



The Local

Official publication of the Mid-Eastern Region,
NMRA – A tax-exempt organization

SEARCH

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Artificial Intelligence

Article on Page 8

We have a new tool for the workbench this year. It's called artificial intelligence. What is it? Can it be used creatively for model railroading? Is it dangerous? What are the downsides? Gordy Robinson, MMR, President of NMRA has endorsed it in the February issue of the NMRA Magazine. Why the excitement? Why the concern?

Like any other tool, we have to learn how to use it, when to apply it and when not to. Alex Belida, MMR has started the snowball rolling with his article in this issue of *The Local* entitled "Artificial Intelligence in Model Railroading" which explores its storytelling capabilities. Once the ice was broken, we couldn't wait to expand on the possibilities which are rudimentary suggestions at best. There will be much more to come.



Flack Mine from MMR Alex Belida's Railroad (Belida Photo).

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Piedmont Junction Layouts - Twin Cities by Mike Humble (Photo by John Sokash).



Piedmont Junction Layouts - Berkshire Short Line by Jim Murphy (Photo by John Sokash).

President's Column...**Heavy Metal****By R. Scott Unger**

When I was growing up my family lived in a suburban development that was not close enough to a railroad to ride my bike to visit. Because our subdivision was still under construction and the railroad was not readily accessible, I spent every available childhood moment watching the heavy equipment used to construct the new roads and building lots. I still remember watching them excavate the foundations of each new house and recall the smell of diesel, the shriek of metal tracks and the image of swirling dirt. The developer used a cab-less track loader to perform the bulk earthwork but there were also off-road forklifts, concrete mixers, rollers, and dump trucks, among other equipment.

However, the most often used implement to build the new housing development was the ever-present backhoe; essentially a farm tractor with a front-end loader bucket and an excavator awkwardly affixed to the rear. The backhoe is the “Swiss Army Knife” of the heavy equipment world. This highly flexible machine can dig utility trenches, load trucks, spread topsoil, and grade driveways. Unfortunately, it doesn’t do any of those tasks very efficiently. Modern versions of the backhoe have evolved to include four-wheel drive, full air-conditioned cabs, and improved hydraulics. Despite these advancements the backhoe still exhibits a high center of gravity giving it a certain lumbering quality to its movement. As an excavator, the backhoe is limited by the need to raise and lower the outriggers with every repositioning. The excavator arm can only swing over a short arc so it can’t dump material behind the machine, unlike a true excavator that can rotate a full 360 degrees. Even the four-wheel drive models of

the backhoe lack the raw pushing power or maneuverability of a track loader. Despite its limitations, this versatile machine has a place at almost every job site.

If I had lived closer to the railroad tracks, I suspect that I would have spent most of my time watching the early years of Conrail. After all, the most common pieces of job site heavy equipment weigh less than a GE center cab. To a six-year-old, bigger is always better when it comes to “heavy metal” equipment... (clearly that may not only be true for six-year-olds). The fact that I missed the most colorful years of the Conrail transition is a separate disappointment.

For those of us who have built or at least started to build a model railroad, the process can easily feel like working a backhoe, as several, sometimes unrelated, skills are required. Within those unrelated skills each of us has areas of model railroading that we are more comfortable with or find most enjoyable. We naturally gravitate to those areas of interest or familiarity. This can occasionally lead to roadblocks at certain stages of construction when we encounter tasks that we don’t enjoy or are not comfortable doing. The NMRA Achievement Program is specifically intended to help and encourage us to try things that are outside of our comfort zone. The Achievement Program offers significant flexibility while broadening our exposure to and adding proficiencies in new aspects of the hobby.

Model Railroad Engineer – Electrical was one of the first AP Certificates that I pursued. I chose it because, at the time, I had already built many components included on the Statement of Qualifications.

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I had built most of the required track-related components, but I needed some additional electrical items to fully qualify and chose to build a circuit for a flashing warning light. Following the guidance of a fellow NMRA member's YouTube channel, I ordered the necessary components and built a timing circuit to make a red LED blinking beacon. I soldered all the components to a circuit board, attached the wires to the LED, connected a 12V DC power supply and... nothing.

I carefully reviewed the circuit diagram and realized that I had missed a jumper wire between two rows on the circuit board.

After soldering in the missing wire, I reapplied the power and it worked! Since then, I have designed and assembled many other electrical components for my railroad. On my current version of my layout, I built a functioning automatic block signal system using Arduinos. I may not have discovered how much I enjoy designing and building circuits had it not been for the AP Program. I encourage you to review the various Achievement Program categories and try something you are not familiar with doing. You might develop a new or more specialized skill and who knows, you might enjoy it even more than operating a backhoe.




Construction Site on the Chesapeake Bay & Western Railroad (photo by Greg Warth).

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IPSWICH HOBBIES



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UPCOMING MER CONVENTIONS

2024 – Carolina Piedmont Division—“Piedmont Junction” October 17-20, 2024, Durham, NC
 2025 – New Jersey Division Dates and location TBD

MER Board of Directors Meeting Schedule

Board of Directors Meeting - 11am April 13, 2024 -Marriot Hotel - Research Triangle Park, Durham NC
 Board of Directors Meeting - 7 pm Sep 26, 2024 - Marriot Hotel - Research Triangle Park, Durham NC
 Annual Business Meeting - 10 am Sep 29, 2024 - Marriot Hotel - Research Triangle Park, Durham NC



NMRA Achievement Program Update

Kurt Thompson, MMR
MER AP Manager

March/April 2024 AP Report

As of February 5, 2024, only one AP certificate has been awarded since the last report in the January/February 2024 issue of *The Local*:

Division 12 Carolina Southern

Dave Thrams - Volunteer



Congratulations, Jerry!

We would like to congratulate Jerry Lauchle, MMR for his article “Galeton & Chestnut Lake” which appeared in the February 2024 issue of *Railroad Model Craftsman*. It’s not every day one of us gets to go public in a nationally recognized model railroad journal such as this. The article is very well written, The pictures are fantastic. And the layout is a showcase of excellence in model railroading.

Good going, Jerry!

From the Editor's Desk...

Exploring New Ideas

Artificial Intelligence

By Greg Warth

Whenever a new idea or technique comes along that we have never used before, there is always some excitement about using it, but that frequently also arrives with a little trepidation. You find yourself thinking, “Yeah, this is cool, but what can it be used for? Is it harmful? I probably don’t need it. Does it cost anything? How hard will it be to learn how to use it? But it *is* kind of amazing. Maybe I do need it.” It’s like when Steve Jobs introduced the iPhone, he said he was creating something that the world wanted, but we didn’t know it yet. “People don’t know what they want until you show it to them.”

Artificial intelligence (AI) is sort of like that. It is almost too easy and too good to be real, but if you look closer there are some hazards. Will it outsmart us? For sure, someone will use it for evil. Will it dominate the world population and eventually destroy the human race? Now that it’s out, we won’t be able to put it back in the box. Currently we are just past the birth and the infancy stage, just trying it out.

The article by Alex Belida, MMR in this issue is an eye-opener. If AI can use its “imagination” to create a story like this, the possibilities are seemingly endless. We just have to be smart enough to ask it the right questions.

Of course, AI, though it may be fast, it can only regurgitate what it finds on the internet. That is its limitation. Can it eventually connect some dots and invent new things out of the knowledge that is available to it? Actually, there is already a known behavior, called “confabulation,” where AI will just make up stuff to fill in gaps in its knowledge base. So, verification is always required. Even worse, if we let it do too much of our “thinking,” will we all become dumber? There might be a danger of that happening. Can you still calculate the area of an isosceles triangle?

AI is a great new tool for research and I am sure as we go along, we will find many more ways to use it for model railroading. I just think we have to be careful that we do not become the manipulated models rather than the dreamers, inventors, and the makers of those models that we have always been before.

This issue of *The Local* springs forward with lots of new ideas to help with your favorite hobby. Bob Charles, MMR goes down memory lane with a surprise that he finds inside an old Lord Calvert box. Fred Miller, MMR shows us how to make our own DCC command throttle for only \$41. Martin Brechbiel, MMR builds a small business in O scale. John Nawn shows his method of fine tuning freight and passenger cars. Ken Montero shows how to build them. Alan Mende puts carpet in his parlor cars. Patrick Flash survives the nightmare of moving his layout, and Jack Dziadul shows how to share the hobby with the family.

Once again, I would like to thank our outstanding editorial staff for all their hard work, not only for this issue but for all they have done over the last year:

Jack Dziadul

Alex Belida, MMR

Martin Brechbiel, MMR

And special thanks to all our authors. Without them, we would have nothing to show you.

Happy railroading,



Photo by DALL-E 3.

I used DALL-E 3, a companion of Chat GPT, to “create” a model of a western American train depot from the 1920s. [Page 57](#).

Artificial Intelligence in Model Railroading?

Text & Photos by Alex Belida, MMR, with ChatGPT

There is a lot of buzz these days about AI—Artificial Intelligence—and online sites like ChatGPT (Chat Generative Pre-trained Transformer) that understand human language, analyze large amounts of data, and then generate responses to user inquiries.

Interest in AI has reached the NMRA. In his February President's column in *NMRA Magazine*, Gordy Robinson wrote:

“AI is out there and fast becoming a mainstream tool that is making people more productive. We haven't really seen a huge impact from AI in Model Railroading yet but...AI has the potential to add additional layers to many aspects of Model Railroading, from how we learn new skills, how we experience each other's layouts, and even running jobs during Op Sessions..”

I decided to open a ChatGPT account (free) to see if it could write an article. I asked this: “Write a story about a model railroad hobbyist today who builds a layout that portrays a real railroad in Nevada that serviced a silver mine and a logging operation.”

What follows is the fictional response that ChatGPT produced in an amazing 14.83 seconds from the moment I hit “enter” on my request to when the finished story appeared on the screen. (The photos are from my Eureka and South Pass Railroad set in the 1890s in Nevada.)

After reading what follows, consider how model railroaders might use sites like ChatGPT and let *The Local* know your thoughts. If you have already used ChatGPT in your modeling, please share your experience.

Here's the story:

In the quiet town of Carson Springs, nestled between the rugged mountains of Nevada, lived a man named Walter Davis. Walter was a model railroad hobbyist with a passion for bringing the past to life through his meticulously crafted layouts. One day, he embarked on a project that would transport him and anyone who witnessed it to a bygone era.

Walter's inspiration came from the history of a real railroad that once served a silver mine and a logging operation in Nevada. The railroad, known as the Silver Timberline Railroad, had long been forgotten, its tracks reclaimed by nature. But Walter was determined to resurrect its memory through his model railroad.

He began his journey by researching old photographs, maps, and historical records. The more he delved into the history of the Silver Timberline Railroad, the more fascinated he became. He learned about the steam locomotives that once chugged through the winding mountain paths, carrying silver ore from the mines and logs from the forests.



Parker Peak Mine.

Walter's basement soon transformed into a miniature world, a labor of love filled with tiny trees, rocky landscapes, and meticulously detailed structures. His hands worked tirelessly, shaping and painting every detail with precision. As he built the layout, he imagined the bustling activity that would have taken place along the Silver Timberline Railroad decades ago.

The miniature train stations, resembling those from the past, were adorned with signs boasting the railroad's name. The tracks wound through canyons and over bridges, mimicking the original route of the historic railroad. Walter even recreated the sounds of the steam locomotives, making the model come to life with authenticity.

Word of Walter's extraordinary project spread throughout the town, attracting curious neighbors and fellow model railroad enthusiasts. They marveled at the dedication and attention to detail he put into every aspect of the layout. Some even contributed their own historical insights and artifacts to enhance the accuracy of Walter's creation.

As the Silver Timberline Railroad model neared completion, Walter decided to open his basement to the public for a special exhibit. The community gathered to witness the unveiling of this miniature masterpiece. As the crowd admired the craftsmanship, Walter shared stories of the real railroad, intertwining history with the tangible beauty before them.



Lincoln Lumber.

The exhibit became a local sensation, drawing visitors from neighboring towns who were eager to experience the magic of the Silver Timberline Railroad brought back to life. Walter's passion had not only created a stunning model but also rekindled an appreciation for the rich history that lay buried beneath the mountains of Nevada.

In Carson Springs, the legacy of the Silver Timberline Railroad lived on, thanks to the dedication of a model railroad hobbyist who had turned a forgotten chapter of history into a living, breathing work of art.



Flack Mine.



Elections 2024

THE MER NEEDS YOU!

Now Accepting Nominations for Officers

If you are a member in good standing (dues paid) and want to support your region with good ideas and real involvement, we need you to volunteer to serve as one of the four Officers for the Mid-Eastern Region (MER). The MER Board of Directors generally meets three (3) times per year; once at the MER convention. **The deadline for nomination entry is May 30, 2024.** The term of office is two years, with a limit of two terms for the President or Vice-President, five terms for Treasurer or Secretary. Any qualified MER member in good standing can be nominated, either by him or herself or by another member with the candidate's permission. The process is very simple:

Prepare:

A 200-word (max) statement outlining the nominee's interest and qualifications for the position, AND a photo of the candidate. Send the nominations package – by May 30, 2024 – to ALL of the following nominations process officials:

Nominations Committee:

Chair: Robert Charles, MMR rcharles@aol.com

Jack Dziadul, jackdziadul@gmail.com

Kenneth Montero, va661midlo@comcast.net

Optional – also by May 30, candidates may supply a 500-word statement suitable for placement on the MER website.

Deadlines and Schedules for 2024 Nominations and Balloting:

Our Bylaws require the publication of deadlines and schedules for nominations and balloting in the first issue of *The Local* of each year. The dates and schedule for nominations, ballot and election results are in the Executive Handbook, Section 5, Policies, Article VI.

May 30, 2024 -- Deadline for receipt of self-nominations sent to the Nominations Committee. Date for Nominations Committee to notify Board of Directors of slate of nominees validated by the Business Manager.

August 1, 2024 -- Deadline for mailing paper ballots to members and for commencing electronic voting.

September 3, 2024 -- Deadline for electronic voting, also last day as shown by postmark for mailing paper ballots.

September 7, 2024 -- Deadline for receipt by Balloting Committee of paper ballots sent by mail.

September 14, 2024 -- Deadline for Ballot Committee to transmit results to President, the Director overseeing this committee, and the Business Manager.

September 21, 2024 -- Deadline for The President to communicate the election results to candidates. The Business Manager also notifies the MER Web Master and the NMRA of the election results.

October 10, 2024 -- Deadline for publishing election results on MER's website.

You can make a difference by giving something back to the hobby you enjoy. This is your chance. Successful completion of three years in office fulfills the requirements for the Achievement Program "Association Official" certificate. Please respond in one email to all three committee members to ensure receipt of your nomination! That is all there is to it!

Advertising in The Local

If you have a model railroading business and would like to place an ad in *The Local*, please contact the Editor. The new rates per year are as follows:

Divisions & Clubs	Free
Clinics & Education	Free
Convention Ads	Free
Full Page - Color	\$100.00
1/2 Page - Color	\$60.00
1/4 Page - Color	\$35.00
Business Card	\$10.00
Text Only	\$7.00

Your ad may appear as text, photo, art, or any combination thereof. Art must be of high quality and camera-ready. Formats must be in txt, doc/docx, pdf, jpeg, bmp or tiff only. The content must be related to model trains or railroads or provide a benefit specifically to model railroaders. If you need help with your ad, please don't hesitate to ask the Editor.

Send in Your Articles

We are always looking for new articles, tips, ideas, photos, and comments from our readers. If you have been awarded an AP (Achievement Program) Certificate or an MMR (Master Model Railroader) award, please consider writing an article about it so others can learn how you did it. We always enjoy looking at new layouts, dioramas, and models that our members have created. If you would like to contribute to *The Local*, please send an email containing your article and photos to [The Local Editor](#).

The Local welcomes and encourages articles, photographs, and model railroad related material as contributions to members' education and enjoyment of the hobby. Materials should have a wide appeal. The Editor will exercise all due care of submissions, but contributors should not send paper/photo originals without retaining back-up copies. Editors, by definition, reserve the right and have the responsibility to make corrections, deletions, and changes to accommodate space. If your item is time-sensitive in any way, please advise the Editor. Otherwise, stories

and photos that are accepted are published in approximately the order in which they were received.

How to Submit an Article for *The Local* (Please Follow These Steps Carefully!)

1. Please read the article written by Martin Brechbiel, MMR on "[Preparing Your Manuscript for Publication in The Local](#)."
2. Compose and submit your text in one of the following formats: TXT, DOC, or DOCX.
3. Consider what photos, illustrations, or other graphics can go with the text. These are essential. But DO NOT include/insert them into your text. DO put notations in the text such as "Insert Photo #1 here."
4. Your photos should be high resolution and very clear. We can-not accept photos that are fuzzy or out of focus. JPG, GIF, TIFF, and PNG formats are acceptable.
5. Please rename your photo files in the order you want them to appear, e.g., Photo-1.jpg, Photo-2.jpg, etc.
6. If you have captions for your photos, etc., create a separate text file for the captions, each of which should be numbered to match a numbered photo or figure.
7. Send your article or photos by email to [The Local Editor](#). There may be a limit on the number of megabytes you can send depending on your email program. If necessary, either send the photos three at a time, or compress the photos with a "Zip" program to send more at one time.

Special Notes: Please only send us [your own creative work](#) or that for which you have written permission to use so we can give that source proper credit. We need to avoid any copyright infringement situations.

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Memories Are Made of This

By Bob Charles, MMR - Photos by the Author

Back in 1972 I longed to attend my first NMRA national convention in Seattle, Washington. I was particularly motivated to attend this event because of my interest in railroad logging, and that was the theme of that event. Unfortunately, my wife was also pregnant with our second son and due to deliver during the convention. Well, she delivered a week early and a couple of days later looked at me across the breakfast table and without prompting said, “OK, you can go.” When I came home for lunch, she said she reconsidered and decided it wasn’t a good idea. Too late, I had already bought the airline ticket and registered for the convention.

Arrival in a strange town and knowing almost no one in NMRA seemed a daunting task, but I was determined to enjoy it. My first day trip was to visit a logging camp, including the famous loco Skookum. That is, of course, the originally Little River Railroad 2-4-4-2. What a disappointment! There it sat in pieces in the weeds. Boiler over here, cab over there, tender nearby, and the frame and running gear seemingly rusting away. Oh, well, it was still a treat to see even in that condition. Happily, it was later resurrected and operates today on the Niles Canyon Railroad in Fremont, California.

Several folks were photographing the remains and I realized I recognized one. That was Judge G. William Hammer of Virginia. I had met him briefly at an MER event, and we started talking. We ended up going to dinner every night during the convention down on the Seattle waterfront. There is nothing like salmon pulled from the water four hours earlier. There are few dinners better, particularly when accompanied by appropriate tasty adult beverages and dessert, an excellent companion, and good conversation.

Bill, or G. Willy as he was referred to, was an early Master Model Railroader (#50) and longtime NMRA legal counsel. We became good friends and when I was elected NMRA President in 1994 he remained NMRA counsel, and a darned good one. I can tell you that he did much to keep me on target and out of trouble while in office.

Now you might ask, “Why are you writing this?” Well, at the recent Altoona convention my good friend Ken Montero approached me and let me know we needed to talk. Later we got together over dinner and he had a real surprise for me. Back in the ‘60’s Judge Hammer had converted from HOn3 to On3. In the ‘80’s he had presented Ken with what had heretofore been his “calling card,” a Lord Calvert (G. Willy’s favorite) box modified to be a carrying case for his HOn3 ‘traveling train.’



Photo 1: HOn3 Tank Locomotive by Judge William Hammer.

To my surprise, Ken informed me that since he is downsizing and he wanted it to have a good home, and since Bill and I had long been close friends, and since I model narrow gauge logging, he selected me to have “this.” With that he presented me with Bill’s “calling card.” Inside was a jewel of a HOn3 tank locomotive (**Photo 1**) and a passenger combine from the Klinker and Kolash (**Photo 2**) that Bill had built years ago. I was stunned. What a wonderful gift. A flood of memories came back and with them a huge thanks to Ken.



Photo 2: A passenger combine from the Klinker and Kolash

How long this model languished in its box I had no idea. I looked forward to getting it home and seeing what condition it was in mechanically. To my great surprise, I put it on the track and off it ran. Now, it is a bit on the dry side, but add some lubricant and it will be good as new and ready to transport loggers from the town of Bedford to the mills on the 3' gauge line of the Shober's Run Lumber Company Railroad (**Photo 3**).

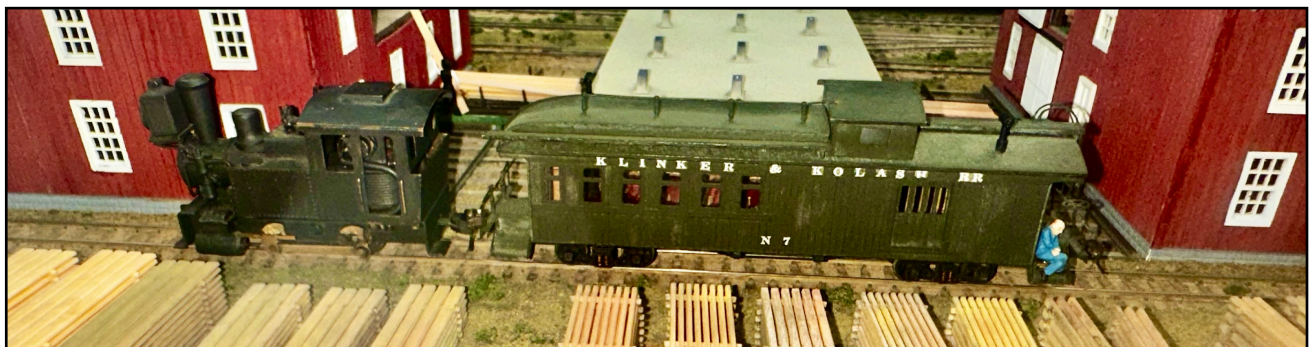


Photo 3: The set - an HOn3 tank locomotive and passenger combine.

Accommodations on the SRL will be improved, and these models will not be changed in the least. Thanks Bill, for the memories, and many thanks Ken for providing an excellent living memory on the SRL. If one ever wondered why membership in NMRA is priceless, THIS is why!!!



Call for N-Scale T-TRAK Modules!

It's here! The call for N-Scale T-TRAK modules! It is for those N-Scale T-TRAK modelers who will be attending the North Coast Limited convention, hosted by The North Coast Division of the NMRA Mid Central Region. The convention will be at the Crowne Plaza Hotel in Middleburg Heights, Ohio from May 16-19, 2024.

Let Us Know You're Coming!
<https://forms.gle/RkKrdTWxcZetGDUr6>

Useful Links

NMRA Mid Central Region, North Coast Division
<https://www.div4.org/>

North Coast Limited Convention
<https://northcoastlimited2024.org/>

T-TRAK Information
<https://ntrak.org/T-TRAK-Home>

T-TRAK Wiki
<http://ttrak.wikidot.com/>

Questions

If you have any questions, please send an email to both Ramhog Shearer ramhog5@aol.com and Frank Trocchia ftrocchi@yahoo.com.

An Interior for an HO Business Car

By Alan Mende - Photos by the Author

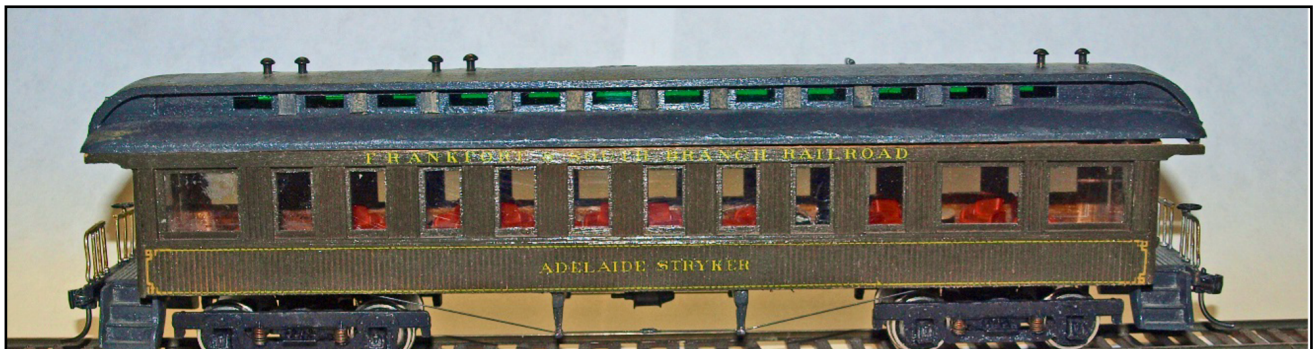
As one of those crazy people who add interiors to model railroad equipment (I once contemplated using Portland cement a live load in a covered hopper with operating hatches, but decided some judge in a contest room would turn the car upside down and make a mess), I find the large windows in a passenger car just beg to have the car populated by figures. I've done many passenger cars that way. I recently built a LaBelle 1883 Open Platform Business Car and wanted to add an interior.

But first, a bit of background is needed. When my brothers, sister, and I were young kids in the 1950s and my parents wanted to go out for the evening, they called a local woman to babysit for us. Her name was Adelaide Stryker, and we had to call her Aunt Adelaide, even though we weren't related. Anyway, when I built the LaBelle car, I decided I would paint and letter it for the model railroad I had when I was a teen, Frankfort & South Branch Railroad. I had already built a 4-4-0 inspection engine from a Mantua General running gear with a modified Roundhouse Overton coach body.



The Neshanic

I lettered it for my railroad and named the engine "Neshanic," the place where I grew up in New Jersey. Since I had already given the inspection engine a name, I decided to give the business car a name also, "Adelaide Stryker" an "old fashioned" name that would go with my turn-of-the-century model railroad.



The Adelaide Stryker

Railroad business cars have taken all manner of shapes and adornments. I decided my car would have plush chairs, small round tables, and rich carpeting. The chairs came from the Palace Car Company. I scratchbuilt the tables from 0.020" Evergreen sheet styrene using a paper punch for the round tops, a smaller punch for the base, and short lengths of Evergreen 3/32" tubing. But what was I going to use for the carpeting? After a bit of thought, I decided to make a search of eBay. I wasn't looking for HO scale carpeting, but images of oriental stair runner carpeting. Boy, did I hit a gold mine of images. In a lot of cases sellers took photos of their carpets on stairs or a long view of them rolled out flat. Neither would be suitable, but some sellers took photos dead on showing the carpet details. I copied those images.

I resized the images to be 1 and 5/32" wide to fit inside the car. The resulting images were too short for the length of the car. So I printed multiple images and then cut and spliced them to the length I needed.



Sectioned Rug Images



Interior of the Adelaide Stryker

They came out so nicely that I put the "rugs" in two LaBelle cars.



Interior of LaBelle 1900 Parlor Car

Bill of Materials for Passenger Car Interiors

Evergreen Scale Models

223	3/32" dia. tube
9020	0.020" thick sheet styrene

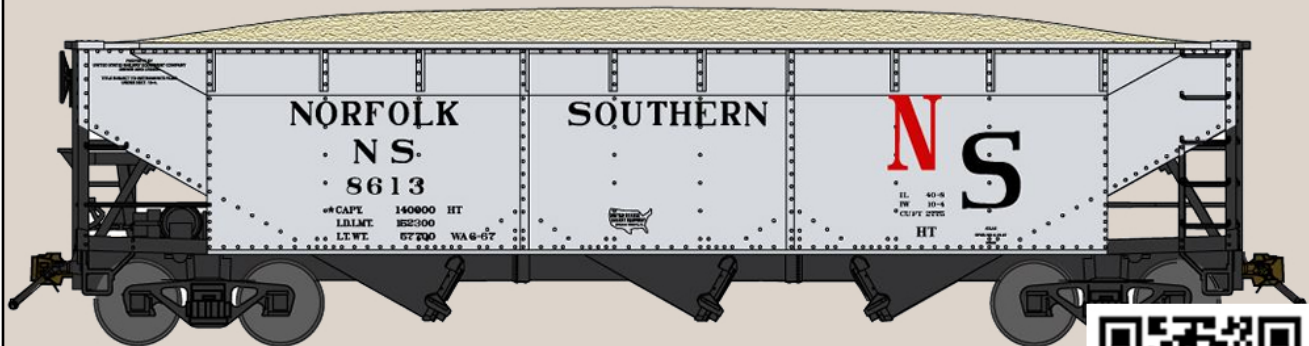
LaBelle

HO- 5	1900 Parlor Car
HO-13	1883 Open Platform Business Car

Palace Car Company

548-500430	Passenger Car Seating – Lounge Car
	Individual Seats

Carolina Piedmont Division, Mid-Eastern Region



N Scale version available once Piedmont Junction registration opens!

Exclusive Limited Edition Custom Decorated by Bluford Shops
Norfolk Southern Rwy **N Scale** 70-Ton Offset Triple Hoppers
2 Road Numbers Available

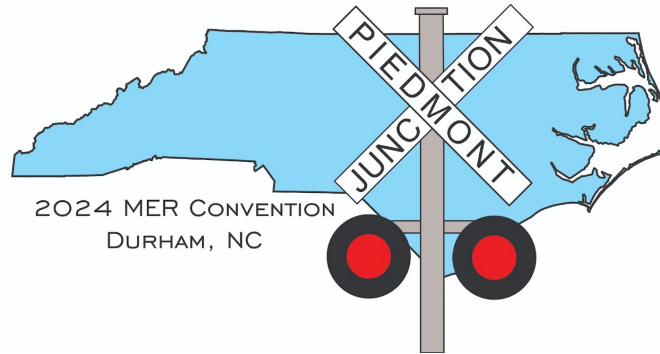


Exclusive run of 86xx series N scale Norfolk Southern 70-ton Offset Hopper. These ex-B&LE cars were leased by Norfolk Southern from U.S. Ry Equipment in 1967. They were photographed in service and all have lightweight dates that was always stenciled to the right of the car's light weight on the left side under reporting marks. WA was for Washington, Indiana on the B&O, the old B&O car shops on their route to St. Louis. The shops were closed and US Ry Equipment acquired them.

Carolina Piedmont Division is offering these in two unique road numbers, 8613 & 8724 for sale using Bluford Shops 70-Ton Offset Hopper car. Pricing is \$25 per car.

Piedmont Junction 2024 Convention Clinics

By Don Roback



As part of the National Model Railroad Association's Mid-Eastern Region, the Carolina Piedmont Division (CPD13) would like to invite all of you to our Regional Convention, Piedmont Junction, on September 26-29, 2024, in Durham, North Carolina.

In addition to all the other great prototype and model railroad activities scheduled for the event, Kevin O'Connor has assembled a slate of 44 clinics including 16 by NMRA Master Model Railroaders. These clinics will cover both prototype and modeling topics and featuring six hands-on clinics.

Broadly, the clinics can be divided into seven categories by subject. Below are short descriptions of some of the clinics in each category highlighting the wide variety of subjects. Note that the schedule is valid as of early 2024 and is subject to change. Keep up with the latest schedule at the convention website Piedmontjunction.org.

Modeling

Modifying and Detailing Plastic Steam Engines – Chuck Davis, MMR: Many railroads had rather unique steam engines which have not been produced commercially. This clinic will address modifying and detailing plastic shell steam engines for unique, unavailable prototypes.

Laser Cutting Technology and Craftsman Kits – Steve Milley: Rail-Scale-Models owner Steve Milley will present an overview of laser-cut craftsman structure kit design and production.

Hands-On: Building Rail-Scale-Models Speeder and Oil Shed – Martin Brechbiel, MMR: Martin will guide participants through the assembly of Rail-Scale-Models Speeder Shed which is a common model railroad structure.

Hands-On: Lighting Your Layout Cost Effectively – Neal Anderson, MMR: Neal will show participants how to effectively light their layout and add more lighting to existing structures.

A Railbus Tour of Lou & Cheryl Sassi's On30 Sandy River & Rangeley Lakes Railroad-Lou Sassi: Lou will cover the construction of his On-30 railroad including a close look at the layout's scratch-built and kit-bashed structures along with their counterparts on the prototype SR&RL, Cheryl's approach to developing realistic ground cover and tree fabrication, and other construction topics.

Operations

Planning a Model Railroad for Prototype Operation – Eric Dervinis: Eric reviews the choices he made when designing his Lackawanna Bloomsbury Branch Ranch Railroad specifically for operations.

Operating Your Model Railroad Remotely – Bob Rodriguez, MMR: Bob has developed a system to allow remote participation in operating sessions. He shows how he did it in this clinic.

JMRI/Electronics

Hands-On: Programming with JMRI – Ernie Little, MMR and George Meyrick: Ernie and George will show different programming modes, equipment needed to program, speed fundamentals and speed and sounds programming. Each participant will be given a flash drive with over 500 files of programming documentation from over a dozen vendors.

Do It Yourself Stay Alive and Keep Alive Devices – Gil Fuchs: One way to overcome dirty track or poor electronic connectivity is to install Stay Alive or Keep Alive in your locomotives. Gil shows how to build them at home.

Scenery

ABCs of Scenery Parts 1 and 2 – Gil Brauch, MMR: In this two-part clinic, Gil will cover everything needed to go from bare plywood to a fully scenicked model railroad.

Hands-On: Techniques for Creating Zero Depth Water Features – Bret Jones: Bret will show a technique to create water features independent of the eventual installation location that avoids many pitfalls of other methods.

Layout Planning

Layout Planning and Design – Andrew Dodge MMR: Andrew will cover topics such as geographic location, era, layout type, room size and logistical issues all to be considered before starting layout construction.

Lessons from Modeling the Prototype. The Erie-Lackawanna Morris & Essex Division – Rich Steinmann, MMR: This clinic will focus on prototype source material: where it was found and how it was used as a basis for designing and modeling Rich's Erie Lackawanna Morris and Essex Division railroad.

Prototype

Original Norfolk Southern Motive Power – John Sokash: John will give an overview of steam and diesel power used by the original Norfolk Southern railroad from the Tidewater, VA to Charlotte, NC.

Scratchbuilding Prototype Structures – Marty McGuirk: Marty will provide tips and techniques to convert a prototype photo into a model including dimensions, parts, assembly, and installation in a scene.

AP Program

Demystifying the AP Dispatcher Paperwork – Kurt Thompson, MMR: Kurt will review the paperwork he submitted to earn his first AP certificate for Dispatcher. This clinic will provide ample time for questions, answers, and discussion regarding AP paperwork.

Motive Power: You Can Do It! - Alex Belida, MMR: Getting the AP Master Builder-Motive Power certificate is not only possible; it is well within your reach. Alex reviews three Merit Award motive power models that he built for his MMR.

These and many more clinics will be available starting the evening of Thursday, Sept 26 and going through to the morning of Sunday, Sept 29. Only the Hands-on Clinics will require advanced registration and a nominal cost. See the Table below and on the next page for a tentative schedule of the clinics.

For the most up to date information including registration and hotel information for this exciting event, see the convention website at PiedmontJunction.org or at the MER Website.

Piedmont Junction Clinic Schedule

As of February 28, 2024 - [Click here for updates](#)

Time Slot	Salon B - Red Zone	Salon C - Blue Zone	Salon D - Green Zone
Thursday Evening 7:15 - 8:15	Clinic #1 Kurt Thompson MMR® Demystifying the AP Dispatcher Paperwork	7:30 MER Board of Directors Meeting	Hands-on #1 Neal Anderson MMR® Three Part Clinic: 1) Lighting Your Layout Cost Effectively 2) Speed Ballasting 3) Ballasting Turnouts and Crossovers
Thursday Evening 8:30 - 9:30	Clinic #2 Alan Mende Judging in the MER - AP & Model Contest or How to Make Better Models	MER Board of Directors Meeting	
Thursday Evening 9:45 - 10:45	Clinic #3 Steve Benezra Introduction to Model Railroad Operations	Clinic #4 Nick Santo What is Decoder Buddy?	
Friday Morning 8:00 - 9:00	Clinic #5 Joe Skorch An Introduction to JMRI	Clinic #6 Bill Davis "Bring Up The Rear"	Hands-on #2 Martin Brechbiel MMR® Building Rail-Scale-Models Speeder & Oil Shed (N,HO,O) Limit 12 Participants
Friday Morning 9:15 - 10:15	Clinic #7 Andrew Dodge MMR® Layout Planning and Design	Clinic #8 Andrew Stitt A Discussion on Dead Rails	
Friday Morning 10:30 - 11:30	Clinic #9 Keith Iritsky Foam Techniques: From Cutting to Finishing	Clinic #10 John Sethian The Art and Technique of Lighting Buildings and Streets	
Friday Afternoon 1:00 - 2:00	Clinic #11 Dave Ellis Planning a New Railroad after Moving	Clinic #12 Alex Belida MMR® Motive Power: You Can Do It!	Hands-on #3 Patty Grant Making Trees from Wire Limit 24 Participants
Friday Afternoon 2:15 - 3:15	Clinic #13 Gil Fuchs Do It Yourself Stay Alive & Keep Alive Devices	Clinic #14 Andrew Dodge MMR® Railroad Infrastructure	
Friday Afternoon 3:30 - 4:30	Clinic #15 Chuck Davis MMR® Modifying and Detailing Plastic Steam Engines	Clinic #16 Earl Hackett CAD and 3D Printing for Modeling	
Friday Afternoon 4:45 - 5:45	Clinic #17 Bob Sprague What's New on the Old Ma and PA	Clinic #18 Chad Barnette Introduction to 3D Printing	

Friday Evening 7:00 - 8:00	Clinic #19 Lou Sassi A Railbus Tour of Lou and Cheryl Sassi's ON30	Clinic #20 Mike Shylanski Painting & Weathering with Vallejo Paints	Hands-on #4 Ernie Little MMR® and George Meyrick Programming with JMRI
	Clinic #21 Dick Bronson LCC, What is it and who is it for?	Clinic #22 Bob Weinheimer MMR® Evolution of an Operating Scheme	
	Clinic #23 Ken Wilson Backdrop Painting- Painlessly	Clinic #24 Eric Schrowang Airbrushing 101	
Saturday Morning 8:00 - 9:00	Clinic #25 John Short Scratchbuilding with the Cricut Maker 3	Clinic #26 Nick Kalis Improve Your Layouts Story	Hands-on #5 Bret Jones Techniques for Creating Zero Depth Water Features
Saturday Morning 9:15 - 10:15	Clinic #27 Andrew Dodge MMR® Track Work	Clinic #28 Alan Silverblatt Automating collection management and operating sessions with Train DB Plus	
Saturday Morning 10:30 - 11:30	Clinic #29 Ed Smith MMR® Military and Industrial Loads 1948-1954	Clinic #30 Steve Milley Laser Cutting Technology & Craftsmen Kits	
Sat. Afternoon 12:30 - 1:30	Clinic #31 Gil Brauch MMR® ABCs of Scenery Part 1	Clinic #32 Eric Dervinis Planning a Model Railroad for Prototype Operations	Hands-on #6 Jim Murphy Resin Castings for Unique Parts
Sat. Afternoon 1:45 - 2:45	Clinic #33 Ed Smith MMR® ABCs of Scenery Part 2	Clinic #34 Joe Walters MMR® Scratch Building a Depressed Flatcar	
Sat. Afternoon 3:00 - 4:00	Clinic #35 Rich Steinmann MMR® Lessons from Modeling from the Prototype The Erie-Lackawanna Morris & Essex Div	Clinic #36 Roy Brecker Reversing Loops for a Model Railroad	
Sunday Morning 8:30 - 9:30	Clinic #37 - CPD13 John Sokash Original NS Motive Power	Keep Open for setup	Clinic #38 CPD Jim Murphy Hopper's Nighthawks Diner - Diorama with Lights and Sounds
		10:00 General Business Meeting	

Table 1. This is a tentative schedule of all convention clinics and subject to change. Check the [Convention Website](#) for the most updated information.

Fine Tuning Your HO Scale Freight and Passenger Cars for Derailment-Free Operation

By John Nawn

Derailments of freight and passenger cars are one of the most annoying mishaps on a model railroad, especially when you are trying to demonstrate to friends and family your pride and joy that you have been spending all your free time on. To avoid that disappointment, you may want to spend a little extra time fine tuning your cars so that doesn't happen. Here's how to do it.

1. Weight

Most higher quality cars today are close to the proper weight for trouble free operation over your railroad, but some may need more. The National Model Railroad Association's (NMRA) [Recommended Practice \(RP\) 20.1](#) recommends cars should weigh 1oz plus ½ oz for each inch of car length in HO scale. [RP 20.1 also includes recommended practices for other scales. -Ed.] For instance, a 50' box car is about 7" long. So, the weight should be 1oz plus ½ oz per inch [$1 + (0.5 \times 7)$] or 4.5 ounces. An 85' passenger car is about 12" long, so the weight should be 7 ounces.



What do I need to weigh my cars? You will need a digital scale, one that can read weight in quarter-ounce increments. A digital kitchen or postal scale, for instance, can be found on Amazon for less than \$10.

Then, you will also need weights, generally in quarter-ounce increments. You can buy stick-on weights, in quarter-ounce increments at most hobby shops (the flying model plane guys use them too for nose weight in the plane), online retailers and eBay. I have seen 6 pounds of stick-on weights, in quarter-ounce breakaway pieces, for \$25. That's probably enough weight for 50 cars or more, assuming you must add about 1 oz of weight to each car. [Trainz.com](#) sells a 6 oz package of Prather stick-on weights, in quarter-ounce increments, for \$8.50. You can also use lead sinkers for all you fisherman, wheel weights available at the auto-parts store, lead shot, or even BBs.

However, it is important to understand that whatever you use, it must be affixed to the car in some way. It cannot be free floating in the car. You can secure weights with white glue, instant glue, or whatever, but they must be secure, which is why I like to use the stick-on weights. A free-moving weight within the car creates dynamic forces that will derail the train. If the weight breaks free in service, then the car should be removed from the track and not operated again until the weight is secured.

The weight preferably needs to go inside the car, of course, so you will have to 'open' the car to put the weight inside. And, when adding weight, it's better to err on the side of too heavy than too light.

A car that is ½ oz overweight will track better than a car that is a ½ oz too light. No worries, we love to buy engines and probably own more locomotives than we will ever need, so if your train is too heavy, just add another locomotive.

2. Wheelsets



We don't call them wheels since there are always more than one (two tracks = two wheels, minimum). The two wheels connected by the axle are referred to as a wheelset.

Just like the real railroad, our model train wheels will wear as the car is operated. As our model track is metal, if we use plastic wheels, they will wear quicker since metal is harder than plastic. As the wheels wear, the shape changes ever so slightly which can cause derailments. Metal wheels on metal track wear more evenly reducing the derailment issue that occurs with plastic wheels. And, unlike the real railroads, we rely on the track for power transfer too. Metal wheels traveling over metal track tends to keep the track cleaner and better able to conduct electricity. Plastic wheels tend to collect dirt which also affects their ability to track well. Plastic wheels are also a direct source of "dirt," due to the wearing process of their component material.

Various manufacturers sell metal wheelsets. InterMountain, for instance, sells a box of 100 wheelsets, enough for 25 cars) which can usually be had for \$80 to \$90. The most important things to know when buying wheelsets are the size of the wheel and the wheel profile. Most modern freight cars (the ones without roofwalks) and all passenger cars use 36" diameter wheels. Most older freight cars and cabooses use 33" diameter wheels. In HO scale, you would need a digital caliper to tell the difference. So, if you do buy them, keep the sizes separated. In HO scale, the prototypical 3" difference is 0.0344 actual inches. The other key consideration is wheel profile, sometime referred to as wheel 'code.' Scale wheels are sometime referred to as Code 88 wheels. While more prototypical, scale wheels do not track well, especially through our not-so-scale switch frogs. Code 110 wheels are wider than scale wheels but track oh so much better. I prefer Kadee wheelsets, especially if you are only doing a few cars. Kadee part No. 520 is a dozen 33" Code 110 wheelsets (\$12) and Kadee part No. 522 is a dozen 36" Code 110 wheelsets (\$15). Each package is enough to do three cars. Yep, that's another \$4+ per car. Luckily though, most higher quality cars sold nowadays already come with metal wheel sets. Whew.

3. Couplers (and Trucks)



We live in great times in the hobby. Almost everything we buy now comes with a scale-like knuckle coupler that is compatible with every other coupler. You may still need to check your couplers and possibly replace them anyway if they don't meet up to your standards.

Body Mounted

First and foremost, except for most passenger cars and some, long freight cars, all couplers should be body mounted. The dynamic pulling and pushing force of the coupled cars must be carried through the body or frame of the car. In other words, the coupled train in tension ‘floats’ on the trucks and the rails. When you apply those dynamic forces to the truck instead of the body of the car, our tiny wheel flanges on relatively light cars are unable to counteract the force without jumping the track. If you have a freight car, other than an 89’ flat car, auto rack, or auto parts box car, with truck mounted couplers, then it’s probably time to retire said freight car.

Check Coupler Height

When you get your brand-new car or locomotive home and take it out of the box, you should always check the coupler height. The easiest way to do this is with a Kadee Insulated Multi-Purpose Height Gauge (\$8.50, Kadee part No. 206). Follow the directions that come with the tool. But it is simple to use and checks both the height of the coupler and the height of the ‘glad hand.’

Trip Pin

The glad hand or trip pin, as Kadee calls it, is that little piece of metal that hangs down below the coupler that looks perhaps like an air hose. If not set to the proper height it can catch on switch frogs, road crossings, bridge rails, crossings, etc., and is a leading cause of derailments. Its purpose is for use with between-the-rail uncoupling magnets. To adjust, a Trip Pin Plier (Kadee part No. 237, \$20) works best. They are specifically designed to bend the trip pin up and out of the way. The Trip Pin Pliers are specially designed bending plier with one jaw being round making for easy bending.

Importance of Coupler Height

If you find that the coupler height itself is not right, that’s a bigger issue, but solvable. Why? If the couplers don’t match, close to perfectly, then the train could come uncoupled. On perfect track work, this wouldn’t be such a problem but, in the real world and on our layout, track is not perfect. Closely watch the train as it travels over switches and track joints. The cars move up and down and the vertical coupler alignment changes almost continuously. So, we need as much vertical coupler ‘face’ as possible to make sure the train stays coupled. *[Inclines will also lead to car separation without near perfect coupler height matches, as anyone with a helix can attest. -Ed.]*

Fixing Coupler Height: Too Low

If the problem is with a freight or passenger car, the easiest way to fix it is with washers on the bolster, between the truck and the body of the car. If the coupler is too low, washers can be inserted

to raise the height of the car, which can raise the height of the coupler (body mounted couplers). Thin, non-metallic, washers. Kadee makes 0.015-inch and 0.010-inch non-metallic fiber washers that can be used/combined to achieve the proper height (Part Nos. 208 and 209). Unscrew the truck from the bolster, add washer(s) and screw the truck back on. Then check the height again. The standard truck screw is a 2-56 screw. It's always a good idea to have a few extra screws around.

When screwing trucks into a car, we want to achieve a three-point landing of sorts. Number one, the trucks must be free spinning. If they are too tight, the car will not go around curves. One truck should be tightened so that it spins freely but then doesn't allow the car to rock side to side. The

Fixing Coupler Height: Too High or Too Low

But what if my couplers are too high? Obviously, adding washers to raise the car won't work. Then it might be necessary to change the coupler, but first make sure you don't have 36" wheels in trucks under a car designed for 33" wheel trucks. The 'standard' Kadee coupler is Kadee No. 5. However, the Kadee No. 5 has a separate metal centering spring that can be cumbersome. Lately, my preference and the industry has been moving to the Kadee No. 148, which is a No. 5 with metal centering 'whiskers' already attached (two pair, \$6 or a 25 pack \$60). A Kadee No. 148 has what Kadee calls a medium shank. The shank is the distance from the coupler to the mounting hole. A medium shank coupler measures 9/32" from the mounting hole to the coupler head. The No. 148 also has a center shank, meaning the coupler head is centered, vertically, on the shank. The 148 will work in most situations. However, if you do have a coupler height that is too high you could switch to an overset shank coupler, meaning the shank is connected to the top of the coupler head rather than the center. This allows the actual coupler head to sit lower if the car body is too high. Alternately, instead of adding washers between the trucks and body to address a coupler that is too low, you can also buy underset shank couplers which allow the coupler to sit higher on car bodies that are too low. Kadee makes an entire assortment of overset, centerset and underset shank couplers in short, medium, and long shank lengths. Kadee couplers are also slightly over-scale, bigger than prototype, for HO. Accordingly, Kadee also makes scale couplers, but I prefer the over-scale couplers for the larger head and bigger vertical face.

Kadee Metal vs. Plastic Couplers

All Kadee couplers, scale or overscale, will couple with each other and almost every other brand of knuckle coupler, plastic, or metal, in the industry. So, no worries on compatibility. But plastic couplers can pull apart under normal use. The most common failure is a broken knuckle, usually on the locomotive, when trying to pull a long train. Plastic couplers are also not as reliable as metal couplers when it comes to operation and don't uncouple as easily when doing switching. Before I introduce any new locomotive or car to the layout, I usually replace the couplers if it comes equipped with plastic couplers. The Kadee coupler conversion chart can be found at <https://www.kadee.com/hocc>

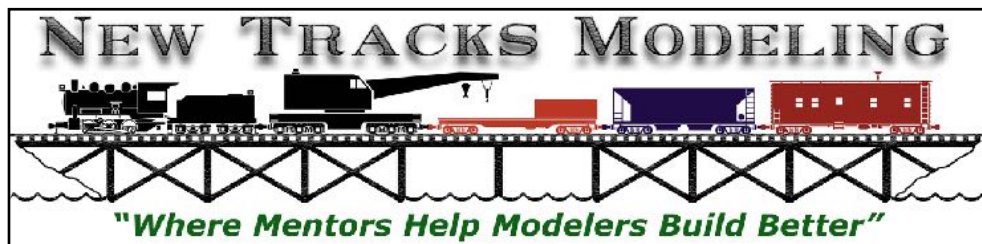
4. Standards Gauge

I don't think any model railroad toolbox is complete without an NMRA standards gauge and I think everyone should have one. With the NMRA standards gauge, you can check wheel and track gauge along with switch machine, signal and building clearances and overhead clearance. Yes, even newly purchased equipment can arrive with the wheelsets out of gauge. In addition, wheelsets can go out of gauge over time. The NMRA gauge can also be used to check coupler heights and has a myriad of other uses. The Mark V is the current standard gauge. They are available directly from the NMRA for \$12 each (\$10 for members). Whenever there is an issue with a car derailing, it is one of the first tools I reach for, to check both the car, wheelsets and couplers, and the track.

So, there you have it. Before your next operating session, spend a little extra time making sure all the cars on your layout meet the above standards. You'll be glad you did.



Line of Boxcars on Marty McGuirk's Railroad in Gainesville, VA. (Photo by Greg Warth).



Dunn's Doorknobs or How to Get Rid of Leftovers

By Martin Brechbiel, MMR - Photos by the Author

This O-scale structure building project is of a modestly sized building which retains a relatively simple quality about it that is also somewhat deceptive. We'll see how that plays out as this build proceeds forward. This will be a commercial business and so different from a residential building. And while perhaps something of a simple rectangular footprint, we'll shake things up a bit on doors, the roof and its installation, plus add some external lighting. So, let's get started!

The dimensions of this building were set based upon the door and window castings combined with the size of the 3 mm plywood base material that I had in the shop. A 5-panel door and frame (Tichy; No. 2040) crawled out of the parts bin and onto my bench bringing with it in tow three orphaned 4/4 windows (Grandt Line probably) from a zip lock baggie. Hurrah! It's finally empty. And, I found a Tichy (No. 2010) baggage door. Looking at it, this is not a baggage door for a freight car, but for a building, so that's where it's going into this project. I pulled out some of my larger scraps of clapboard for the front and back walls. These two sections of clapboard don't quite match in spacing (Kappler or Midwest), but different spacing for separate walls just adds visual interest (**Photo 1**).



Photo 1

I managed to locate some reasonable sections of clapboard for the sides and cut those to the profile for the planned sloped roof and to a width that matches



Photo 2

the plywood base. I laid out locations for the doors and windows to be installed and started cutting openings. The ends of the front and back walls were capped off with 3/32" x 3/32" basswood to form the corners using Goo and CA. This makes a strong bond to traverse the end grain wood involved in the joinery. This step makes the corner board trim and also provides gluing surfaces for adding the sides to the walls (**Photo 2**). Now we have the walls and floor ready to assemble.

The four wall parts were assembled using Goo and CA. The floor was added pushing it inside the “box” formed by the walls and gluing into place. Bracing or gluing surface boards (miscellaneous scrap) were added reinforcing the floor mounting and for adding the roof sheathing (Carpenter’s glue) (**Photo 3**).



Photo 3

The roof was planned to be corrugated metal so the sheathing support for that installation is a variant on what was used by my grandfather over our tractor shed. This is keeping with the theme of making do with leftovers as that prototype roof was done with both recycled wood and metal standing seam. For this structure, HO 4” x 20” stripwood was applied as in **Photo 4**. Normally, the gaps in between the full boards at the ends are not filled, but for the sake of appearance and also to space out the full boards, I filled the gaps in with bits of HO 4” x 20” stripwood. This also provides some extra structural support to the roof. From the exterior this roof appears to be solid. In the 1:1 scale, filling in also limits access to birds and other unwanted visitors. While gluing these boards in place, I also added two goose neck exterior lights (source unknown; miscellaneous electrical bin). These were mounted by feeding them through a simple drilled hole in the wall. They were secured with a bit of Goo and CA. The wires for each were threaded through holes in the floor for future connections (**Photo 5**).



Photo 4

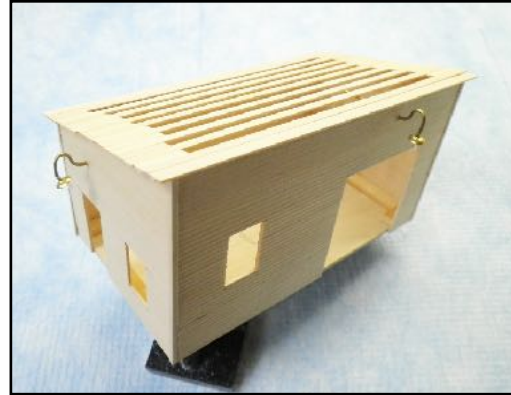


Photo 5

I thought the back wall was a little bare and also that this business needed to have a little heat for those colder days. I managed to locate what I think is my final stove pipe in that parts bin (likely Turner Model Works) for that wall. The metal roof was a mix of Builders in Scale No. 737 (8’ wide) and No. 736 (6’ wide) metal roofing. This comes in strips that were cut into four-foot-wide sections and applied individually over the sheathing. These were set down using Goo very discretely overlapping the top and side-to-side areas of each roof section working left to right and bottom to top. The excess overlap was trimmed off with a pair of scissors. The roof was painted with a mix of

Red Oxide and Mineral Red (Polly Scale), which means I ran out of the one using it for a first primer coat (**Photo 6**).

The building walls and underside of the roof overhang were given two coats of Coach Green (Floquil) paint. The windows and doors were painted Grey (Polly Scale) and glazed with some remaining acetate from the mysterious unmarked envelope in the miscellaneous parts bin. Once dry and with glazing secured, the doors and windows were installed. The stove pipe was painted (Steam Black; Polly Scale) after a washer from the 6/32 box was added to it to make a mounting wall flange. A hole was drilled in the back wall somewhat near the side door corner which might be where an office could be situated with a stove.

The stove pipe was secured with some Goo and CA. The exterior lamps were also painted (Steam Black; Polly Scale) along with a tiny dab to the doorknob on the side door (**Photos 7, 8**).

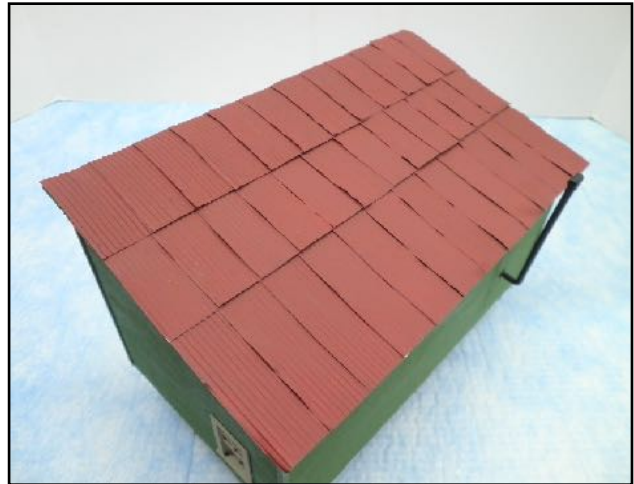


Photo 6



Photo 7



Photo 8

The final steps in this project were to add a sign for this business and to add a bit of a foundation. The sign was created in PowerPoint and printed up to a size where it would fit on the front wall. The paper sign was glued to some scrap 1/32" flat basswood, framed around with some pre-painted wood angle, and glued into place with a dab of Goo (**Photo 9**).



Photo 9

The foundation stones are something like the building blocks that are sold by Dr. Ben's Scale Consortium (<https://www.debenllc.com/>). I got these from a train show vendor selling them by the pound years ago. I may have overbought my supply then, but I like the way they mimic a cut limestone or field stone foundation. They were just attached to the underside of the floor with CA. A pair of nippers can be used to cut them to whatever size is needed to fill the space. These also take stains to age their appearance.

And with the foundation and sign installed, that brings this little build to its conclusion. Again, all sorts of possible details could be added surrounding this building and then again into the surrounding scenery. And, by just changing the sign to a different business, this would possibly change all of those visible details. There are a lot of options available to be supplied by your imagination.



It is with great sadness to report that the New Jersey Division has recently lost another of our beloved members, John Dunn. John was a great friend to many of us in the Division and he always had a nice smile to greet you. John was instrumental in making the arrangements for our January meets at the Grace Episcopal Church in Merchantville, NJ. Below are some excerpts from his obituary.

John Patrick Dunn, Sr., 67, was born on July 11, 1956, in Philadelphia, PA. He recently passed away on December 15, 2023, in Egg Harbor Township, NJ.

John attended Mainland Regional High School. He worked for Prudential and Dunn Insurance.

In order to honor John's memory, donations can be made to the Patcong Valley Railroad Club, 1308 US-40 Richland, NJ 08350; Cherry Valley Railroad Club, 7 East Maple Ave Merchantville, NJ 08109; Jersey Shore Live Steam Railroad, 11 Oak Lane Little Egg Harbor Township, NJ 08087; and Northfield Linwood Kiwanis Club, PO Box 294 Linwood NJ 08221.

Sharing the Hobby

By Jack Dziadul - Photos by the Author

The period from Thanksgiving to New Year's Day is filled with family, friends, and holiday traditions. For model railroaders, it is also a time to share our hobby with those who might not be familiar with our three-dimensional, animated works of art. To many, we are just in our man-caves killing time playing with trains. How do we reel in infrequent or seasonal visitors beyond the five-minute "that's nice" tour? Perhaps make a game of it; you know, a type of "Where's Waldo?" type of game. My wife, Iris, was so enthusiastic about the idea that she pried open my wallet and put 1st, 2nd, and 3rd prizes in envelopes.

So, I made a list and checked it twice. **Exhibit A**, below, was an initial search list. How do you score this? I asked my wife to take a test drive through the layout.

Exhibit A

Train Layout Search

Can you find the following scenes and details?

1. Can you find Iris' Art Gallery?
2. How many joggers can you see?
3. How many taxi cabs are on the layout?
4. Where is the Richfield oil truck?
5. Find the Clam Box.
6. Find the cannon.
7. Where is the bus?
8. How many US Mail trucks can you find?
9. How many fire hydrants can you see?
10. How many bar-be-que grills do you see?
11. Find the man reading a newspaper.
12. How many gas pumps are there?
13. Where is the car wash scene?
14. How many birds can you see?
15. Where is the Museum of Science?
16. Where is the Hotel Manger?
17. Find the young lovers.
18. Find the old lovers.
19. Where is the forklift?
20. How many station wagons can you find?
21. Where is the ice delivery man?
22. Where is the jeep?
23. How many people are ordering ice cream?
24. Find the outhouse.
25. How many fishermen are there?
26. Find the four ladders.
27. Where is the moose?
28. How many wheelchairs can you find?
29. How many tire swings are there?
30. Where is Santa Claus?

Based on that effort, the scoring sheet was revised as shown in **Exhibit B** below.

Exhibit B		
Name:		
	Can you find the following?	✓
1	Iris' Art Gallery	
2	3 joggers	
3	3 taxi cabs	
4	Richfield Oil truck	
5	The Clam Box	
6	Antique cannon	
7	Bus	
8	2 US Mail trucks	
9	4 fire hydrants	
10	5 bar-be-que grills	
11	Man reading a newspaper	
12	3 gasoline pumps	
13	Car wash scene	
14	4 birds	
15	Museum of Science	
16	Hotel Manger	
17	Young lovers kissing	
18	Old lovers cuddling on porch	
19	2 forklifts	
20	3 station wagons	
21	Ice delivery scene	
22	Jeep	
23	2 people ordering ice cream	
24	Outhouse	
25	4 ladders	
26	4 fishermen	
27	Moose	
28	2 wheelchairs	
29	2 tire swings	
30	Santa Clause	

Knowing the competitive nature of some of the expected participants, a list of rules was in order. The list (**Exhibit C**) was read aloud before the “high green” to start was announced.

Exhibit C	
LAYOUT GAME RULES	
1.	NO RUNNING
2.	NO ELBOWING
3.	NO COPYING
4.	NO REACHING OVER THE LAYOUT
5.	NO TOUCHING OF MODELS OR TRAINS
6.	NO CUSSING
7.	NO SPITTING



Three Joggers



Bus



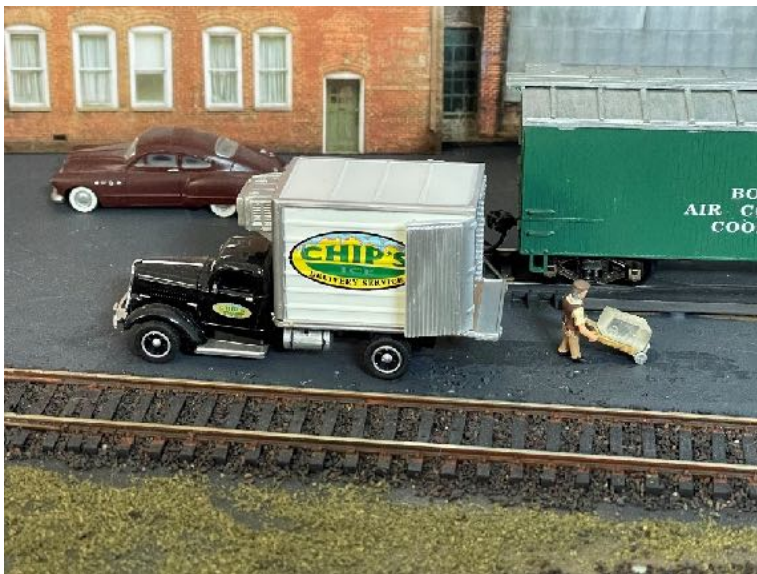
Clam Box



Car wash



Iris' Art Gallery



Ice Delivery



Young Lovers

*Man Reading a Newspaper**Ordering Ice Cream**Richfield Oil Truck*

Everyone had a great time and learned to appreciate all of the detailed work that went into each of the mini scenes. What I found most enlightening was that I had to explain what a station wagon was. (All of the participants were born after 1960.)

This new holiday tradition makes the season so much richer, although my wallet is a tad poorer. Now to expand the layout to create a more challenging game this coming holiday season. This time I'll remember to hide my wallet.

Blue Ridge Summit: April 6, 2024

By Don Florwick



Blue Ridge Summit - Photo by the Author

Blue Ridge Summit, Pennsylvania, Saturday, April 6, 2024, NMRA, MER South Mountain Division and Mainline Hobby Supply hosts their 10th annual Mini Con at the Blue Ridge Fire Hall, 13063 Monterey Ln. Blue Ridge Summit, PA 17214. Come enjoy from 9 AM to 3 PM this one-day free event across the street from Mainline Hobby Supply, consisting of prototype and modeling presentations, formal and informal clinics, modular displays, interaction with fellow hobbyists and beginners, plus a 10% discount at Mainline Hobby Supply. This free admission, wheelchair accessible, educational event is open to the public for promotion of the hobby of Model Railroading.

Contact: Don Florwick, DJFlorwick@comcast.net, Phone 717-414-0660 for the South Mountain Division, Mid Eastern Region, <http://www.smdnmra.org/>

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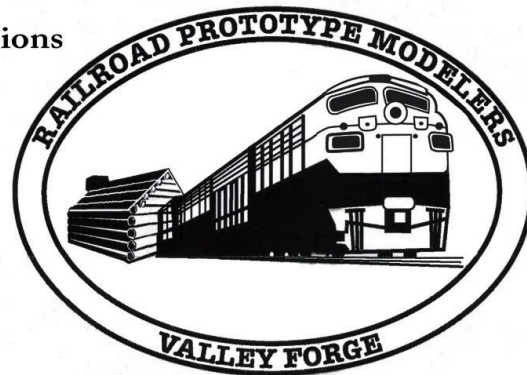
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For information and updates
rpmvalleyforge.com

Registrar

Steve Salotti

rpmvfregistrar@gmail.com

Clinic Information

Rob Hinkle

robhink@gmail.com

Vendor Information

Drew Marshall

vendorsvfrpm@aol.com

Ops Sessions

Mark Wallace

mwallace665@verizon.net

How I Survived “The Move”

By Patrick Flash - Photos by the Author

In 2015 I had a “coming along” HO model railroad in our basement in Ohio. Yes, we did have a house above the basement. The railroad occupied a space about 17' x 37', and was shaped somewhat like the capital letter F with a curl back on the top bar of the F. The layout had about 150' of mainline with five town areas for switching cars. Our local round robin group, Tuesday Night Trains (TNT), operated on the layout regularly.

Then my wife decided we needed to move to the Baltimore area to be near the grandchild and her parents. As a condition of the move I got the 10' x 14' dining room of our new condo for the train. As the only condo of 288 in the community with a model railroad in the dining room, we are unique. Visitors during the holiday season assume that the “train garden” will come down soon after the holidays. Ain't gonna happen.

I moved four L-girder based sections of the original layout and two newer box girder sections to Ellicott City (EC) with me thinking that a nice double deck layout might result. The two newer sections had an unusual history. A new electrical box necessitated moving the terminal L-girder section I named Crystal Lake. I was planning to turn it 90° and add a 2' x 2' filler. As I was making coffee upstairs while an Op session was finishing in the basement, I heard the circular saw down in the basement. What the ??? The TNT guys had cut up and pulled off one wall of an old 2' x 6' brace for a long gone workbench. With that gone, there was space for a narrow aisle to the new electrical box and for two new box girder sections donated by a generous TNT member who was no longer using them. He even adjusted the sizes of the two boxes to fit my space. My layout expanded, despite my objections! The two new sections make up about 50% of the upper level of the new railroad in EC.

So, how did the rebuild in EC go? Slowly!! We spend half the year in Florida to escape the cold Maryland winters and that really delayed reconstruction. I rapidly decided that two of the L-girder sections had to stay in storage. The all double deck layout idea was just not going to fit or work in a 10' x 14' space. The original Crystal Lake area and the two new sections became the right side, the end, and a bit of the left side of the layout as shown in [Photo 1](#).



Photo 1: The First Three Pieces Reassembled

A few feet of old L-girder bench work was spliced to the left side table (Photo 2). Photo 2 also shows the L-girder base for the lower level Johnstown Junction section. The Johnstown Junction section had to be trimmed for width and length to fit along the left wall. Even after the trimming, there was only about 40" between the layout end and the wall for a helix to connect the two levels.



Photo 2: Lower L-girder Base for Johnstown Junction (on the floor).

The Helix

I realized that the helix could have a maximum radius of only 18" for it to fit between the layout end and the wall. Since I wanted the maximum grade between the two levels to be less than 3%, I divided various height difference (19" - 16") by multiples of the helix circumference distance (113") to calculate a grade per cent. I did not have enough distance in the helix to meet my goals. If I made the helix oval instead of round however, I could lower the grade by increasing the circumference. So I added 9" of straight track on two sides to make the oval. My calculations showed that a level separation of 16" with a four turn oval helix would give me a grade of just a tiny smidgen over 3%.

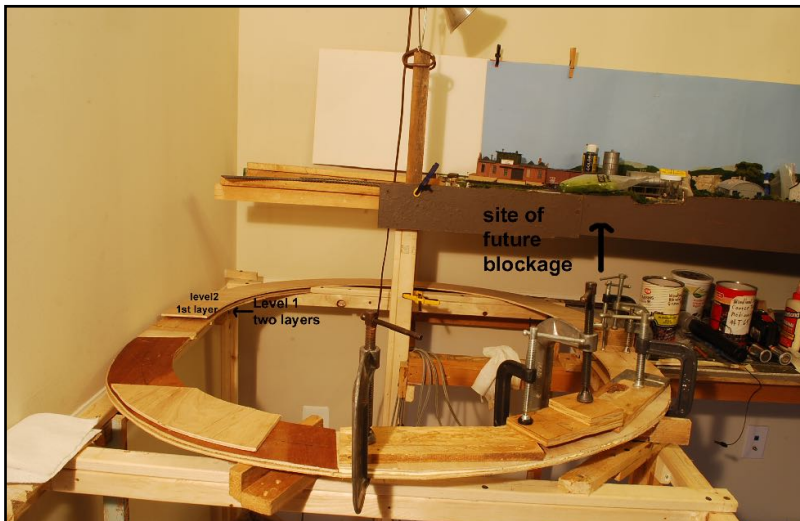


Photo 3: Helix Base and First Level

The helix rests on a square L-girder base and was constructed by laminating two arcs of thin plywood together such that there was no overlapping seam on the two layers that make up a helix level. Roughly 1/8 to 1/2 sections of arc were drawn on thin plywood sheet with cardboard templates to mark the helix curves outer edges. Photo 3 shows the square helix base, the first layer oval, and the beginning of the second level.

I constructed a tool from a 1' spirit level to keep the helix grade constant. Knowing the percent grade for the helix, I used trigonometry to determine what thickness of shim should be glued to the end of my spirit level so that, when the bubble was centered on the level as it rested on the track line of the helix, the helix surface was at the correct per cent rise. I then fastened the first level of the helix to risers to ensure it was fixed at the correct grade. For the second through fourth levels of the helix I used wood blocks as vertical separators to maintain the grade and join the helix levels for structural strength.

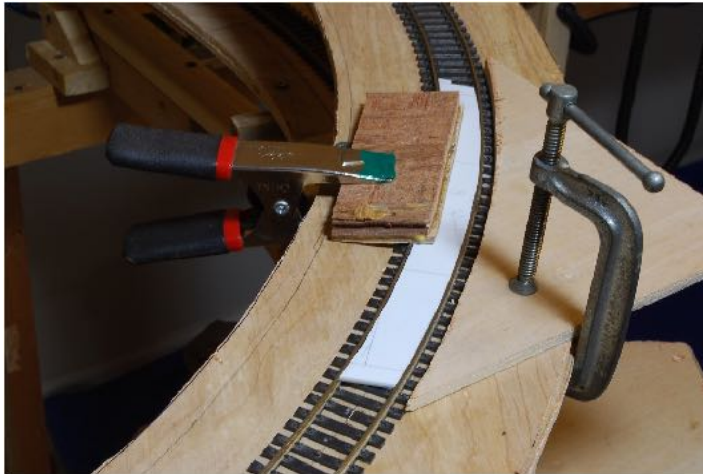


Photo 4: Home made Radius Tool and Tie Edge Template

My first mistake with the helix was to assume that my track laying skills were sufficient to lay flex track at a consistent 18" radius. Ah, hubris. In hind sight I should have used snap track. Despite using a home made radius tool and a wood template for the outer tie edge (**Photo 4**), when we returned from our winter Florida stays for the first two springs, the helix track had buckled in at least one place and sometimes in two or three locations. Purchasing a metal 18" radius tool and resetting the curves has finally solved the buckling problems. (I hope...)

The second problem with the helix construction was not anticipating a blockage caused by the bench work over the top layer of the helix. Even after reaming out much foam and trimming the vertical part of the L-girders so that trains could make it through, I had to decrease the grade a bit before the blockage and increase it after to something over 3%. **Photo 5** shows the L-girder trimmed, the added vertical brace, and some of the foam that had to be cut out to provide clearance for the trains.

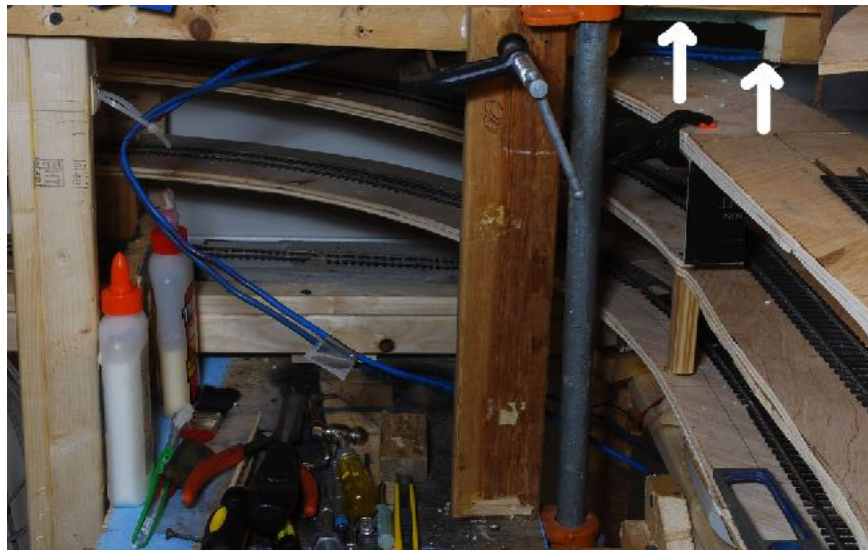


Photo 5: L-girder Trimmed, Vertical Brace Added, Foam Cut Out

I realized that I'd need to access the center hole in the helix for scenery construction and maintenance, so I constructed a very light weight removable hill to cover the area. The hill's foam ribs rest on thin tabs glued to the bottom of the top helix layer. **Photos 6 and 7** show the structure of the hill. The cardboard framed hill was covered with used masking tape to provide a surface for the scenery materials. (I'm frugal.) 🐷



Photo 6: Hill Construction



Photo 7: Hill with Cardboard Strip Webbing

I was initially concerned that the hill might sag over time, so I had planned to reinforce it by spraying a thin layer of insulating foam over the underside of the hill. Although I never got around to the foam reinforcing, the hill has not sagged in six years.

Regrets? The old layout was point to point with a provision for continuous running. I could not figure out how to add a continuous run option within the small room size. The old layout had a long four track hidden staging yard that could feed into the layout in either direction. The new staging is two quite short tracks.

Photo 8 is an overview of the current layout taken from the entry point. You can see the short two track staging yard on the lower level of the far wall.



Photo 8: Overview of the Layout

What's left to do? Adding details never ends. I'd like to replace the mostly sedum trees with more Super Trees. And, most importantly, I need to figure out an operating scheme that can keep two or three people busy for an evening.

The Moral

Just because you are forced into a downsizing situation, don't give up on a fulfilling hobby. You too can have a lot of fun reconstructing your railroad in a smaller footprint. In my case it even offered me the opportunity to improve the remainder of the layout and complete projects I had put off for years.

I had never given much thought to the Master Model Railroader program, thinking that my skill levels were nowhere that needed for the program. I was too busy working on a large layout without much focus on the specific requirements. With more focus on the smaller layout, I qualified for Civil, Mechanical, Electrical, and Scenery certificates. Now the only ones left are Author (over halfway there) and the dreaded Cars (Oh, scratch building!).

On the other hand, with my age and eyesight, maybe it's time to go big. On30 big. Having spent two years in the Peace Corps in Kenya in the 70s, I fell in love with the East African Railways (EAR) and their Beyer-Garratt articulated engines running on meter gauge track. I gave up on modeling the EAR in HO because I figured it would require totally hand laid track and all scratch built equipment. Now with Bachmann's On30 catching on for two foot gauge modelers, I've been thinking again about the EARR. On30 track is readily available and I think I could modify the Bachmann 2-6-0s and 4-8-0s to look a bit like Kenyan engines. I could even scratch build the cars to earn my Cars certificate! I will keep you posted if this fit of whimsy comes to fruition.



"I understand the chap next door is keen on model trains."

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From the Divisions...**Branch Lines**

As *The Local* Editor, I have the distinct pleasure of receiving a copy of all the Division newsletters, which are all very informative and creative to say the least. Here are links to those publications and to their Division Websites for easy access:

Divisions	Newsletters
South Mountain Division	Wheel Report
Potomac Division	The Potomac Flyer
New Jersey Division	Train Orders
Susquehanna Division	Sidetracks
Philadelphia Division	The Dispatcher
Tidewater Division	The Callboard
James River Division	Crossties - Index
Carolina Southern Division	The Brass Pounder
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Reminder: Here's how to access the [Digital NMRA Magazine](#):

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Inexpensive DCC Command Station & Throttle

By Fred Miller, MMR - Photos by the Author

While developing a small N scale switching layout, I had need of a DCC command station/power supply and throttle for operating my DCC sound decoder equipped N scale locomotive. Although I could use a conventional DCC command station and throttle, I decided to experiment with an Arduino-controlled DCC project.

The project resulted in a self-contained DCC power and throttle not unlike the commercial basic DCC startup units offered by Digitrax, MRC, or NCE. However my project was constructed with parts costing around \$40 rather than commercial units costing upwards of \$200. My project has limited functionality but it proved to be a useful poor-man's DCC system.

Overview

The Arduino software to implement a DCC++ command station using an Arduino UNO or MEGA and a motor driver shield is readily available and described on the internet. I decided to try using a smaller Arduino Nano motor driver shield with an Arduino Nano plugged in. Since the nano is essentially the same as an Arduino UNO, this turned out to be an easy conversion. I did some modifications to the Arduino software to support serial command inputs from another micro to control the DCC power and Loco operations. I stripped out much of the other support software.

I decided to implement a DCC throttle within the same box as the command station. I used another small Arduino I had on hand, in this case another nano. A pro-mini could just as well have been used.

The throttle portion of the project makes use of push-buttons, toggle switches and a rotary encoder to initiate applicable serial commands to the command station.



Fig. 1: DCC Command Station & Throttle

The DCC functions are controlled by push-buttons (**Figure 1**). The locomotive direction is controlled with a toggle switch. The rotary encoder switch is used to select the loco's DCC address and also set the loco speed. A small display shows the selected speed and direction as well as the function states.

These controls were mounted on the top of a project box and the circuits for the command station and throttle were mounted in the box.

Design Objectives

For my particular needs for controlling an N scale DCC locomotive on a small switching layout, I limited the functionality to the following:

- Two-digit loco addressing
- 128-Step decoder operation with speed settings 0-99
- Forward-Stop-Reverse motion of loco
- Control of DCC functions F0 – F8
- DCC rail power reset if a short was detected.
- DCC rail power limited to 12VDC.
- Rotary encoder switch to select address and speed
- A display of function settings and loco direction and speed.
- Saved loco address for next power up.
- Provision for programming DCC decoders NOT included.

Construction

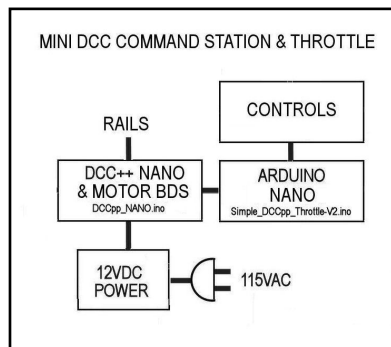


Fig. 2: Project Overview

The basis for the DCC command station portion of the project is a motor driver board specifically designed for plugging in an Arduino Nano (**Figures 2 and 3**). Minimal wiring, along with the readily available software, is required to generate the DCC signals on the rail power output (**Figure 4**).

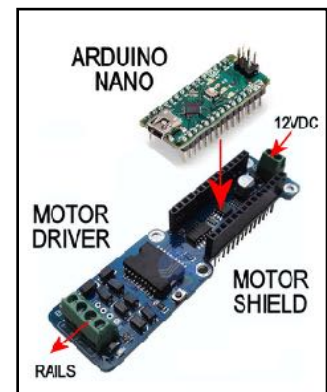


Fig. 3: Nano Motor Shield

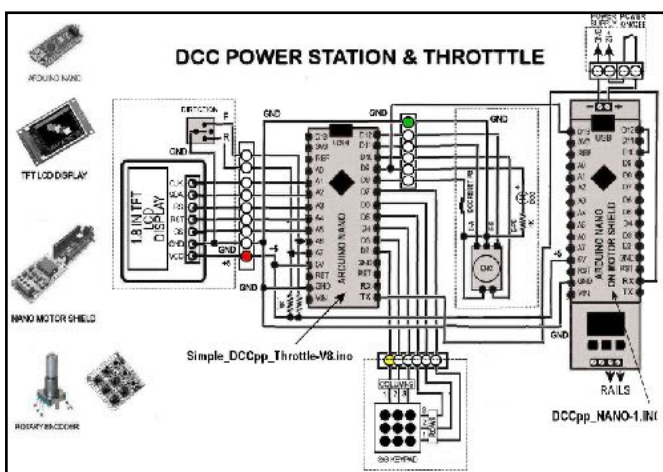


Fig. 4: Nano Circuits

The software running on the Arduino Nano expects controlling serial commands from some other source. In my case I used a small Arduino Nano. The commands sent to the Nano/motor shield reflect various toggle and push-button switches connected to the throttle Nano (**Figure 5**). Any text enclosed within '<' and '>' characters are interpreted as commands to the DCC++ command station.

DCC FUNCTION CODES												
	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	FCT	ASCII CMD VAL	TYPICAL DECODER FUNCTIONS	
GROUP 1	1	0	0	0	0	0	0	0	NONE	128	F0-F4 OFF	
	1	0	0	1	0	0	0	0	F0	144	HEADLITE	
	1	0	0	0	0	0	0	1	F1	129	BELLS	
	1	0	0	0	0	0	1	0	F2	130	HORN	
	1	0	0	0	0	1	0	0	F3	132	COUPLERS	
GROUP 2	1	0	0	0	1	0	0	0	F4	136	DYNAMIC BRAKES	
	1	0	1	1	0	0	0	0	NONE	176	F5-F8 OFF	
	1	0	1	1	0	0	0	1	F5	177	-	
	1	0	1	1	0	0	1	0	F6	178	-	
	1	0	1	1	0	1	0	0	F7	180	-	
	1	0	1	1	1	0	0	0	F8	184	MUTE ON	

SERIAL COMMANDS SENT FROM THROTTLE TO DCC CMD STATION

<1> TrackPower ON, <0> Track Power OFF

<t 1 L s d> L=Loco Addr , s=speed, d=Direction (1=FWD, 0=REV)

<f LL x> L=Loco Addr, x=above Function command values

Function command values are 'logical Anded' for combinations

Fig. 5: DCC Commands

The motor shield expects a 12VDC power source. That is used for both the DCC rail power output as well as powering the two NANO micros. The 12V DCC output is quite adequate for driving my N scale locomotives.

The Nano 'THROTTLE' circuit makes use of a rotary encoder to set the loco speed as well as selecting the loco address. The encoder also has a switch activated by pushing down on the shaft. This is used to distinguish between address and speed selections.

The address and speed selections are presented on a 1.8" TFT color display panel in nice large characters. Any new loco address setting is saved in non-volatile memory (EEPROM) so that it is available after a new power up.

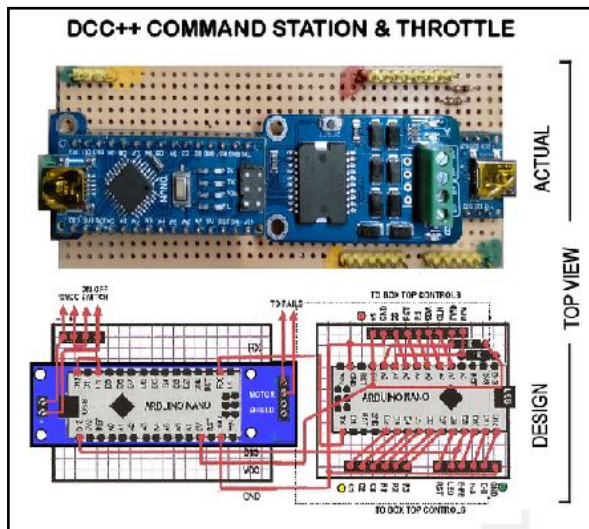


Fig. 6: Assembled Nano & Shield

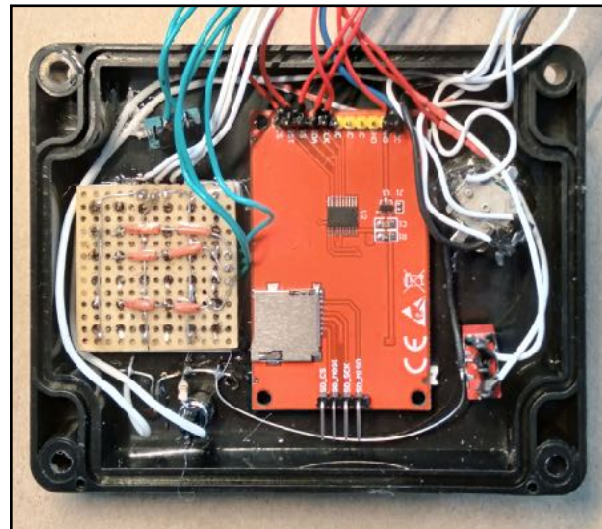


Fig. 7: Throttle Controls Under Top Panel

The DCC command station and throttle circuit boards are assembled on a perf-board and then enclosed in a small project box (Figures 6 and 7).

The controlling push-buttons, toggles and display are mounted on the cover of the box with the leads plugged into the circuit board inside the box.

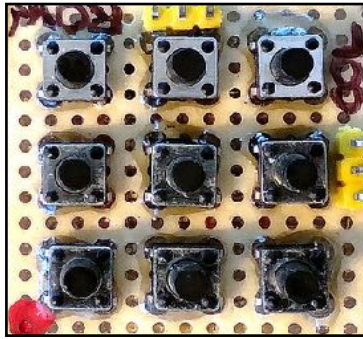


Fig. 8: Pushbutton

The nine-position keypad (Figures 8 and 9) for the function buttons is built using inexpensive circuit board tactile pushbuttons. The buttons are wired to present three ‘columns’ and three ‘rows’ to the Throttle Nano. A software library is included in the throttle sketch to interpret the button presses. With the exception of F2, each press cycles the function states between ON and OFF. F2, which is normally used for the whistle, remains ON while pressed and OFF when released.

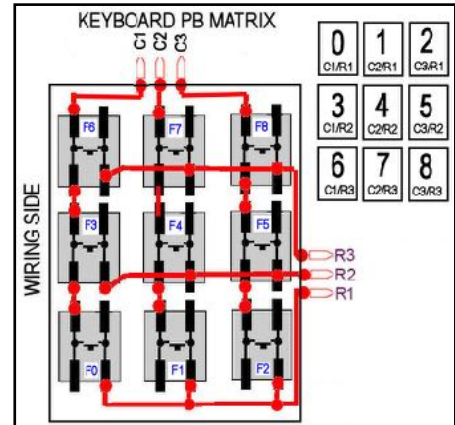


Fig. 9: Pushbutton Wiring



Fig 10: Power Input & Rail Output

Two power receptacles are provided on the unit (Figure 10): one for a 12VDC power supply, i.e., a wall power adapter, and the second is a connection to the rails.

Operations

DCC rail power is turned on automatically when the power toggle is turned on. A red LED shows the DCC ‘ON’ state.

If a short is sensed by the unit, the DCC power will be automatically turned OFF. The DCC reset button can be pressed to restore the rail power.

The three-position direction toggle initiates the loco’s FORWARD and REVERSE motion. The center or STOP position will cause the loco to come to a zero speed. However, a quick click from either the FORWARD or REVERSE position to the opposite will change the direction and keep the current speed settings. I find that feature works great for switching operations with a low speed setting.

The sample display in Figure 11 shows:

- The throttle is working with a loco address of 31.
- The loco is running FORWARD at a speed of 14.
- Functions F0 and F3 are turned ON.



Fig. 11: Throttle Display

Reference

The parts list (**Figure 12**) shows typical prices, less shipping. Prices from off-shore sources will vary.

TYPICAL PARTS LIST - DCC POWER & THROTTLE				
QTY	PART	SOURCE	PART #	PRICE
1	NANO MOTOR DRIVER SHEILD	ALIEXPRESS	-	\$ 8.21
2	ARDUINO NANO	ALIEXPRESS	-	\$ 5.66 *
1	1.8 INCH TFT DISPLAY MODULE	ALIEXPRESS	-	\$ 2.14
1	20 PIN MALE HEADER (CUT FOR 4)	JAMECO	2236797	\$ 0.99
1	20 PIN FEMALE HEADER (CUT FOR 4)	JAMECO	308567	\$ 0.95
3	1K 1/4 WATT RESISTOR	JAMECO	690865	\$ 0.18
1	RED LED (T1)	JAMECO	333851	\$ 0.12 *
9	TACTILE PUSH BUTTON SWITCHES	JAMECO	1586074	\$ 1.71 *
1	MINIATURE SPST TOGGLE	JAMECO	72161	\$ 1.69
1	MINIATURE SPDT CO SWITCH	JAMECO	21910	\$ 1.29
1	ROTARY ENCODER W/SWITCH	ALIEXPRESS	-	\$ 0.69 *
1	KNOB FOR ROTARY SWITCH	AMAZON	-	\$ 0.69 *
1	SCREW TERMINAL BLOCK	ALIEXPRESS	-	\$ 0.50 *
1	4.5 X 3.5 PROJECT ENCLOSURE BOX	AMAZON	-	\$ 8.19
1	12VDC WALL POWER ADAPTER	JAMECO	2233983	\$ 7.95
	PERF BOARD, MISC HARDWARE/WIRE/SOLDER			~
			~TOTAL	\$ 40.96

PRICES NOT INCLUDING SHIPPING. ALLOW TIME FOR OFF-SHORE SHIPPING (ALIEXPRESS)

* PRICES ARE FOR 1 UNIT WHEN PURCHASED IN LARGER QUANTITIES

Figure 12

I would be happy to share the software (sketches in Arduino talk) which I used on each of the Arduino Nanos.

My email contact for the files and links for other help or information is shown below:

Arduino website (for tutorials, etc.):	https://www.arduino.cc/
Ali-Express website (for parts):	https://www.aliexpress.com
Jameco website (for parts):	https://www.jameco.com
Description of the original DCC++ base station:	https://github.com/DccPlusPlus/BaseStation

My email (for further information, files, etc.): tractionfan@aol.com

Note off-shore parts sources (Ali-Express) have good prices but long shipping lead times. Better shipping times are possible with US based suppliers, but total prices could be \$20-\$30 more for the project.

Making Your Own Sharps Container

By Kurt Thompson, MMR - Photos by the Author

As I am sure others have done, I've had my share of hobby accidents involving sharp objects. Usually these bear a striking resemblance to X-ACTO knife blades. Ask me sometime about pushing a fresh No. 17 chisel blade right under the edge of my left thumbnail while shaving off molded-on details on an Athearn GP38-2 shell. Lots of fun as that healed over 3 weeks.

I'm also old enough to remember the advertisement X-ACTO ran in *Model Railroader* back in the early 1980s. The ad was very clever. It said "check your X-ACTO blade by cutting around the border of this ad. If your blade doesn't cut through this page and more, replace your blade. If it did, replace the magazine." It seems that several people tried it and then were upset about having to replace their magazine. Whoops!

When I recently started a decaling project, I got out my small knife-storage box from my hobby desk. The box is marked, appropriately enough, "sharp things." And what's in this box? My collection of X-ACTO knives, sharp and pointed tweezers, the snap away box cutter, and other sundry implements of prickly and pointy pain.

Gathering my tools for the decal work, I checked the blade in my X-ACTO. The No. 11 blade was not sharp as new, and the point had been snapped off. Probably because someone (me) used it to pry something on the layout (and did not use the proper tool for that job). Time to replace it. But how to safely dispose of the old blade. I started to toss it in my trash can beside my workbench.

Worrying about cutting myself later when I empty the trash or someone else injuring themselves, I looked around for a suitable safe container. I couldn't find one and I did not want to leave it loose on the workbench.

A small flash of brilliance happened as I remembered I was nearly done with a large bottle of ibuprofen. (Photo 1) With a 1/8" wide and 1" long gap cut in the top (Photo 2), I had a safe disposal unit for my used blades (Photo 3).

Now, as long as I remember to use it (101010), my workbench will be a safer place than it has been in the past. Thank goodness, OSHA doesn't have jurisdiction over my hobby workspace. And the ibuprofen bottle is relieving me of other pains as well.

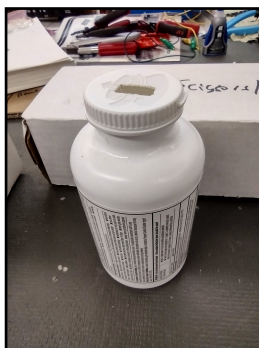


Photo 1



Photo 2



Photo 3

Tips for Improving Car Construction: Part 2 of 4

By Kenneth Montero

[Continued from Part 1 located in the January/February 2024 issue of The Local. -Ed.]

Construction techniques

- Decide if you are going to need enough grab irons to justify using a bending jig.
- If not,
 - Determine the wire size to be used.
 - Using a ruler or caliper, select the serration on the needle nose pliers jaw that is the desired width of the grab iron – and put tape on either side of the selected serration.
 - Place the wire in the serration.
 - Close the pliers.
 - Bend the wire to form the legs of the grab iron.
 - If making a drop grab, use the same technique to make the drop bend.
- If so,
 - o Use a commercial jig.
 - o Make your own jig:
 - Create a flat piece of styrene plastic or brass large enough to accommodate all of the grab irons for the location of the grab irons on the model (such as a row of grab irons instead of a ladder).
 - Measure the size of the grab iron. Note: Most prototype drawings measure the outside of the grab iron – you should do the same.
 - Using a ruler or caliper and a machinist square, mark the spots where the grab iron legs should go through the jig. If making holes for more than one grab iron, consider using a pair of draftsman’s dividers to transfer the width measurement to the next set of holes.
 - Determine the wire size to be used, then select the appropriate size drill bit.
 - Lubricate the drill bit, then drill the holes.
 - Test the accuracy of the holes by pushing your wire through each of the holes.
 - Write or put a label on the jig to record the size wire and width of the holes – in case you want to use the jig again for a different model.
 - Insert each end of the wire in each of the holes, push the wire through both holes so that the center of the wire is flat to the jig.
 - Remove the grab iron from the jig, fine-tune the 90 degree bend with needle nose pliers.
 - If making a drop grab iron, use the above process using needle nose pliers to make the drop bend.
 - o Save any jig that you use for future use as a drill guide for installing grab irons on the model.
- File the tips of the grab iron so that they are slightly rounded. They will then enter the holes drilled on the body of the car much more easily and with less damage to the side than grab irons with squared-off tips (which is how most wire grab irons are cut at the factory).
- Slick metal wire won’t hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine “tooth” on the grab irons to improve paint adhesion.

Note 1: For running boards end platform grab irons, caboose grab irons on the end next to the steps, use a serrated jaw needle nose pliers to make the 90 degree bend before making the bend for the leg at each end. Also, consider using an eyebolt to simulate the support at the bent corner.

Note 2: For curved grab irons, such as the grab irons on the caboose body, use a dowel or round item of the appropriate diameter to wrap the wire around it to get the proper curve. Once the curve is created, then figure out where the grab iron ends to create a 90 degree bend at each end for installing the grab iron.

Note 3: You can add rivets or nut-bolt-washer either to the side or above the grab iron as determined from prototype application - - glued just on the surface of the bracket or drill into the bracket and attachments and insert like a grab iron (discussed later).

B. Stirrup Steps [*A. Grab Irons - is in Part 1 of this series. -Ed.*]- Stirrup steps are made very much like grab irons, except that flat wire is used. Sometimes, staples are re-bent so as to make stirrup steps. Here are the differences between making a grab iron and making a stirrup step:

- Flat wire instead of regular round wire. If using a jig, bending the wire around a set of nails to create the shape rather than drawing wire into holes in a jig.
- If to be attached through the bottom of the model's side and/or frame, use a file to round off enough of the ends to permit insertion into drilled holes in the bottom.
- If to be attached to the side of the model, twist the ends 90 degrees so that a wider flat surface is placed against the car side.
- Consider drilling that flat portion and adding rivets or nut-bolt-washers to further anchor the stirrup steps to the car body.
- Slick metal wire won't hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine "tooth" on the grab irons to improve paint adhesion

C. Uncoupling mechanism (cut lever and bracket)

- While commercial parts are available, a cut lever can be made by bending some wire into the shape of the desired cut lever. Note: [Carmer cut levers](#) are available from Yarmouth Model Works.
- While commercial uncoupling mechanism brackets are available from [Precision Scale](#) (PIA parts Coupler Lift Bar Stanchions #'s 2644 and 2645) or Yarmouth Model Works YMW-507, you can use an eyebolt as a very effective substitute at less cost.
- Slick metal wire won't hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine "tooth" on the grab irons to improve paint adhesion.
- If additional car end material is needed to provide an anchor for the cut lever bracket, cut a small piece of plastic, add by a butt joint to the underside of the car ends, and add a joint splicer to this piece and the car end to provide a stronger joint.

D. Brackets to support brake steps and running boards (roof walks).

Most of these brackets are set at a 45 degree angle, with a cross strap across the outer edges of the running boards and brake step, and attached to the car ends and the running boards and brake steps with bolts or nut-bolt-washers - glued just on the surface of the bracket or drill into the bracket and attachments and insert like a grab iron (discussed later). [Yarmouth Model Works](#) makes a brass kit, YMW-381.

- Types of suitable materials.

- Brass Strip

- Easily bent to shape.
- Cross strap can be attached to brackets by soldering or using cyanoacrylate cement.

- Brackets can be attached to car body with contact cement, canopy glue or other glues designed to bond dissimilar materials.
- Slick metal wire won't hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine "tooth" on the grab irons to improve paint adhesion.
- Styrene plastic strip
 - Can be notched lightly and then bent (too fragile to bend without notching),
 - Cross strap can be attached with styrene solvent cement (if running boards and brake steps also are made of styrene plastic) or with contact cement, canopy glue or other glues designed to bond dissimilar materials.
 - Brackets can be attached to car body with styrene solvent cement (if running boards and brake steps also are made of styrene plastic) or contact cement, canopy glue or other glues designed to bond dissimilar materials.

E. Tack Boards

Tack boards come in various sizes and locations on freight cars, especially boxcars and refrigerator cars. Check your prototype information for dimensions. See B., above, for types of suitable materials. While commercial parts are available, here is how to make one.

Construction:

- Use wood (see above for preparation) or styrene plastic strips cut to length of planks in tack board. If you are trying to show a heavily weathered tack board, then consider lightly dragging a fine-tooth saw blade across the exposed side of the wood before painting. Be careful – this can easily be overdone.
- Use brass strip or thin plastic strip to create the straps holding the tack board together. Apply two strips to each assemblage of planks, one near each end of the assembled planks.
- Add nut-bolt-washers to each strap, using two nut-bolt-washer for each plank at each end.

F. Running Boards (roof walks) and End Platforms

Prototype running boards and end platforms are either wood or metal:

Metal:

- Splicing together two or more metal running boards held together only with a butt joint to create a longer running board will result in a weak joint. It may be possible to use a very thin metal strip or flat wire the size of the outer edge of the running board to act as a splice plate by gluing the splice plate between the two sections underneath the outer edges of the metal running boards.
- Slick metal wire won't hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine "tooth" on the grab irons to improve paint adhesion.

Wood – most commercial castings are too thick. Here is how to make one:

- Use wood (see above for preparation) or styrene plastic strips cut to length of planks in running board and end platforms. Use strips that are prototypically thin.
- Boards used in running boards run 12-16 feet in length, so keep this in mind that more than one plank will be needed to create a running board in most cars with running boards.
- A car's typical running board will be three planks wide, with space between each strip of boards.
- If you are trying to show a heavily weathered running board, end platform or tack board, then consider lightly dragging a fine-tooth saw blade across the exposed side of the wood before painting. Be careful – this can easily be overdone.

- Running boards and end platforms usually are attached to car by brackets. Many model car roofs have these brackets built into the roof casting. For other cars, these brackets can be simulated by small blocks of wood or styrene shaped to fit the contour of the roof (bottom) and flat on top. It would be a challenge to fabricate scale-size brackets in brass.
- Note: Running boards and end platforms are attached to brackets with countersunk nut-bolt-washers. It would be a challenge to duplicate this feature.

G. Side Sills

- On boxcars, flatcars, gondolas and some other cars, side sills provide extra strength to the side of the car. For example, Boxcars usually have some type of side sills because the door opening in the car side removes some of the strength in the sides, for which the side sills are added to compensate.
- Side sills can be fabricated from strip styrene plastic that is cut to the contour of the prototype side sill when attached to the existing (if any) side sill or bolster tabs.

H. Sliding Door Guides - non-working top and bottom sliding door guides

- Measure the thickness of the indented door, then pick angle that is wide enough to insert the door while one edge is glued to the boxcar side.
- Create by cutting appropriate size angle (styrene or wood) to desired length, or make one by cutting two pieces of strip plastic or wood to the appropriate length, then create an angle by gluing them together to form an “L” angle.

I. Ladders

- Determine the type of ladder in the location:
 - One rail of the ladder may be longer than the other rail.
 - The bottom of the rails may extend below the car body to create a stirrup step.
 - The top of the rails may be bent inward toward the body of the car.
 - The top of the rails may be bent over the top of the body of the car (such as a caboose).
- Determine the size needed in the location. Size is usually measured in the:
 - Width between the rails of the ladder,
 - Width between rungs of the ladder (but sometimes the diameter of the rungs can vary),
 - Length of the ladder.
 - Decide whether the rails will be made of metal or plastic (see below). Slick metal wire won't hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine “tooth” on the grab irons to improve paint adhesion.
 - Build the rails:
 - ♦ Cut the rails to the appropriate length.
 - ♦ If one rail is longer than the other, mark it so that it is very evident which is the longer rail.
 - ♦ If the rails will be bent inward, either to touch the car body or to curve over the top of the body, so bend them now – in tandem to get the same curvature for each rail.
 - ♦ Mark the rails at the points where the rails will be drilled for the rungs. See IV, A. Grab Irons, above, for using a drilling jig to make the holes parallel on each rail.
 - ♦ Drill the holes in the rails.
 - ♦ If brass or phosphor bronze is used for the rails, remember that slick metal won't hold paint well. Use fine sandpaper (400 grit or finer) or 0000 steel wool to create a very fine “tooth” on the rails to improve paint adhesion.

- Create a jig to keep the rails parallel to each other and for the drilled holes to be parallel from rail to rail. Yarmouth Model Works makes such a jig – YMW-LAJ – but you can look at the picture of it to create your own jig.
- Create rungs. Use IV, A. Grab Irons, for process to create rungs.
- Insert rungs into the rails.
- Flip the assembled latter so that you are looking at the back side. Make sure that the rungs are at 90 degrees to the rails. Then glue or solder the rungs to the rails. Doing so from the back side avoids having glue or solder mess up the front side of the ladder.

J. Ladder brackets

Most ladders are not bolted directly to car bodies. Instead, a set of metal brackets attach the ladders to the car body.

To simulate such brackets,

- Cut a set of small styrene plastic block that are no wider than the rails of the ladder.
- Glue at least 4 of them on each ladder (2 near the top of the ladder, 2 near the bottom)

K. Other Commercial Parts

While there are commercial parts for all of the above items, there are some commercial parts that are very time-consuming and/or difficult for the typical modeler to fabricate. In HO, they include:

- Couplers – [Kadee](#) are the standard for daily operations, [Sergeant](#) are a more prototypical in looks and operation.
- Air brake components – a number of manufacturers make the basic underbody parts, leaving it to the modeler to fabricate the air pipes and connecting rods.
- Air brake hoses and brackets - recently, a number of manufacturers such as [HiTech Details](#) have made flexible air brake hoses, and one also uses small magnets to couple up hoses when cars are coupled up ([North American Railcar Corporation](#), sold through [Pacific Western Rail Systems](#)). Air hose brackets are offered separately from [Precision Scale](#) (Angle Cock Bracket for freight cars, no. 39156) and Yarmouth Model Works (Etched Air Hose Brackets, YMW-506) or with styrene plastic air hoses from Kadee (Air Hose & Bracket no.438 for older cars) and Cal-Scale (Air Hose & Bracket no. 190-276). I would use the brackets and substitute the flexible hoses for the styrene plastic ones.
- Hand brake – a wide range of brake wheels, especially from Kadee, a smaller number of power brake housings.
- Archer rivets and weld lines – they are 3-D decals and are handled like decals.
- Metal boxcar doors.
- Metal-type see-through running boards and end platforms – both metal and plastic.
- Trucks, both freight and passenger.

[This concludes Part 2 of this series. The next section, Part 3, which will appear in the May-June issue of The Local, will include details on removing unwanted parts. Print these parts out so you have the complete set after the next two issues. -Ed.]

More about AI in Model Railroading!

By Greg Warth and ChatGPT - Photos by DALL-E 3

The article by Alex Belida, MMR in this issue of *The Local*, “Artificial Intelligence in Model Railroading?” may have pried open the flood gates on the use of this new tool. It is limited only by our own degree of intelligence and imagination or lack thereof, and perhaps that will be our saving grace. The title in Alex’ article asks a question, for which he gave one possible answer - using its intelligence to write a story about a model railroader. So, then I asked ChatGPT4, “What are all the possible uses for AI in the hobby of model railroading?” Here was its answer:

“The integration of Artificial Intelligence (AI) in model railroading opens up a broad spectrum of possibilities, enhancing both the operational and experiential aspects of the hobby. Here are various ways AI can be utilized in model railroading:

1. **Automated Train Control:** AI can manage train speeds, stop trains at stations, and control switching operations, making the operation of trains more realistic and less reliant on manual control.
2. **Layout Design Assistance:** AI algorithms can assist hobbyists in designing their model railroad layouts by optimizing space usage, suggesting track placements, and even recommending themes based on the hobbyist's interests.
3. **Predictive Maintenance:** By analyzing operational data, AI can predict when parts of the model railroad, such as locomotives or track sections, may require maintenance, helping to prevent breakdowns and prolong the lifespan of the model railroad components.
4. **Voice Command Operation:** Integrating AI with voice recognition technology enables control of trains, lights, and other layout features through voice commands, adding convenience and a futuristic touch to the hobby.
5. **Realistic Operations Simulation:** AI can simulate real-world railway operations, including cargo logistics, passenger traffic patterns, and even unexpected events, enhancing the realism and complexity of model railroad operations.
6. **Scenery and Layout Animation:** AI can control animated features within a layout, such as moving vehicles, changing streetlights, and dynamically changing weather conditions, adding life and dynamism to static scenes.
7. **Traffic and Collision Avoidance:** With AI, sophisticated sensor networks can be implemented to manage traffic flow and prevent collisions on complex layouts with multiple trains operating simultaneously.

8. Train Recognition and Inventory Management: AI-powered image recognition can identify different locomotives and rolling stock as they move around the layout, aiding in inventory management and ensuring that trains are correctly positioned for realistic operations.

9. Personalized Experience for Visitors: For those who showcase their layouts, AI can tailor the experience to individual visitors, modifying scenarios or operations based on the visitor's interests, whether they prefer passenger operations, freight logistics, or specific historical periods.

10. Educational Content Delivery: AI can provide educational content about railway history, engineering principles, or specific details about the modeled railway, making the hobby more informative and enriching, especially for younger enthusiasts.

11. Integration with Simulation Software: AI can link physical model railroads with train simulation software, allowing changes in the software to affect physical elements on the model layout and vice versa, creating a hybrid virtual-physical railroad operation experience.

12. Social Interaction and Collaboration: AI can facilitate social interactions within the model railroading community by matching hobbyists with similar interests, enabling collaborative projects, or even hosting virtual operations sessions.

13. Enhanced Control Interfaces: AI can simplify the user interfaces used to control model railroads, making them more intuitive and accessible to hobbyists of all ages and technical proficiencies.

The application of AI in model railroading not only aims to automate tasks but also to enrich the hobbyist's experience by making layouts more interactive, operations more realistic, and the overall hobby more engaging and accessible to a broader audience. As AI technology continues to evolve, its potential uses within model railroading are likely to expand, offering new and exciting opportunities for innovation.”

Then I drilled down on **Layout Design Assistance:**

“Layout design assistance in model railroading, particularly when augmented with AI and technology, offers hobbyists innovative tools and methods to plan, optimize, and visualize their miniature worlds before the physical construction begins. This aspect of model railroading is crucial as it lays the foundation for a successful and satisfying model railroad that meets the creator's vision and operational goals. Here's a deeper dive into how layout design assistance, especially with the integration of AI, can enhance the model railroading experience:

Automated Design Suggestions

AI can analyze the available space, user preferences, and standard model railroading guidelines to suggest optimal layout designs. By inputting parameters such as room size, scale, preferred railroad era, or theme, hobbyists can receive tailored layout designs. This automation helps in efficiently using space and ensures that the layout has operational viability and aesthetic appeal.

Virtual Simulation and Testing

Through 3D modeling software and virtual reality (VR), hobbyists can immerse themselves in their layout designs before any physical work begins. AI can simulate train operations on these virtual layouts, allowing users to test and tweak track arrangements, signaling systems, and scenery placements. This process helps in identifying potential issues with track gradients, curve radii, and operational bottlenecks, reducing the need for costly and time-consuming changes later on.

Optimization of Track Layouts

AI algorithms can optimize track layouts to achieve specific goals, such as maximizing mainline length, ensuring smooth traffic flow, or fitting in as many scenic elements as possible without overcrowding. This optimization can extend to ensuring that the layout supports realistic operations, including aspects like train lengths, siding capacities, and the logistics of railroad yards.

Scenery and Theme Planning

Beyond the tracks, AI can assist in planning the scenery and thematic elements of a layout. Based on the chosen era or geographic location, it can suggest appropriate buildings, vegetation, and other scenery items that match historical and regional characteristics. This assistance ensures thematic consistency and can introduce hobbyists to new ideas or details they may not have considered.

Integration with Digital Libraries

AI-assisted design tools can integrate with digital libraries of model railroading assets, including track pieces, structures, and rolling stock. Hobbyists can "drag and drop" these elements into their layout designs, seeing in real-time how different components fit together. This feature simplifies the design process and aids in inventory management by allowing hobbyists to keep track of the elements they need to purchase or build.

Collaborative Design Features

AI-enhanced layout design software can facilitate collaboration among multiple hobbyists, even those geographically dispersed. Users can share designs, receive feedback, and work together on a single layout project. This collaboration can extend to sharing custom-designed elements, such as 3D-printed structures or custom scenery items, further enriching the hobbyist community.

Learning and Guidance

For beginners, AI can act as a learning tool, offering tips and guidance on model railroading principles. It can suggest articles, tutorials, and videos based on the current stage of the user's layout design, providing a personalized learning experience.

In summary, layout design assistance powered by AI and technology significantly enhances the model railroading hobby by simplifying complex design challenges, offering creative and operational insights, and making the design process more interactive and enjoyable. As these technologies continue to evolve, they promise to bring even more sophisticated tools to the hands of model railroading enthusiasts, further elevating the art and science of miniature railroading.”

Then I asked the companion program, DALL-E 3 to show me some pictures (**Photos 1-6**) related to model railroading.



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

These pictures were not just lifted from somewhere on the internet. The text that you enter goes through a transformation process to create pixels or representations of images. It predicts the visual content corresponding to your text through complex encoding processes. The input text and the output images are broken down into tokens which are small pixel patterns. These are arranged and refined into a new image. The outputs are also filtered to conform to ethical guidelines so they are not inappropriate. It is a remarkable process. How do I know this? I asked AI how DALL-E generates images.

Back on Track...

Potential Problems with AI

By Greg Warth, Editor

Before getting too excited about AI (Artificial Intelligence), you may need to consider a few things:

Inaccuracies and Confabulations

First it's only as good as the internet. Despite the vast amount of information available at the touch of a key, how many times have you researched a project only to find out later that the information was incorrect? It may be a good starting point, but if you use it for anything important, you have to verify everything, unless you are knowledgeable enough about the topic to know that it is true. AI has been known to make up content when there are gaps in its knowledge base. When humans do this, it is known as "confabulation." If your research must be accurate, you will need to verify the information with another source. Consider it a learning resource, a "tool" for your workbench, but not as evidence for anything. At least not at this stage.

Copyright Issues

Second, the myth is that there are no copyright issues related to using it. That is not entirely true, particularly if the content generated is similar or close enough to previously written copyrighted material. That would include generated pictures as well. These issues are unlikely because of the way the content is generated. (Text is created one word at a time.) Currently, however, the legal lines are blurred regarding the output and use of AI-generated content. Openai.com, the company who made the program, imparts to the user the copyright for all **output** from its program. You, the user, are responsible for the **content** when you publish it. There is no author, so you can't ask for permission to use it. The best information I could find on this was a [document written by Bloomberg](#), a legal research company, in March of 2023. Fair use rules indicate that if this content is used in non-profit, non-commercial newsletters, it should be safe. Perhaps the right thing to do would be to put a disclaimer at the end or the beginning of each document where AI is used, "AI was used to generate (or partially generate, if you edited it) this document."

How to Access AI

Nevertheless, AI is a great new idea and if we can learn how to use it, control it, tame it, and make it more accurate, it promises to be a great benefit to us in the future. If you want to use it, and if you realize its limitations, here's how to access it:

1. Go to your internet browser.
2. Type in openai.com in the search bar.
3. Then register or log in.
4. Click on "Try Chat GPT". If you can upgrade to Chat GPT4, do it.
5. If it doesn't work and you are using VPN for internet protection, disable it (VPN).
6. When the program opens, Just type in a question in the message box at the bottom of the screen. The more detailed your question is, the better the output will be.
7. Also, try DALL-E 3 for images and type in "model railroading."
8. You can also ask for more specific images like "Show me a scratchbuilt model of an American train depot from the 1920s."

Thank you for reading this issue of *The Local*. If you have any suggestions or constructive ideas about what to add or change in the newsletter, [please let us know](#). We're always open to "Exploring New Ideas."