order deadline are TBA.

Additional new models in pre-production at Rapido are GP39 road switchers and SWMT powered slugs. Final design work is nearing completion with tooling expected to begin shortly. Road names will be C&O, Chessie System, Chessie Patch, CSX (Bright Future), and CSX (YN3 scheme). The deadline for ordering and an arrival date are TBA.

Rapido has announced a new in-stock paint scheme for the Procor GP20 20,000 gallon tank car, ROLX – Railroad of Lies. Started as a friendly joke regarding modeling freelance railroads and popularized on a couple of podcasts, Rapido has released boxcars, coil cars, coal hoppers, and now a tank car in the ROLX line. Only 100 cars in two road numbers are available in this release, which includes photo-etched metal walkways, vent stacks, loading hatches, air tanks, and braking equipment. The models are of a late-style car with 100-ton trucks, 36″ metal wheels, a reinforced drain valve housing, and semi-scale metal knuckle couplers.

All artwork is courtesy of Rapido Trains.
Info: www.rapidotrains.com

Walthers is quoting a fall 2025 release date for a Wabash-style streamlined caboose. The HO scale Proto series model is based on group of distinctive prototype cabooses built by International Car Co. and by Wabash Railroad in its shops in Decatur, Illinois. A total of 90 Wabash streamlined cabooses were built over a ten- year period beginning in 1945.

Walthers Proto series model features clear window glazing, separate wire grab irons, AB brake equipment with separate

brake cylinders and rigging, see-through running boards and end platforms, etched step treads, and era-specific roofs, door windows and smoke jacks.

Cars decorated for Wabash will be available in both Tuscan and a red and white scheme. Both versions will have Murphy roofs, square windows in the doors and original-style smoke jacks.

Models decorated for Ann Arbor will be available in red with yellow ends. They will have diagonal panel roofs, an original smoke jack and round windows in the doors.

A Norfolk & Western caboose in blue paint will have diagonal roof panels, square door windows and a modernized smoke jack. N&Ws red, white and blue bicentennial car will have a Murphy roof.

A Wabash-style streamlined caboose decorated for Detroit, Toledo & Indiana will have one window blanked out, a diagonal panel roof, an original smoke jack, and square windows in the end doors.

An undecorated model will come with square door windows, both smoke jacks and both Murphy and diagonal panel roofs. All versions of the model will be equipped with caboose swing-motion trucks with 33″ machined metal wheels.

VIEW READER COMMENTS

R. Bale

ALCO RSC-2 LIGHT ROAD SWITCHER

The RSC-2 is a diesel electric locomotive built by the American Locomotive Co. between 1946 and 1950. Powered by a 12-cylinder 1,500/1,600hp engine, Alco RSC-2s rode on six-wheel A1A-A1A trucks with evenly spaced axles. The six-wheel trucks reduced the axle load making the RSC-2 more suitable for use on light rail as found on branch lines and industrial areas. The RSC-2 had a rarely-used top speed of about 65 miles per hour. Its siblings RS-2 and RS-3 are the same locomotive with four-wheel trucks.

Walthers is updating its Mainline series Alco RSC-2 diesel locomotive with a Proto series power train and road-specific air- and water-cooled exhaust stacks. The plastic injection molded body will have drill starter points for adding grab irons, which are available as separate purchase.

The HO scale model will feature a heavy diecast metal chassis, all-wheel drive and electrical pickup, and constant and directional LED headlights. Set for DC operation, Walthers RSC-2 will have a 21-pin plug to simplify installation of an aftermarket DCC decoder.

Road names on this release will be Soo Line, Milwaukee Road, Union Pacific, Seaboard Coast Line, Seaboard Air Line, and Chicago, Milwaukee St. Paul & Pacific. Availability is scheduled for winter 2026.

Walthers plans to release a new 81′ eight-axle depressed-center flatcar this fall. The HO scale Mainline series model is based on a prototype introduced in

the 1960s to haul up to 150-ton loads. The model features a heavy duty diecast metal body, four 100-ton trucks with 36″ machined metal wheels, and separate air and handbrake details at both of the articulated end platforms. Road names will be Santa Fe, TrailerTrain QTTX, Southern Railway, New York Central, Siemens Westinghouse, Norfolk & Western, Pittsburgh & Lake Erie, Western Pacific, and undecorated. The HO scale model requires a minimum track radius of 22″ with a 24″ radius recommended.

R. Bale

WWII TROOP CARS CONVERTED TO EXPRESS BOXCARS

Toward the second half of World War II, when American Railroads' passenger car fleets were stretched to the limit, Pullman Standard and American Car & Foundry received government contracts to build troop sleeper, kitchen, and hospital cars on what was essentially a modified 50' boxcar equipped with passenger-type braking and trucks. The cars were used by the military to move troops across the country. After the war, there was no longer a need for the cars and they were sold to several railroads at bargain prices. Most of the cars had their Spartan interiors removed and windows plated over for service as express boxcars. Many of these cars could be found on the head end of passenger trains into the 1960s.

Walthers is preparing three versions of 50′ World War II troop cars converted to postwar civilian use. First up in the HO scale lineup is a troop sleeper converted to a New York Central-style express boxcar with Youngstown sliding doors.

Road names scheduled for this release include New York Central, Alaska, Frisco, Rock

Island, Erie, and Lackawanna. An undecorated model will also be available.

A WWII troop kitchen car rebuilt as a Chicago, Burlington & Quincy-style express boxcar will feature a single swing door. In addition to CB&Q, road names will include Alaska, Missouri Pacific, Monon, Chicago & Eastern Illinois, and Maintenance-of-Way (Green).

Spotting features of troop sleepers converted to Chesapeake & Ohio-style express boxcars include an inside sliding door with windows. Decorating schemes will include two C&O schemes (Green and tri-colored), two Baltimore & Ohio schemes (Green and blue), Boston & Maine, and MOW (Tuscan).

Features on all three types include rivet seams on the plated-over windows, diaphragms, and separately installed grab irons and steps. All of the doors are non-operating. The ready-to-run models come with metal Proto MAX knuckle couplers and high-speed passenger-style trucks with machined metal wheels. Undecorated models will be available for each car type. Reservations are being taken now with availability planned for winter 2026.

Also scheduled for release during the winter of 2026 is a new production run of 60′ Pullman Standard auto parts boxcars with a pair of Youngstown doors (non-operating) covering a 16′ wide opening well-suited for loading by forklifts. The Mainline series model will have separately applied ladders, and a detailed underbody with simulated end-of-car cushioning and extended draft gear box. A minimum track radius of 22″ is required.

Road names scheduled for this release will be Santa Fe, Conrail, Norfolk & Western, Chicago & North Western, Penn Central, Rock Island, Union Pacific, and Grand Trunk Western. An undecorated version will also be available. All Walthers models mention in this report will be equipped with metal Proto MAX knuckle couplers.
Info: www.walthers.com

N SCALE PRODUCT NEWS

Athearn December 2026 production schedule lists two new N scale models including the 50' FMC 5077 cu. ft. boxcar with double sliding doors.

Road names on this release will be Union Pacific, Western Pacific, McCloud River Railroad, Sierra Railroad, Seattle & North Coast, Camino, and Placerville & Lake Tahoe.

R. Bale

BETHGON COALPORTERS

See the Athearn entry in HO scale for more information on the BethGon Coalporters.

Athearn has included a new release of BethGon Coalporters in its December 2026 production schedule. The N scale models will be available in 5-packs decorated for Norfolk Southern /CR, CIT Group (ex-DJJX), CIT Group, Minneapolis & St. Louis, and Entergy Corporation.
Info: www.athearn.com

Atlas has released an N scale model of EMDs SD35 locomotive. Atlas Silver series models are set up for DCC/DCC ready operation. Gold series models of the SD35 come with factory installed DCC/ ESU LokSound decoder.

Features on the N scale model include directional lighting with golden-white LEDs, walkway safety tread, and blackened metal wheels.

Road names are Norfolk & Western, CSX, Cargill, B&O, CSX, Guilford, Montana Rail Link, Great Lakes Central, Southern Pacific, and a Southern Railway unit with a high nose

Additional N scale models recently released by Atlas is a Master series 50′ ACF boxcar. Both smooth side and rib side versions of the car are in this release.

Road names are Conrail, Union Pacific, BNSF, Canadian National, Chicago & North Western, Montana Rail Link, and Rock Island.

Also new is a group of shorty *beer can* tank cars. The N scale model features separate add-on ladders and dome details. Roads names on this Trainman series model include GATX-Detrex, GATX-FMC Chemicals, GATX-Jefferson, Lake Sulphur, GATX-Sobin, GATX-Upjohn, GATX-Nalco, JMHX-Jim Hunter, and SCMX.

Check with a dealer for availability of these Atlas models as the factory is already sold out of several road names.
Info: www.atlasrr.com

Bluford Shops has scheduled another production run of an 86′ auto parts boxcar with double plug doors.

The N scale models will feature improved draft gear, magnetically operating couplers, separate wire grab irons, etched metal end platforms, and appropriate trucks with metal wheels.

The body-mounted draft gear will have a spring centered swing action that both resists string-lining the train pulling through curves and resists the trucks climbing the rail during shoving moves. The minimum radius is 11″.

Road names available on this release will be Burlington Northern, SSW-Cotton Belt, Erie Lackawanna, Illinois Central Gulf, MKT, New York Central, Pennsylvania, Santa Fe, Southern Railway, Western Pacific, Detroit, Toledo & Ironton; and two schemes each for Ann Arbor and Conrail. Bluford is accepting pre-orders through mid-August with release planned for the summer of 2026. Info: www.blufordshops.com

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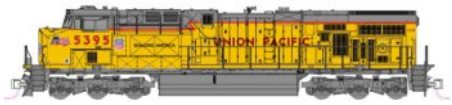
New N scale freight cars coming from **InterMountain** include a group of cylindrical covered wheat hoppers. The models are based on colorful prototype cars introduced in the 1980s, with several decorated in distinctive Canadian wheat schemes Features include operating knuckle couplers, and appropriate trucks with machined metal wheelsets.

Road names scheduled for this release will be ALNX *(Take an Alberta Break slogan)*, ALPX (Take an Alberta Break), CN (Rainbow scheme), Canadian Wheat Board, Industrial Grain Products, Soo Line (ex-Pillsbury), BNSF, Kansas City Southern, Potash, and Procor.

The deadline for ordering is July 31, 2025.
Info: www.intermountain-railway.com

Kato USA has announced a new run of N scale GE ES44AC locomotive models with an availability of winter 2025. The prototype ES44AC was designed to meet the EPA Tier 2 standards that took effect in 2005 and featured the GEVO-12 4400hp prime mover. A redesigned radiator/heat exchanger resulted in a larger radiator section than the predecessor Dash-9/AC4400 series of locomotives.

Paint schemes in this release include two Canadian Pacific special paint schemes, Every Child Matters #8757 and Hapag-Lloyd #8781. Two CSX locomotives include markings commemorating the Western Maryland Scenic Railroad and the Seaboard System. Two UP releases are locomotives #5395 with the US flag located on the side of the nose and #7777 with the large US flag on the side of the engine compartment.



The models feature a 5-pole Kato motor with dual flywheels, directional headlights and illuminated number boards, working ditch lights, a Kato magnetic knuckle coupler, and a DCC friendly mechanism. All locomotives are

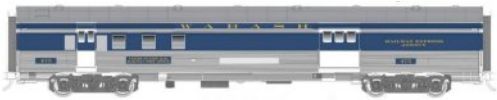
also available with DCC or DCC/Sound.
Info: katousa.com

New N scale freight cars released by **Micro-Trains Line** includes this 36′ wood truss-rod ice reefer decorated for Sudbury Brewing Co. Ltd. The home office of the brewery was located in Sudbury, Ontario.

This 65′ mill gondola is based on a prototype built by Pullman Standard in 1953. The design includes drop ends that allowed the gondola to handle loads longer than the car.

Micro-Trains is offering these ACF triple bay covered hoppers in a 3-pack with different numbers. The Kansas City Southern paint scheme has been targeted by graffiti.
Info: Contact a dealer.

RailSmith released an N scale lightweight Kansas City Southern dome car at the recent N scale National Convention. Some inventory may still be available. The model is the first car in a KCS *Southern Belle* name train under development by Rail Smith. Reservations are open now for a diner and sleepers. Future plans call for a *Southern Belle* baggage/RPO and a lounge observation car.



Continuing with the Kansas City theme, Rail Smith has announced plans to produce the Wabash Railroads *City of Kansas City* name train. The full consist will include an RPO car, baggage car, coach,

diner, and observation car. Reservations are currently open for the RPO car.

Rail Smith is scheduled to release this colorful Haystack refrigerator car this month. The model replicates an AFPX-Northwest Fruit Growers reefer. The N scale model was produced for Rail Smith by Micro-Trains Line. Info: www.lowellsmith.net

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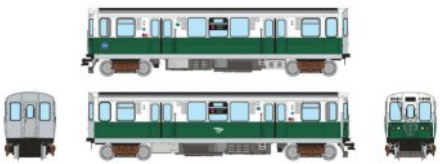
Rapido has announced the conditional release of the CTA 2600 Budd Series 'L' cars in N scale. Like other conditional releases, if you pre-order by a certain date (September 15, 2025 for this product) you earn a 5% discount. With 600 of the cars built by Budd between 1981 and 1987, they are still in operation today on nearly the entire Chicago CTA system.

Two-car sets feature one powered and one unpowered car with operating headlights, marker lights, and interior lighting on both ends. Available in DCC-ready and MoPower capacitor plus ESU LokSound DCC/Sound versions, the cars include the standard Rapido underbody details. A minimum radius of 9 3/4″ is suggested.



Four car collectors sets in a bookend case will be available in the As Delivered and Circle Logo schemes. Schemes intended for this release include two As Delivered schemes, Speedlines Logo, two Circle Logo schemes, a work motor scheme, a 75th anniversary white/green scheme, and a painted but unlettered version.

All artwork courtesy of Rapido Trains.
Info: www.rapidotrains.com

ScaleTrains has released an N scale model of a GE AC4400CW in twelve decorating schemes.

The Rivet Counter series model is laden with prototypically accurate details. Optional road-specific details, such as ditch lights, air horns, antenna, and trucks, are specified for each decorating scheme.

Road names available now are CEFX (Bluebird), Chicago & North Western, two schemes each for CSX and Kansas City Southern, and three schemes each for Ferromex and Union Pacific. Both DC/DCC ready and DCC sound equipped versions are available.
Info: www.scaletrains.com

STRUCTURES & SCENIC SUPPLIES

Athearn is booking advance orders thorough July 31, 2025 for a 40′ low-cube container and a 53′ utility reefer trailer scheduled for release in December 2026.

The stackable low-cube containers are just 8′-6″ high. Decorating schemes

include Evergreen, K-Line, Messina Line, Mediterranean Shipping Co., Ocean Network Express, and Titan Containers.

The 53′ reefer trailer have separately applied mud flaps, and rubber tires. Prototype options include three sizes of fuel tanks, a spare tire rack, and etched metal aerodynamic "wings".

Decorating schemes available on this release will be KLLM, Boparai, MK Express, Prime Intermodal, Dick Simon Trucking, Alliance, Gill Transport, and Werner.
Info: www.athearn.com.

Frenchman River Model Works has released the Burton House in HO scale. Constructed of limestone in the 1890s, the house is still standing, making it appropriate for nearly any era. The kit for the house contains resin walls, roof, floor, and foundation pieces. Also included are laser-cut doors, railings, and window glazing. Lumber, styrene, and assorted detail parts round out the kit. When constructed it measures 2.125″ wide (without steps) by 3.675″ long (without the cellar entrance) by 3″ tall. Info: frenchmanriver.com

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New HO scale vehicles coming from **Oxford Diecast** include a yellow 1949 Mercury coupe and a 1962 Chevrolet Corvair Greenbrier ambulance.

Also scheduled for release later this year is an HO scale 1960 Ford Fairlane taxi and a 1950 Chevrolet panel truck in dark blue.

Info: www.walthers.com

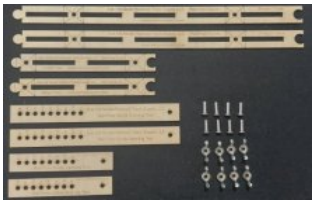
Walthers has provided details on three new HO scale structure kits scheduled for release later this summer. They include a Tudor style home features detailed brickwork, printed interior material, and clear windows. The plastic model is molded in four colors. Assembly is required - painting is optional. The assembled structure has a footprint of 5.94″ x 5. 875″.

Walthers newest bridge is a well-detailed arched Pratt truss single track railroad bridge with a cantilevered vehicle roadway on one side. The bridge, without the guardrails, is 23″ long. With the guardrails (as shown above), it is 24.9″. The main structure featuring simulated steel construction with detailed girders, lattice work, and rivets. The roadway includes deck, guardrails, and structural supports.

For crossing creeks, ditches or back-country roads, Walthers is getting ready to release a pair of short beam bridges. The kit is molded in dark brown plastic and includes parts to build two complete bridges - one short and one with extended supports for added clearance. The tall version provides a clearance of 1.125″. Clearance on the short version is .594″.
Info: www.walthers.com

TOOLS

Oak Hill Model Railroad Track Supply has announced Rail-Flow Systems, a track alignment tool intended to assist with both commercial flex track and hand laid rail. The system is



laser-cut from 2mm Baltic birch and includes both 9.5″ and 4.5″ Rail-Flow Guides for laying track in a consistently straight line and 1.25″ to 2.75″ and 3″ to 5″ Spacing Tools that are used in combination with the Rail-Flow Guides to ensure consistent spacing between parallel tracks. Eight screws and wingnuts are included to attach the Spacing Tools to the Rail-Flow Guides.
Info: ohrtracksupply.com

BRIEFLY NOTED AT PRESS TIME ...

Atlas plans to release HO scale CNCF 5000 boxcars later this month...

New N scale models from **Bachmann** include GP40 diesels and a streamlined version of a PRR K4 4-6-2 steam locomotive...

Broadway Limited's HO scale heavyweight combine/baggage cars have just been shipped to dealers...

Under development at **Sunset Models** are detailed HOn3 plastic models of Durango & Silverton and Denver & Rio Grande Western passenger cars...

Walthers HO scale Mainline models set for release in late July include 40' wood reefers with Dreadnaught ends, and Trinity 25,400 gallon tank cars... ■

SELECTED EVENTS

July

Please submit your event information, including website, to model-railroad-hobbyist.com/contact/News_event_-_product_announcement

Ongoing 2025

ONLINE, Zoom & YouTube, Wednesdays at 7pm Eastern. New Tracks Modeling Live Weekly
Info: newtracksmodeling.com
YouTube: www.youtube.com/channel/UCMA_VhPb5pjdkAYTdXLceJA

ONLINE, Facebook & YouTube, dates vary, see Facebook page. "NMRAx" organized by Gordy Robinson, Martyn Jenkins, Speed 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

July-August 2025

AUSTRALIA, QUEENSLAND, BRISBANE, August 22-24, 2025. Brisbane 2025, NMRA Australasian Regional Convention. Flight One, Qantas Drive, Archerfield.
Info: nmra.org.au/nmra-ar-convention-2025

ARIZONA, PRESCOTT, July 26, 2025. Beat the Heat Model Train Marketplace and Show. Embry-Riddle Aeronautical University, 3700 Willow Creek Road.
Info: camrrc.com/bth

ARKANSAS, CONWAY, August 23-24, 2025. Rail & Sprue Train and Hobby Show, Conway Expo & Event Centers, 2505 E. Oak St.
Info: railandsprue@aol.com

FLORIDA, THE VILLAGES, July 14-16, 2025. Camp Villages Train Show, Savannah Regional Center, 1545 N Buena Vista Blvd.
Info: www.thevillagesmodeltrainclub.com

GEORGIA, DULUTH (Atlanta), August 23, 2025. 67th Atlanta Model Train Show. Gas South Convention Center, 6400 Sugarloaf Parkway.
Info: www.gserr.com

ILLINOIS, COLLINSVILLE (St. Louis, MO). July 24-26, 2025. St. Louis Railroad Prototype Modeler Meet. 1 Gateway Center Drive.
Info: stlrpm.com

MASSACHUSSETTS, ORLEANS, Wednesday evenings, July & August 2025. Annual Summer Open House of the Nauset Model Railroad Club. 180 Rte 6A.
Info: www.facebook.com/p/Nauset-Model-Railroad-Club-100054369888560

MICHIGAN, NOVI, July 14-19, 2025. Station No. VI, 2025 NMRA National Convention. Sheraton Hotel, 21111 Haggerty Road.
Info: nmra2025.com

MISSOURI, KANSAS CITY REGION, July 12, 26, August 23, 2006. MO-KAN Garden Railroaders 2025 Garden Railroad Tour. Thirteen train gardens in the Kansas City metropolitan area.
Info: mokangardenrailroaders.org

NEW HAMPSHIRE, CONCORD, August 17, 2025. Concord Model Railroad Club 39th Annual Show. Everett Arena, Loudon Rd.
Info: www.trainweb.org/cmrc/index.html

OHIO, MARION, August 9, 2025. Summerail. Marion Palace Theater, 276 W Center St.
Info: www.summerail.com

OHIO, VAN WERT, August 16-17 2025. 22nd Annual Van Wert Railroad Heritage Weekend Model Railroad Show & Swap. Van Wert County Fairgrounds, 1055 S Washington St.
Info: www.vwrrhw.com

PENNSYLVANIA, MOUNT UNION, July 18-20, 2025. Central Pennsylvania Shortlines RPM. Bricktown Museum, 300 W. Small St.
Info: rpm.pennsyrr.com

TEXAS, AUSTIN, August 23-24, 2025. Austin 2025 Train Show. Palmer Events Center, 900 Barton Springs Rd.
Info: austintrainshow.org

WISCONSIN, LA CROSSE, July 19, 2025. Rail Fair, presented by the non-profit 4000 Foundation, Ltd. 1130 Copeland Park Dr.
Info: www.4000foundation.org

Future 2025-26 by location

AUSTRALIA, QUEENSLAND, TOOWOOMBA, September 13, 20, 27, 2025. 2025 Carnival of Trains Open House, sponsored by the Toowoomba Model Railway Club, Inc. Toowoomba Showgrounds, Glenvale Road.
Info: www.facebook.com/toowoombamodelrailwayclub

CANADA, BRITISH COLUMBIA, SIDNEY, September 21, 2025. 33rd Annual Victoria Model Train Show. Mary Winspear Centre, 2243 Beacon Avenue.
Info: victoriatrainshow@gmail.com

CANADA, ONTARIO, BURLINGTON, October 17-19, 2025. Real Rails 2025 Convention, sponsored by the Canadian Pacific Historical Association. Holiday Inn and Candle Wood Suites, 3060 South Service Road.
Info: www.cptracks.ca/realrails2025.html

ALABAMA, GADSDEN, September 20, 2025. Coosa Valley Model Railroad Association 2nd Annual Fall Train Show. Mary G Hardin Center for Cultural Arts, 501 Broad St.
Info: www.facebook.com/coosavalleymodelrailroad

CALIFORNIA, IRVINE, September 3-6, 2025. PSR 2025 Convention – Pacific Southwest Express. Irvine Hilton – John Wayne Airport, 18800 Macarthur Blvd.
Info: www.pacificswexpress.org

COLORADO, ESTES PARK, September 20, 2025. Rails in the Rockies XXVIII, Estes Park Events Complex, 1125 Rooftop Way.
Info: railsintherockies.org

COLORADO, GREELEY, September 27-28, 2025. Colorado Rail Proto Meet, in association with the Colorado Model Railroad Museum, featuring the HomeShops Freelance Forum and the Narrow Gauge Gathering. Island Grove Event Center, 421 N 15th Ave.
Info: corpm.org

FLORIDA, OCALA, October 9-11, 2025. Sunshine Region 2025 Annual Convention. Ocala Hilton, 3600 Southwest 36th Ave.
Info: www.nmrasunshineregion.org/2025-annual-convention

FLORIDA, THE VILLAGES, September 20-21, 2025. Summer Expo Model Train Sale & Show, Savanah Center, 1545 N Buena Vista Blvd.
Info: www.thevillagesmodeltrainclub.com

INDIANA, DANVILLE, November 22, 2025. CID-NMRA Danville Train Show. Hendricks County Fairgrounds, 1900 E. Main Street.
Info: www.cidnmra.org

INDIANA, INDIANAPOLIS, October 4, 2025. Indianapolis Train Show @ Garfield Park. Garfield Park Burello Family Center, 2345 Pagoda Dr.
Info: www.naptownrr.org/shows

MARYLAND, LINTHICUM (Baltimore), September 11-14, 2025. Mid-Atlantic Railroad Prototype Modelers Meet. DoubleTree by Hilton Hotel Baltimore-BWI Airport.
Info: www.marpm.org

MASSACHUSSETTS, ORLEANS, Wednesday evenings, July & August 2025. Annual Summer Open House of the Nauset Model Railroad Club. 180 Rte 6A.
Info: www.facebook.com/p/Nauset-Model-Railroad-Club-100054369888560

MASSACHUSSETTS, WEST SPRINGFIELD, January 24-25, 2026. Amherst Railway Society Railroad Hobby Show. Better Living Center, Young, Stroh, and Mallary Buildings at The Eastern States Exposition Fairgrounds – Home of the Big E. 1305 Memorial Avenue.
Info: www.railroadhobbyshow.com/index.php

MISSOURI, SPRINGFIELD, September 19-20, 2025. Ozarks Model Railroad Association 2025 Train Show. Ozark Empire Fairgrounds, 3001 Grant Ave.
Info: www.facebook.com/events/1337256877719034

NEW HAMPSHIRE, CONCORD, September 11-14, 2025. Concord Flyer - North Eastern Region NMRA Annual Convention, hosted by the Seacoast Division NMRA. Grappone Conference Center, 70 Constitution Avenue.
Info: conventions.nernmra.org/home/home-2025

NEW YORK, BATAVIA, September 7, 2025. The Great Batavia Train Show. Genesee Community College, 1 College Road.
Info: gsme.org

NEW YORK, HEMLOCK, September 20-21, 2025. 5th Annual Hemlock Train Show. Hemlock Fairgrounds, AG Expo Building, 7370 Water St.
Info: www.fctt-hirailers.com

NEW YORK, SYRACUSE, November 1-2, 2025. 50th Great New York State Model Train Fair, sponsored by the CNY Chapter, National Railway Historical Society. NYS Fair Exposition Center, 581 State Fair Blvd.
Info: www.modeltrainfair.com

OHIO, ATHENS, September 11-14, 2025. C&O Historical Society Annual Conference. Ohio University Inn & Conference Center.
Info: chessieshop.com/event/chesapeake-ohio-historical-society-conference

OHIO, CAMBRIDGE, October 26, 2025. Seventh Annual Buckeye Division (Division 6, MCR) Train Show. Pritchard Laughlin Center, 7033 Glenn Hwy.
Info: div6-mcr-nmra.org/trainshow.html

OHIO, MIDDLEBURG HEIGHTS (Berea), October 4-5, 2025. 51st Annual Great Berea Train Show, hosted by the North Coast Division, Mid-Central Region, NMRA. Cuyahoga County Fairgrounds, 19201 Bagley Rd.
Info: thegreatbereatrainshow.org

OHIO, WEST CHESTER (Cincinnati), October 11-12, 2025. 57th Annual Division 7 NMRA Fall Train Show. Lakota West High School, 8940 Union Centre Blvd.
Info: cincy-div7.org

OREGON, PORTLAND, October 25, 2025. 6th Bridgetown Railroad Prototype Modelers Meet. Holiday Inn Airport – Portland (I-205), 8439 NE Columbia Blvd.
Info: www.facebook.com/groups/2001136043323501

PENNSYLVANIA, EASTON, October 5, 2025. 47th Annual Lehigh Valley Regional Train Show & Expo. Charles Chrin Community Center 4100 Green Pond Road.
Info: www.lehighlines.org/chrin-flyer.html

PENNSYLVANIA, KING OF PRUSSIA, October 16-19, 2025. Philly Express, 2025 NMRA/MER Convention. Crowne Plaza Hotel, 260 Mall Blvd.
Info: phillyexpress.org

TENNESSEE, GATLINBURG, September 17-20, 2025. Smoky Mountain Rails Convention, sponsored by the Southeastern Region of the NMRA. Glenstone Lodge, 504 Airport Rd.
Info: 2025serconvention.org

TEXAS, PEARLAND (Houston), November 15-16, 2025. 2025 Houston Area Model Train Show. Knights of Columbus Hall, 2320 Hatfield Rd.
Info: houstonttrak.org

WASHINGTON, BATTLE GROUND, September 27, 2025. Southwest Washington Model Railroaders Great Train Swap Meet. Battle Ground High School, 250 N Parkway.
Info: larry.sprnkel@gmail.com

WASHINGTON, LYNDEN, October 4-5, 2025. 40th Anniversary Lynden Lions Club Model Train & Toy Show. Northwest Washington Fairgrounds, Henry Jansen Agricultural Building, 1775 Front St.
Info: lyndentrainshow.com

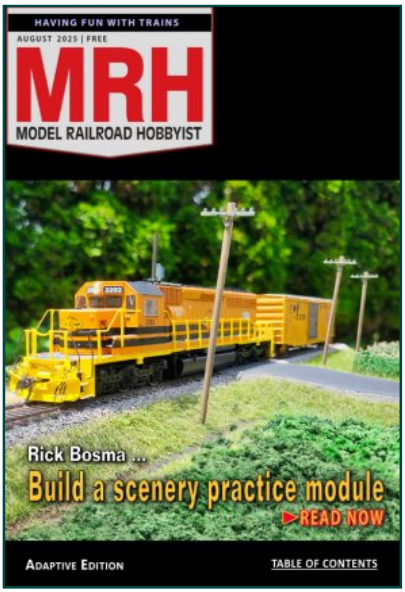
WASHINGTON, SPOKANE, October 12, 2025. River City Modelers Fall Model Train Show. Spokane Fair & Expo Center, Buildings A, B, & C. Gate G, 404 N Havana.
Info: www.rivercitymodelers.org/rcm-train-show-info.html

WISCONSIN, MILWAUKEE, November 1-2, 2025. Trainfest – America's Largest Operating Model Railroad Show. Baird Center, 400 W Wisconsin Ave.
Info: www.trainfest.com/trainfest.html ■

Clickable advertiser index

Clickable "other" index

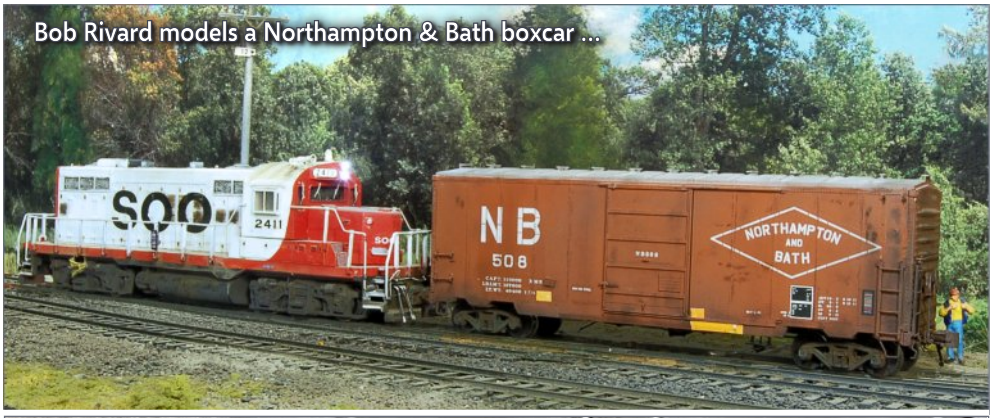
Coming next month in MRH ...

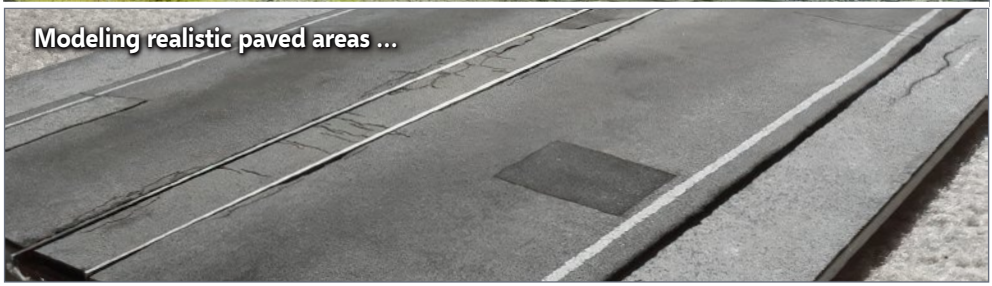


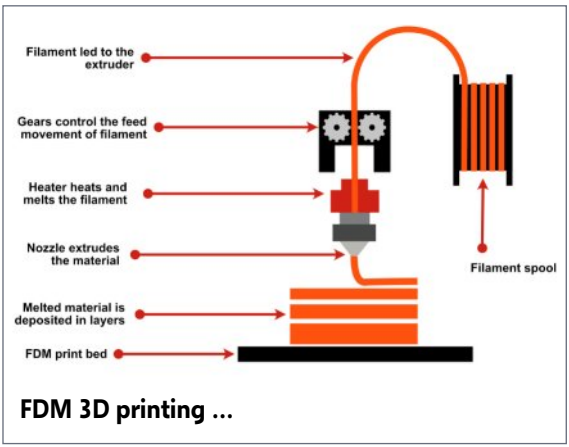
... coming August 15th in the August MRH

Coming next month in Running Extra ...

... all the MRH articles and ads, PLUS:







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