



The Local

Newsletter of the Mid-Eastern Region, NMRA
The Local, 77, Number 5, Sep-Oct 2022

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Scenery Photo Contest

By Greg Warth

I love to see model trains surrounded by great scenery – a true blend of art and science, machine and nature, man-made engineering intermingling with natural creation (**Photo 1**). The fall is my favorite time of year, I think because the colors of the season are so bright and vivid with reds, oranges, and yellows compared to the gray drabness of winter, the green of summer and the mixed colors of spring. That’s just my opinion though. I have seen winter layouts that are so realistic, they take your breath away, and you can actually feel the cold air. Some layouts have *all* seasons depicted. Some have none, just tracks. But even those without scenery often have a particular geometric design that is very appealing when approached from certain angles.

Photography is a brilliant discipline of model railroading, just as much as building a mountain, creating a river, or constructing a bridge. It is a skill in and of itself. Using a camera to demonstrate the artistic scenery of a layout re-



Photo 1: The Stream on the layout of Bob Charles, MMR
Photo by Jack Dziadul.

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Mid-Eastern Region Board of Directors & Administrative Staff

	<p>President: Kurt Thompson, MMR</p> <p>410-507-3671 president@mer-nmra.com</p>		<p>Vice President: Scott Unger</p> <p>610-462-0756 vp@mer-nmra.com</p>		<p>Treasurer: Brian Kampschroer</p> <p>717-991-7560 treasurer16@mer-nmra.com</p>
	<p>Secretary: Rick Stoneking</p> <p>(856) 296-9291 secretary@mer-nmra.com</p>		<p>Director-at-Large: Charlie Rausch, MMR</p> <p>crausch@mer-nmra.com</p>		<p>Director-at-Large Randy Foulke</p> <p>919-649-8253 RFoulke@mer-nmra.com</p>
	<p>Director-at-Large: Bob Morningstar</p> <p>301-471-0132 BMorningstar@mer-nmra.com</p>		<p>Business Manager: Howard Oakes</p> <p>717-632-5990 business@mer-nmra.com</p>		<p>Assistant Business Manager: John Hoyt</p> <p>410-340-1776 jhoyt@mer-nmra.com</p>
	<p>Achievement Program Manager: Dave Chance</p> <p>704-933-4200 loconut@carolina.rr.com</p>		<p>Editor: Greg Warth</p> <p>757-816-8399 Local-editor@mer-nmra.com</p>		<p>Nominating Committee Chair: Bob Charles, MMR</p> <p>717-763-1848 rcharles@aol.com</p>
	<p>Ballot Committee Chair: Bob Minnis, MMR</p> <p>(434) 589-3011 kahlualab@aol.com</p>		<p>Executive Convention Chair: Sam Rogers</p> <p>443-610-8452 ecc@mer-nmra.com</p>		<p>Contest Chair: Alan Mende</p> <p>717-469-1047 training@susquehannanmra.org</p>
	<p>Registrar: Kirk Bateman</p> <p>410-442-0446 MER-Registrar@mer-nmra.com</p>		<p>Assist Registrar: Jim Fisher</p> <p>443-504-3919 jfisher@mer-nmra.com</p>		<p>Archivist: Kevin O'Connor</p> <p>919-593-2537 kioconnor2@yahoo.com</p>
	<p>Assistant Treasurer: William Wurtzell</p> <p>wwurtzell@msn.com</p>		<p>Publisher: Rick Stoneking</p> <p>(856) 296-9291 rstoneking@mer-nmra.com</p>		<p>Web Master: Jeff Burch</p> <p>443-574-6859 webmaster@mer-nmra.com</p>
	<p>MER Photographer: Jerry Lauchle, MMR</p> <p>814-404-6955 photos@mer-nmra.com</p>				

Mid-Eastern Region Division Superintendents










	New Jersey Division 1 John V Gallagher (856) 228-2239 njdiv.super@gmail.com Division web page: njdivnmra.org		Potomac Division 2 Martin Brechbiel, MMR superintendent@potomac-nmra.org Division web page: potomac-nmra.org/		Philadelphia Division 3 Joe Walters, MMR (302) 521-5884 josephwalters@yahoo.com Division web page: www.phillynmra.org
	Tidewater Division 4 John Robey (571) 217-0599 jrobey2019@gmail.com Division web page: nmra-mer-tidewater.org		James River Division 5 Phillip R. Taylor (434) 589-6006 drphilster@gmail.com Division web page: irdnmra.blogspot.com/		South Mountain Division 10 Bob Johnson southmountaindiv@gmail.com Division web page: http://www.smdnmra.org/
	Susquehanna Division 11 Tim Himmelberger (717) 695-7958 timh@susquehannanmra.org Division web page: www.susquehannanmra.org		Carolina Southern Division 12 Andrew Stitt (919) 637-1282 superintendent@carolinasouthern.org Division web page: www.carolinasouthern.org		Carolina Piedmont Division 13 Charlie Rausch, MMR crausch@mer-nmra.com Division web page: www.cpd13.org/
	Chesapeake Division 14 Tom Casey (410) 426-8947 super@chesdiv-nmra.org Division web page: www.chesdiv-nmra.org				

Photo Contest (Continued from page 1)

quires a blending of abilities to not only “see” the beauty and the realism of a scene, but also to frame it properly, and adjust the settings to improve the quality of the photo (either in the camera or in the software). Just look through the pages of any national model railroad magazine where you can truly appreciate the skills of photographers showing a layout or a model structure in the best light and at the best angle, with perfect clarity, and depth of field.

Much has been written and demonstrated about photography in model railroading. A very educational video on this subject has been produced by Jack Burgess, MMR and is available on [YouTube](https://youtu.be/B_AeXNTKlok) (https://youtu.be/B_AeXNTKlok). An article written for *PopPhoto* by [Paul Dolkos](#) as interviewed by Matthew Ruiz is also very informative. Once you have collected a few tips from these masters, and with a little practice, you’ll be ready to become a master yourself.

Here are a few tricks of the trade that might be helpful:

1. You can’t fix a blurry picture no matter how good your software might be.
2. Always use a tripod or at least a monopod whenever possible. (See No.1)
3. Use a high-resolution camera. Your picture should be at least 1200 x 1200 pixels to show well on a computer screen. (See No.1)
4. Adjust your camera settings to show the largest depth of field (a high *f* number). Often, even at the best camera settings, the depth of field will still be too narrow, and part of your picture will be blurry. The best way to fix this is to use [Helicon Focus](#) software, which allows you to take several photos at different depths of field and blend them together on your computer so that the whole picture comes out clear and sharp. This software is available for a 30-day free trial, and then anywhere from \$30-65/yr. ([Prices noted here.](#))
5. There are some situations where you may *want* the depth of field to be narrow to focus clearly on the subject with the rest of the photo being blurred into the background.
6. Adjust the lighting setting(s) on your camera as well as the external lighting on the subject for the best images.
7. Learn about [composition](#) and how to frame your subject for the most pleasing effect.
8. Eye-level photos are often better than the ones taken from the birds-eye perspective.

(Continued on page 4)

Photo Contest (Continued from page 3)

Now for the fun part:

1. Take pictures of different scenes, or views, of any layout, or diorama, using whatever camera settings and whatever software you wish to use to enhance them. They must be model railroad pictures, **not** railfanning photos. And for this contest, each photo must be a scene, not just a model, although a model may be included in the scene.
2. Choose three of your best photos and send them to local-editor@mer-nmra.com. Please include the camera settings and the software you used for each photo. And include whose layout or structure the photos represent.
3. The photos must be taken by you personally. (You must verify this in writing when you submit your photos.)
4. The deadline for photo submission is on or before October 15, 2022.
5. Our team of proofreaders will carefully review all submissions of photos for quality, clarity, realism, and artistry and will choose the best three for first, second, and third prize, along with one or more honorable mentions.
6. Contest winners will be announced and the winning photos will be shown in the next issue of *The Local*, and at the upcoming Annual Mid-Eastern Region Convention, Oct. 20-23, 2022.

This will give you all a chance to show off your modeling abilities as well as your photography skills. We truly look forward to seeing and reviewing your photos.



The NMRA has a new SIG – Women in Model Railroading

We are excited to offer the opportunity to women around the world to become members of this new Special Interest Group - [Women in Model Railroading](#)! As a recognized SIG within the NMRA, we expect this group to be vibrant in the world of model railroading. The purpose of the Women in Model Railroading (WIMRR) SIG is to introduce, encourage and connect women in or interested in the hobby of model railroading. The SIG is designed for education, enrichment, social interactions, and all-around fun. This group is meant to be inclusive and supportive of all women in the hobby and railfan world. We plan to host a few social meetings per year including online and at train shows/conventions around the country. The SIG will provide women in their local NMRA regions the support needed to create activities or gatherings, in order to grow the hobby and remove perceived barriers for women modelers.

Join our Facebook Pages:

"[Women in Model Railroading](#)" is for women in the model railroad hobby to share their world.

"[The Steam Sisters Group](#)" is for women railfans to share their photos of steam AND diesel trains.

Visit the SIG page: <https://www.nmra.org/sigs/women-in-model-railroading>

Join: Please use this link to join the SIG: <https://forms.gle/aKPhcXU1sthKW1MQ8>

Contact: wimrr@nmra.org

Election of Officers and Bylaws Changes

The candidates for officers (President, Vice President, Secretary, and Treasurer) of the Mid-Eastern Region of the NMRA are listed here along with their statements. Following the candidates are the proposed Bylaws changes. Please read all of these over carefully so you can decide how you will vote when the ballots are sent to you.

Candidates and Their Statements

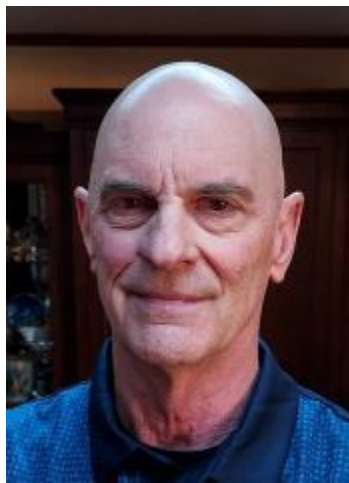
Candidate for President:



R. Scott Unger –

One of the most rewarding parts of model railroading is the endless opportunity to learn as well as to interact with others who share our interest of railroads. Over the last four years I have served as the Region Assistant Treasurer and the Vice President. Both of those positions were certainly learning experiences and provided me the opportunity to meet new people from well beyond my home Region. A specific learning experience centered around the challenges of reintroducing our Regional Convention in 2021 following the 2020 cancellation due to COVID. While technology has provided our hobby with the ability to narrow the sometimes large, physical distances between us, parts of our hobby like conventions, model contests and operating sessions are best experienced in person. Whether it is in person or virtual, I look forward to helping strengthen the connections between us as well as reaching those outside of the organization should I be elected to serve as the MER President.

Candidate for Vice President:



Gary Brown –

I have been a model railroader for over 50 years and am currently rebuilding my permanent layout. I am on the Board of the Tidewater Division where I have served as Director, Assistant Superintendent, and Superintendent, and am currently the Assistant Superintendent. I was the Chairman for the 2012 MER Convention. I have completed three Achievements towards my MMR and am half-way through four others. I am also with a group working to develop and open the "Model Railroad Museum of Hampton Roads", patterned after the San Diego railroad museum.

Outside model railroading, I serve as the Chairman of the Board for the SkillQuest Advisory Group for the City of Virginia Beach's Adult Day program for the disabled. I have served on the Board of my local Lions club as President, First Vice President, and was just re-elected President of the Virginia Beach Host Lions club. In addition, I am active with my local community Civic League. I was a Navy Pilot for twenty years, flying fighter aircraft. I have a wealth of experience working in and leading organizations and look forward to serving the MER as Vice President. I ask for your vote in the MER elections.

Candidate for Secretary:



Rick Stoneking –

I grew up in the Phoenix AZ area and after graduating from high school I joined the US Army where I served as a Military Police officer and was eventually stationed at Ft. Dix, NJ. After leaving the Army I returned to AZ and earned a degree in Electronic Engineering Technology, and eventually ended up back in NJ in 1999. I have spent my professional career primarily in engineering management. My love of trains started as a young boy of 13 when I convinced my mom to buy me a copy of the July 1980 issue of Model Railroader magazine. In that issue was described Bruce Goehmann's Midland Electric. I read, and re-read, that article until the pages were worn out, and I have been hooked ever since. I currently serve as Director of Technology for the NJ Division of the MER, Publisher for the MER, Director and Merchandise Coordinator for the Maryland & Pennsylvania RR Historical Society, and as Secretary of the Burlington County Model RR Club. I look forward to bringing my energy, commitment, and passion for our hobby to this role within the MER, and to serving the MER and its members in the best way that I can

Candidate for Treasurer:**Brian Kampschroer -**

Over the past six years as your Treasurer on the MER Board of Directors, we have accomplished many of the objectives we set in 2016. Kirk Bateman is doing a superb job as Registrar, accounting for all convention receipts and deposits. The convention treasurer functions, budgeting and paying the convention bills, are now safely separated from the Registrar duties in the hands of our Assistant Treasurer, Bill Wurtzell. All convention monies now reside in a separate dedicated but linked MER bank account overseen by the MER Treasurer. We are conservatively investing between one third and two thirds of the MER funds to create safe income. MER accounts are balanced after many years of deficit budgets, and the budget committee is now codified to reflect the major areas of income and expense within the MER. Despite no change in NMRA support, we have increased our monetary support of the Divisions. And the work to improve the fiscal health of the Mid-Eastern Region continues. In the future we hope to further support our convention committees and to convert the MER accounts to a non-profit software, which will help support the biannual audit as well. As Treasurer, I continue to be an active member of the board with a long corporate history, open to fresh and creative ideas. I appreciate your continued support.

Proposed Changes to the MER Bylaws

No. 1 -- Change Article 8, Section 4, Part B

From:

Annually, the Budget Committee will be responsible for receiving operating budget requests and requests for special projects. They shall evaluate the requests and develop a sensible operating budget proposal for the fiscally responsible operation of the Mid-Eastern Region NMRA, Inc. in keeping with the stated purposes of the organization and present it to the Board of Directors at least **thirty (30)** days prior to the annual budget meeting.

To:

Annually, the Budget Committee will be responsible for receiving operating budget requests and requests for special projects. They shall evaluate the requests and develop a sensible operating budget proposal for the fiscally responsible operation of the Mid-Eastern Region NMRA, Inc. in keeping with the stated purposes of the organization and present it to the Board of Directors at least **seven (07)** days prior to the annual budget meeting.

No. 2 -- Change Article 5, Section 3

From:

There shall be at least two (2) meetings per year of the Board of Directors of the Mid-Eastern Region, NMRA, Inc., one of which shall be in conjunction with the Annual Meeting, and another shall be for consideration of the annual budget. These two (2) meetings shall be held at such time and place as directed by the President after consultation with the members of the Board of Directors and set at least two months in advance. The two (2) mandated meetings shall be in-person meetings of the Board of Directors; however, the Board of Directors by unanimous vote may waive this requirement for a specific meeting.

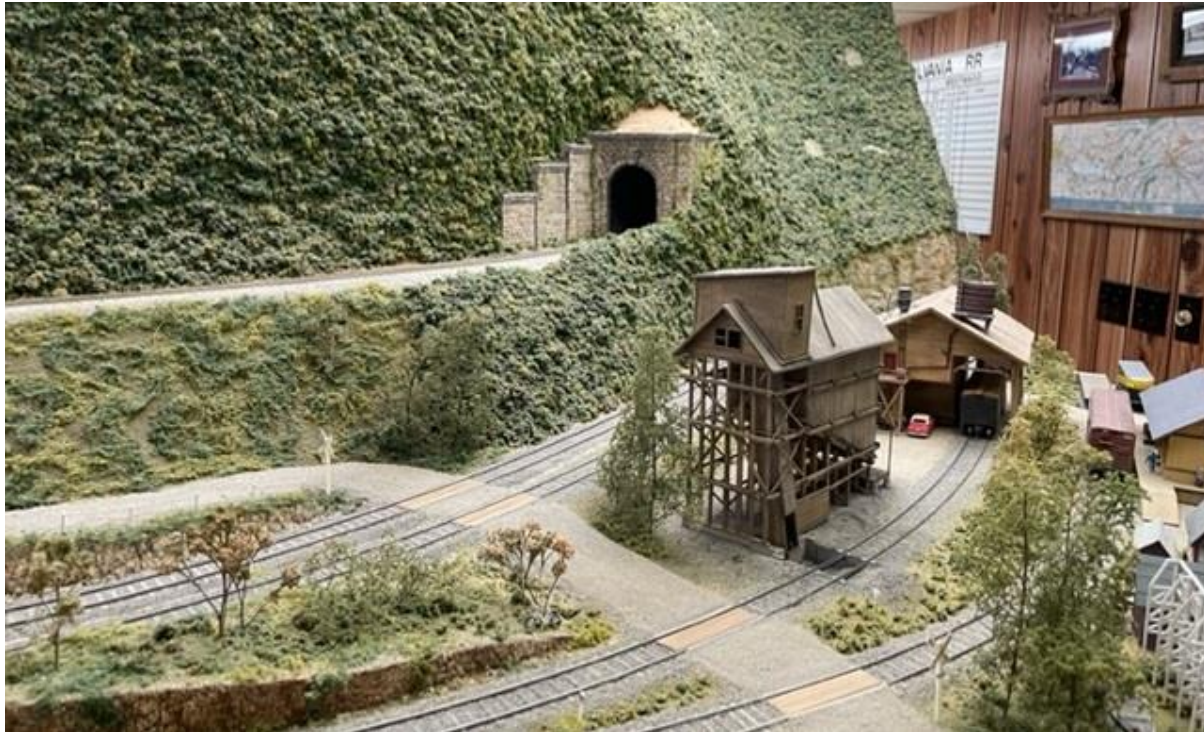
To:

There shall be at least two (2) meetings per year of the Board of Directors of the Mid-Eastern Region, NMRA, Inc., one of which shall be in conjunction with the Annual Meeting, and **the second of which shall be the Spring Board of Directors to be held in April.** These two (2) meetings shall be held at such time and place as directed by the President after consultation with the members of the Board of Directors and set at least two months in advance, **and in accordance with Policy. A Board of Directors Budget meeting shall be held in January to set the budget for that calendar year.** The two (2) mandated meetings shall be in-person meetings of the Board of Directors; however, the Board of Directors ~~by unanimous vote~~ may waive this requirement for ~~a~~ **any** specific meeting.

End of proposed changes

Did You Know...?

Ben Kubelsky, the author of “The Frugal Model Railroader”, a regular column in the *Susquehanna Sidetracks*, is actually a pseudonym adopted by Rich Wurst, the editor of *Sidetracks*. Ben Kubelsky was a well-known comedian from the 1930s to the 1970s, who used the subject of obsessive frugality to become famous. Ben was a real person who also used a pseudonym – Jack Benny! Interestingly, despite his cheapskate character, in real life he was quite generous. (Story shared by Bob Charles, MMR in the “Division Business Car” of the *NMRA Magazine*, June 2022, p.45.)



Hillside Scenery from the layout of Bob Charles, MMR. Photo by Jack Dziadul

MER Board of Directors Meeting Schedule

Board of Directors Meeting – 7 pm, Oct. 20, 2022, Hilton Charlotte University Place 8629 JM Keynes Dr., Charlotte, NC

MER Annual Meeting - ~8 pm, Oct. 22 (10 am, Oct. 23) Hilton Charlotte University Place 8629 JM Keynes Dr., Charlotte, NC

UPCOMING MER CONVENTIONS

2022 Convention – Carolina Southern Division — “Carolina Special Look South” — Oct. 20 - 23, 2022, Charlotte, NC

2023 Convention – Susquehanna Division — “Round the Curve to Altoona 2023” — October 19-22, 2023, Altoona, PA

2024 Convention – Carolina Piedmont Division — “Piedmont Junction” — Sep 26 - 29, 2024, Durham, NC

2025 Convention – New Jersey Division— Dates and location TBD

Advertising in The Local:

Advertising rates have changed! For the better! 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:

Division and Clubs	Free
Full Page – color	\$100.00
½ Page – color	60.00
¼ 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*, 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 for publication are used in approximately the order they are received.

Publication Schedule Submission Deadline

Jan/Feb	Dec 1st of previous year
Mar/Apr.....	Feb 1st
May/Jun	Apr 1st
Jul/Aug	Jun 1 st
Sept/Oct	Aug 1 st
Nov/Dec	Oct 1 st

Please observe the following steps to submit your contribution. **1.** Compose and submit your text in one of the following formats: TXT, DOC, or DOCX. **2.** 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." **Send the illustrations separately and numbered as you would want them in the text.** JPG, GIF, TIFF, or PNG formats are best for photos. **3.** If you have captions for your photos, etc., create a separate text file for the captions, each of which will be numbered to match a numbered photo or figure. A special note on photos or other exhibits; please only send us your 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.

Also, if you have previously published your article or photo in any other magazine or newsletter, including a division newsletter or your own website blog, it cannot be reproduced in *The Local* without written permission from the magazine publisher, editor and author / photographer.



President's Column

President Kurt Thompson, MMR

As most of you know, I'm in the final months of my term as the President of the MER (Mid-Eastern Region). This will be my next to the last President's column.

The elections for the next President, Vice-President, Secretary, and Treasurer are also winding down. By the time you read this, I hope you have exercised your right as a resident of the MER to vote for the candidate of your choice who will lead the MER through the next two years. And if your candidate doesn't win, please support the MER Board of Directors with your encouragement and your volunteerism.

As I step down, I wish the incoming President well and will move quietly into the position of Past President. There I'll serve the next President and the Board as a resource for institutional knowledge and support.

This move is indicative of the overall nature of our hobby and our organization. Those with experience share with those who are seeking knowledge and help. Part of this involves giving clinics and simply helping other modelers to achieve their dreams and goals.

I would encourage each of you to consider what you have to offer the hobby, the MER, and your division. You have more to offer than you give yourself credit for. (That's a natural tendency for most of us.) One way to look at it is to remember (and honor) those who helped you in the hobby in the past and then offer similar help to others, emulating the gift you were given.

You might find that by doing so you will rekindle some of your own passion which may have waned somewhat since those earlier years. This will help to fend off hobby apathy, and perhaps you might even learn something new in the process.

See you in a few weeks in Charlotte.



From the Editor's Desk

Greg Warth, Editor

Sharing Information

Having just returned from the NMRA Gateway Convention in St. Louis, I am now full of enthusiasm about the future of the hobby. I am anxious to apply the new techniques I learned, and to share that knowledge with as many people as I can. And sharing what we know about model railroading is another great aspect of the hobby that we do all the time, but don't think about it much.

In Virginia Beach, we have a group of about 14 or 15 model railroaders, most of whom belong to the Tidewater Division of the MER, who meet informally for lunch at a local pub every Wednesday. This is a fantastic group of guys who all come from diverse backgrounds and from different parts of the country. Some of them have been modeling railroads for 50 years and others are just beginning, but we all have something to share. We bring in models that we've been working on or ones that we have finished for others to see. And we do things to help each other in our various modeling projects. One of us is an excellent painter of locomotives and railcars. Two or three are great scratch builders. Others are electronic experts. One is an awesome locomotive repair guru. Some of us are brainstorming about how we can expand the hobby in our area and acquire a location where we can start building layouts in different scales to share with the public. We don't have a set agenda. We just meet and talk about stuff, but it usually centers around railroads and/or modeling. I really enjoy those lunch meetings. Sharing knowledge that we have learned and finding out things from others is another wonderful way to have fun in this hobby.

Our group previously had a 4000 sq. ft. location containing an HO layout that was visited by lots of people in the area. Unfortunately, the building where it was located changed ownership and the layout had to be removed. That was about three years ago, and we are still looking for a new location. But we have hope that eventually we will get a place where once again we can start building and operating. In the meantime, we continue to share lunch, fellowship, and tips about model railroading.

Jack Dziadul of the Carolina Piedmont Division tells me they have a similar luncheon group that meets monthly in Sanford, NC. They even have a name for themselves – The Train Guys.

If you don't have a group such as this in your area, I would urge you to start one. It wouldn't take much. Start with two or three people in your division who might be interested, locate a restaurant nearby and start having lunch there once a week. Then one by one start inviting others, maybe even some model railroaders from outside the division. There are many very good modelers out there who just never got around to joining the NMRA. So, even if you don't have a layout location, you can still

Continued on page 16

get together and talk about it. At least you will have a group of great friends with whom you can share your models, tips, and information.

This issue of *The Local* features an inspiring basement-sized HO layout built by Bob Charles, MMR. An expansive freelanced model railroad based loosely on the PRR (Pennsylvania Railroad), the layout demonstrates the imaginative, artful scenery and scratchbuilding skills of the creator. We will also share Part II of Jim Fisher's very informative and comprehensive reference article on "Tuning Freight Cars for Reliable Operation" based on a clinic that he presented at the 2021 Mid-Eastern Region (MER) Convention in Baltimore, MD. In the "Electronics Corner", we have another excellent presentation from Fred Miller, MMR on how to operate a switch machine using a servo device activated either by DCC control or by a pushbutton mounted on the fascia. As usual, "Modeler's Haven" contains a variety of new tips, tricks, and/or gadgets to help with your modeling. The model railroad photographers among us will relish the idea of a "Photo Contest" where you don't have to wait a year to see if you have won. Check out the newest "[Look South 2022 MER Convention](#)" update by Bob Halsey as we anxiously await our next annual conference in October hosted by the [Carolina Southern Division](#).

Congratulations to our newest Master Model Railroader (MMR) #710, Robert Cook, of the Tidewater Division along with several other MER members who have recently won Achievement Program (AP) Certificates. See the AP Update by Dave Chance in this issue.

Above all, thank you for your membership in the MER and NMRA. We truly appreciate your faith in our organization as an educational resource and as a method of communicating with other modelers. And thanks to all those on *The Local* team who provide endless help, input, and support in putting these issues together:

Editorial Staff, Publisher, and Proofreaders:

Bob Morningstar, MER Director
 Martin Brechbiel, MMR
 Alex Belida, MMR
 Jack Dziadul
 Rick Stoneking, Publisher



Greg Warth, Editor



NMRA Achievement Program Update

Dave Chance
 MER AP Manager

Since the last report in *The Local*, the following Achievement Program (AP) certificates were earned and awarded:

Division 1 – New Jersey

Dale Leasure – Golden Spike Award
 Bruce Barrett – Golden Spike Award
 William H. Howard – Master Builder Scenery
 Thom Radice – Master Builder Scenery
 David Albertson – Master Builder Cars

Division 13 - Carolina Piedmont

Kevin O'Connor – Association Volunteer
 Kevin O'Connor – Model Railroad Author

In a perfect world, this information will appear soon in the **NMRA** magazine. This should not deter you from giving recognition locally. Normally you will be able to recognize AP accomplishments long before the names appear in the **NMRA** magazine.

PROBLEM - PLEASE HELP ME. National does NOT accept R&V forms, except Volunteer and Author. I am getting too many of them, only to have to return to the sender and get the proper form. **NO R&V FORMS.**

Notice:

Martin Brechbiel, MMR has decided to step down as Secretary of the Board for the Mid-Eastern Region. He has been an exemplary staple of our leadership for several years, providing consistency, stability, and an amazing wealth of knowledge. He will be missed in that role but will continue his position on the editing/proofreading team for *The Local*, for which I am extremely grateful. Rick Stoneking has graciously agreed to step up to the platform as Acting Secretary for the rest of this term and as Secretary for the following term if so elected. He is well suited for the position as you can see based on his candidate statement on page 5.

Elections 2022

Deadlines and Schedules for 2022 Nominations and Balloting:

The deadline for self-nominations was on May 30. So, in August and September, you will be voting on the four unopposed officer candidates as follows:

Scott Unger for President
Gary Brown for Vice President
Brian Kampschroer for Treasurer
Rick Stoneking for Secretary

Along with the two proposed Bylaws changes.
(See pages 4-5 of this issue for details.)

July 2, 2022* – Eligibility to vote: You must be a member in good standing (paid up NMRA dues) based on the membership report supplied to the MER Business Manager from NMRA National as of 07/02 (the 2nd of July) of every election year to be eligible to vote. If an individual is not a member, or if membership has expired as indicated by the record supplied to the MER, and MER officials have not been informed by NMRA National of a valid renewal of membership by 07/02 (the 2nd of July), that individual will not receive a ballot, nor be permitted to vote in that year's election.

August 1, 2022* – Deadline for mailing paper ballots to members and for commencing electronic voting; could be mailed earlier depending on other deadline requirements.

September 6, 2022 – Deadline for electronic voting, also last day as shown by postmark for mailing paper ballots.

September 10, 2022 – Deadline for receipt by Balloting Committee of paper ballots sent by mail.

September 17, 2022 – Deadline for Ballot Committee to transmit results to the President to communicate the election results to candidates. The Business Manager also notifies the MER Webmaster and the NMRA of the election results.

October 8, 2022 – Deadline for publishing election results on MER's website.

Our next election cycle for 2023 will be for Directors. If you wish to be considered as a candidate for service as a Director, please notify one of the members of the Nominating Committee:

Chair: Robert Charles, MMR rcharles@aol.com
Jack Dziadul jackdziadul@gmail.com
Kenneth Montero va661midlo@comcast.net



2022 Potomac Division Clinic Schedule

The Potomac Division sponsors a number of clinics to which all MER members are invited when space is available. Most of the in-person clinics are held at Jerry Stanley's Hobby Barn in Hume, Virginia unless otherwise stated. If you are interested in attending any of these clinics, either in-person or virtually, please contact Jerry at 703-595-8081.

Saturday Sept 17th, 2022, Make and Take Clinic 10 AM

In Person – Nicholas Kalis, Gary Eames – Turning Plastic into Wood in All Scales inexpensively, Jerry Stanleys Hobby Barn, Hume, Va.

Sunday, Sept. 18th, 2022, Virtual Clinic 3 PM - Pending

Saturday October 15th, 2022, Make and Take Clinic 10 AM

In Person – Kate Kalis – Painting a backdrop in a train room
 Jerry Stanleys Hobby Barn, Hume, Va.

Sunday October. 16th, 2022, Virtual Clinic 3 PM

Bob Sprague – The Ma & Pa in HO, design of my layout related to the prototype

November (5th or 19th), 2022, Joint MiniCon with James River and Tidewater Divisions; Battlefield Baptist, Warrenton, Va.

Sunday December. 4th, 2022, Virtual clinic 3 PM

George Gaige – Adding working headlights to HO scale vehicles

*July and August dates are left here for future candidates to plan for next year

Hope to See You at the Look South 2022 MER Convention!

By Bob Halsey, CSD

By now, I hope you have registered for the convention, made your room reservation at the Hilton University Hotel, and signed up for the tours we have arranged including the North Carolina Transportation Museum (NCTM), the National Narrow Gauge Museum and restored Newton Depot/Model Railroad Center, several outstanding nearby layouts, and the Lionel Corp. development center in Concord where you can see all the interesting projects they are working on.

We will also be operating the General Store (formerly “white elephant room”) that will allow you to sell any of your surplus items to fellow modelers. The General Store is also where we will be displaying the many top quality **raffle prizes** and **door prizes**. Door prize tickets will be given to you when you check in. Raffle tickets will be on sale in the store, where you can buy as many as you want and put them in the various boxes for each of the items you would like to win. Drawings for these items will be held on Saturday afternoon by an impartial (non-CSD) person and the results will be posted on a board outside the banquet room well before those doors open. Prizes may then be claimed up until start of the banquet. You really should take a look at these raffle prizes. All are new and unused, most in the original packaging! They include rolling stock and structure kits in multiple gauges, several quality railroad clocks and artwork items. The door prizes include new/unused railroad-related T-shirts, artwork, and souvenir items. Raffle tickets will cost 1 for \$1, 6 for \$5, 12 for \$10, 25 for \$20 (no checks or cards) and store hours are 7-10 PM Thursday, 9-12 AM, 1-5 PM, and 6-9 PM Friday, and 9-12 AM and 1-5 PM Saturday. Also, we will open from 9-9:30 AM Sunday only for picking up prizes and reclaiming your unsold items.

So, sign up for those tours, get your raffle tickets, and we will see you at the convention!



Special Event at Stowell Yard - The Milwaukee Bi-Centennial Unit Arrives! Photo by Mark Nieting of the Tidewater Division.

The Last Stop...

We never know when we may reach our own personal last stop in life. Recently, Hubert Mask of Mask Decals passed away suddenly on August 8, leaving his survivors deeply saddened. Besides the mourning, there was another unfortunate consequence of his passing. His extensive decal business and website, listing almost 500 decal sets is no longer accessible. He left no one any passwords or notes about how to get into his website or financial accounts. Even though the old Mask Island Decals website is still online, no one can access it. Highball Graphics has taken on the arduous task of transferring information to their website, so if you wish to order one of his decals, you will have to do that from the Highball Graphics site. The moral of this story is that no matter what your age, you should make sure that your financial accounts, websites, and any other important documents that you maintain will be accessible to your survivors. Please refer to the excellent article written by Marshall Abrams in 2018 in the *Potomac Flyer* on [“Estate Planning for Model Railroaders.”](#) (Provided by Jack Dziadul)

BULLETIN

2022 MER CAROLINA SPECIAL

ALL ABOARD!

CHARLOTTE NORTH CAROLINA CONVENTION UPDATE



nmra.org

Carolina Southern Division
CS
National Model Railroad Association

CAROLINA SPECIAL
NMRA - MER - CSD

Carolina Southern Division
CS
National Model Railroad Association

MID-EASTERN REGION
Established 1946
NMRA

LOOK SOUTH IN 2022

2022 MID-EASTERN REGION CONVENTION



Hilton University Place, Charlotte NC



Hotel Lobby

Carolina Special, 2022 MER Convention update The Carolina Southern Division is looking forward to hosting the 2022 MER convention, 20-23 October, in Charlotte!



Be sure to register soon as the registration cost goes up on September 1st! Here are highlights of the latest Convention information.

The website has been updated several times since the last email I sent about this fun event. The 2022 MER convention website is <http://www.carolinasouthern.org/MER2022.html> where all the information you need can be found.

The Banquet will be a great meal with an exciting guest speaker, Shane Wilson, President of Scale Trains. Be sure to sign up.

There are Layout Operating Sessions and information on these can be found at:

<http://www.carolinasouthern.org/MER2022tours.html>

A full clinic schedule, with a broad range of exciting topics, with 4 Make-and-Take clinics of which three of these clinics are conducted in 2 sessions and information can be found at:

<http://www.carolinasouthern.org/MER2022clinics.html>

We have three special tours before and during the convention.

Tour #201 is a pre-convention backstage tour being held at the North Carolina Transportation Museum at 1 Samuel Spencer Drive, Spencer NC. Don't worry about checking into the convention hotel until after the museum tour. The private tour takes place on Thursday, October 20, 2022 starting at 12:30pm.

Try to be in place at noon. Information can be found at:

<http://www.carolinasouthern.org/2022%20Convention/NCTM%20Tour%20Notice-V3.pdf>

And a map of the Museum grounds can be found at:

<http://www.carolinasouthern.org/2022%20Convention/NCTM%20Tour%20Map-r.jpg>

After the tour you can visit [The Little Choo Choo Shop](#), the largest model railroad hobby shop in NC across the street from the museum.

Tour #202: The second special tour is the UNIFOUR SPECIAL which includes the Southeast Narrow Gauge and Shortline Museum in Newton, NC and six very nice layouts in the Hickory, NC Metro Area. This is a Friday all-day mini-bus tour and will leave the convention hotel on Friday morning and return about dinner-time. Information on this tour can be found at:

<http://www.carolinasouthern.org/MER2022unifour.html>

Tour #203: The third special tour is of Lionel Corporation Headquarters. This will be a self-drive tour on Friday, October 21, 2022 starting at 9:30am at 6301 Performance Drive, Concord, NC.

The Lionel Headquarters is approximately 5 miles from the convention hotel.

A Carolina Special Look South in 2022 convention shirt is now available to purchase during early registration.

One Day Registration is now an option.

We will have hand sanitizer in the clinic rooms and masks are welcome if someone feels safer wearing one.

For our friends in the Southeastern Region, a home layout in Greenville SC will be open on Sunday Oct 23 for our SER visitors returning home!





LOOK SOUTH IN 2022

Mid-Eastern Region, NMRA 2022 Convention CAROLINA SPECIAL

October 20th to 23rd, 2022

www.carolinasouthern.org/MER2022.html



Use Online Registration for Secure Payment and Most Up-To-Date Activity Availability

Please enter (print legibly) all names **as you wish them to appear on your registration badge(s)**. They will not be changed at the convention.

Primary Registrant: _____ MMR? Y / N, Title for Badge _____

Significant Other Attending (living at same address): _____

Children Attending (18 & under - list all + age): _____

Registrar's	Address: _____
Use	City: _____ State: _____ Zip : _____
Only!	Phone #: _____ E-mail: _____
	NMRA #: _____ Region: _____ Division: _____
	Favorite Scale: _____ Is this your first MER Convention? _____

Description	ID	Cost	Qty	Paying
Registration				
NMRA Member: \$50 thru Aug 31, \$55 Sep 1 – Oct 6, \$60 On-Site Oct 20 – 23				
Non-Member*: \$70 thru Aug 31, \$75 Sep 1 – Oct 6, \$80 On-Site Oct 20 – 23				
One-Day (circle day) NMRA Member: \$35 Fri Sat Non-Member*: \$55 Fri Sat				
Spouse/Significant Other (Name)		\$0		No Fee
Children 18 and Under (Name & Age)		\$0		No Fee
Banquet – Saturday Night ____ Pulled Smoked Pork Shoulder ____ Grilled BBQ Chicken Breast ____ Roasted Veg Lasagna	401	\$55		
Call Boards / Ops – See Convention Web Site for Latest Information	-----	-----	----	-----
Seth Gartner's NYC Piney Fork Branch	801	\$5		
Jack Parker's Piedmont & Western (Section 1)	802	\$5		
Jack Parker's Piedmont & Western (Section 2)	803	\$5		
Neal Anderson's KK&L	804	\$5		
Andrew Stitt's ET&WNC	805	\$5		
Marcus Neubacher's CR&W	806	\$5		
John Short's Rio Grande Southern	807	\$5		
Extra Fare Clinics – Registration Required, Further Information on Web Site	-----	-----	----	-----
Build a Craftsman Kit Section House ____ N (\$20) ____ HO (\$25) or Crossing Shanty ____ N (\$15) ____ HO (\$20)	601			
Ready a Freight Car Kit for Your Layout	602	\$15		
Scratchbuilding with the Cricut Maker	603	\$5		
Making Wire Trees	604	\$5		
Prototype Tours – Further Information on Web Site	-----	-----	----	-----
North Carolina Transportation Museum (Thu 12:30p – 5p)	201	\$15		
Unifour Special Tour (Fri 7a – 5:30p)	202	\$65		
Lionel Headquarters, Concord, NC	203	\$5		
Merchandise	-----	-----	----	-----
Convention Shirt (order by Oct 6) ____ S ____ M ____ L ____ XL (\$31) ____ L-T ____ 2XL (\$32) ____ XL-T (\$33) ____ 2XL-T ____ 3XL (\$34) ____ 3XL-T ____ 4XL ____ 4XL-T (\$35)				
Embroider Shirt Y / N: Line 1 _____ Line 2 _____	913	\$7.50		
Would You Like To Be A Contest Judge At The Convention – Circle - YES or NO	----	----	---	-----
Have You Been A Contest Judge In The Past – Circle - Yes or NO	----	----	---	-----
TOTAL			➡	

* Non-members must complete a Rail Pass application for a 9-month trial membership to the NMRA. Please contact the Convention Registrar (contact info below) for details.

Featured Layout

Bob Charles, MMR Layout Photos

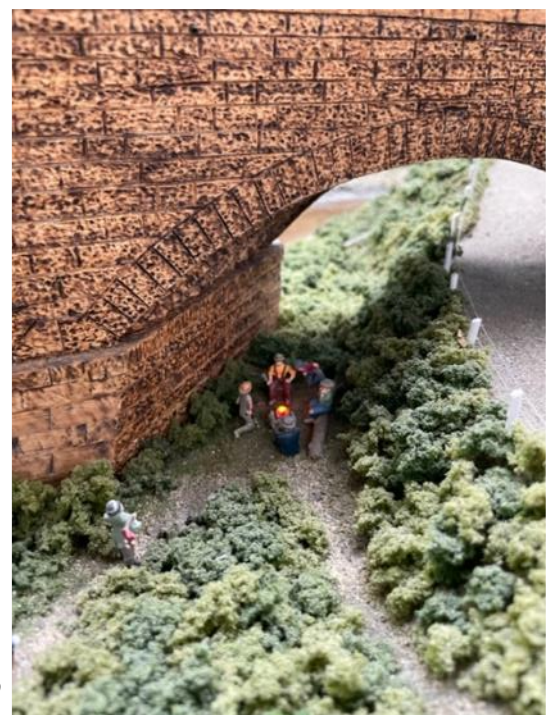
Photos and Text by Jack Dziadul

There are occasions when you have an opportunity for a diversion on your way to or on your way back from a train show or model railroad related convention. Such was the case after the Harrisburg Narrow O Summer Meet. I met up with Superintendent Tim Himmelberger of the Susquehanna Division at the show. Tim mentioned that our mutual friend Bob Charles, MMR lived nearby. I reached out to Bob and suggested that he stop over to the show and to be sure to bring his wallet. Well, he bobbed and weaved at that suggestion, but he did invite me to stop by the house to see his layout. That I did.

To the surprise of no one, Bob was a gracious host who provided a tour of his large and mostly completed layout. Bob's empire fills the basement. The railroad was fully operational and controlled with NCE DCC equipment. The railroad is fictional with a bias toward Pennsylvania RR scenic elements and rolling stock. Some industries are inspired by prototypes, and some are named for friends and family. The layout is a collective effort with several friends contributing to construction. MER Treasurer Brian Kampschroer earned his AP Master Builder Scenery certificate on Bob's layout.



Bridges2



Hobo Camp

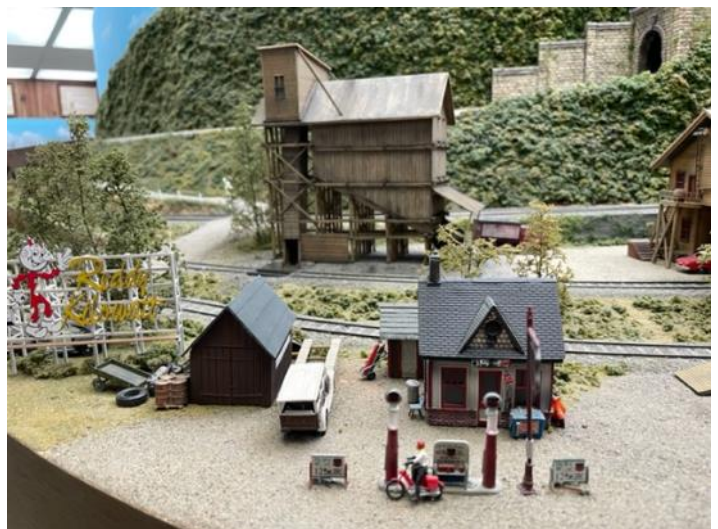
Featured Layout



Bridges



Blue Bird Cafe



Gas Station

Featured Layout



Columbia Malleable Casting Co



Culvert



Logging Repair Facility

Featured Layout



Coal Yard



Sand and Coal



Soybeans

Featured Layout



Hillside Scenery



Golf Tee

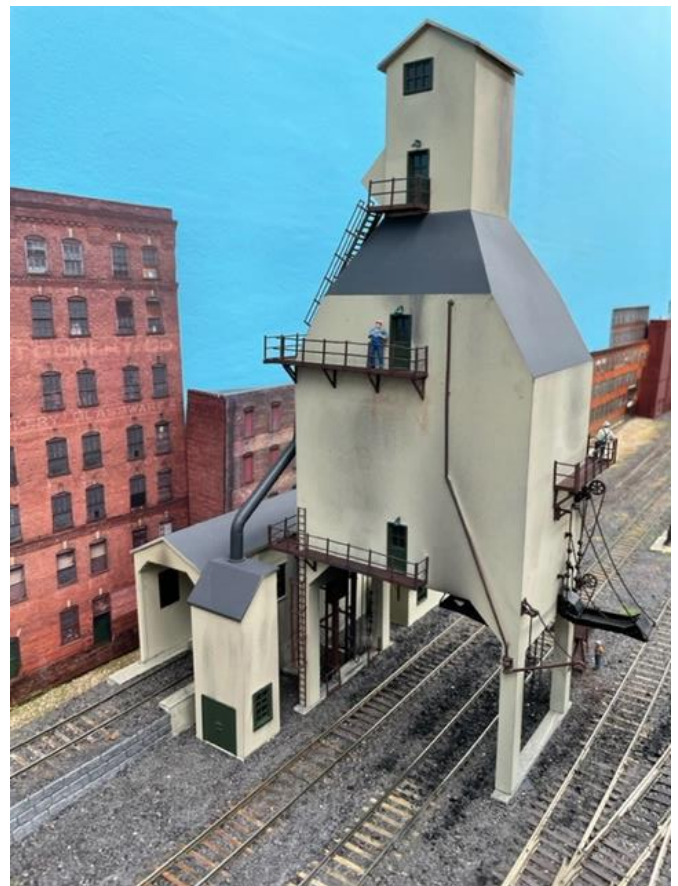
Featured Layout



Tunnel




Water Tank



Tichy Cooling Tower

Advertisement Central Station

IPSWICH HOBBIES
Craftsman Structure Kits
Jack Dziadul



IpswichHobbies.com *919-721-8757*

Hobby Central Train Station



Model Railroad Supplies
 10% Off for MER Members -w/Coupon Code BYMRR10MER
<https://trainstoreonline.net>

**Custom
 Layout
 Building**




Layout Design

By Lance Mindheim

www.shelflayouts.com
 301-404-8164

[Mid-Eastern Region Home Page](#)
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Your advertisement could be on this page!



Steel Mill on the layout of Bob Charles, MMR. Photo by Jack Dziadul.

A Milk Service on My Erie-Lackawanna Morris and Essex Division

By Richard Steinmann

Over the years, it has become clear to me that nostalgia drives a lot of model railroading. We tend to remember, sometimes with rose-colored glasses, our “glory days” when we were in high school. I am no exception. I grew up in Northern New Jersey and naturally found my modeling inspiration in the railroads nearby. In my case, this was the Erie-Lackawanna Morris and Essex Division.

The focal point of my railroad is my hometown, Morris Plains, New Jersey. I described how I modeled Morris Plains and nearby Morristown in an article in the June-July 2022 issue of the *Potomac Flyer*. The article was featured in the Division Business Car column in the August 2022 issue of NMRA Magazine. You can read it at the NMRA Website Member Pages.

But my model railroad covers more than just Morris Plains and Morristown. In this article, I will describe my railroad, using a unique milk service to show some of the scenes on the railroad.

The Model Railroad

My HO scale layout models a portion of the Morris and Essex Division. While the date modeled is May 1965, there is still plenty of rolling stock from the pre-merger Erie and Lackawanna Railroads. The area modeled covers the Morristown and Boonton Lines from Madison to Port Morris, the Sussex Branch to Netcong, the Cut-Off to the West, and the Old Main towards Phillipsburg. East Staging represents Hoboken, NJ and West Staging represents Scranton, Buffalo, or Chicago. There is also an (anachronistic) trolley line modeling the Morris County Central from Morristown to Dover.

Key towns modeled include Madison, Morristown, Morris Plains, Dover, Wharton, Port Morris, and Netcong. Port Morris Yard serves as the center of operations as through freights drop off blocks of cars which are then sent out on local freights. These locals serve Dover, Madison, Morristown, and Morris Plains. Dover is also the terminus for the MU commuter trains from Hoboken and is a major stop for the Phoebe Snow and Lake Cities long distance trains. There are also a number of diesel hauled local passenger trains.

Wharton is an industrial center with a prototypical track arrangement serving several industries. The Wharton Drill serves these industries.

At Morristown, there is a connection to the Morristown and Erie with the M&E switching district at Morristown serving as live interchange. There are also connections to the Rockaway Valley Railroad, Central Railroad of New Jersey (two locations), Wharton and Northern Railroad, and Mount Hope Mineral Railroad. These interchanges also provide for significant amounts of traffic.

The layout occupies a 24' x 42' basement. There is a double track mainline of about 150'. The minimum radius is 30" with No.6 and No.8 turnouts (except for No.4's in the yard and industrial sidings). The layout is basically level, with a nominal track elevation of 48". The track is code 70 and code 83 Micro Engineering and Atlas flex track. Switches are a mixture of manufacturers including Micro Engineering, Shinohara, Peco, and Atlas. A few of the switches are hand laid using code 70 rail on wood ties. The railroad has been under construction since about 1990.

Radio (Simplex and Duplex) Digitrax is used for the command system to allow walkaround operations. WiFi throttles can also be used. Three hour long operating sessions accommodate 8 to 12 people using car cards and waybills for freight car forwarding and there is extensive local, through and commuter passenger service. Two man crews handle Wharton and the Morristown and Erie switching districts. Through freights are about 18 cars and way freights about 8 cars.

A Unique Milk Service

At an MER convention some years ago, I ran across a copy of Robert R. Bahrs' book *Railway Milk Cars Volume 4 (DL&W Cars Part 2)*. Never willing to pass up anything with my prototype railroad in its name, and even though I was pretty sure I would never need it for modeling purposes, I bought a copy. But I soon found out that I was wrong about not needing the book. Mr. Bahrs describes a milk service that I could easily model. Although the service ended a few years before my chosen era, the temptation was too great.

Milk service turns out to have been quite important to the Delaware, Lackawanna, and Western Railroad, the predecessor of the Erie-Lackawanna. Sussex County is in the far northwestern corner of New Jersey and was home to quite a few dairy farms. For years, local creameries collected the milk from the farms, and railroads were the way milk got from there to the big cities. Familiar names such as Borden's were active in the New Jersey market.

Milk is a perishable commodity, so it needed to move quickly from creamery to dairy to consumer. Often, milk moved on passenger trains. Mr. Bahrs' book describes how an early morning DL&W Sussex Branch local passenger train picked up a loaded milk car at Branchville, New Jersey and took it as far as Dover. There, the car was cut-off and left for a commuter electric multiple unit (MU) train to pick up and take as far as Newark. There it was cut off for a local switcher to spot at the Borden's dairy in Orange, NJ. I just had to model this unique service. As Mr. Bahrs states in his book, where else would you find a milk car on the back end of an electric MU commuter train.

Following the Milk Car

Let's follow the milk car as it travels around my model railroad. The train originates in Branchville which is represented by Sussex Branch staging. The first town it passes through is Netcong (**Photo 1**). The station is a scratch-built model of the two-level prototype. The upper level is the Old Main from Phillipsburg, and the lower level is the Sussex Branch. The model was built from plans I drew up from photos of the prototype.



Photo 1

The train leaves the single-track Sussex Branch and joins the double track mainline at Port Morris Junction (**Photo 2**). The model is from a Hydrocal kit. Almost immediately, the train passes Port Morris Yard (**Photo 3**). This is where most of the yard action on the railroad takes place. Through freights drop off blocks of cars which are sorted to be made up into local freights serving industries and interchange tracks at Dover, Morristown, Morris Plains, and Netcong.



Photo 2



Photo 3



Photo 4

The next town is Wharton (**Photo 4**). The Wharton Drill is hard at work switching this single location. Through freights drop off and pick up cars in mini yards at Wharton for the Drill to handle.



Photo 5

The MU arrives on the track closest to the station. Once the passengers have left the train, it crosses over to the other track and backs into the milk car (Photo 6). It can then leave for Hoboken. The MU is a kit-bashed model using Athearn passenger bodies and a Con-Cor Rail Diesel Car mechanism.



Photo 6



Photo 7

Heading east, the MU with the milk car in tow passes through Morris Plains (Photo 7). The station is scratchbuilt from plans I drew up from photos of the prototype. My June-July 2022 *Potomac Flyer* article (see web link above) has much more detail on Morris Plains.

Finally, the train passes through Madison (Photo 8). Madison's track arrangement is based on Sanborn maps and includes a freight house, coal dealers, and other industries. Like Wharton, through freights drop off and pick up blocks of cars. The local industries are switched by the Madison Drill which originates in Port Morris with a locomotive and caboose.

As noted above, on the prototype, the milk car would be dropped off at Newark before the train would terminate at Hoboken. On my railroad, after Madison, the train completes its run at East Staging.

Conclusion

I hope you enjoyed this tour of my railroad. Much more can be found on my website. <https://richardsteinmann.wixsite.com/elrr-m-and-e-div>. I am hoping that on-site open houses will resume and that I will be able to host one soon.

About Me

I have been a model railroader since the 1960s, beginning with my Dad's Lionel trains before moving on to HO. I am particularly interested in operations, prototype research, and building structures for my layout. Prior to my retirement, I was a senior advisor for an agency of the Federal Government.

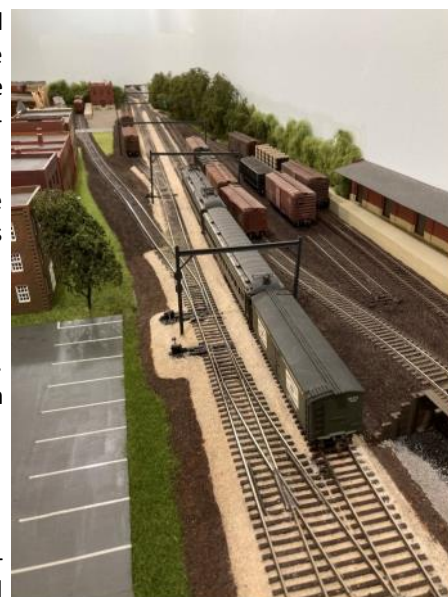


Photo 8

Tuning Freight Cars for Reliable Operation: Part II

By Jim Fisher

In Part I, we discussed the proper weights for rolling stock and the various types of wheels, trucks, and couplers that are available. In Part II, we will demonstrate how to assemble an Athearn HO 40-foot “blue box” boxcar and configure it for the best possible operation.

TOOLS

Of course, you will need tools to work with, and you probably already have many of them:

Screwdrivers – a small flat blade screwdriver and a small Philips screwdriver should handle the screws involved

File – A small flat file is useful, especially for working on couplers.

Hobby Knife – A standard hobby knife or a scalpel, because you will always need to trim something.



Photo 1 - NMRA Gauge for HO Scale.

NMRA Standards (Photo 1) – Needed to check the gauge on the wheels. About \$16 from the NMRA or \$7 if you buy it when you renew your NMRA membership. Available from hobby shops at higher prices. An essential tool for track work as well. The gauge is available for N, HO, HO_{N3}, Sn3, O, On3, and On30 scales.

Oil Dispenser (Photo 2) – Most of the oil sold for model railroad use comes in bottles or tubes that have tips too large. A bottle with a fine, blunt hypodermic tip is much better. These bottles were formerly sold by A-Line but seem to be no longer available. Bottles and tips are available on Amazon or eBay. You will want a 25-gauge or 27-gauge blunt needle tip.



Photo 2 - Oil dispenser with fine gauge needle.



Photo 3 - Medium, Kitchen, & Pocket Size Scales.

Electronic Scale (Photo 3) – \$10 to \$15. Or free if your spouse has one in the kitchen. (May require some negotiation.) Most small scales will measure to 1/100 ounce. These scales come in sizes from pocket size to kitchen size. You can't tune the weight of your cars without having a way to determine what their weight is. You can buy an electronic scale on eBay or Amazon for \$10 to \$15.

Coupler trip pin pliers (Photo 4) – About \$13 for Kadee pliers. These are special pliers with jaws designed for shaping wire. Cheaper ones may be found at train shows. You can also find pliers like these in the jewelry section at craft stores.



Photo 4 - Kadee Trip Pin Pliers, File, Cheap Trip Pin Pliers.



Photo 5 - Kadee Coupler Gauge

Photo 5 - Kadee Coupler Gauge.

Kadee (HO) or Micro-Trains (N) coupler height gauge \$7 to \$10 (**Photo 5**) - Used to set coupler and trip pin heights. The Kadee gauge comes in metal and plastic versions. The plastic version allows the coupler on it to move up and down a little while the metal version is rock steady. The metal version will short circuit the track if the power is on.



Photo 6 - Clinometer App Measuring 2.5% Grade.

Level App for Smart Phone – Free to \$2 (**Photo 6**). Used to measure the slope of track that a car will roll on. I really like an app called “Clinometer + Bubble Level”, which can measure the slope to 0.1%. The app is available for Android or Apple phones and costs about \$2.00. For maximum accuracy, calibrate your phone as described on the following website: <https://www.plaincode.com/products/clinometer/>



Photo 7 - 2' Test track.

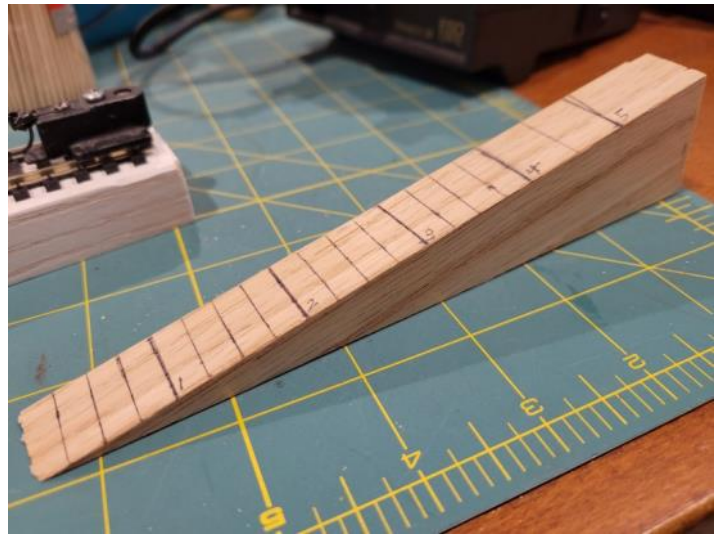


Photo 8 - Wedge to adjust slope of test track.

Test Track (**Photo 7**)– 2' of track mounted on a straight, flat board to test rolling qualities and as a place to mount your coupler height gauge. The wedge shown in **Photo 8** allows you to vary the slope.



Photo 9 - Truck Tuner.



Photo 10 - Using Tuner to Improve Socket for Axle.



Photo 11 - The unneeded level gauge

Tools You May Not Need

Truck Tuner (Photos 9 and 10)– \$27 from Micro-Mark. This is only needed on occasion to fix problem trucks.

Level Gauge for Track Slope (Photo 11) – \$15 on eBay or Amazon. DON'T BUY IT! A level app on your phone is far more accurate and much cheaper (assuming you have a smartphone).

Other Supplies

Kadee truck washers to adjust height.

Graphite - Kadee Greas-em, Woodland Scenics Hob-E-Lube, Dry Graphite, or similar.

Plastic safe, light hobby oil.

Spare screws – You know you are going to lose one sooner or later.

Double stick tape or contact cement – for attaching weights.

PUTTING IT ALL TOGETHER



added to meet the target weight of 3.85 oz.

I will be using an Athearn 40-foot blue box boxcar in the photos since this is a very common car. It was in production from 1957 until 2009, a total of 52 years. You will still find many of these at train shows or online. The Athearn boxcar also has a couple faults that let me demonstrate how to deal with problems. The current Athearn ready-to-run 40-foot boxcars have been completely retooled and are quite different.

Weight

The first step in assembly is to establish the target weight. You can use the NMRA formulas or tables 1, 2, or 3 to determine the target weight for a car of the size you are assembling. Before putting them together, place all of the parts for the car including the wheel sets you will be using on a scale (Photo 12). Then, subtract this weight from your target weight. This will give you the weight you need to add. Be sure to weigh with the wheelsets that you will be using, and not with the plastic wheels that probably came with the

car. The plastic wheels are much lighter than metal wheels.

Next, weigh the material you will be adding. You don't need to be super accurate in matching the target weight. I allow plus or minus 10% of the target weight, though I am usually within 5%.

When you add the weight, be sure to position it as low as possible and balance it evenly, so the car isn't heavier at one end than the other (Photo 13). The weight can normally be attached with contact cement

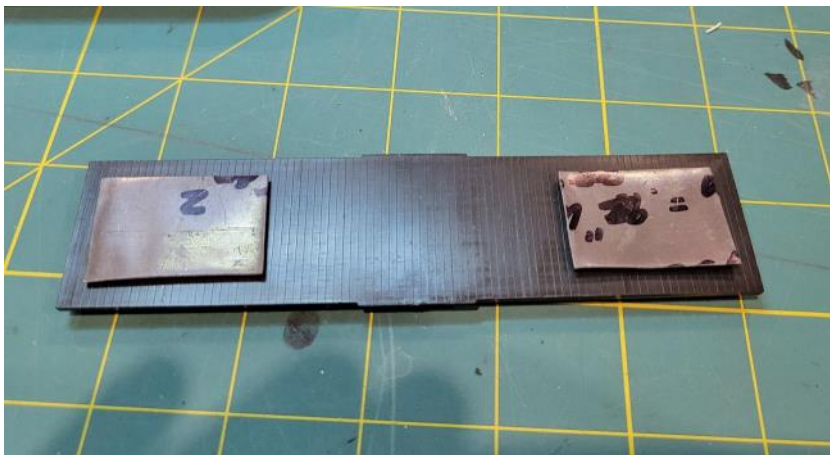


Photo 13 - Weights attached to car floor.

or double sided tape. If you add weight over the truck attachment points, be careful about using long screws that could push the weight loose, or that could impact the weight.

Wheelset Inspection

You should conduct an inspection of each wheelset. While quality wheelsets rarely have problems, they do occur. Most commonly, either the wheels are out of gauge or there is a wheel that wobbles. Wheels can also not be centered properly on the axle so that the portion of the axle sticking out of the two ends have different lengths.

First, check the gauge of the wheelset using the NMRA track gauge. The flanges should drop fully into the two slots and should have a little room to move back and forth. Preferably, the wheels should be spaced so that they will both rest against the same side of the slots. Each wheel set should be checked at four points spaced approximately 90 degrees around the perimeter. This acts as a preliminary test for wobbly wheels.

Visually inspect each wheelset for anything strange such as a bent axle or a burr. Look, or measure, to see if the amount of axle extending out of both sides is about the same.

If the wheelset is a little out of gauge you can often carefully twist and push on the insulated side to get it back in gauge. If the gauge isn't the same at all four points that you tested, and the wheels are wobbly, or they are noticeably off center, then they can be used as scenery on your layout, but they aren't usable for your cars.

Trucks

Truck preparation starts with a visual examination ([Photo 14](#)). Look for any twist, bends, or burrs. Burrs are fairly common, but they can be removed with a hobby knife or a scalpel. Twist and bends are rare and call for relegating the truck to service as scenery on your layout.



Photo 14 - Wheelset on right is centered by washers. Wheelset on left is loose and off center.

After inspection, place a bit of graphite in each of the sockets for the wheelset axles. Install the wheel sets in the trucks. If you prefer oil to graphite, place a tiny drop of plastic safe oil on each end of each axle. Make sure that the insulated wheels are on the same side of the truck. While not really needed with most plastic trucks, it's a good habit to get into since it is essential for metal trucks or trucks with electrical pickups.

After the wheelsets are installed in the trucks, give them a good spin to see if they roll freely. At the same time, observe to see if there is any visible wobble. Look to see if the wheels can drag on the sides of the trucks. If the wheels do drag on the sides of the trucks, first check for any burrs on the trucks. If there are no burrs, the best solution is to use a wheelset with a longer axle.

If a longer axle isn't practical, then tiny No. 0 washers can be placed on the ends of the axles. Using the washers may increase rolling resistance, but the resistance won't be nearly bad as having the wheels drag on the sides of the trucks. Make sure that there is still a little slop for the wheel set to move

back and forth after the washers are installed.

The best source I have found for these washers is Micro Fasteners in Easton, Pennsylvania www.microfasteners.com. Micro Fasteners is also an excellent source for the small screws that model railroaders often need. They sell a pack of 100 No. 0 brass washers at a reasonable price. (Shipping may cost as much as the washers.) The brass washers are smaller in outside diameter than the washers Micro Fasteners sells in other materials. This is better for our purposes because they are less visible. A few wheel sets such as the new Walther's Proto 2000s and some Bowers have axles too large for No. 0 washers and will need a No. 1 or No. 2 washer. These are also available from Micro Fasteners.

Some model railroaders feel that reducing slop may also contribute to reducing derailments. I haven't seen this as a major problem, but I may look into this in the future for troublesome cars.

At the extreme, I have found a few trucks that had so much slop that the wheelsets actually fell out. Those obviously needed to be replaced. Old Athearn trucks are noted for being wide. This is not true for recent ready to run Athearn boxcars. This particular pair of Athearn trucks was so wide that they were close to having the axle fall out, and I felt it would be a good idea to add some washers. (An alternative might have been to use Bowser wheelsets with their longer axles.) The washers keep the wheelsets centered so they can't fall out.

If you prefer to use oil rather than graphite for lubricating the wheels, this a good time to put a tiny drop of plastic safe oil on each

end of the axles. Most of the containers that oil comes in will not dispense a small enough drop. A-West used to sell a bottle with a tiny blunt needle, but these don't seem to be available now. You can find bottles with blunt hypodermic needles on Amazon. Try to get a bottle with a 25-gauge or 27-gauge needle. If there is any excess oil on the truck, use a tissue to carefully wipe it off.

On occasion you may find that the trucks are tight on the underframe bolsters that they are supposed to fit over. The easiest way to correct this is usually to slightly open the hole in the truck. This is most easily done with a small reamer, or round file, but if you don't have one, you can place a No. 11 hobby knife blade in the hole and twirl it around while applying gentle pressure.

You also may occasionally run into an underframe bolster on a very old car that doesn't have a boss. Using a standard screw, the truck can slide left and right and backwards and forward. In most cases you can fix this problem by just using a flat head screw to attach the truck. The taper on the bottom of the head fits into the hole in the truck keeping it from sliding around. When you attach the trucks be sure that they are parallel to the floor of the car. I have had a couple of occasions when this was a problem. If this happens you will need to develop a solution based on the particular case.

How tight should the screws attaching the truck be? There are two theories on this. One theory is to make the screw on one of the trucks as tight as it can be while still allowing the truck to pivot freely. This prevents the truck from tilting at all. Then leave the screw on the other truck a bit loose so its truck can tip about 1/16" or a little more each way to deal with track irregularities. This arrangement prevents the car from rocking and works well on good track. However, this arrangement may have trouble with very poor track such as that which is sometimes encountered on modular layouts.

The alternate arrangement is to allow both trucks to rock about 1/16" or a little more each way. This works well on bad track but may allow the car to rock back and forth. This is particularly true for cars with a high center of gravity.

Couplers

While I have couplers at the end here, it is usually easier to install them before the trucks are attached, but they must be tested after the trucks are installed. Nearly all cars have coupler boxes that are attached to the car.

The first step is to select the type of coupler you will use. The possibilities include either the No. 5 head or No. 58 head, old spring or whisker spring, short shank, standard shank, or long shank. The choices go on and on. For now, we will be using the classic No. 5 Kadee coupler.

Inspect the couplers for any obvious issues. The most common problem is a missing knuckle spring. Kadee usually supplies a few spare knuckle springs with a package of couplers.

As the next step, Kadee recommends that you burnish the coupler shank and the face of the knuckle by rubbing them with a smooth surface such as the handle of a screwdriver. Burnishing the coupler shank smooths it and helps the coupler to move in the coupler box. Burnishing the faces of the knuckles smooths them so they slide across each other when coupling. Rather than burnishing them, I prefer to use a small diamond grit file or fine-tooth steel file such as those sold by Harbor Freight. Don't try to take the surface down to bare metal. Just knock off any flash. On rare occasions you may find that the coupler box is too tight for the shank and the coupler won't move freely. On those occasions you may want to carefully file the shank to make it a little thinner.

Put a bit of graphite in the coupler pocket. You can use powdered graphite such as Kadee "Greas-em"®, or you can rub the socket with a graphite stick or a soft pencil. Place the coupler in the pocket and snap on Athearn's little metal cover. More on that darn cover will come later. You have now installed the coupler, but it will most often need adjustment.

If you haven't already done so, do the basic assembly of the car. It is now time to proceed to the inspection stage. I've already mentioned inspecting some of the parts before you install them. As you gain experience you will learn to do much of the inspection as you work. This can save a lot of trouble and often reduce the need to disassemble things to make adjustments and changes. It is best to work with a checklist so that you don't forget anything while you are working. I keep all of my car records on one big spreadsheet. Some people use an individual sheet for each car. This is much like the car cards that real railroads used. I like them because they can also be used to record maintenance on the car. If you can find a copy or picture, you can create a car card that resembles a real car card from your favorite railroad.

HCMR CAR CARD

Reporting Marks	CB&Q	Trucks	Athearn
Car #/Name	35789	Wheel Type	Intermountain
AAR Class	XM	Wheel Diameter	33
Manufacturer	Athearn	Wheel Gauge	ok
Body Length	5.75	Wheel Spin	ok
Target Weight Oz	3.85	Truck Mount	ok
Actual Weight Oz	3.93	Truck Motion	ok
Coupler Type	KD 27	Lube	Done
Coupler Height	ok	Rolling Grade	1.20%
Coupler Motion	ok	Inspection Date	5/24/2022
Notes: Used washers to center wheelsets			

Table 8 A Car Card type inspection form.



Retail Businesses on layout of Bob Charles, MMR. Photo by Jack Dziadul.

CHECK OUT LIST

Reporting Marks	Car #/ Name	Road Class	AAR Class	Manufacturer	Tgt Wgt	Act Wgt	% Over/ Under	Trucks	Wheel Type	Gage Spin	Truck Mount	Truck Motion	Coupler Type	Cplr Hgt	Cplr Motion	Lube	Grade %	Inspection Date	Notes:
DL&W	45900		XM	?	3.85	4.38	13.77	?	IMWX	ok	ok	ok	KD58	ok	ok		1.50	1/19/17	
SP	15248		XM	Accurail	3.85	4.00	3.90	Accurail	IMWX	ok	ok	ok	KD5	ok	ok		1.25	2/9/17	
PRR	67614		XM	Bowser	3.85	4.01	4.16	Bowser	IMWX	ok	ok	ok	KD148	ok	ok		1.10	2/9/17	
RPX	2332		TM	Walther Proto	3.5	3.55	1.43	Walthers	P2K	ok	ok	ok	KD5	ok	ok	ok	1.00	2/10/17	
RPX	2382		TM	Walther Proto	3.5	3.55	1.43	Walthers	P2K	ok	ok	ok	KD5	ok	ok	ok	1.00	2/10/17	
BECC	22		TM	Atheam	3.9	4.00	2.56	Atheam	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.25	2/11/17	
BECC	895		TA	Atheam	3.9	4.02	3.08	Atheam	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.20	2/11/17	
SCMX	848		TM	Atheam	3.9	4.05	3.85	Atheam	IMWX	ok	ok	ok	?	ok	ok	ok	1.00	2/13/17	
BECC	896		TA	Atheam	3.9	4.10	5.13	Atheam	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.25	2/13/17	
SCCX	1310		TM	Walthers	3.5	3.68	5.14	Walthers	P2K	ok	ok	ok	KD5	ok	ok	ok	1.25	2/14/17	
SHPX	3253		TA	Atlas	3.7	3.45	-6.76	Atlas	Atlas	ok	ok	ok	KD148	ok	ok	ok	2.00	2/14/17	Needs JB .965" Axle Wheels
CTTX	8502		TM	IM	3.5	3.30	-5.71	IM	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.00	2/14/17	
SP	58577		TM	Atheam	3.9	4.00	2.56	Atheam	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.15	2/14/17	
SHPX	1612		TA	Atlas	3.7	3.55	-4.05	Atlas	Atlas	ok	ok	ok	KD5	ok	ok	ok	1.00	2/15/17	
SCCX	1314B		TM	Walthers	3.5	3.49	-0.29	Walthers	?	ok	ok	ok	KD5	ok	ok	ok	1.00	2/15/17	
SCCX	1314C		TM	Walthers	3.5	3.80	8.57	Walthers	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.00	2/15/17	
WM	27013		XM	Unknown	3.85	4.13	7.22	Unknown	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.10	2/16/17	
PRR	60881		XA	Bowser	3.85	3.99	3.64	Bowser	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.10	2/16/17	
PRR	60935		XA	Bowser	3.85	3.94	2.21	Bowser	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.10	2/16/17	
WM	28835		XM	Atheam	3.85	3.94	2.34	Atheam	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.10	2/18/17	
PRR	70392		XM	Bowser	3.85	3.98	3.38	Bowser	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.00	2/18/17	
WM	5146		LO	Bowser	3.5	3.48	-0.57	Bowser	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.50	2/19/17	
PRR	59516		XA	Bowser	4.5	4.54	0.89	Bowser	IMWX	ok	ok	ok	KD58	ok	ok	ok	1.25	3/2/17	
PRR	81309		XA	Bowser	3.85	3.94	2.21	Bowser	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.10	3/10/17	
NYC	175049		XM	Accurail	3.85	4.35	12.99	Accurail	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.15	3/10/17	Needs Brakewheel
P&LE	32705		XM	Accurail	3.85	3.94	2.34	Accurail	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.10	3/11/17	
SP	66424		XA	Accurail	3.85	4.09	6.23	Accurail	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.00	3/12/17	
SP	69231		XA	Roundhouse	4.5	4.74	5.33	RH	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.00	3/12/17	
MP	90430		XM	Accurail	3.85	3.98	3.38	Accurail	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.50	3/12/17	Needs New Trucks
SP	83155		XA	Branchline	3.85	4.06	5.32	Branch	IMWX	ok	ok	ok	KD148	ok	ok	ok	0.90	3/13/17	
SP	69230		XA	Roundhouse	4.5	4.49	-0.22	RH	IMWX	ok	ok	ok	KD148	ok	ok	ok	0.90	3/14/17	Will need weathering to hide paint damage
PRR	100800		XM	TM	3.85	4.00	3.90	TM	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.25	3/14/17	
OSL	254079		XM	BevBel	3.85	4.14	7.53	BevBel	IMWX	ok	ok	ok	KD5	ok	ok	ok	1.00	3/14/17	UP
SP	27658		XM	TM	3.85	3.92	1.82	TM	IMWX	ok	ok	ok	KD58	ok	ok	ok	1.00	3/15/17	
SP	67934		XA	Walthers	4.5	4.58	1.78	Walthers	IMWX	ok	ok	ok	KD58	ok	ok	ok	1.00	3/15/17	
OWR&N	188300		XM	Atlas	3.85	4.06	5.45	Atlas	IMWX	ok	ok	ok	KD148	ok	ok	ok	1.60	3/15/17	UP
SP	97648		XM	Bevbel	3.85	4.03	4.68	Bevbel	IMWX	ok	ok	ok	KD58	ok	ok	ok	1.10	3/16/17	

Table 9 A page from my inspection spreadsheet. ([Download a blank copy for yourself](#))

It's time to start seriously inspecting your car. First, place your car on a flat surface. A piece of plate glass is ideal, but any flat surface will do. Make certain that all eight wheels are touching. If all eight wheels don't touch, you will have to tweak the chassis or body. This is usually due to a molding that is slightly twisted. In rare cases you may need to carefully sand one side of the bolster on the car.

Adjust the truck screws to your preference for how much tilt you want in each truck. Flip the truck back and forth to make sure that it is moving very freely. Test spin the wheels to be certain that they spin freely and don't wobble.

Now it's time to place your car on a test track. Move the car up to the coupler height gauge. The coupler should match the height of the coupler on the gauge. It needs to be pretty close to exact on the height. For a Kadee No. 5 coupler, the knuckle is only 0.155" high. The knuckle on the No. 58 head is even lower. If one car has a coupler that is 1/16" high and the coupler on the other car is 1/16" low, the couplers will barely touch and will definitely not stay together as the train moves. Even 1/32" up and down is likely to be unreliable over track irregularities.

The trip pin should just clear the shelf at the bottom of the gauge. After you have the coupler height set correctly, you can use the Kadee trip pin pliers to adjust the height of the trip pin. Using regular pliers for this can easily damage the coupler. You may want to bend the trip pin up slightly at the end so it will tend to ride up and over any obstacles in the track. The coupler should be level and not hang down. If it hangs down much, you may need to add a shim to the coupler box.

Since our car in this example is an old Athearn boxcar, the coupler will be low ([Photo 15](#)). I know this from having set up about 40 of these cars.

There are several ways to correct this. Kadee washers can be used on the truck mounting to raise the car. A truck with a higher bolster can also be used to raise the car. In my opinion, with the Athearn boxcar, raising the whole car makes the car appear to be sitting rather high. The best option is to use a Kadee coupler with an underset shank. This can raise the coupler without raising the whole car. The underset shank raises the coupler almost 1/16" (0.063") so in some cases it is not an option as it raises the coupler too much.

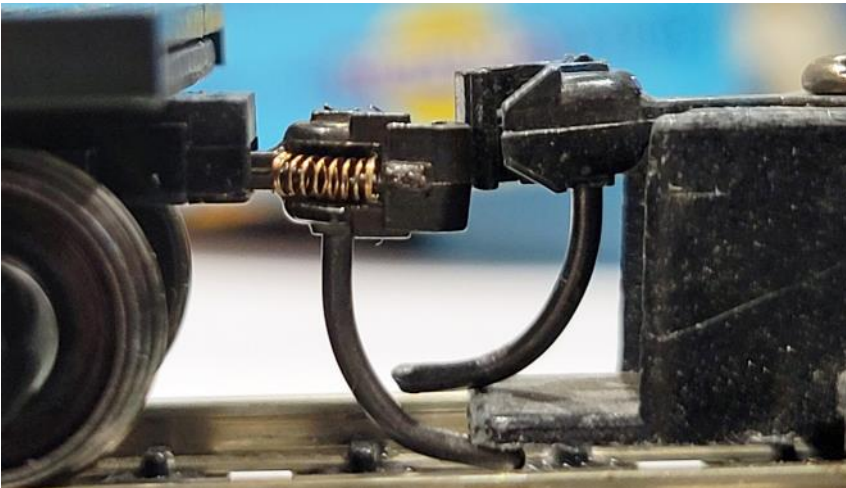


Photo 15 - The coupler on this Athearn boxcar is very low.

Once you have the coupler installed it is time to do something about that Athearn coupler cover ([Photo 16](#)). That little clip-on cover is not very reliable. It has a bad habit of falling off and then getting tangled up wherever it can cause the most trouble. Also, you will be wondering where you left the back half of your train. You may need to file the edge of the tongue as it sometimes has a burr on the edge.

Some modelers prefer to dispose of the metal cover and fabricate a new cover out of styrene. I have found a less radical procedure that has worked well for me.

After filing off any burr and snapping the cover on, I make a small glue applicator by cutting off the end of a toothpick and then flattening the remaining end. I then use a knife to cut a groove in the flattened end. Put a few drops of super glue in an old bottle cap and then use the applicator to apply a tiny drop of glue where the little plastic tab is on each side of the coupler box ([Photos 17 and 18](#)). This glues the clip to the box. Don't try to apply the glue directly from the bottle that it comes in unless you have a micro-applicator tip. That is a recipe for gluing the coupler solid.



Photo 16 - The notorious Athearn coupler box cover.

Finally flip the coupler back and forth to make certain that it moves freely and returns to center. Look to see that the coupler is not drooping a lot due to being too loose in the coupler box. Check that the knuckle spring is still there and that the knuckle easily opens and closes. Some like to glue one end of the spring to keep it attached. So far, I haven't had any problems with skipping the glue there.

Note: After 52 years of dealing with this troublesome clip, Athearn retooled the entire car and went with a more conventional coupler box cover. If you prefer to use oil to lubri-

cate the axles and haven't already done so, now is a good time to apply a drop to each end of the axles.

Now it is time to see how freely your car rolls (**Photo 19**). I have 2' of track glued to the straightest board that I could find. Each $\frac{1}{4}$ " that I elevate the uphill end of the board gives me about a 1% grade. I use a wedge that I cut and marked every $\frac{1}{4}$ percent of thickness to elevate the end of the board, but this is only as accurate as the surface that you put it on.

This is where the clinometer app comes in handy (**Photo 20**). First follow the online instructions to calibrate the clinometer app. Calibration is easy, but without it you won't get good numbers. You may need to remove your phone's case if it is rounded or irregular. Put your car on the track and adjust the wedge until your car just barely rolls. Then put the phone on the track to get the percent grade. Turn the phone around 180 degrees to double check. The readings should be the same, but if there is a difference in the two readings, you can average them.



Photo 19 - Test Track with Kadee Coupler Gauge and wedge to adjust slope.



Photo 17 - Toothpick glue applicator.

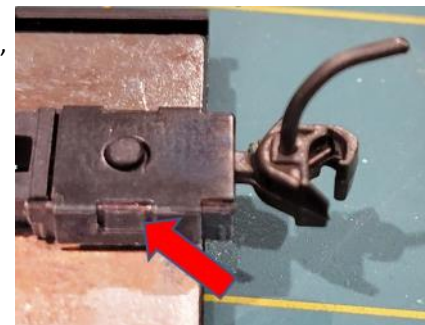


Photo 18 - Where to apply a tiny drop of super glue on each side.



Photo 20 - The completed car on the test track. Coupler height matched and ready to roll on a 1.1% grade.

So now you have a boxcar you can be proud of. You have optimized the weight, wheels, trucks, and couplers. This car should run very well on any decent, correctly laid HO track with little risk of derailment.

The Book:

If you really want to get into car tuning, I strongly recommend that you get a copy of [Make it Run Like a Dream: Rolling Stock](https://store.mrhmag.com/store/c1/Featured_Products.html) by Joe Fugate. The print edition is available from Amazon. You can buy the electronic download or the print edition directly from Model Railroad Hobbyist. https://store.mrhmag.com/store/c1/Featured_Products.html

A Note On NMRA Recommended Practices For Trucks and Wheelsets

Many of the NMRA RPs for trucks are very old and, in some respects, inadequate or obsolete. Some only specify a maximum or minimum dimension with no tolerance. Some only specify a nominal dimension. With the exception of RP-25 for wheels, manufacturers generally don't feel constrained to the Recommended Practices.

I could not find a truck in my box that was close to the NMRA RP-23 truck bolster height. All were lower. The lowest were a full $\frac{1}{32}$ " low. This is perhaps fortunate since the bolsters on most cars are set such that the cars would be too high with truck bolsters that meet the NMRA RP. Axle lengths may not match the journal width on trucks. There are other possible incompatibilities.

Note: I measured all bolster heights with 33" wheels as the trucks that I was measuring were designs normally used with 33" wheels. Bolster height will vary with larger or smaller wheels.

The outcome of this is the modeler will need to exercise judgement when selecting trucks and wheelsets to ensure that they work together. The tables in this article and in Part I of this series can help in this selection.

Branch Lines

From the Divisions...

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 so you can stay up to date on what the other Divisions are doing:

[South Mountain Division, *Wheel Report*](#), Spring Edition 2022

[Potomac Division, *The Potomac Flyer*](#), Aug-Sep 2022

[New Jersey Division, *Train Orders*](#), May 2022

[Susquehanna Division, *Sidetracks*](#), May-June 2022

[Philadelphia Division, *The Dispatcher*](#), May 2022

[Tidewater Division, *Callboard*](#), March 2022

[Carolina Southern Division, *The Brass Pounder*](#), Aug 2022

[Carolina Piedmont Division, *The Herald*](#), Aug 2022

[Chesapeake Division, *The Relay*](#), June 2022

The NMRA Magazine Archives Are Now Digital!

Message from President Kurt Thompson, MMR

As many of you already know, on April 1st of this year, the *NMRA Magazine* went digital. As part of that process, the entire back issue collection of the magazine in all its varied titles is now available on the NMRA national website. The trick is you must register your membership to gain access as this is a “members only” benefit.

To do that you have to click on the link on the upper tool bar on the right side that says Member Info / Registration (<https://www.nmra.org/members>). You’ll be able to set up your login using the email address you have on file with National. You only have to do this once and you are done. While you’re setting up your login, please take 30 more seconds before you start wandering through the back issues to verify, and correct, if necessary, your contact information.

Thanks, and happy wandering through the archived issues.

Electronics Corner

DCC & Pushbutton Activated Servo Switch Machine

By Fred Miller, MMR

Operation of model railroad turnouts is accomplished by either manual or electro-mechanical means. In years past, model railroaders used solenoid-type switch machines. However, these proved to be loud (snap) and subject to wear. To this day, some HO and N Scale turnouts come equipped with self-contained solenoids to actuate the switch points. Many modelers have more recently switched to slow-motion switch machines. Tortoise is perhaps one of the most popular brands.

Electrical operation of both types of switch machines is possible with manual pushbuttons or toggle switches. DCC users have an additional option using ‘accessory’ or ‘stationary’ decoders, where a DCC switch command results in a pulse for the solenoids, or applicable DC voltage for the slow-motion motors. Those DCC switch commands are issued from DCC throttles or other electronic means like JMRI and serviced by accessory/stationary decoders.

The growing interest in micro-controllers (e.g., Arduino) in model railroad applications offers still another, even less expensive, way to control turnouts from DCC switch commands. I have developed a micro-controller circuit to operate a small servo motor, initiated by DCC switch commands or fascia panel pushbuttons (Photo 1). The inexpensive servo motors I use are typical of the model airplane or robotics hobbies. Servo motors provide rotational motion, generally up to 180 degrees. My electronic circuit makes use of a small, 14 pin micro-controller called an AT-TINY84 with controlling software. The circuit is capable of running the servo motors at slow motion from one position to another. The total price of each device works out to be less than \$10, depending upon options and parts sourcing. I feel this is a great price for both controller AND motor compared to the popular slow-motion machines plus their controlling means.

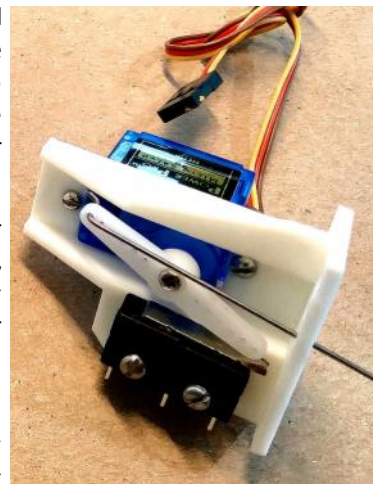


Photo1: Servo Motor and Mounting Bracket

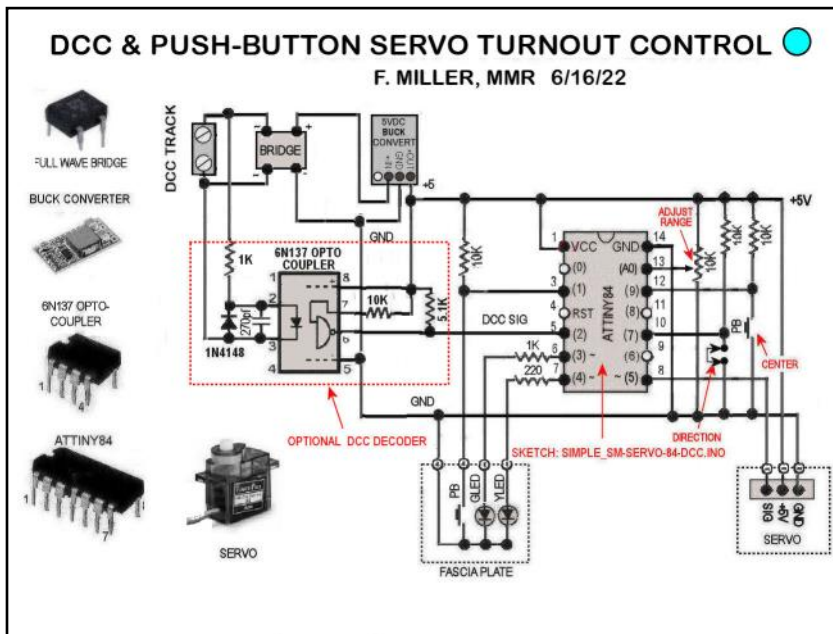


Photo 2: Circuit for DCC & PB Servo Turnout Control

The project described in this article has provision for controlling the servo motor driven turnout points by either a pushbutton, typically mounted on the layout fascia, or a DCC switch command issued from a DCC throttle. Alternative circuits not described in this article could eliminate the DCC command decoding portion, or conversely replace it with a Digitrax LocoNet switch command decoder.

My circuit-software device has provision for:

Centering the servo to aid in mounting under the turnout.

Adjusting the servo movement range.

Selecting the DCC address.

Saving the last used address and movement range (in EEPROM) for restoration when the power is turned back on.

A jumper to define servo rotation (CW or CCW) for the THROWN and CLOSED settings.

A YouTube video of the project in action can be seen at: <https://youtu.be/C2z3IzSVPco>

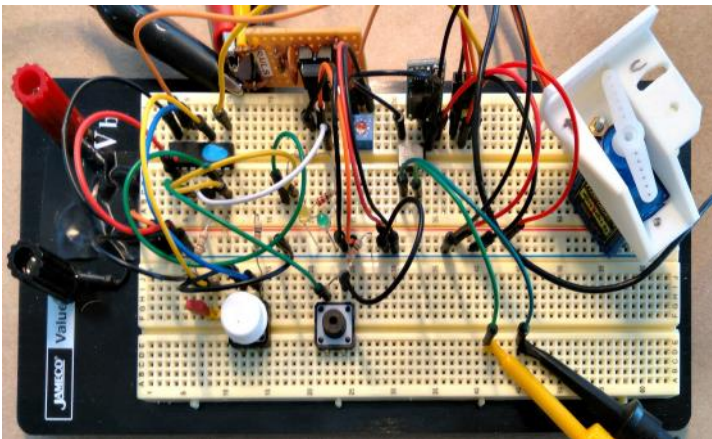


Photo 3: Breadboard Circuit Development & Test

Construction Steps

My controlling Arduino program (sketch) was developed on an Arduino Nano plugged into a breadboard (Photo 3). The Nano is very similar to the popular Arduino UNO. When the circuit and program worked satisfactorily, I moved the code over to a smaller micro-controller, in this case an ATTINY84. I then rechecked the operation with the ATTINY84 (instead of the Arduino Nano) on the breadboard. Note that an Arduino Nano or UNO could be used in the final circuit rather than the ATTINY84, but at a higher price tag per unit.

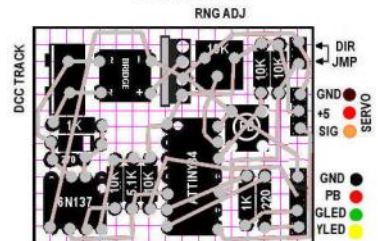


Photo 4: Wired Bottom

When the circuit is operating correctly, I graphically lay out the components on a perf board template and “wire” the components graphically in a top view. The drawing is then flipped to represent the bottom or wiring side of the circuit board (Photos 4 and 5). The mounted components are shown in Photo 6.

Note that I use pieces of wire insulation to protect the wires which cross over each other. When completed and tested, I encase the wiring in five-minute epoxy to secure and protect the circuit.

DCC/PB SERVO TURNOUT CONTROL



COMPONENT SIDE
WIRING SIDE

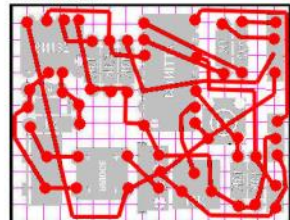


Photo 5: Circuit Wiring

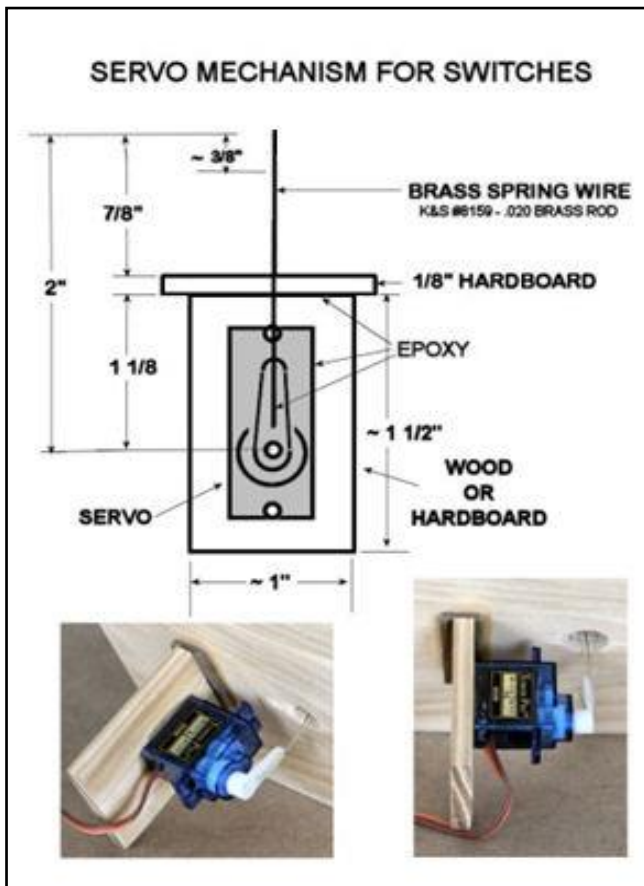


Photo 7: Alternate Servo Mounting

No provision is made in the circuit for powering a turnout frog to correct rail polarity; however, the 3D-printed servo mounting bracket I use accepts a snap-action switch for that purpose. The servo motor bracket shown at the top of this article is similar to those offered by Digitrax and others except for the added frog power snap-switch provision. An alternative servo mounting (Photo 7) could be made by just using a block of wood, which in turn is mounted to the bottom of the layout with the spring wire running up to the switch throw rod. This works but is not as easy to adjust during installation. I typically use five-minute epoxy to fasten the servo to the wood mount, then Walther's Goo glue to fasten the servo to the bottom of the layout. The Goo glue offers time to adjust the positioning while drying.

DCC & PB SERVO TURNOUT CONTROL

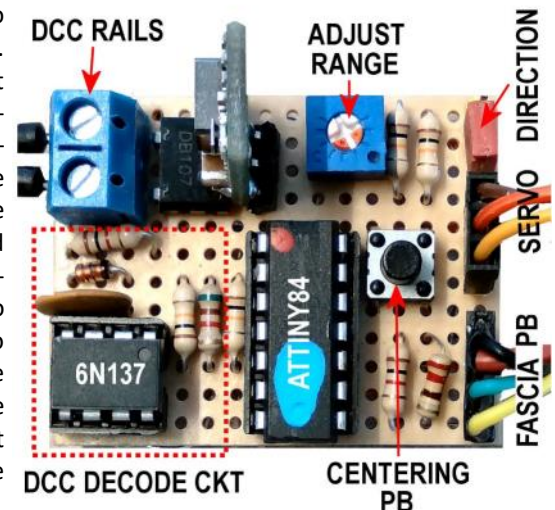
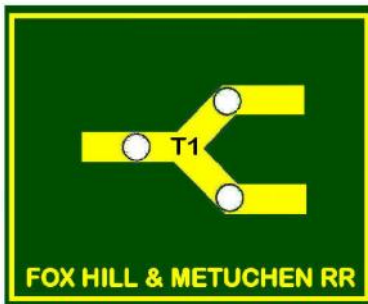
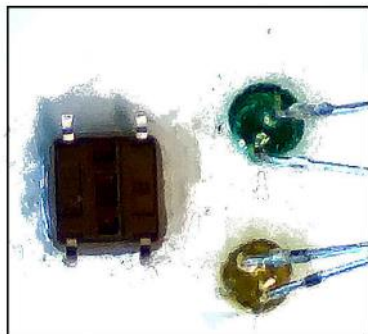


Photo 6: Components on Circuit Board

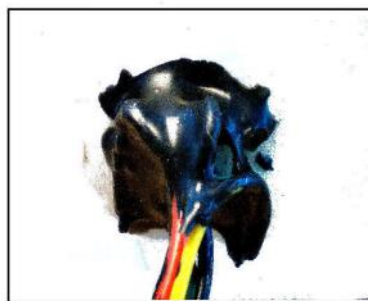
FASCIA CONTROL PANEL



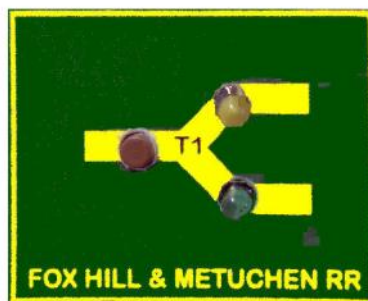
STEP 1 - PRINT & GLUE GRAPHICS



STEP 2 - DRILL, GLUE PB & LEDS



STEP 3 - SOLDER WIRE LEADS



STEP 4 - MOUNT ON LAYOUT FASCIA

Photo 8: Fascia Panel Composite

The fascia control panel is constructed using a printed graphics overlay glued to a styrene sheet panel (Photo 8). As shown in the accompanying construction steps, the holes for a tactile PCB pushbutton and the two LEDs are drilled with a 5/32" bit. The pushbutton and LEDs are glued to the back of the panel. Five-minute epoxy works nicely for this but be careful with the glue around the pushbutton. It is easy to glue the button's moving parts making it inoperable. Wires are soldered to the pushbutton and LEDs. I like to coat the wires and components with liquid electrical tape.

A four-position female header is soldered to the other end of the wires. This makes for an easy connection to the circuit board in a manner similar to the servo motor connections. I like to use color coding to keep correct alignments.

An appropriate size hole is drilled in the layout fascia and the control panel is glued in place.

Installation and Operation

A hole must of course be drilled through the track subbase to enable the actuating rod to run up to the turnout throw tie. The rod is assembled into the servo rotating actuator arm with a Z-bend as shown in the earlier picture. The rod is a 0.6 or 0.8mm piano wire. Before mounting the servo under the turnout, connect the DCC rail power (or 16-18VAC power) to the circuit board and press the 'CENTERING' pushbutton on the board (Photo 9). Plug in the servo cable and the fascia panel wires into the circuit board and test the operation. Adjust the range of motion to an approximate (guess) of the required motion (this can be adjusted later). Adjust the snap switch position on the mounting bracket to make and break contact as the servo motor arm moves between positions. If the rotation does not work for the turnouts THROWN (yellow LED) and CLOSED (green LED) in the anticipated mounting position, plug in the 'DIRECTION jumper' to reverse those definitions.

Again, put the servo motor in the CENTERED position and mounted under the turnout in a position that puts the turnout points at a 'centered' position. After the servo mounting bracket is secured, try the servo operation with the fascia panel pushbutton and adjust throw and frog power switch position if necessary.

To set the project's DCC address, press the CENTERING pushbutton, then send a DCC switch command with a desired DCC switch address. That address will be stored in the EEPROM of the ATTINY84 and saved from then on without resetting. The servo motor should now move to the selected THROW or CLOSED positions when sending the DCC switch commands. Note that the servo will toggle alternatively to each position when using the fascia panel pushbutton, but the DCC switch commands will move directly to the commanded position.

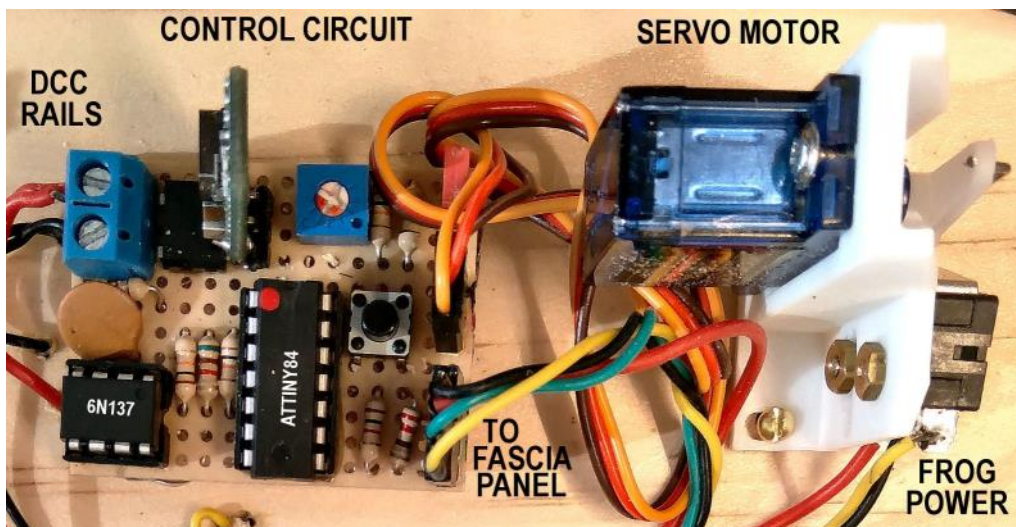


Photo 9: Under Layout Mounting

References

The accompanying chart lists the components, suggested source, and prices for the project (**Photo 10**). Many of the prices shown are for single items when purchased in quantities of 10. The total price is less than \$10. I would be glad to share the Arduino software as well as more information on transferring the software to the ATTINY84 micro-controller. For those not interested in Arduino 'programming' I could supply a pre-programmed ATTINY84. Also, a limited number of the 3D-printed servo mounts is available.

DCC/PB SERVO TURNOUT CIRCUIT				
QTY	PART	SOURCE	PART #	TYPICAL PRICE *
1	DCC BUCK CONVERTER	AMAZON	-	\$ 1.10
1	6N137 OPTO COUPLER	JAMECO	113911	\$ 0.49
1	FULL WAVE BRIDGE	JAMECO	178001	\$ 0.35
1	1N4148 DIODE	JAMECO	36038	\$ 0.06
1	270 PF DISC CAPACITOR	JAMECO	2301975	\$ 0.16
8	VARIOUS 1/4 WATT RESISTORS	JAMECO	691104	\$ 0.80
1	10K TRIMMER POT	ALL-ELECTRONICS	TPS-10K	\$ 0.25
2	8 PIN & 14 PIN IC SOCKET	ALL-ELECTRONICS	VARIOUS	\$ 0.40
1	ATTINY84 MICROCONTROLLER	MOUSER	555-ATTINY84	\$ 2.72
1	SG90 MICRO SERVO	BANGGOOD	1078614	\$ 1.74
3	2, 3 & 4-PIN MALE HEADER	ALL-ELECTRONICS	SHS-40	\$ 0.25
1	3 PIN SCREW TERMINAL	JAMECO	2120655	\$ 0.49
2	GREEN & YELLOW 3MM LEDS	ALL-ELECTRONICS	VARIOUS	\$ 0.25
2	TACTILE PCB PUSH-BUTTONS	ALL-ELECTRONICS	TS10-126	\$ 0.50
1	SHUNT/JUMPER	JAMECO	112432	\$ 0.15
	PORTION OF PERF BOARD	JAMECO	616690	~
	MISC HARDWARE/SOLDER/GLUE			~
			~TOTAL	\$ 9.71
* MANY PARTS PURCHASED IN MIN ORDER QTY OF 10. UNIT PRICE SHOWN				

Photo 10: Parts Required for this Project

I can be contacted at my email address shown below.

Arduino website (for tutorials, etc.): <https://www.arduino.cc/>

Download Arduino NMRA DCC library: <https://www.arduinolibraries.info/libraries/nmra-dcc>

Author's email (for further information, files, etc.): tractionfan@aol.com

YouTube video of project in action: <https://youtu.be/C2z3IzSVPco>

Modeler's Haven

This section of The Local is for all members to share any tips, techniques, tools, books, fixes, new products, or any other information that might be of interest to others. One of the many benefits of being an NMRA member is spreading knowledge about the hobby and learning things from other modelers. Please submit your tips to the [Editor](#) for consideration on publishing them here.

Making Tall Timber

By Greg Warth



Photo 1 – Taken at Mike Brusky's "Tall Timber" clinic at the 2022 NMRA Gateway Convention in St. Louis where I recently learned this technique.

(Supplies needed are underlined.)

Purchase a set of 12" long wooden dowels* of various diameters along with some branches of artificial asparagus plumosis fern from your local craft store. Cut the dowels to varying lengths so they are not all the same size. Using a carving knife, carefully taper one end of each dowel gradually along its length to a blunt tip. Carve tiny grooves and imperfections along its length for added realism. Stain each dowel with a water-based brown stain diluted by 30% and let it dry. Use a 0.7mm black gel pen to create the irregular impression of bark along the length of the dowel. Now randomly drill small holes sized to fit the stems of the plumosis in the sides of the dowel. Drill all the holes before you start to apply the branches. The holes at the bottom should be larger in diame-

ter than the ones at the top. Now glue the plumosis branches in the holes, using the larger branches at the bottom.

Next you will need conifer green and burnt grass clump foliage. Mix the foliage in an old blender in a ratio of 1:1 (50% of each). Empty this mixture into a bowl. Then add dark green 4 mm static grass to this mixture. (Do NOT put the static grass in the blender; add it in afterwards.) Now apply spray glue to the tops and bottoms of all the branches and then sprinkle on the mixture of foliage and static grass. Add a clump of foliage to the top of the tree as well. Glue the trunk to a hole in the layout surface. Group different sized trees for variability. The finished product is seen in [Photo 1](#).

*In his clinic Mike suggested starting with a block of balsa wood, out of which you could cut smaller strips of wood using a band saw. Others have used wooden dowels which is what I prefer for safety reasons.

Using a Postage Cancellation Mark to Identify Your Layout

By Nicholas Kalis



Nicholas Kalis has found a neat way to provide an identification tag to your layout fascia. He first had to search the internet for an authentic postal cancellation mark for Waipahu, the locale that he models. Then he was able to take that to a signage shop and have it made into vinyl decal with adhesive backing. He then carefully applied it to his valance over the layout and was delighted with the final result. Details are outlined in his blog on this page -<https://oahusugarcane3.blogspot.com/2022/08/identifying-your-layout-setting-by.html>.

As You Drive By...

By Martin Brechbiel, MMR

I model a 19th century into early 20th century line, the Cumberland Valley RR (CVRR), and a seriously condensed representation of the South Mountain line that ran up from the main line between Greencastle and Chambersburg, PA. I do travel in that area of the county quite regularly and have the occasion to drive on Rt. 30 east of Chambersburg principally for the change in scenery. I had noted for years near Fayetteville off to one side of the highway a few railroad cars parked in what appeared to be a park. What had caught my attention however was that one of these cars looked like an old vinegar tank car. When I first saw this car it appeared to be in sad shape and partially collapsed in on itself. But over the years, apparently some enterprising souls attended to its sad condition. But I still failed to turn off the road and go take a closer look at it and the rest of the cars parked there. That all changed in March of this year.



Photo 1

I had reason to head east on Rt. 30 that month and time to spare so I impulsively turned off the highway, and drove down and around to a parking area near to where I could walk over to where these cars were resting quietly ([Photo 1](#)). I also had my camera available and in hand to capture a few photos.



Photo 2

Toward one end of the string of cars, there was a PRR N5 cabin car, quite possibly one of the few of this class remaining ([Photo 2](#)). There was an N5c at the end, but being a CVRR modeler and enthusiast, the N5 was of far greater interest as the CVRR actually had this class of car on its roster. This N5 is particularly interesting since it never got the collision posts added to its platforms. There was a flat car next in line but being a flat car, it was of such little interest to me as to make it almost completely forgettable. Yet, for those that love flat cars, it was a class F41 car lettered for PRR 469677.



Photo 3

Last in line was the prize car for me, an actual vinegar tank car, NFPX 22 (Photos 3-5). I have scratchbuilt and also rebuilt the efforts of others to have my own model vinegar tank cars, but I've had to work from plans and photos. In O scale, the only commercial option, the Overland vinegar car, is a rare and expensive item. There was also a brass kit made, but it is apparently also a rare beast.

Photo 4



Photo 5

Now I was able to walk right up and measure, photograph, sketch, etc. a prototype car. This car has some history starting out as a flat car and the tank was added to it in the late 1920s. And while restored cosmetically, the 42' tank is a replacement made from cypress. Yet it seemed to still not be quite 100% all there and had a bit of damage evident. Nonetheless, visiting it up close offered a unique opportunity for me.

By the way, this is all located at Norlo Park east of Chambersburg along Rt. 30.* The park was built on a former farm and is operated as a community park. The former Mont Alto Railroad right-of-way runs where the PRR cabin cars and the flat and vinegar cars sit. This short line eventually became part of the CVRR. There is also a station that has been relocated to the park from Quincy, PA and another station there for a miniature train that the Cumberland Valley Chapter of the National Railway Historical Society operates seasonally. There is also a Western Maryland RR Maintenance of Way shed. So, while the park is populated with picnic pavilions, walking/jogging trails, dog parks, and sport fields, it's also a site for preservation of local railroad history well worth stopping by and visiting.

So, keep in mind as noted by the philosopher Ferris Bueller, **"Life Moves Pretty Fast. If You Don't Stop And Look Around Once In A While, You Could Miss It."**

* <https://www.guilfordtwp.us/norlopark/>

Live from St. Louis!

By Greg Warth

Greetings from the Gateway to the West! I wrote this report while attending the August 7 – 13, [2022 NMRA National Convention](#) at the Marriott Grand followed by the [National Train Show](#) which was held nearby in Collinsville, IL. To say that this has been an inspiring experience would be a gross understatement. Learning new information was my primary focus. But making new friends, and enjoying the local scenery, which is considerably different than it is in the Mid-Atlantic area, were also major benefits. Many of the older buildings in the area actually looked exactly like many of the DPM (Design Preservation Models) kits I have put together over the years, not to mention the presence of even more bridges than what we have in Virginia. Prototype trains were everywhere. Many local attractions were available to be seen when not attending the conference including the Gateway Arch, the National Blues Museum, the Art Museum, riverboat cruises, helicopter tours, and much more. We could have even watched the Cardinals sweep the Yankees while we were there if we had bought tickets earlier.

Attendance

The meeting was well attended by model railroaders from all over the world including Europe and Australia. They were universally very friendly and always anxious to talk about their trains and prior experiences with model railroading. Most of these gentlemen (and ladies!) were die-hard modelers and exceedingly proud of the fact that they have been in the hobby for anywhere from 5 to 60 years or more. Many of them have built multiple layouts. [Steven Priest](#), MMR, prior editor of *Railroad Model Craftsman* and *NMRA Magazine* who presented a clinic on CTC (Centralized Train Control), said he has built about 17 of them, each of which was a learning experience. He would build one, realize his mistakes, then tear it down and start over, each one being better than the last. Some have devoted their hobby years on just one railroad, but what amazing productions they were! There were some younger and middle-aged folks, but most were well into their senior years. It is fantastic that the older folks have been so dedicated to the hobby for so many years and are still attending these conventions, even at significant hardship in some cases. It is also a bit disconcerting that there were not more young people attending. But perhaps my observations are skewed by the fact that the younger segments of the population are working and do not have the time to attend conferences.

Education

The didactic content of the convention was outstanding. There were at least six clinics occurring at the same time every 90 minutes going constantly from 8:00 AM until 9:30 PM for four straight days. I attended as many as time allowed. The biggest problem was to decide which ones would be the most important for me to attend, since there were too many to see them all. Almost every aspect of model railroading was covered by these clinics including scenery, benchwork, tools, hands-on scratch building, kit bashing, decals, operations, electronics, signaling, lighting, painting, weathering, and others. The cutting-edge clinics included Arduino projects, Wi-Fi layout control, CTC panels, fiber optic lighting, signaling, 3D printing and laser cutting. There were even clinics on marketing and promoting your local Division and how to get new members to join. One of these was given by [NMRA President Gordy Robinson](#) himself. I was struck by his motivational and inspiring enthusiasm about the organization and its future.

Layout Tours

I went on two bus tours to visit a total of six fantastic local layouts. The first of these tours consisted of visits to three “small” layouts, none of which were small by my standards. The second tour of regular-sized basement layouts helped me to put that in the proper perspective. We were extremely appreciative of the hosts of all the layouts we visited. They were very gracious allowing us to barge into their homes in the morning hours to view their amazing creations. Multiple photos of these layouts, all taken by the author with permission from the owners, are featured below. There were several additional layout tours, which I did not have time to see. Two large on-site modular layouts occupied the convention halls. One was an HO_n3 scale narrow gauge railroad by the local Mudhens group, and the other was a large N-Trak production called “FreemoN.” They both ran like a dream and were very well-endowed with artful scenery.

The Train Show

The National Train Show, requiring a 20-minute shuttle ride from the Marriott Grand in St. Louis to Collinsville, Illinois, was a magnanimous production. Almost all the major manufacturers were represented here, along with several distributors and multiple smaller and local companies. At least four outstanding modular layouts from nearby groups were displayed in HO, N and even Z scale. In fact, the Z scale displays were quite impressive, ranging from the largest I have ever seen contrasted with the smallest which was built inside a cigar box. The phrase of the day was “Bring your wallet!” That was the only tool you needed for this part of the conference. Guys were coming back with big smiles and shopping bags full of new train stuff.

The Banquet

The Banquet on Saturday evening was also quite inspirational. Many awards and recognitions were presented. *Our heartfelt congratulations go to Ernie Little, MMR, from the Potomac Division of the Mid-Eastern Region who received the President's Award for Division Service.* The celebrity speaker, Michael Gross, was very entertaining. He is an actor that you may remember as the father character from the television series called "Family Ties", and he also played Burt Gummer in the seven "Tremors" movies. As a life-long model railroader devoted to the Santa Fe prototype, he even owned an 18 mile stretch of actual Santa Fe rail at one time. He was greatly inspired by his father and much supported by his wife in his many hobby-related endeavors. The food was delicious, and the fellowship was very enjoyable.

Next Year

While at the convention, I had the great fortune of meeting Mike Mackey, MMR, the Western District Director of the NMRA and the Chairman of next year's annual NMRA convention in Grapevine, Texas. A very friendly, enthusiastic and motivational leader, he personally helped me to sign up for the 2023 Texas Express convention, which looks to be as awesome as this one. Registration is open right now at [2023TexasExpress.com](https://www.2023TexasExpress.com). I hope you will join me there.

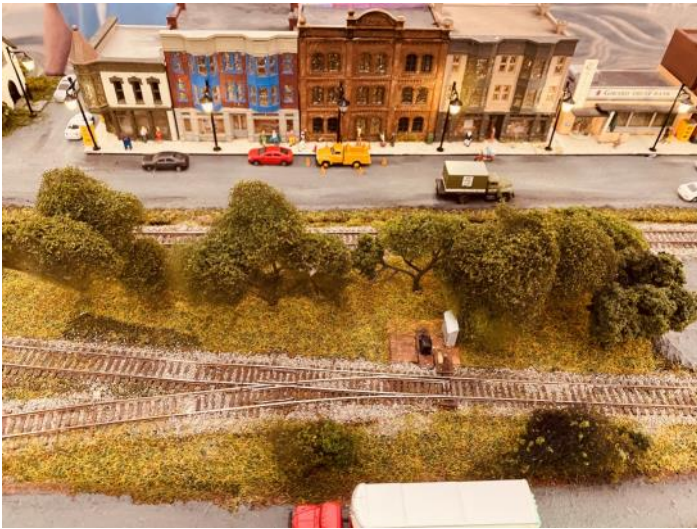
Photos

If pictures tell a thousand words, here are 24,000 for you to enjoy...

Mudhens HO3 Narrow Gauge Modular Layout



Free-moN Modular Layout by N-Trak



Bob Brady – Frisco River Subdivision in HO

This is a DCC multilevel representation of the St. Louis and Chaffee Subdivisions with point-to-point operation including a long gradual 40-68" grade with staging at each end and built to facilitate switching.



Gary Gross – Franklin Pacific in HO

This is a tri-level Digitrax DCC layout including the Missouri Pacific (MoPAC) and Frisco (St. Louis San Francisco) Railroads and the fictional Franklin Pacific connecting Kansas City to St. Louis. It contains a staging area, two helices, and four switching districts.



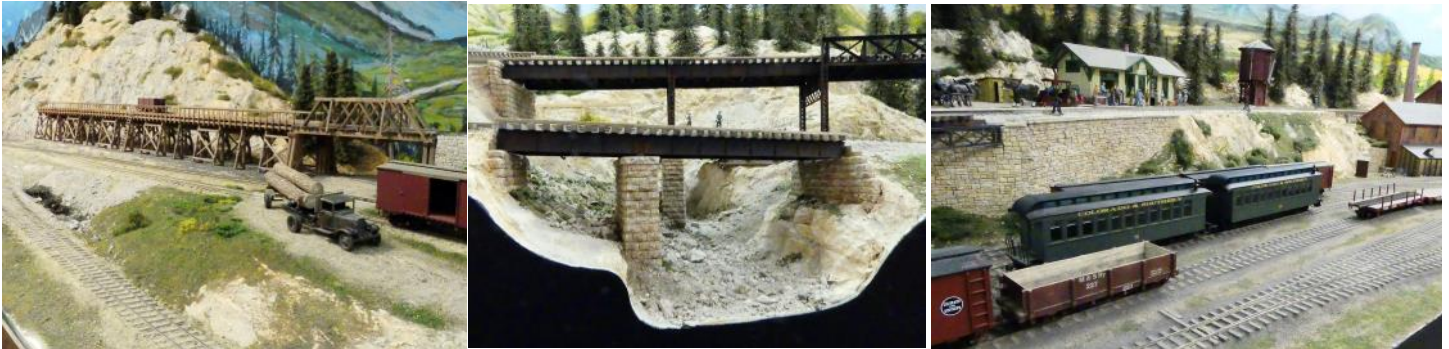
Gary Hoover – Norfolk and Western – 1950s

A freelanced prototype where the equipment is mostly N&W, but the locations are fictitious. Steam engines predominate the layout but there are a few GP9s and RS11s also present. Realistic winter scenery is a highlight of this railroad.



Richard Rands – Mineral and SouthFork Railway

This is an O scale, two-rail, freelanced DCC layout depicting mining operations in 1990s southern Alaska in the midst of a vast impressive display of rugged mountains and canyons from floor to ceiling. Numerous scratch-built structures and 21 trestles and bridges enhance the scenery for this continuous running railroad which includes a helix hidden inside one of the mountains.



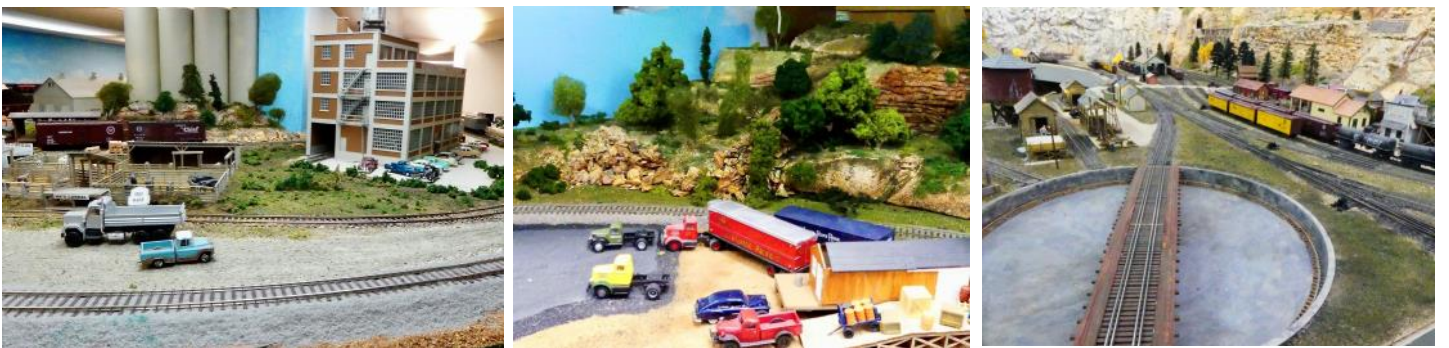
Bob Lenz – Colorado Western in HO and Aspen Junction Railroad in HO_n3

Two railroads, 35 years in the making, are connected by an interchange. The Colorado Western is a logging railroad based on the prototype Colorado Midland with floor- to ceiling rock construction. The Aspen Junction captures beautiful Colorado scenery as it climbs several switchbacks over two bridges, seven trestles and three tunnels to eight different mines.



Hank Kraichely – Burlington Route Hannibal Division in HO

This is a double-decker representing the CB&Q short cut to Kansas City from St. Louis, Hannibal, and Old Monroe by way of the GM&O's KC Line. The main objectives were 1) to make the operators really feel like they were traveling a distance with a 500-mile mainline and sidings serving six small towns, and 2) to avoid a helix by using a long gradual ramp from one end of the layout to the other to connect the two decks.



Well, there you have it. I hope you enjoyed the review. I am truly glad that I attended this convention and plan to make it a habit for the future. Next up is the October 2022 Mid-Eastern Region Convention in Charlotte. See you there!

Back on Track...



Have you ever wanted to just jump into the cab of one of your locomotives and take a tour around your layout? Roger Bir of the Tidewater Division managed to do just that on the CB&W (Chesapeake Bay & Western) as you can see in the pictures below...







...All thanks to the wonders of Photoshop!