

# THE POTOMAC FLYER



## Issue Highlights

### Liberty Bell!

It's Almost Time p. 2

### Outreach Report

With James River p. 4

### Installing Decoders

You Can Do It p.18

Cover Photo: A fisherman heads out on the Cochecho River with the branch line and the Pemigewasset Paper Mill in the background on Mark Gionet's Boston & Maine Western Route

## Coming Events

Oct. 10-13: Liberty Bell Special  
NMRA/MER Convention, King of Prussia  
PA

NOV. 9: Layout Tour: Glenn Downing  
Milwaukee Road, Reston, VA

NOV 16: Joint Meet with James River Div.,  
Warrenton, VA

New: PD Events Calendar!

## MER Convention: Liberty Bell Special 2019!

Most of us probably don't need a back to school calendar or reminder anymore. And for those who do need a nudge, the merchants on TV do an excellent job of reminding us that summer is almost over. But while you're thinking of hanging up those white shorts and trousers you shouldn't wear after Labor Day, give some serious



### Liberty Bell Special NMRA Mid-Eastern Region 2019 Fall Convention

October 10-13, 2019  
Crowne Plaza Hotel - King of Prussia, PA

### Bill of Lading

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*Tip: The above entries are all links. Click on the title to jump to the article.*

### Potomac Flyer

The Potomac Division's Bi-monthly Newsletter

Submission Deadlines—Issue

|                       |                       |
|-----------------------|-----------------------|
| Dec 15—February-March | Feb 15—April-May      |
| Apr 15—June-July      | June 15—Aug-September |
| Aug 15—Oct-Nov        | Oct 15—Dec-Jan        |

thought to joining your fellow Region members at the Mid-Eastern Region convention at King of Prussia, PA, October 10<sup>th</sup> through October 13<sup>th</sup>.

The clinic schedule is full up starting Thursday night running through Sunday morning. In addition to the usual fare of presentations, there are several hands-on or make-and-take sessions available for participants. Whether you want to learn T-Trak modular, the finer points of resin car assembly, work on your AP Electrical award or build a Hunterline structure, we have something available for you. Many of the hands-on sessions require prior sign up available on the convention registration form at [www.libertybellspecial2019.org](http://www.libertybellspecial2019.org). You will also find a tentative clinic schedule on the site. As we approach the convention, please remember to check the convention website frequently for updates, additions, and changes. There is even a place on the home page to sign up for emails whenever changes or additions are made to the site.

One thing not listed on the convention website is our vendor roster. Artist Peter Lero will be joined by such familiar names as, in no particular order, MicroMark, Funaro & Camerlengo, CMR, Downtown Deco, Hunterline, and Nick & Nora Designs.

And speaking of Nick & Nora Designs, our Saturday night railroad menu themed banquet will feature a presentation by Mike Baker of Nick & Nora Designs. Mike is a professional artist and designer and founded TMB Custom Models in 1992. In addition to creating



*Another car float of coal is being off-loaded at the Linden Street Freight House on the Reading Railroad's facilities in North Camden, NJ. NJ Free-Mo is set up at the annual Bordentown Holiday Train Show.*

craftsman kits, Mike builds models and details rolling stock for clients. He will regale us with stories of his achievements and frustrations pursuing this career most of us only dream about.

In one of our previous articles we discussed the modular display from the Reading Modular Society that will be on display at Liberty Bell Special 2019. Your author would be remiss if he did not give equal time to the New Jersey Free-Mo display that will share the Reading Modular room. NJ Free-Mo will offer operating time or spectating time on their two modules. Bill Grosse's Yardville module displays the Pennsylvania Railroad in the name sake town circa 1955. Mike Prokop's Linden Street Freight Station recreates the Reading Railroad's facilities on the Camden waterfront, and also packs a lot of operating opportunities in a small space. Mike's module was featured in the 2019 issue of *Model Railroad Planning*.

As you can see, the Liberty Bell Special committee strove to fill all your Regional convention

expectations over Columbus Day weekend. Register on the convention website, pack the car and family, and plan to be on one of the many roads that lead to King of Prussia, PA.

See you all there! 

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## Potomac Division Outreach Programming Report

by Martin Brechbiel, MMR, Division Superintendent  
and Andrew Dodge, MMR, Senior Asst. Superintendent

### September 15, 2019

On Sunday, September 15, the Potomac Division met at the Northern Virginia Model Railroader Club at 231 Dominion Road NE in Vienna, VA from 2 to 4 PM. There was a very brief meet and greet while everyone was bringing more chairs into the room so we could get started on time, or at least with minimal delay. Yes, that does mean we had a packed house with standing room only at the one end of the room. Despite this being a bright, sunny afternoon competing with football and all sorts of outdoor activities, we had a very strong showing of folks wanting to hear about model railroading subject matter.

Mark Gionet kicked off the program with an excellent and entertaining introduction to his HO Boston & Maine layout, which was scheduled to be open the following Saturday, September 21. Whenever possible, we will encourage future open house hosts to present a brief introduction or overview of their layouts to promote the layout experience.

Following Mark's presentation, we were treated to a presentation from one of our best known and well published modelers, Paul Dolkos. It's almost impossible not to learn something really valuable related to photography and modeling from one of Paul's presentations. This day's experience was no exception to the rule. Tips on lighting and set up of the camera to capture scenes with specific effects and depth were passed on to a very attentive room.

After a cupcake break courtesy of Jim Kinder's daughter, we had a third clinic presentation. For those who are technically inclined or just want to learn about the subject, Zach Pabis shared his knowledge and experience of 3D printing. This was exceptionally exciting since Zach is also one of our up and coming teenage modelers that the Division desperately needs to support. Zach's contagious enthusiasm and creativity really served to demonstrate that 3D printing is something that a modeler can do right now while also being a wave of the future not unlike a similar impact of



Paul Dolkos



Zach Pabis

laser-cutters. One learned through this clinic that yes, you too can do 3D printing and make those unique parts for your projects.

**November 16, 2019**

The next Modeling Outreach Program will be a joint Potomac-James River Division meet on November 16 at the Battlefield Baptist ([www.battlefieldbaptist.org](http://www.battlefieldbaptist.org)) at 4361 Lee Highway in Warrenton, which is just south of the intersection of US 29 and US 15. The doors will open at 9 AM when we will have coffee, donuts, meet and greet, and a few words from the church’s minister. (We would like to remind everyone to be respectful to the minister’s short message and that this is his church, which we are being allowed to use at no cost.)

Programming starts at 9:30 with clinics on constructing a layout building and one on an old Southern theme, pickle cars. The second set of clinics are by two O Scalers. One will be focus on building a layout in O Scale in a modest space and the other will examine modeling the B&O’s west end. Before breaking for lunch, several Master Modelers will be available for any questions on modeling, the Achievement Program, etc. In the afternoon’s portion of the day’s events, you will be able to see Terry Terrance’s B&O west end layout “in the flesh” and visit Cam Green’s HO Maine Central layout. Also, don’t forget to bring along a scratch built or kitbashed freight car to share with the group. This is a show-and-tell and should be an inspiration to finish that project in time for the meet.



**March 7, 2020**

A really new event takes place in an area not often visited by the division. On March 7, 2020, we will be holding a full day of activities for the division at the Mary Surratt House and Museum, which is located at 9110 Brandywine Road, Clinton, MD 20735. Again, the doors will open at 9 AM with coffee and donuts, and the board will discuss events taking place in the division. At 9:30 Dale Latham and Glenn Paulson will give a preview of their HO layouts,

which will be open during the afternoon portion of the program. Following that, we will have a show and tell with the ubiquitous caboose as the subject. Andrew Dodge will discuss the history of the old South Park and Colorado Midland railroads. But, please join and bring along your favorite caboose with its story to share. We have also scheduled two 40-minute clinics.



Bernard Kempinski, “A High Tech Approach to a

19th Century Railroad,” includes how to model an ancient steam railroad when little commercial product is available? This talk will describe how Bernie used some of the latest technology and techniques to build his 19th Century Civil War O scale railroad. He'll cover laser cutting, photo etching, 3D printing, spin casting, battery powered locomotives, and a microprocessor controlled telegraph system.

Bernie Halloran, “There's Another Way to Do It” will include the coving of corners without using Masonite. Or expensive styrene. Water without 2-part epoxy and horrifying smells, or various popular, expensive hobby water. Gatorboard and how not to use it. Rubber cement, inexpensive, correctible and super-sturdy. The inexpensive alternative to Testor's plastic cement. Fabricating a one-sided lift bridge. Oh, and kind-of double-sided tape; no not carpet tape. To cloud or not to cloud the skies. Layout skirting costs and techniques. Removable flat car loads and other time and money saving techniques.

During the afternoon, following lunch on your own, members will have the pleasure to visit Dale's Piedmont Southern and Glenn's Conrail Allegheny Division HO layouts.

### **April 4, 2020**

The last and biggest event of the season will be the Potomac Division's Minicon, which will be held at St. Matthews United Methodist Church, 8617 Little River Turnpike, Annandale, VA 22003 on April 4<sup>th</sup>, 2020. The doors will open at 9 AM for registration, coffee and donuts, and socializing. At 9:30 the division will hold its annual business meeting, which will include voting for two members of the board and the revised set of Division Bylaws. Immediately following this formal event, Brad Stanford will do a quick introduction to his Nashville, Chattanooga and St Louis Railroad layout that will be open on April 11. The remainder of the morning program will be an open floor set of

demonstrations where modeler/clinicians will be seated at tables around the room doing and showing different modeling projects. So far, we have Martin Brechbiel working on MOW cars, Robert Sprague on LED Lighting, Nick Kalis doing Bushes/Ground Cover, a Module Layout member sharing Building/Standards for modular layouts, John Sethian TBA, and Nigel Phillips on On30 Kitbashing. *(We still have plenty of tables left for those who wish to show and share their favorite modeling*



*activity. This is a great way to meet, socialize and gain the methodology to give formal clinics without any stress. This is also a super chance for you to shine and get some Volunteer AP points. Contact the Senior Assistant Superintendent to reserve your table.)*

The lunchtime program will feature Bob Geldmacher's talk on ground cover materials and his excellent techniques in developing scenes. He did his program at one of the recent South Mountain gatherings, and it was outstanding, something for everyone no matter whether one is a beginner or an MMR.

During the afternoon, we will be holding a total of eight clinics approximately 40 minutes each in length. There will be two tracks, so four clinics will be offered during each segment with some clinics being presented twice so you will have less of a chance on missing one you want to attend. The list of clinics during the first hour will include: Martin Brechbiel and Alex Belida focusing on the

AP author program and the Potomac Flyer; Nick Kalis discussing Enhance Your Layouts With Story Telling; Rod Vance is a *tentative* on Creating a Model RR Book of your layout for your Family; and Chris Smith will do a clinic on his excellent N&W Landscaping. During the second session beginning at 3 PM, Martin Brechbiel will do a program on Introduction to Resin Casting, Chris Smith will do a second clinic on Landscaping, and Nigel Phillips will do a session on a Prototype Switching Yard. We also may have John Sethian or Marty McGuirk who are *tentative* with programs *TBA*.

We hope you will join us this coming season and in the coming years to take part in these Outreach Programs. The board can only do this with the support of the membership. Attending is a must for this to succeed and the life of the Potomac Division to prosper. But, besides attending, members must step up and become active in sharing their favorite aspects of the hobby with others by doing clinics and the roundtable clinics during the morning minicon program. It is not reasonable that the same few people do all the programming. Everyone must do their part to make this a success. We look forward to seeing you. ☒

## Growing the Hobby from the Ground Up

by Martin Brechbiel, MMR, Division Superintendent

In the near future we will be starting a trial, multi-week program with goal of introducing the next generation to the exciting hobby of model railroading. The ages will be from 9 or 10 years old and up.

The trial program will be based at the Battlefield Baptist church in Warrenton/Gainesville area and I'd like it to start in November. The children will construct a 2' x 4' module, lay track, build structures and rolling stock (preferably a blue box piece) from kits, a tree or two, lay down a section of track, etc.

At the end of the six or eight week course, we'll have a ceremony and their modules will be judged by NMRA master modelers.

One of the goals is to enlist the kids and or parents as members of the NMRA along with helping them learn to read kit instructions, model building, teamwork, etc.

So here's where our Potomac Division members can get involved in this program. If you have blue box rolling stock that has not been assembled, tree kits, Atlas 100 track, extra simple building kits that are gathering dust under the layout or in a closet, here is your chance to donate them for a worthy effort. And, if you want to donate some of your time teaching, that too would greatly be appreciated.

The Potomac Division point man on this program will be Jerry Stanley. Contact him with your donations and your offers of help at: [jerry@madisonhomesinc.com](mailto:jerry@madisonhomesinc.com) ☒

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The NMRA now accepts  
**PayPal**<sup>tm</sup>  
Use it for new memberships, membership renewals,  
books, donations, the National convention...  
*anything and everything* in our online store!

## Election Countdown (Volunteers Needed, Too)

### Two Board Positions are Up for Election on April 4, 2020

John Paganoni and Nick Kalis have been appointed as the Election Committee for the 2020 Board of Directors elections to be held April 4, 2020, During our Minicon at St. Matthews United Methodist Church, 8671 Little River Turnpike, Annandale, Virginia.

If you're interested in running, please note:

- NMRA membership is mandatory;
- Candidates must reside within Division boundaries;
- Candidates must be endorsed by two or more active Division members.



Please contact John (john.paganoni@comcast.net) or Nick (nkalis@verizon.net) with questions, for additional information, or just to let them know that you're considering running.

#### Key dates:

- **5 MARCH 2020**—Nominations deadline to Election Committee 30 days before election.
- **20 MARCH 2020**— Date and time of election communicated to membership 15 days before election.
- **4 APRIL 2020**—Election.

In addition, there are four vacant, non-Board positions that urgently need to be filled now.

LAYOUT TOUR VOLUNTEER COORDINATOR  
LAYOUT TOUR ASSISTANT  
COMPUTER CLERK  
WEBMASTER—Incumbent may be leaving soon

NOTE: there is no mandatory length of tour duty for these positions; however, reasonable retention in these positions would be extremely beneficial to the Division. ☒

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## Announcing the Second Annual Potomac Division Operations Saturday—May 16, 2020

Why are Rich Steinmann and Bryan Kidd looking so happy?

It's because they just heard the Second Annual Potomac Division Operations Saturday will be held May 16, 2020.

The plan is to replicate what we did this year. We will have at least two sessions on the Maryland side of the Potomac and at least two on the Virginia side that day.

You are invited if you are a new operator, a never before operator, or an old hand operator. You will be given the chance to sign up for one or two sessions - your choice.

So, clear your calendar and be ready to sign up when we send out the formal invitation.

If you have an ops ready layout and want to host, let me know, Mat Thompson at [ocrr@comcast.net](mailto:ocrr@comcast.net) 



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## Editor's Note: We Need Your Submissions

by Alex Belida, *Flyer* Editor

We at the *Flyer* are hungry for submissions from all Potomac Division members.

We suspect most of you have experiences and knowledge worth sharing with your fellow modelers. Perhaps you're afraid to write? No problem. We can work with you to produce an item that will make you look good. So please, if you have an idea, send us a brief description of what you propose to write. Send it to: [Potomac-Flyer@potomac-nmra.org](mailto:Potomac-Flyer@potomac-nmra.org). (And if we have suggestions, don't take it as rejection. We're just trying to make you and the *Flyer* look better.)

Now a few notes: when you get approval for an article, please observe the following steps to get your contribution into print.

1. First, compose and submit your piece in one of the following preferred formats: TXT, DOC, DOCX, or RTF. Please do not double space after periods. Don't hyphenate any words. Don't send us items with abnormal margins.

2. Then, consider what photos, illustrations or other graphics can go with the text. These are essential. But DO NOT include them in your text. Instead, put notations in the text such as "Insert Photo #1 here." Send the illustrations separately (and numbered as you would want them in the text, for example: "Belida1.jpg" or "PhotoEtch1.jpg"). JPG, GIF, or PNG formats are best for pictures.

3. If you have captions you would prefer for your illustrations, please create a separate text for captions only, each of which should be linked to a specific numbered picture. For example, "The front grill has been cut away from the engine"—with illustration #2." (Please note when the article is being prepared for insertion in the *Flyer*, pictures sometimes have to be relocated.)

4. Also, don't forget to add a short biographical sketch and provide a headshot photo of yourself.

All articles are subject to editing. However, if any edit might affect the substance or meaning of your text, you will be asked if the proposed change preserves both the accuracy and intent of your wording.

One more thing: we want your photos. Last issue we asked for submissions for “Models We Admire” and published some from our MMRs to inspire you. Maybe you think your photos can’t match up? Well, you’ll never know unless you send us some.

**A special note on photos:** please only send us photos you took or photos for which you have written permission to use (and then tell us whose photo it was so we can give that person credit). Please don’t just pluck something off the Internet and think you can use it unless the owner of the website states clearly that his or her material is free to use. **We don’t want to run afoul of any copyright infringement situations!** 

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### ***Coming Layout Tours***

## **Glenn Downing's Milwaukee Road—Superior Division Chicago North Shore & Milwaukee**

- What:** Glenn Downing's Milwaukee Road - Superior Division; Chicago North Shore & Milwaukee  
**When:** Saturday, November 9, 2019, 1:00 - 4:00 PM  
**Where:** addresses are not posted on the web  
**Scale:** HO  
**Access:** not handicapped accessible.

Multi-level layout depicting two railroads with an interchange in Racine, Wisconsin. Set in 1948. This is our first visit to this railroad.

## **Cam Green's Maine Central Lower Road**

- What:** Cam Green's Maine Central Lower Road  
**When:** Saturday, January 18, 2020, 1:00 - 4:00 PM  
**Where:** addresses are not posted on the web  
**Scale:** HO  
**Access:** Down a flight of stairs, not handicapped accessible.

This layout simulates the operations of the Maine Central Railroad between Yarmouth Junction and East Augusta in the mid-to-late 1970's. Features include the Androscoggin Bridge to Topsham, the Pejepscot Paper mill, Lisbon Falls (Chip Board Mill), Lewiston lower team and industrial (Mill) tracks and yard.

Layout type: Double deck, Operated as a point-to-point but is essentially a loop through staging. One Double track helix. This is our first visit to this railroad.



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**Layout Tour Report**

**Doug Hess's Ohio Central Railroad**

by Lee Stoermer



Doug Hess's layout is located in a 143 square foot, fully finished, climate-controlled lower level room in his home. Doug is working steadily on creating a recent era, freelance version of the Ohio Central Railroad. He jokingly commented that he had been 'in the process' of building for a while as progress came in spurts. He added that the open house spurred him to push on with a couple items to help show some extra progress. I have heard that statement about the impending deadline of an open house as an added incentive from many hosts!

Twenty-three visitors took advantage of this open house and were able to learn of Doug's design goals, current projects and future plans.

Doug has space constraints, as most of us building a layout do, which have caused him to implement some unique construction techniques that can definitely be used by others on their own home layouts. The layout is built on a series of 30 inch wide units in an around-the-wall style, leaving a wide-open central space.

The room is a comfortable, well-lit area. Lighting is on two circuits, one being the center ceiling mounted room lights and the other being the around the room track lighting. Doug demonstrated the dramatic effect of turning off the center ceiling lights and leaving the track lighting on. It gave an excellent shadow box effect, drawing your attention in to the layout operations area.

Doug says he may in the future add a narrow central peninsula coming in from the rear wall that could add a specific industry operation. He cautioned, though, that he did enjoy the openness of the central area as an aid in construction and ease of movement operationally. This can be noted in the following photo showing Doug (on the right) and two visitors, easily fitting into the space.



In looking forward and planning ahead, a pair of redundant turnout operation push button panels are located on both corners of the room for the operation of the staging yard turnouts. This will allow operation of the staging yard from either side without having to walk around the future peninsula. In the following photograph (right), the black background material, seen behind the rolling stock, hides the three-track staging yard, while one of the two track control panels is visible.

Entry into the room is through a chest high duck under as the layout is an around-the-room walls layout. Since the lift-out is not fixed in place, it can be removed for open access into the room. It isn't a lift-up or swing section, so during operations it is secured in place. The mounting method and electrical connection are due to be revised, Doug states.



Doug's layout is designed to support operations with three to four operators, using a car card system and Digitrax DCC. He has a staging yard that is semi hidden. While on the same level as his layout, it is separated visually by a low relief back drop that will consist of scenery and low relief structures. Multiple online switching locations and the use of an active interchange track give great operational potential.

Doug has a unique photo backdrop that is already

installed on his layout. He utilized a drone to take a series of photos from one specific location nearby. A photo editing program was used to stitch them together into one long panoramic view. He then had it printed and, using sheet styrene as backdrop base material, mounted the styrene sheets to the wall and then added the photos. The effect is dramatic, and instantaneous.

A comment Doug made to me while we were discussing his layout ideas and plans was that he was a bit hesitant about having the open house event at his layout. In asking why, he said wasn't sure there was a lot for others to see as his layout wasn't fully scenicked, or even had a lot of structures. I mentioned to him that personally, I enjoy seeing layouts that are under construction, as it gives you a better view of the construction techniques that are utilized. Trying to see how benchwork, wiring and such are in place on a completed layout is near to impossible, without being a contortionist looking up underneath those layers of plaster and scenic turf! I heard similar sentiments from several of the visitors as they listened to Doug



speak to each of them about his building methods and materials used. One visitor in particular who I spoke with said he had been stuck in trying to decide how to build framework. Now, after seeing how Doug's went together, he felt better prepared and ready to press forward beyond the perpetual "planning and design" phase.

Something I noticed was that Doug was able to speak with every visitor who came to his layout. He was able to spend some time with each one, having a conversation and discussing not only his layout but also model railroading in general. Not every layout owner has the time to be able to spend like this with all of his or her guests during their open house, which to me makes it that much more of a memorable event.

More specific information about Doug's layout can be found on the PD NMRA website in the Layout Tours page: [http://potomac-nmra.org/LayoutTours/Doug\\_Hess\\_2019/index.html](http://potomac-nmra.org/LayoutTours/Doug_Hess_2019/index.html)

Thanks to all those who attended the event and, special thanks to Doug and his wife for opening their home to us. We'll see you at the next open house! ☒

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Lee is a long-time model railroader, modeling the Western Maryland Ry and Northern Central Ry in HO scale. He has received the NMRA Golden Spike Award, NMRA President's Award for volunteer efforts, is the program manager for the NMRA 100% Clubs program manager, and was NMRA Arizona Division Member of the Year in 2015. He enjoys model rail operations, structure building and weathering, railfanning steam and continuing his efforts towards the Achievement Program.

# The *NMRA TURNTABLE* makes the internet a little smaller.

If you're spending hours doing internet video searches, you're wasting valuable modeling time! The *NMRA Turntable* brings the best of the best model railroading videos to your mailbox every month. It's one more benefit of NMRA membership!

**If you're not receiving it, contact NMRA HQ and make sure they have your current email address!**



**Layout Tour Report**

# Paul Hutchins Modern Day CSX

by Nicholas Kalis



Paul had a nice turnout of the Potomac Division to his layout located in Charles County, Maryland. Interestingly, Paul's home faces CSX tracks that serve a coal-fired electric generating plant. Unfortunately, no trains passed by on the right-of-way during our visit.

Paul's layout is located in a detached garage behind his home. Paul models current era CSX, Conrail, and Norfolk Southern in HO scale. He calls his railroad the "P&D Railroad." His operating and control system is Digitrax.

This was the Potomac Division's first visit to Paul's railroad. ☒

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 Click on address to send email.

## From the Business Car

by Martin Brechbiel, Division Superintendent

How the Potomac Division communicates with all its members has been an evolving exercise. We now rely greatly on e-mail and electronic communications. You probably accessed this issue of the *Potomac Flyer* through a link to its location on the Potomac Division web site. That link was e-mailed to you. We rely on the web host and other systems to make this happen. How does this actually work?

Our regional organization, the MER, gets a membership dataset every month from the national, the NMRA. The MER Business Manager extracts a dataset for each Division and sends it on. That dataset gets handled here in the Division and the updates are processed in several ways. New members get parceled out to be welcomed by Board members dependent upon location, i.e., VA, MD, or DC. Members that have lapsed in dues get reminded to renew their memberships. Other members are noted as having moved out of the Division, or, sadly, as having passed on. All of that information (e-mail addresses) is then also cross-checked with a data file for use with MailChimp. The Division uses MailChimp to communicate with the members to inform and remind you about Open Houses and other events that might take place within the Potomac Division.

However, this remains an incomplete success for a variety of reasons. I know this will surprise all, but the NMRA at the National level makes mistakes. I know that's shocking, but it's true. Some oddities seem to also creep into the extract that the MER distributes to the Division. Members seem to come and go from the Division roster on a monthly basis. Nonetheless, we have to work with what we are given and that's how your copy of the Potomac Flyer ultimately gets to your computer screen or your phone or gets printed out (my choice!).

Another issue that comes up is that we have members who have an e-mail address of record that is no longer used or checked, or no longer exists, or has an error in it. We can't tell unless something we send out bounces back as undeliverable. But if it's an address that is no longer used, yet still exists, we can't know you're not receiving it because it gives every appearance of still being functional. But then you don't get your copy of the *Flyer* or other information.

We have some 40 known broken links in the Division. We need you to make sure that we have your real, functional, and actually used by you e-mail address on record. I freely admit that I have nine different e-mail addresses due to seven different positions that I hold plus two more that I rarely use but which remain in the background. We need you to make sure that yours is correct with National and the MER since we cannot make those corrections for

The Potomac Division, Mid-Eastern Region, National Model Railroad Association includes the District of Columbia; Calvert, Charles, Montgomery, Prince George's and St Mary's Counties in Maryland; Arlington, Fairfax, Fauquier, Loudoun, Prince William, and Rappahannock Counties in Virginia, as well as all area independent cities.

you. Not only does this ensure you receive newsletters and other information, this action keeps our costs at a minimum.

Now at the other end of the spectrum, we have a selection of members that we do not reach at all but once a year. We do not have their e-mail addresses. They either choose not to share that information with us, or in some cases, they simply do not have e-mail. We have to accept and respect both situations. Unfortunately, as much as we'd like these members to fully participate in all of the opportunities and events in the Division, these members are not getting the *Potomac Flyer*, nor any of the MailChimp communications on events taking place in the Division. That also means that they are probably not getting the MER's newsletter, *The Local*, other than in a very truncated hard copy mailed to them.

The only time that we directly contact all of our Division members is for elections as that is a basic requirement. We can send election info out to about 85% of the Division membership by e-mail and MailChimp. We'll be mailing out all of the election information and ballot by USPS to those 40 or so broken linkages at some very real cost early in 2020 in advance of the Annual Business meeting in April at the miniCon where the elections will be held.

Elections! For those who don't know, and it seems that there are some out there who don't, there are five Board positions: Superintendent, Senior Asst. Superintendent, Asst. Superintendent, Paymaster, and Clerk that get divvied up after the elections every year. Next year, the terms for two of the Board members currently occupying the positions of Asst. Superintendent and Paymaster will be up. Here's a lovely grand opportunity for all those critics of the Division to get off the sidelines, to stand up, run for office, and to prove to everyone that they do know it all and have the answers for everything. For those who also care about pursuing their Volunteer certificate in the Achievement Program, holding office does count toward that goal. Next year, on that same ballot we intend to have a full revision of the Bylaws for approval by the members, too. ☒

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## Achievement Program News

by Mat Thompson, MMR

Bernie Kempinski has now been awarded AP Certificates for Master Builder-Scenery, Model Railroad Engineer-Civil, and Model Railroad Engineer-Electrical. He has five of the required certificates and is documenting his work for Cars and Structures to complete his work for the Master Model Railroader designation.

Ernie Little now has six certificates and has all the work for his final choice, Cars, completed except for two scratchbuilt cars. He recently sent me a write up and photos of the car he is finishing now. The proof is always in having three judges evaluate the real model but what he sent looks good.

One of our modelers is working on a station scene for the Prototype Model category. He was concerned that one requirement is for a background, which earn up to 15 points of the 87 ½ required for the certificate. The exact wording is "Treatment of the wall, backdrop, and/or ceiling to realistically depict depth, distance, horizon, and sky." This is also the Background requirement for the Scenery Certificate.

He intends to build a free-standing diorama viewable from all sides, so he won't be adding a backdrop. His question was how he could satisfy the backdrop requirement.

The answer is to use a portable backdrop during judging and when taking photos. Nothing in the requirement says the backdrop must be permanent or somehow always connected to the prototype scene. I also recommended taking a few pictures and adding them to the write up as visual proof that the requirement has been met.

I am glad he asked, and hope that if you are stymied on a requirement you will let me know. It is surprising and pleasing to know that many times all we need to do is think a bit about what the requirement wording actually says. If I can't unknot an issue for you, I have an able backup in Dave Chance, our Mid-East Region AP Coordinator. He is a knowledgeable and practical man who answers questions wisely and quickly. 



*I have a simple backdrop painted on a piece of Masonite with a sky photo pasted on the other side. I put it on an easel and moved it around to show I had a background treatment for my Scenery Certificate.*



*This picture was taken using the sky photo side of my portable backdrop. I think it well meets the requirement to "...depict depth, distance, horizon and sky." It is immaterial to the requirement that after taking the picture I removed the backdrop.*

[Return to Bill of Lading](#)



All decoders come with a standard color-coding of the wires connected to the decoder wiring harness. However, for a typical non-sound decoder, there are only four wires you need to connect to successfully install it. The red and black wires on the decoder's wire harness connect to the pickups on the wheels; red connects to one side, and black connects to the other side. The decoder harness also has an orange and a gray wire. These wires connect to the motor. There are a lot of other wires on the decoder harness, but if you look at the wiring diagram that comes with the decoder, most of these are for various lights on the engine, speakers (if it is a sound decoder) and perhaps a "Keep Alive." If you are installing a sound decoder, there will be two purple wires that connect to a speaker.

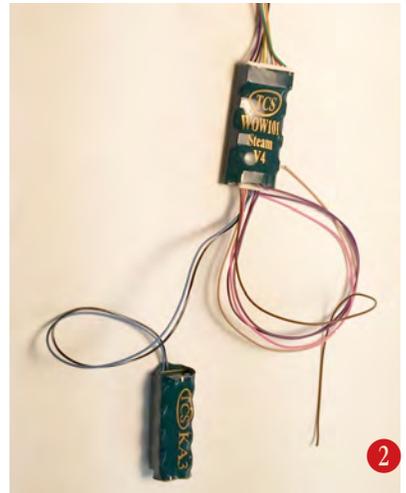
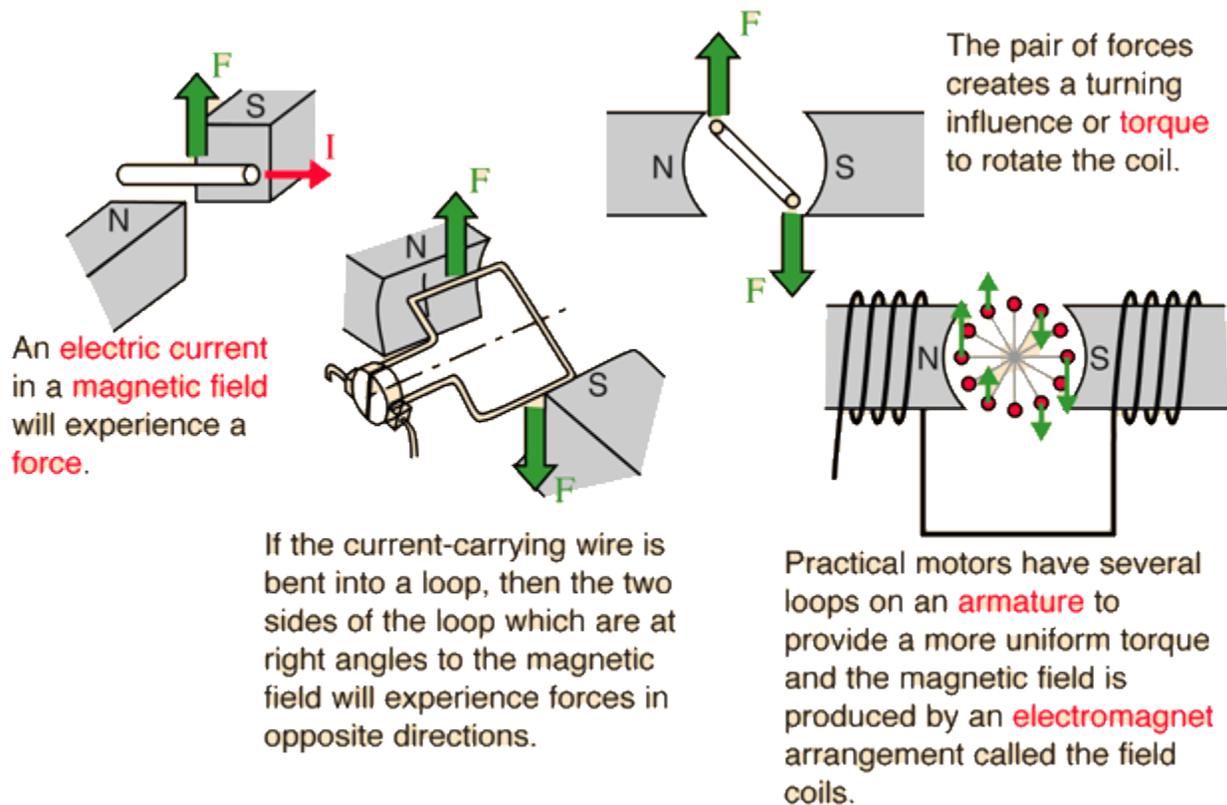
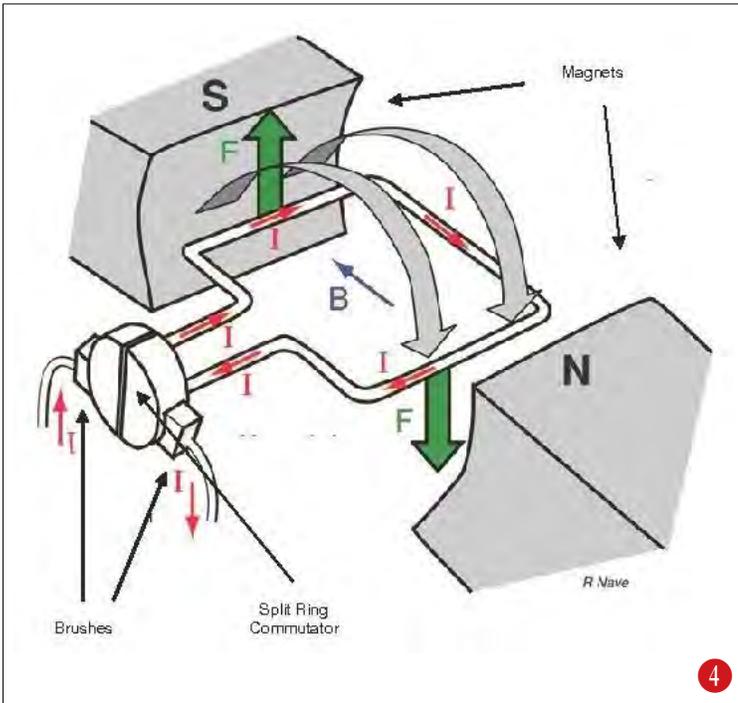


Figure 2 is a TCS WOW101-KA steam sound decoder with a Keep Alive attached.

### How Does a 12 volt DC Electric Motor Work?

When a wire that is carrying electric current passes through a magnetic field, a force is exerted on the wire (see figure 3). A DC electric motor takes advantage of this by winding a wire in coils around a metal shaft, called the rotor or armature. The coiled wire in the rotor is connected to a commutator, which is simply a ring on the end of the shaft that is in two halves, with each half electrically isolated from the other half. The rotor assembly is housed between two permanent magnets. Each half of the split ring on the end of the rotor rubs against a carbon brush (see figure 4). The brushes are connected to the DC electric power supply. When the power is connected,





current flows through the brush to the split ring and then to the coiled wire on the armature. When current flows through the armature wire in the presence of a magnetic field produced by the magnets on the stator, a force is exerted on the armature wire and causes the armature to turn. However, once it turns halfway around, the split ring will also rotate, and the brush that was contacting half of the split ring will now contact the other half of the split ring. This will produce a force which will continue to force the armature to rotate. As the armature rotates, the split ring continues to alternately contact the brushes, and the motor spins. By increasing or decreasing the voltage (and therefore the current that flows through the armature), the force on the armature will increase or decrease and the motor will speed up or slow down.

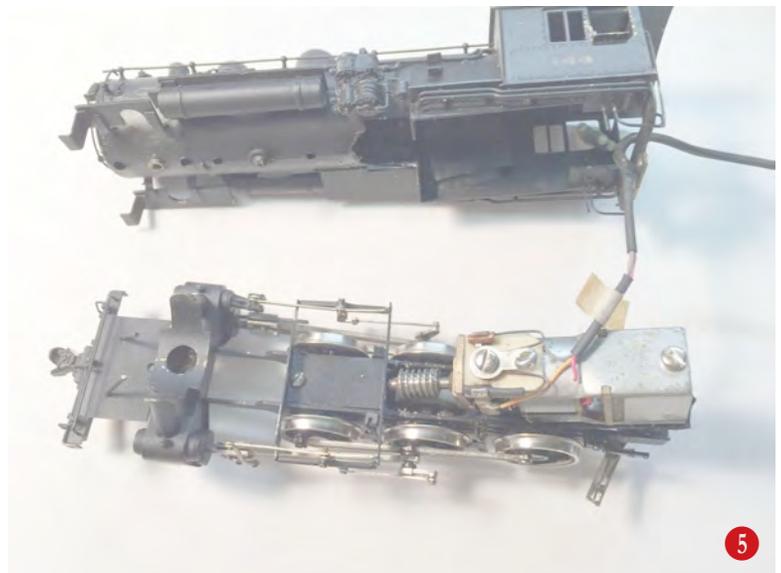
## Starting the Installation

### Check the Tender for Room!

Before you start taking your locomotive apart, it is best to check and see if there is sufficient room in the tender for a sound decoder, speaker, and, perhaps, a Keep Alive. Remove the base from the tender and see if there is sufficient room. Sometimes there are internal braces or frames that need to be removed in order to make room for the decoder, speaker and Keep Alive.

### Remove the Boiler from Your Locomotive

The first step in installing a sound decoder in your locomotive is to remove the boiler and cab assembly from the frame so you can gain access to the electric motor. Most boilers are attached with a threaded bolt that passes through the front lead trucks (if your engine has a lead truck), through the locomotive frame, and screws into the underside of the boiler. The boiler and cab assembly is also usually attached with small screws near the cab. Once these are removed, the boiler should lift off. Figure 5 is a photo of a 1970's vintage NJCB G-53sd 4-6-0 with the boiler removed, showing the open frame motor on the locomotive frame.



## Isolating the Motor

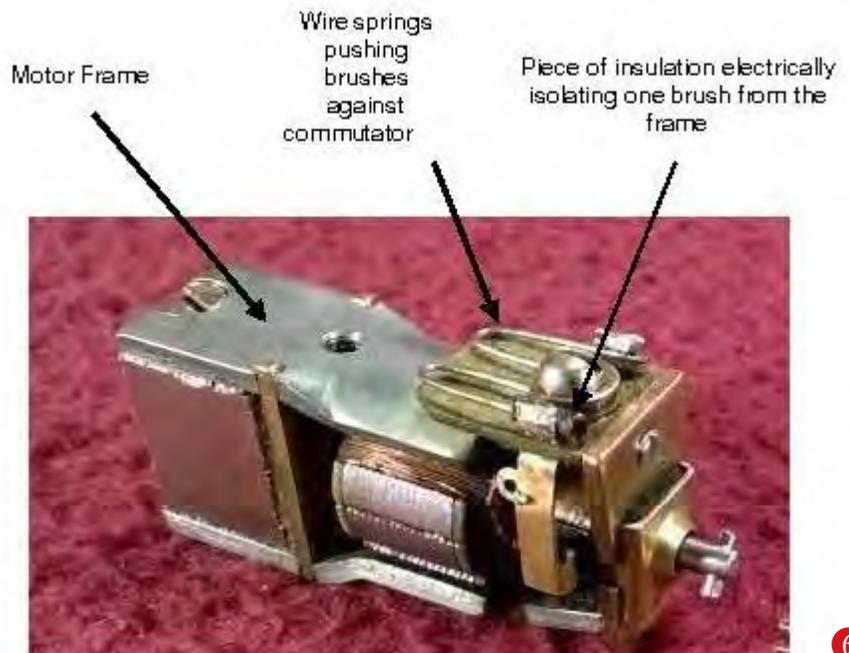
As pointed out earlier, the decoder converts a digital AC signal that is transmitted through the rails to a DC signal that is used to drive the electric motor in your locomotive. In other words, your electric motor is looking for a DC voltage, and it doesn't care if it comes directly from the rails or from a digital decoder. As long as the motor terminals only receive a DC voltage signal, your locomotive will run fine. What you do not want to happen is for the electrical terminals on your DC motor to see the digital AC signal that is being sent via the rails. Not only will the motor not run, but you can damage your decoder.

On many older locomotives, one of the two electrical terminals on the motor may be electrically connected to the frame of the motor. Because the locomotive was designed to run on DC voltage picked up through the rails, this was done on purpose. The driver wheels on a locomotive are electrically isolated from each other, in order not to produce a short circuit across the rails. However, one side of the drivers was usually used to pick up the electricity from one side of the rails. The drivers on that side of the locomotive were electrically in contact with the locomotive's metal frame. In order to provide track power to one side of the motor's terminals, the motor frame would be directly attached to the locomotive frame. If one of the motor terminals was connected to the motor frame, then current from one side of the rails could flow from the rails, through the drivers to the locomotive frame, then from the locomotive frame to the motor frame, and finally from the motor frame to the motor terminal. The wheels on the locomotive's tender were usually used to pick up the electricity from the other rail, and a wire from the tender truck to the other motor terminal completed the circuit.

While this works well on a layout that uses DC voltage on the rails, it will not work for a DCC system. Thus, the first step is to determine if your motor brushes (terminals) are electrically isolated from the locomotive frame and drivers. The easiest way to do this is to use an ohmmeter and place one probe on a part of the locomotive frame that makes a good electrical contact with the probe tip and the other probe on the motor terminals, one at a time. If the ohmmeter shows an open circuit when you touch the probes between the frame and each of the motor terminals, then the motor is properly isolated electrically, and the motor terminals will not see the AC track voltage.

If the ohmmeter shows a short circuit between the locomotive frame and either of the motor terminals, then you need to find out where the short circuit is coming from and eliminate it. There are several possible sources of the short as well as several remedies to eliminate it.

The fact that you found a short circuit would imply that one of the motor brushes is contacting the motor frame and the motor frame is contacting the locomotive frame. However, on some older locomotives, the drive gear on the driver axle may be metal, rather than plastic, and the armature shaft of the motor may be in electrical



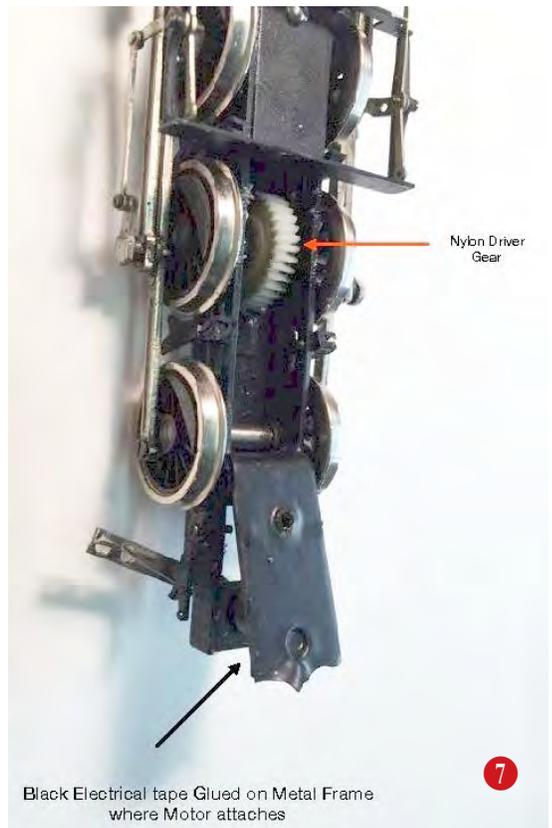
contact with the motor frame. You can check this by removing the motor from the locomotive frame and touching the probes of your ohmmeter between the armature shaft and the motor terminals. If the ohmmeter shows a short circuit, and the drive gear on the driver axle is metal, then this is a likely cause of the short circuit. One remedy is to see if the motor terminal can be electrically isolated from the motor frame. Often, the metal bar that holds the brush is held in place by a metal wire that pushes on the metal bar to keep the brush in contact with the armature. This piece of metal wire may be connected to the motor frame. Putting an insulating piece of material between the wire and the brush holder will electrically isolate the brush. Figure 6 shows wire springs that push the brushes against the commutator. One spring is isolated and the other is contacting the motor frame.

If it is not possible to isolate the brushes, then the other remedy is to cut the motor shaft ahead of the worm gear and use a non-conductive coupling, such as short piece of plastic or rubber tube, to reconnect the section of shaft with the worm gear to the armature.

Note that if the drive gear that is attached to the driver axle is plastic, then the armature will be electrically isolated from the frame via this path.

The other likely source of the short circuit is that one of the motor terminals is electrically connected to the locomotive frame (as described above). This can be remedied two ways. One, as described above, is to see if the brush that is electrically connected to the motor frame can be isolated, perhaps by placing a piece of insulating material between the metal bar holding the brush and the wire used to hold the brush in contact with the armature. The other is to electrically isolate the entire motor from the locomotive frame. This can be done by removing the motor from the frame, and gluing a piece of thin insulating material (I usually use electrical tape) between the motor and the locomotive frame (see Figure 7). However, the metal screw that holds the motor to the frame can still cause a short, since it will contact both the locomotive frame and the motor frame. If you have the same size plastic or other non-conductive threaded fastener, replace the metal screw with it. However, you can isolate the metal fastener by putting a non-conductive washer on it and making sure the hole in the frame that it passes through is large enough so the fastener doesn't contact the locomotive frame.

Once you have successfully made sure that the motor brushes are electrically isolated from the locomotive frame, you can solder a two conductor electrical connector to the motor terminals. This connector will mate up with a connector that is providing the DC signal to the motor from the decoder that is in the tender. So now we can turn our attention to the tender.



## Electrical Pickups

### Pickups on the tender

There are wiper kits available that can be installed on the tender trucks. However, I have found these relatively tedious to install. First, the axles on the tender truck wheels must be metal and the wheels must also be metal, with one wheel insulated from the metal axle. They need to be

bent at the proper angle to just maintain contact with the axles, and the leads coming from the wipers must be electrically isolated from the tender (if you are using a brass model), or the tender cannot be in electrical contact with the locomotive (e.g., via the drawbar or touching when going around bends). The other drawback is that with the wiper kits, each truck on the tender only picks up from one side of the rails.

What I have found that work just about flawlessly are Ring Engineering trucks with electrical pickups. Unfortunately, the Ring Engineering trucks only come with freight car side frames, since they were originally meant to pick up power from the rails for freight car applications.

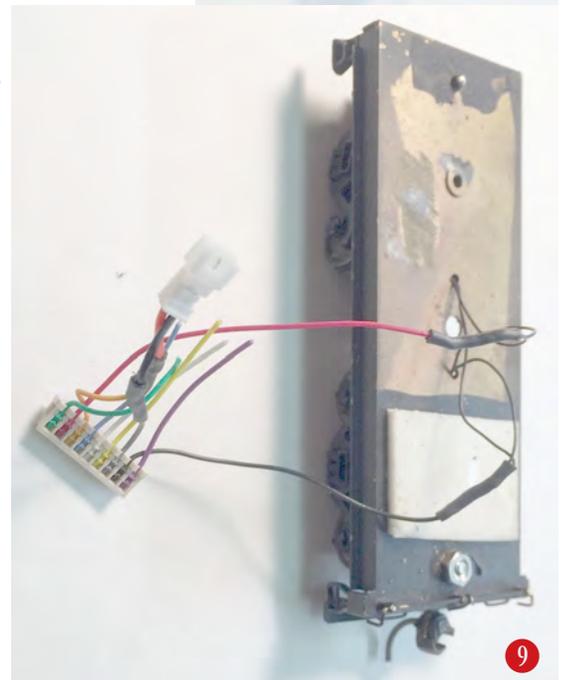
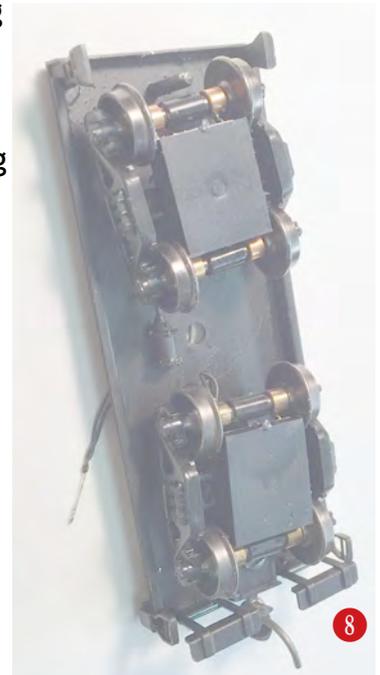
For all of the purists out there that would not even think about putting a freight car truck on a steam engine tender, then this solution is not for you. However, I have used the Ring Engineering trucks on seven steam engines in which I have installed sound decoders, and not one visitor to my layout has squinted at the tender trucks on my engines and pointed out that the trucks were freight car trucks and not tender trucks!

The advantage to using Ring Engineering trucks on the tender is twofold; first, each truck picks up power from both sides of the rails, so with two trucks on a tender, you have four wheels on each side of the tender picking up power. Second, they are very simple to install. The truck frames are plastic and look identical to Athearn freight car truck frames. You simply mount them to the tender base with a screw and drill a small hole in the tender base for the pickup wires to go through and attach to the decoder.

Figure 8 shows the Ring Engineering trucks mounted on the tender, and figure 9 shows the pickup wires from the Ring Engineering trucks connected to the red and black wires of the decoder harness. Note that the micro connector plug is connected to the orange and gray wires that go to the motor in the locomotive. I added the micro connector so I can easily detach the tender from the locomotive.

### Pickups on the Locomotive

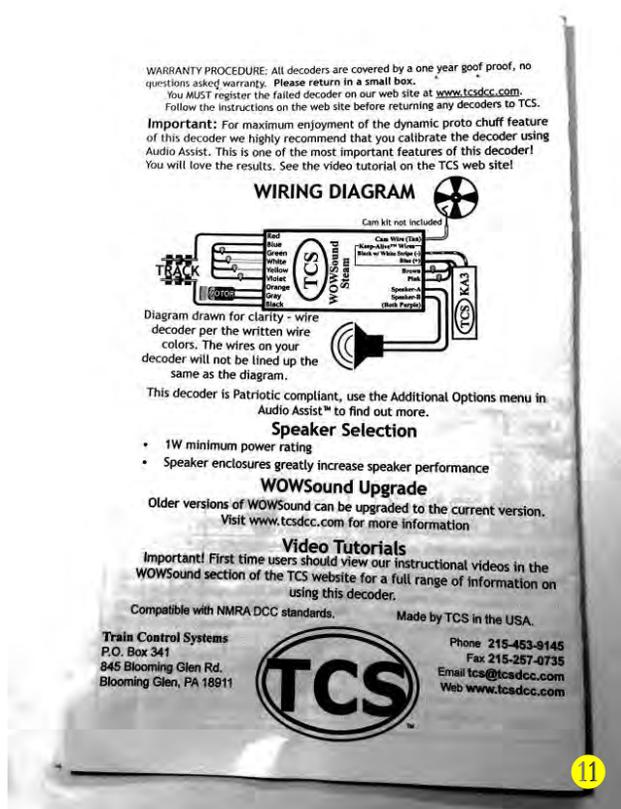
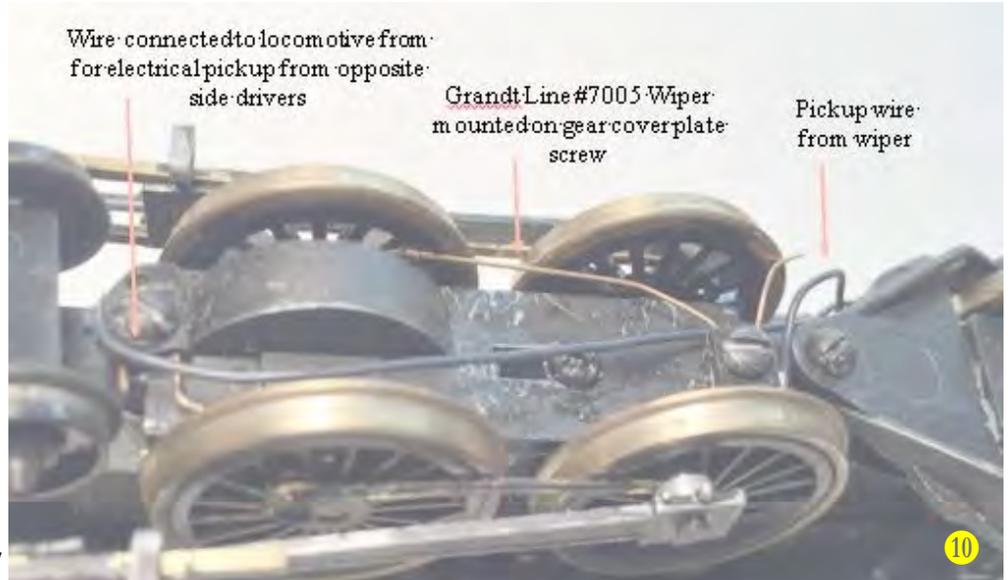
There is one other option for installing electrical pickups in your steam engine. The drivers on one side of your locomotive are grounded to the locomotive's frame. The drivers on the other side are electrically isolated from the frame (and the drivers on the opposite side). You can use the drivers to pick up power by attaching a wiper (e.g., Grand Line #7005) to the underside of the engine that rubs against the drivers that are isolated from the frame. A wire must now be run from the wiper to the decoder. If the drivers on the opposite side are electrically connected to the locomotive frame, you can attach a wire to the frame and run it to the decoder. Thus, this arrangement will provide for electrical pickup in your engine not only from all of the tender wheels, but also from the engine drivers. However, attaching the wiper such that it just rubs against the inside of a driver wheel, but does not touch the frame or protrude such that it will snag on turnouts, etc., can be a bit tricky. While this arrangement will further ensure good electrical pickup and minimize the likelihood of stalling, I have found that using just the Ring Engineering



trucks on the tender is sufficient for reliable operation. Figure 10 shows a Grandt Line wiper installed on a Mantua E-6 4-4-2 loco-motive.

### Hooking Up the Decoder

As I said earlier, hooking up the decoder consists of simply connecting the wires that pick up electricity from the tracks to the black and red wires on the wiring harness, and connecting the wires that attach to the locomotive motor to the orange and gray wires on the decoder harness. In the G-53sd locomotive, the front half of the boiler is solid brass, and installing a headlight would be extremely



difficult. However, if you have a locomotive that has a headlight and wires are attached to it, the decoder wiring diagram shows you which wires to connect to the headlight. Note that the polarity of the DC voltage on the motor now becomes important, since if it is not correct, the headlight will turn on when the locomotive is in reverse and go out when the locomotive moves forward. Either reversing the polarity of the motor leads or function re-mapping the decoder will correct this. Figure 11 shows a typical wiring diagram that comes with a sound decoder.

### Adding a Keep Alive or Current Keeper

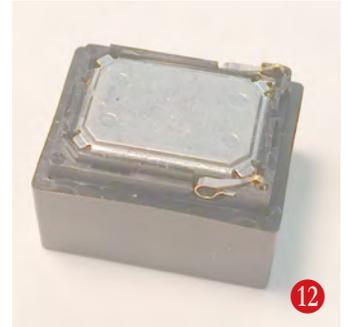
Several decoder manufacturers offer an electrically-capacitive device usually called a "Keep Alive" (TCS) or "Current Keeper" (Soundtraxx). These are simply a group of electrical capacitors that attach to the decoder. A capacitor is an electrical device that can store an electrical charge. When the voltage across the capacitor suddenly changes, the capacitor will discharge its stored electrical charge. By adding a Keep Alive or Current Keeper to your decoder, it means that

if your engine does hit a dead spot on your rails, and the voltage across the rails suddenly goes to zero, the capacitors will discharge, continuing to provide electrical power to your locomotive's motor for up to a few seconds. This will allow your engine to keep running and hopefully move off of the dead spot on your rails.

I personally like adding a Keep Alive or Current Keeper to my engines as added protection against stalling. However, they will add about \$20 or so to the cost of your decoder. Also, if space in your tender is at a premium, there may not be enough room for a decoder, speaker, and Keep Alive (or Current Keeper). (Note that the TCS WOW101-KA steam or diesel decoder comes with a Keep Alive. The TCS keep Alive is smaller than that the Soundtraxx Current Keeper and may better fit in a smaller tender.)

## Installing a Speaker

If your decoder is a sound decoder, you will need to install a speaker in the tender. Again, before you decide to install a sound decoder, become familiar with the relative sizes of the decoders, Keep Alive's (if you intend to install one) and speakers and whether your tender has enough space to hold them. A speaker that was recommended to me by Tony's Train Exchange is the TDS Supersonic Mini speaker, which is 15 x 11 mm and is



referred to as the "Sugar Cube" because it is about the same size as a sugar cube. You will also need to buy the enclosure that holds the speaker. I have installed these in several of my steam engines and they are amazingly loud and clear, so you do not have to drill holes in the bottom side of the tender and mount the speaker so it is facing the holes. The speaker is \$5.95 and the enclosure is \$9.95. Figure 12 is photo of a Supersonic Sugar Cube speaker mounted in the enclosure.

### Putting it all Together

Once you have the decoder harness wired up, it's time to mount everything into the tender shell. I usually use a double-sided tape to attach the speaker to the tender shell, and, if possible, also the decoder and the Keep Alive. This will prevent them from bouncing around when the locomotive is being handled. Figure 13 shows the TCS WOW101-KA sound decoder, Keep Alive, and speaker all mounted inside the G-53sd tender, and figure 14 shows the engine with the installation complete.



## Conclusion

Now that I'm comfortable with installing sound decoders in older steam locomotives, I have been able to add models of a number of prototypical locomotives that were run by the LIRR to my layout that were only manufactured years ago and did not have DCC or sound.

I've installed sound decoders in seven older steam engines, including two brass Westside G5's, a Bachmann K4, two Mantua E6 4-4-2's, a brass NJCB G-53sd, and an older Japanese brass B-8 0-6-0. They all have Ring Engineering trucks on their tenders, they all have either a Keep Alive or a Current Keeper installed (depending upon whose decoder I'm using), and they all run smoothly and

do not stall. With Ring Engineering trucks on the tender, there is ample electrical pickup to ensure relatively smooth, stall-free operation. And if you add a Keep Alive, stalling is virtually eliminated.



(Note that unlike today's models, many older engines did not come with traction tires on any of the driver wheels. Also, the weight distribution over the drivers on some locomotives can be very unbalanced, with most of the weight over the rear drivers. This can severely limit their pulling power as the driver wheels will start to slip under a minimal load. To solve this, I applied "Bullfrog Snot" on the drivers of many of my older locomotives, and this has eliminated the slipping. Adding small weights over the front drivers (if possible) will help correct a weight imbalance problem).



[Return to Bill of Lading](#)



Brian is a long-time model railroader, and models the Port Jefferson Branch, Atlantic Branch, and City Terminal Zone of the Long Island Rail Road in HO scale. He earned Master Model Railroader (MMR) certificate number 469 in 2011 and was the Superintendent of the Potomac Division from 2014 to 2019. In the spare time he has, when he's not working on his trains, he enjoys boating and playing banjo in a local band.

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## Scratchbuilding A Maintenance of Way Car

by Martin Brechbiel, MMR

As I have noted previously, the aspect of model railroading that I find most enjoyable is the actual building of models. I have and continue to build a lot of rolling stock, and within that heading, I find the building of MoW cars to provide the most fun for me. I would estimate that better than 25% of my rolling stock is MoW related, well over any realistic need other than the fun and play factor that they generate on my workbench. I've probably scratchbuilt five or six MoW cars in just the past year! For this project, I found that I had in the project queue a box with a few "sticks" in it, a pair of resin car bolsters, and a kit for a chain hoist with an "A" frame. All that and the glimmer of an idea was enough for me to start building the next car.



After sorting out the sticks, I built up what I describe as my standard flat car, not that far evolved from the basic flat car that I wrote about many years ago<sup>1,2</sup>. The side and end sills were assembled into a rectangle on one of my glass work surfaces. (I work on glass since it is flat. Even if I glue something to it, it's not difficult to free it later without damage.) I used Walthers Goo to set the sill assembly into place and then took that apart and reassembled it with a bit of medium viscosity CA added to the Goo. Gluing end grain wood joints generally results in weak joints and Goo by itself is not terribly strong in this instance. Combining the two adhesives results in a very strong and rapidly curing joint also when joining dissimilar materials, e.g. white metal castings to wood with or without end grain involvement.

With the four sides of the box assembled, 1/16" thick scribed siding was glued (Carpenter's Glue) down. For this car, I used siding scribed on both sides (Kappler). This provides a nice decking that generates a good visual from both above and below the car and can also be used to install the remaining four support beams. The middle two of the four were installed centered and spaced apart as a unit to match up with the mounting screws from Kadee coupler boxes. A little advance planning here goes a long way towards eliminating future problems. The other two beams were installed centered in place. All were glued into place using Carpenter's Glue. The resin bolsters were drilled and tapped for 4/40 screws, and then mounted in a scale 5.5' from the ends using Goo combined with CA. Needle beams were added and centered. Brass stake pockets (All-Nation) were added to both sides of the side sills for attaching the upper parts of the car. Having the scribed siding to work off of makes it pretty easy to get these aligned across the body of the car.

The one set of sides was built up from O scale 2" x 10" and O scale 4" x 4" (Kappler). The 2" x 10" were red cedar rather than basswood. The cedar has a rough texture to its surface as opposed to the neatly polished basswood that tends to be just too perfect and smooth. The 4" x 4" is also not basswood, but rather yellow pine. The mixture of woods in this model will contribute to making the final finish not overly uniform. The spacing of the 4" x 4" parts was set by the stake pockets.

1 Scratchbuilding a Wooden Flat Car, *The Local*, 2004 (March-April), 59(2), 1, 4-7.

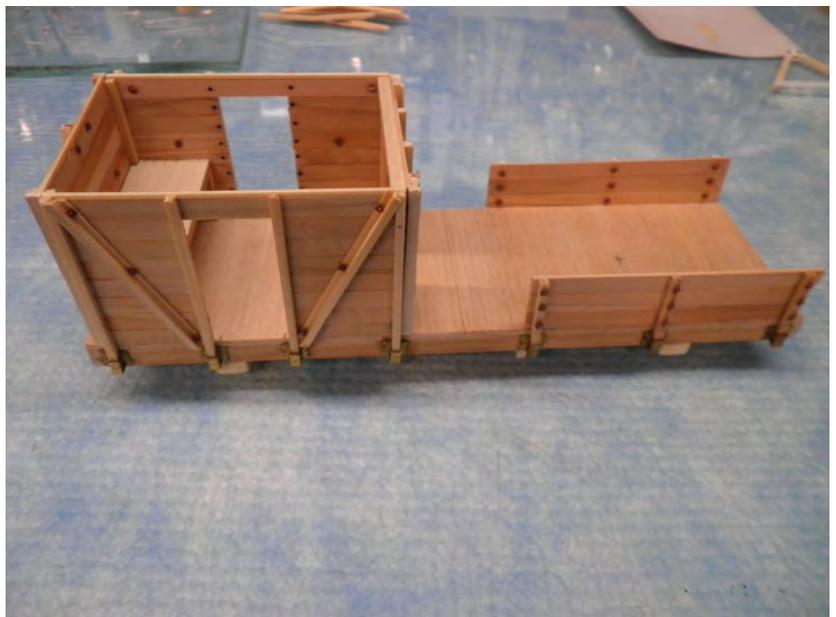
2 Scratchbuilding Wooden Freight Cars, *Scale Rails*, 2004 (November), 30-36.

After these two sides were solid, every joint was through drilled to accept nut-bolt-washers (NBWs) on both sides. If you can see both sides, you have to put something on both sides. In this case, I used NBWs from Tichy, inserting them from each side and both of these sides fit neatly into the stake pockets.

Moving to the other end of the car, I built up two more sides using the same materials. These sides are full car side height and also have openings left in them for doors that will get added later. Two ends were built up as well and while one of these started off without a doorway, it will get one later. At the time, I was unsure whether to center the door or make it offset to one side. As you can see, the sides drop into the stake pockets neatly.

Fast forward slightly, and the sides have been joined to the two ends and the one end now has a doorway in the center. Also added was “z” bracing on the diagonals. The “z” is a wood shape that used to be available from Northeastern Scale Lumber. It’s a bit delicate to cut and work at times, but once in place it’s pretty stable. Some extra 4” x 4” bracing has been added and a table has been inserted inside at what will be the end of the car. This was made up from more 4” x 4” and some scrap scribed siding. Lastly, just a few NBWs from Tichy and Grandt Line were added to both the exterior and interior of these ends and sides. This entire unit then fits into the stake pockets and will be left as removable until the last moment.

With the height set, the next parts that were assembled were a set of rafters for the roof. These were made from O scale 4” x 4” and 2” x 4” with the pitch angle derived from some O scale milled roof section. One rafter was sheathed with a cedar 2” x 10” cut to shape for use on the car end. The “A” frame castings that came with the kit were way too tall to get installed on the car. The solution was to just make a new set. The width at the base was set to fit inside the sides that fit into the stake pockets. The height was set to meet the top of the body shell. These were made up from some scrap wood, some 0.015” styrene for the gussets, and some 1/16” styrene angle for the base mounting plates. The wood was tacked together with some Goo. The gusset plates were cut to shape after gluing the styrene to the wood and letting that set everything solidly into place. A host of NBWs (Tichy) were applied into the through drilled holes in these frames.



While all the top side structure remained removable, I decided it would be a good time to install all the underbody parts to get that area secured and ready for painting or staining. Some scrap scribed siding was glued in straddling two of the supports and used to mount a K brake casting. The casting was drilled out to accept 0.022” brass wire at the one end. I used 0.020” phosphorbronze wire (Tichy) for the brake rigging. Brake levers were from Chooch, and the clevises were from Grandt Line. Usually I make my own clevises, but I had a pack available in the parts bin. The brake hangers were from Precision Scale. All of the parts were assembled with Goo and CA, test-fitting each component as it was added. The brake wheel stirrup was from US Hobbies. The pair of stirrup steps at the one end was out of the parts bins, maker unknown. These could be made pretty easily

from some brass flat stock. They were mounted with Goo and CA and then—since these tend to be fragile—I pinned them into place. The truss rod system was installed using 6” queenposts (Grandt Line) and turnbuckle castings from Tichy. The truss rods were made from surgical silk anchored at one end from the outside of the end sill with a large NBW (Grandt Line) and CA with the silk threaded through the car body under the bolsters and over the needlebeams, adding a turnbuckle casting in passing, and then out through a hole in the end sill. The silk was pulled as tight as possible and another large NBW (Grandt Line) was inserted into the hole with CA. The silk was then threaded the other direction through the car repeating the process. In this particular car I decided that it would only have two truss rods, but using this process with four works just as well. After these were installed and the CA fully set, the excess silk was cut away, and then the truss rods were lifted up onto the queenposts putting the turnbuckle castings between the queenposts. This puts very real tension on the entire system. I generally just put a bit of CA on the line to set the position of the turnbuckles. The underbody is now ready for stain or painting.

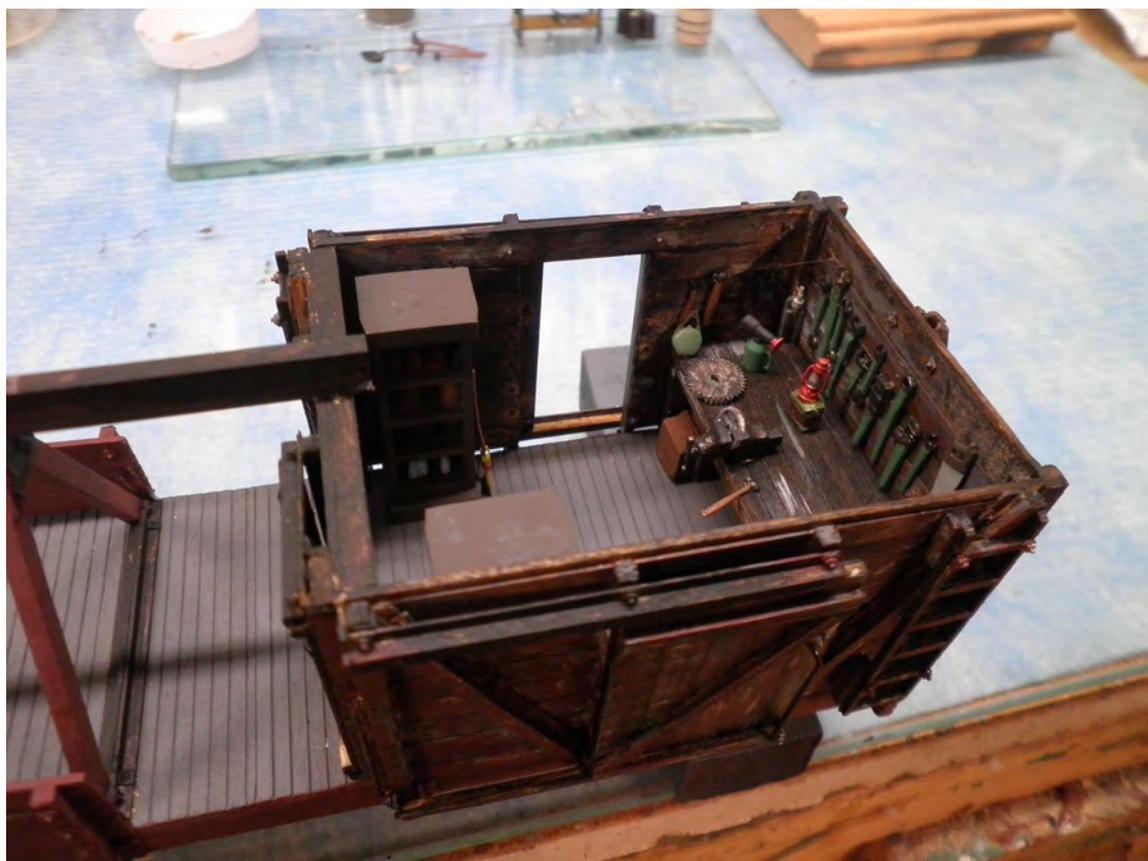
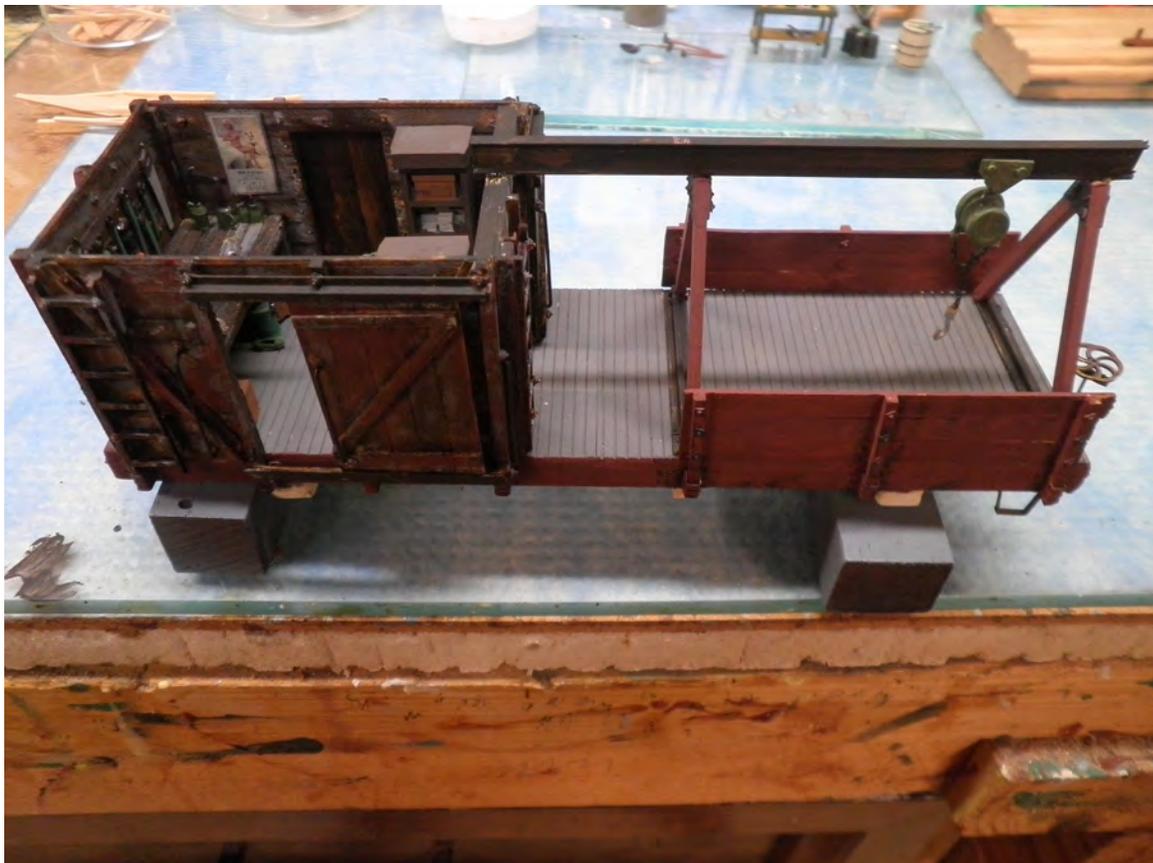
Back to topside where things have been progressing nicely where more NBW castings have been getting installed. Looking inside, I started installing the beginnings of the interior details. The first layer here were a pair of shelf units (Model Tech Studios) and some crate and oil drums (my resin castings). Ladders were added to the sides and by the deck side door. These were laser cut (eBay) and then cut to fit and set out on 4” x 4” blocks where needed to clear the “z” angle bracing on the sides and end. More “z” angle stock was used to create the door runners top and bottom. The doors are in place but not finished yet; they are just test fitted for size and motion.



I still need to put a roof over this “structure.” Those rafters were assembled together using more of the same red cedar 2” x 10”. The rafters were spaced across the structure and some 4” x 4” scraps were used in between the rafters to strengthen the roof unit and to close off the eaves. The front and back rafters were positioned to line up with the front and back walls, respectively. The back rafter got a pair of alignment posts added so that this roof when removable could be replaced properly. After all the glue had set, the front rafter was modified with a slot reinforced with some more scrap 4” x 4”. The roof was also notched out at this end.



We'll fast forward a bit now. The hoist supports are now installed with the "I" beam (styrene from the kit) in place with the hoist casting mounted on the beam such that it still slides the full range of the hoist. The "I" beam rests not only on the two supports, but also on the end wall of the workshop structure. At this point, the shop part is now anchored in place by the beam. And, as you might gather, the slot in the rafter and the gap in sheathing was done so that the removable roof would slide into place around the beam and lock into place. Everything was also painted (Floquil Caboose) and all of the parts were painted a host of colors. Almost all of the details were painted with Polly Scale. The brake wheel was from Precision



Scale and ratchet plate was from USH. More NBWs were added everywhere there could be a possible need and grabs for the doors were added, too. The doors do still slide in their guides.



Fast forwarding even further ahead now, as I can see the finish line. Detailing the interior of the shop required the addition of lots of tools and shop “stuff.” This is, by the way, a great opportunity to clear out some of the miscellaneous detail bits that went unused in prior projects. Most of the tools and all the bits are either Detail Associates, Wiseman, Berkshire Valley, Chooch, Sierra West, Grandt Line or Model Tech parts. There are a few resin castings of mine in there, too. There’s a required calendar for the over 21 viewing audience, too. All of these parts were tediously painted with Polly Scale. I set up 10-12 fine tweezers held in clothespins holding the parts for painting. Larger bits were painted sitting on a separate piece of glass shelving that I can clean and reuse. Each detail was placed using Goo & CA to keep them from relocating later. Interior weathering was done with Polly Scale grays and browns drybrushed into place.



Detailing the exterior of the car was a similar exercise with a worktable left over from a Sierra West set of parts populated with bits and pieces from many sources, all painted as noted above. A barrel, more tools, some hand tools, drums of oil, and parts for the hoist are visible along with a very animated pair of workmen (Arttista). The roof on the workshop was made up from

metal corrugated roofing (Builders in Scale) cut into 3’ sections and applied overlapping. The roof was painted and dry brushed to finish it off.

One last look inside reveals another Arttista figure staring down a problem gear in the vise, no doubt the product of efforts by his fellow workers outside. You can see the usual solution to the problem there on the bench - the right tool for applied percussive maintenance is within reach.

And now that this car is complete, I’ll be off to the next project in the queue of stacked project boxes in my shop. 

[Return to Bill of Lading](#)



Martin is a long-time O scale model railroader who models the South Mountain Branch of the Cumberland Valley Railroad. He also has a strong interest in traction and trolley modeling that freely adopts the Chambersburg, Greencastle & Waynesboro Rwy. He earned his Master Model Railroader (MMR) certificate # 629 in 2019 and is currently the Superintendent of the Potomac Division, Secretary of the Mid-Eastern Region, and also the Editor of *O Scale Trains* magazine. His goal is to make the Potomac Division a thriving environment for all aspects of model railroading while promoting the values of NMRA membership.

## Web Site Facelift

The Potomac Division web site at <http://potomac-nmra.org> has had a facelift. It has a new contemporary look, highlighted by a Navigation Bar that makes it easy to find what you’re looking for. The NavBar replaces the frames menu with drop downs that makes all the features visible and accessible. The revitalized pages are all mobile-friendly, making them readable on the small screens of smart phones and tablets.

Home   Clinics   PD Activities   PD Services   Library   Information   Links   Prior PD Activities

The home page, which was introduced a few months ago, features a slide show of photogenic layouts in the Division. Contact [webmaster@potomac-nmra.org](mailto:webmaster@potomac-nmra.org) if you’re like to add a picture.

Upcoming major events are highlighted on the home page. You can jump directly to each event’s page. There is a search box to help find something specific that appears somewhere on the PD site. At the bottom of the home page are links to information about Potomac Division, Division contacts, Mid-Eastern Region, and National NMRA pages.

The second item on the NavBar links directly to the Division’s collection of clinics. We’ve been collecting clinics by PD members and other NMRA members for many years. The collection currently has about 80 entries and continues to grow. The list of clinic titles at the top of the page links to a description of every clinic. Next to every description is a button to open the clinic. There are also four links to external clinic collections.

The third item on the NavBar is a drop-down list of PD Activities:

- Modeling Outreach – listing and description of upcoming PD activities.
- Layout Tours – a list and descriptions of scheduled home layout tours
- Calendar – schedule of PD, MER, and national events through 2020
- Prior Layout Tours – PD has been holding home layout tours as long as anyone can remember. The collection on the web dates back to 2005. There is a page for every tour that includes a description written by a PD member and a set of pictures. Some layouts have been visited more than once; you can follow their development.
- Next Minicon – the Minicon is the major highlight of the year. Planning starts early and is publicized here.

- Operation Saturday – a recap and pictures of the first OpSaturday is topped by an announcement of the next one scheduled for May 2020.
- Achievement Program – a quick rundown of the AP is provided, along with a list of the PD Certificate Holders.

The fourth item on the NavBar is a drop-down list of PD Services:

- Membership – provides links to the national NMRA for membership services and to the PD Yahoo group. The descriptions of services available to PD members is a great place to send folks who are interested in joining.
- Helper Service – explains how PD has implemented a “member helping members” exchange.
- Layout Disposal – summarizes a report developed to help members who are giving up the hobby and members’ survivors about disposing of the layout and rolling stock.

The fifth item on the NavBar is the Library, with two drop-downs:

- Potomac Flyer – back issues to 2000
- Special Interest Reports – the collection currently includes:
  - Insurance for Your Model Railroad
  - Estate Planning for Model Railroaders
  - Perishable Freight
  - Earning Merit Awards

The sixth item on the NavBar is Information:

- Model Railroad home pages – descriptions and links to 18 sites
- Local & Interesting – over 50 links to nearby sites and points of interest
- Operating Groups – information about seven groups
- Tips ‘n Tricks – around 30 useful ideas
- PD Contacts – Officers and committee chairs

The seventh item is links, some of which appear elsewhere:

- PD Information
- Mid-Eastern Region
- National NMRA
- MER Convention

The eighth and last item presents prior PD Activities:

- Prior Layout Tours
- Excursions
- Prior Minicons
- MER 2018 Convention (hosted by PD)
- Operations Initiative – precursor to Operations Saturday

A little browsing could be fun and informative. Contributions and suggestions are welcome and should be addressed to [webmaster@potomac-nmra.org](mailto:webmaster@potomac-nmra.org). 

# Custom Model Railroad Structure Kits

by Mat Thompson, MMR

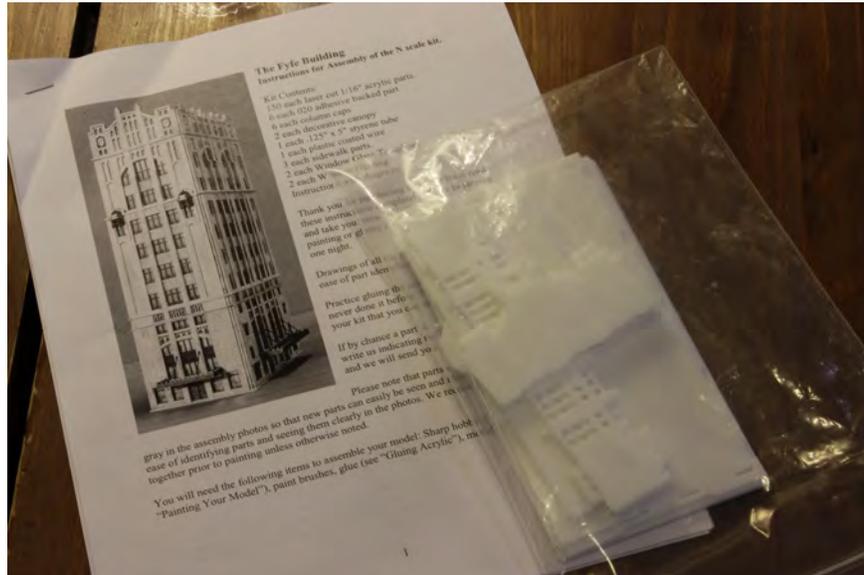
When Charlie Young asked me to build some kits for his N scale Chesapeake Crossing Railroad, I was happy to say yes. Part of the reason was friendship. But what clinched the deal was the kits he wanted me to build were from Custom Model Railroads (CMR).

CMR is a Baltimore firm that has been offering an extensive line of multi-storied downtown structures in both HO and N scale, and building custom railroads, for more than 25 years. If you read the

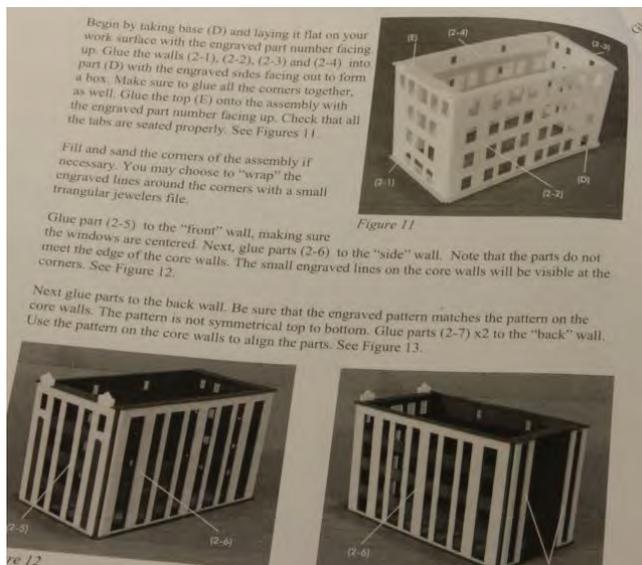
*Model Railroader* articles about rock singer Rod Stewart’s railroad in the December 2007 and June 2017 issues, you have seen some of CMR’s work.

During a tour of the factory a few years ago, the owner, Jeff Springer, said his kits are made from a high-quality acrylic because the acrylic is rigid and stable so it doesn’t warp or change dimensions. Laser engraving is used to create stone and mortar lines, window pane detail, and other detailed parts. I was intrigued—but the urban nature of the structures doesn’t fit my Pacific Northwest lumber railroad. So until Charlie offered me the chance, I hadn’t built any CMR models.

The first kit I built was the N scale version of the Fyfe Building. I was immediately impressed with the careful packaging. The structure is built in “units,” and unit parts are in separate plastic packages.



CMR’s N-Scale Fyfe Building Kit



Instructions Well Written and Illustrated

The instructions are well written and profusely photo illustrated. The building sequence is explained in a logical order. Instruction print is large enough to read easily, and the space between paragraphs make it easy to look back and forth between the model and the instructions.

The depth of the structure walls is made by gluing layers together. The separate pieces would make painting the building in different colors an easy task.

Never having worked with acrylic before, I was concerned about what glue to use. The instructions recommend a styrene glue. I used Plastruct Plastic Weld and found it worked perfectly. Once the glue joints dried, they were quite strong, and held up to handling the model as I added more parts.

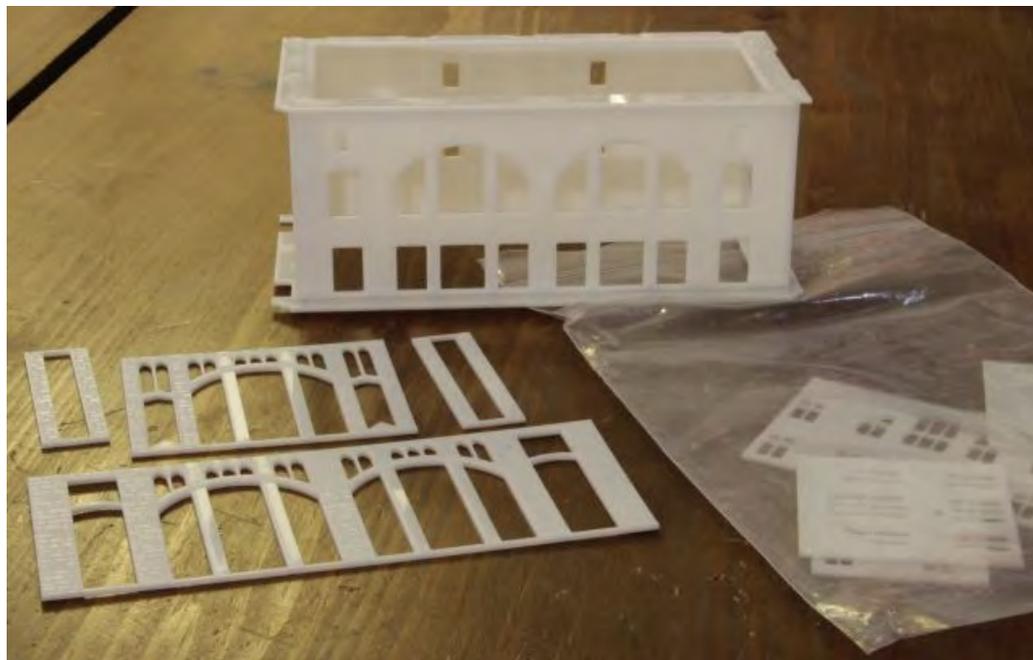
Most parts fit together with a tab and slot system. Pieces fit easily. Slots in the foundation and in the trim between each “unit” keep the structure square.

The few times I thought I needed to use some force to put parts together I realized I was putting the parts together incorrectly.

I painted the walls with a gray primer from Lowe’s.

Windows are printed on clear plastic. The window sheets are

marked so a complete piece can be cut out and glued onto the back side of the appropriate wall. Then a paper sheet is cut and glued to provide the look of shades and curtains, and to suggest room interiors.



*Parts Come In Individual "unit" Packages*



*The Units Are Stacked*

Working in N scale, I choose to add the window glass and interior as I built each unit. This allowed much easier access to the inside of the model as I aligned the “glass” and interior with the window openings.

After adding the final unit to the top of the building and gluing on roof details, I was finished with the building construction.

The only weathering I did was a very light black India Ink wash to highlight mortar lines.

Quality parts and good instructions added up to a pleasant modeling project.

After this, I made three or four more buildings, and was equally pleased with the pieces, instructions and attention paid to making the kit fit together well.

CMR is a quality company offering first-class kits to the model railroad hobbyist. I recommend them highly.



*Finished building*

The final kit I built is one CMR calls Judy's Jams and Jellies. Since Charlie is a professor of music at Howard University and travels the world playing Duke Ellington music, I changed the name. ☒



*Mat Thompson (R) with music professor Charlie Young (L) and another CMR kit*

[Return to Bill of Lading](#)

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Engineers and Firemen say “Mark me up!” to get their name on the crew Call Board for their next run. “Mark Me Up” is a quarterly column focused on how model railroaders can become operators and members of the operations community. Mat Thompson’s Oregon Coast Railroad was featured in *Great Model Railroads 2014*. Building structures and scenery are his favorite modeling activities. He is also an avid model railroad operator and regularly attends operating sessions.

## Mark Me Up: Helping the Operators – Wide-bodied Isn't Just for Jets

By Mat Thompson, MMR

In the last Mark Me Up (August 2019) I talked about easy, no-cost or low-cost things a host can do to help operators.

This time the subject is tougher to fix: narrow aisles.

Our layout space and our railroad dreams can steer us into less than satisfactory building choices. Narrow aisles are the most common example I have seen (unfortunately including on my own layout). We are all railroad barons at heart and more railroad is always better than all that empty space wasted on aisles.

That's true—until operations start. Then cramped aisles, crowded working spaces, and constant jostling with other operators can steal the fun from your sessions. The problem is aggravated by the reality that model railroaders tend to come in extra-large sizes.

Here are some minimum aisle-size standards I have learned the hard way. While the focus is on operations, even if your layout is just for viewing these are worth considering.

- Aisles where people have to pass need to be 36”.
- Aisles by yards and big industries, where a crew is assigned for much of a session need to be 48” if others have to routinely pass behind them.
- Aisles where people work back to back in fixed locations during an ops session need to be 60” or more so people can pass between the fixed location crews.
- The end of peninsulas and passage points where no railroad work is done can be narrower.
- Short distance narrow aisles, say a foot or two, are fine if they open into wider aisles and no work needs to be done standing in the narrow places.

On my layout the aisle at Astoria narrowed to 22” when I built it. Watching



*John Rogers and Dave Oleson are working the Swift Packing Plant in a 48' aisle so other operators easily pass by during an ops session. Removing display cabinets and bookshelves along the wall behind them opened up the aisle space.*



*Rod Vance is working at the end of a peninsula in a space less than 30" wide. Since no one else will work in the area or even walk through it, he has a comfortable workspace and can concentrate on his railroad job not the people around him.*

crews wiggle past each other during early operations sessions told me the space was simply too tight, but I didn't want to give up some sidings and modeling space. Finally I just did it -- grabbed a handsaw and cut off the first six inches of the layout along a six-foot strip. It was traumatic but the comfort of operations improved immediately. I no longer remember what I was so carefully trying to hang on to.



*The aisle between Rich Gibson (in green) and Dave Ramos narrows to 28" making it difficult for train crews to come into Astoria. Cutting off the yard track closest to Dave and continuing the cut in a straight line up to the edge of the float would widen the aisle to 36" - still tight but an improvement with little impact on operations.*

Now I can see that by moving or eliminating just one track I can trim another four or five inches off the area without losing any operations capability. The result will be that a former 22" choke point will be 32" to 34" wide -- not perfect but much better. While looking at that I realized another place on my layout is also a choke point and the aisle could be widened easily. Those projects are now on my to-do list.

Layout height also has an impact on aisle width. My single deck layout is 50" high which is common for operations-oriented layouts. Carcards in boxes and fascia signs are just a few inches lower so the cards and signs are readable even if I am only a few inches back from the layout.

Occasionally I have operated on layouts at tabletop height, 30" or so. Then I have to step back more than a foot and bend down to read the track diagram or other information on the fascia, meaning the aisle needs to be 24" just for working and 36" is so tight that work stops when operators pass behind people working at that spot. The point is a lower layout may need aisles wider than the minimums above.

Multi-deck layouts offer longer runs and more modeling opportunities than a single deck layout in the same space. That's what makes them so popular but the additional activity and operators may need more aisle space and even the widest aisles won't help if yards and switching sites are stacked one over the other. Lower decks with busy work sites need wider aisles so operators have room to bend over.

But you have built your benchwork and the aisles are tight. So now what?

- You can always just live with it. But judge your aisle situation critically. Can you trim the layout here or take out a track there and end up with a better layout because it is so much easier to get around? Gaining just a few inches in aisle space can be a significant improvement.
- Don't be afraid to make changes. As I studied the two places I plan to trim, I realized I won't lose any operational capability and the scenes are old. The new fascia profile and new scenery will be an improvement.
- Stagger yards and switching sites so people aren't working back to back in tight aisles
- Reduce the crew size. Don't use two person crews on trains and look hard at the reducing the people for yards and switching locations.

- Run fewer trains and slow down the schedule so operators don't need to squeeze by each other so often and in a hurry.
- Inset controls such as turnout switches so the toggles are not sticking out in the aisles.
- Inset carcard boxes, pencil and pick holders, and similar items or move them to spaces where the aisles are wider.
- Hang documents closer to eye level- like at the top of a backdrop - or on a clipboard or a drawer so operators can read them comfortably even in restricted aisles.
- Add a spacer on the bottom of fascia signs so that they have a slight upward tilt makes them easier to read from a standing position.
- Remove bookshelves, chairs and other items that may be lower than the layout but still encroach on aisle space. ☒



*To improve the working space in Astoria, information Yardmaster Don Wells needs is on a clipboard instead of on the fascia. Also notice the small circle shape above engineer Chuck Davis' throttle. It is an inset housing a switch toggle to avoid having the toggle stick out into the aisle.*

Upgrading your fleet?  
Switching prototypes?  
Cleaning out the basement?  
Lightening your load?

Changing eras?  
Changing scales?  
Moving?  
Selling non-railroad stuff?

**Don't forget to choose the NMRA as your ebay charity!**

## PD Events Calendar

| Open House Schedule 2019 |                  |  |       |                  |
|--------------------------|------------------|--|-------|------------------|
| Date                     | Name             | Name of Layout                             | Scale | Location         |
| Nov. 9                   | Glenn Downing    | Milwaukee Road - Superior Division - CNS&M | HO    | Reston, VA       |
| Dec                      | Your name here!  |  |       |                  |
| Open House Schedule 2020 |                  |  |       |                  |
| Jan. 18                  | Cameron Green    | Maine Central Lower Road                   | HO    | Broad Run, VA    |
| Feb. 22                  | Dean Ripple      | B&O Monongah Division                      | HO    | Gaithersburg, MD |
| March tbd                | Bernie Halloran  | New York Kittatinny and Western            | HO    | Chesapeake, MD   |
| April 11                 | Brad Stanford    | Cowan, TN a NC&SL helper district          | N     | Arlington, VA    |
| May 30                   | Brad Trenkamp    | State Line Feed Co.                        | HO    | Vienna, VA       |
| June 21                  | Alex Belida      | Eureka and South Pass Railroad             | HO    | Rockville, MD    |
| July 25                  | Bernie Kempinski | USMRR Aquia-Fredericksburg Line            | O     | Alexandria, VA   |
| Aug. 15                  | John Swanson     | Cresson Branch PRR                         | HO    | Gainesville, VA  |
| Sept. 5                  | Brian Sheron     | LIRR Port Jefferson Branch                 | HO    | Poolesville, MD  |
| Sept. 5                  | Brian Benoit     | Seneca Junction                            | HO    | Poolesville, MD  |
| Nov. tbd                 | George Meyrick   | Not yet named                              | HO    | Manassas, VA     |
| Dec. 5                   | Gary Mason       | North Coast Bay To Bay                     | HO    | Arlington, VA    |
|                          |                  |  |       |                  |

|                              |  |  |  |                      |
|------------------------------|--|--|--|----------------------|
| <b>Outreach Program 2019</b> |  |  |  |                      |
| Sept. 15                     |  | Vienna, VA (NVMR)  |  |                      |
| Nov. 16                      |  | Battlefield Baptist Church, Warrenton, VA with James River Div.          |  |                      |
| <b>Outreach Program 2020</b> |  |  |  |                      |
| March 7                      |  | Surrat House, Clinton, MD  |  |                      |
|                              |  |  |  |                      |
| <b>Ops Weekend 2020</b>      |  |  |  |                      |
| May 16                       |  | Stay tuned to details to be announced in your copy of The Potomac Flyer! |  |                      |
|                              |  |  |  |                      |
| <b>miniCon 2020</b>          |  |  |  |                      |
| April 4                      |  | St Matthews, Little River Turnpike, Annandale, VA                        |  |                      |
|                              |  |  |  |                      |
| <b>MER Conventions</b>       |  |  |  |                      |
| Oct. 10-13, 2019             |  | King of Prussia, PA  |  | Phila. Div.          |
| 2020                         |  | Charlotte, NC  |  | Carolina South. Div. |
| 2021                         |  | Baltimore (?)  |  | Chesapeake Div.      |
| 2022                         |  | tbd  |  | James River Div?     |
|                              |  |  |  |                      |
| <b>National Conventions</b>  |  |  |  |                      |
| July 12-18, 2020             |  | St. Louis, MO  |  |                      |

[Return to Bill of Lading](#)