



The Local

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

SEARCH

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Happy New Year!

By Greg Warth

As the New Year unfolds, we have new expectations, renewed energy, new commitments. “Same Old Thing” no longer applies. Time to refresh ourselves. There is new technology available. New opportunities and new challenges present themselves. We must adapt and learn new things.

Fortunately, model railroading is such a vast, multifaceted hobby, there are always new things to accomplish. What will it be this year? I have several things on my list, like more automation on my home layout, adding more details, developing a new small N or Z scale layout, building a model railroad museum... Wait! A museum? That sounds pretty ambitious. Is that possible?



The photo to the left shows that reindeers were not the only means of transportation for Saint Nick on December 25. This was a window scene from the [Holiday Model Railroad Show](#) put on by the [Model Railroad Museum of Hampton Roads](#) for the Community of Norfolk, Virginia and the surrounding area. After the Holiday Show ended on December 31st, the space was closed with plans to re-open as a Model Railroad Museum in March of 2025. The locals are ecstatic, not to mention the model railroaders who live nearby. There will be more about this later, but needless to say, 2025 will truly be a Happy New Year for model railroading in eastern Virginia. (Continued on p. 4)

President’s Column...

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Flexibility

By R. Scott Unger

For about the past twenty years my wife and I have hosted her siblings and their extended families for Thanksgiving. After several years, we purchased a new dining room table specifically for that annual event. Now part of the typical preparation involves inserting two leaves in the table to provide 12 seats. Even with the extension, as family grew, we needed to add a second smaller table in the hall to accommodate everyone.

Adding the leaves in our table sometimes reminds me of a custom table that my great grandfather built from oak. It had an integral leaf that stayed connected, but under the table when not in use. Everything about that table was consistent with his German heritage; it was not overly ornate, was built from one of the most durable hardwoods, and was somewhat overconstructed. I think that one of my uncles has the table currently, but for a while my sister had it. On each of the many occasions on which I helped her move it, I always cringed when I saw that table as it seemed like it weighed 200 pounds and was not easy to move. One of my friends, who was also helping with one of the moves, commented on the table’s stout construction when he opined that “at the end of time there will be three things left: cockroaches, Keith Richards and this table!”

I am not sure when the table leaf was invented or by whom, but it got me thinking about how beneficial the flexibility of a table with leaves can be.

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How to Build a Model Railroad

Our dining room table can seat six without any leaves, eight with one leaf and twelve with both leaves. On occasion we have even fit two at each end for a total of fourteen. Clearly it would be ridiculous to purchase and store two or three different tables to accommodate different size gatherings. Not to mention the more obvious issue of the space requirements in the basement that would otherwise be dedicated to the railroad. Even with the leaves I still store all of the extra chairs for the table under the benchwork of my railroad.

Flexibility is not just useful for tables on the holidays. Despite modeling at a reduced scale, our railroads still require compression and sometimes elimination of elements to make things fit and function properly. Much like a dining room table with leaves, finding ways to get more than one function from a single element can be a way to save space without eliminating anything. An example of this is a caboose track in my classification yard (Riker) located in Punxsutawney Pennsylvania that also serves as a runaround.

The Encyclopedia of B&O Cabooses Volume 2 by Dwight Jones includes discussion of the 1957 Caboose Agreement that required dedicated caboose tracks in all classification yards. Per that requirement, no other rolling stock was permitted to occupy caboose tracks. Yet the book includes a photo from 1974 showing a Western Maryland hopper car on, yep you guessed it... a caboose track! I chose to use this evidence of the caboose track serving what appears to be multiple functions to my advantage. Connecting to the west end of Riker Yard, the former Adrian Mine Line served a few remaining industries in the town of Elk Run. I did model the siding in Elk Run but only one end of the siding has a functioning turnout. The other end was too close to the aisle, so I modeled the turnout at that end as if it had been partially removed with just the frog and some guardrails remaining (in 1974 not everything that broke got fixed). However, removing this turnout eliminated the run around necessary to switch the Elk Run industries. To address this issue, the caboose track at the west end of Riker, which is a double ended siding, was pressed into service as the run around for Elk Run. Perhaps not prototypical, but given the photo discussed above... “reasonably plausible” will have to do.

We inevitably encounter challenges when what we want to build or model simply won't fit as we initially intended. Perhaps there is a flexible solution that preserves the spirit of what was intended. The next time one of your plans fails to work on the benchwork as well as it looked on paper or in your mind, give some thought to how you might bend or adapt the plan without breaking it. Whether you model a specific railroad or a freelanced route, a good reference book is a great place to inspire some flexibility.

NOW HIRING!!
Positions are now open
and available for:
Executive Convention
Chairman (ECC), and
Business Manager for the
MER.

Model Railroad Museum of Hampton Roads: Part 1

How do you build a model railroad museum?

Our local model railroaders have been meeting every Wednesday at a restaurant near where the TMRC (Tidewater Modular Railroad Club) was evicted from a space in a small shopping center 5-6 years ago. The local people really loved the HO layout that our team worked on passionately for almost 10 years. The owner of the shopping center let us use the space for free, since the model railroad display brought in lots of visitors who ended up buying things from his other stores and restaurants. However, the center was eventually sold to a new owner who did not see the advantage of providing free space to anyone. So we had to go on an expedition to find another place to build a model railroad.

Four of us, plus two more that joined later, decided to take it upon ourselves to really work on getting a new place. We decided to “think big” and our President had the idea of developing a 50,000 sq. ft. museum. One of our members had been involved in the development of the [San Diego Model Railroad Museum](#), which is now one of the best of its kind in America, and which started from humble beginnings (two small model railroad clubs). So, we applied to the Commonwealth of Virginia and the IRS to form a nonprofit 501(c)3 organization and were approved. We developed an extensive business plan, bylaws, created a website and spent hard-earned personal money on local advertising. Then we went on a property hunt.

We looked everywhere. We talked to the mayors of two cities, met with the Chamber of Commerce, went to city council meetings, hired a commercial real estate agent, talked to the Department of Parks and Recreation and multiple other city officials, all to no avail. We combed websites for real estate listings that might work for us, but again, nothing was available in our price range (zero). We received a \$1000 grant from CSX and received some monetary donations from local model railroaders including pitching in ourselves. But this did not amount to nearly enough for what we needed. We received a lot of model train donations from the public and from model railroaders alike, but not much in monetary donations.

Then, one of the newer members of our small group let it be known that his family had received an inheritance from an uncle who had been a very successful real estate mogul in the early 1900s. As it turned out, this uncle also happened to love model railroading and acquired a rather large collection of them. Furthermore, he directed to his family that he wanted some of his funds to be used for model railroading. This was nothing short of a miracle for our little group with big aspirations. The funds were not limitless, however. We still had to be very frugal and continue to look for more funding.

At the same time, a local mall started losing some of their retail stores. A lot of malls have been experiencing this recently in our area. As a result, some of their available spaces were leasing for a much lower price than usual. The mall asked us to do a holiday model railroad show for November and December of 2024, rent free. They were also able to provide us with a one year renewable low rate lease for a 6500 sq. ft. space, which was very reasonable. So, we took the leap. The only downside of the deal was that the mall may end up being demolished or repurposed after two years, so we would probably have to find a new place at that time.

We also asked other local clubs to join with us but they did not yet see the potential for success and were worried about possibly having to move again in two years. Nevertheless, we had faith it would work based on local surveys, and after preparing multiple budget projections. We also hoped that after two years, our reputation would help us find a new location. There were only six of us in our core group to start, but fortunately more volunteers and members signed up later.

We could not move into our new space until November 1st, and we had planned to open for the holiday show by November 15th. So we worked hard to move several of our home layouts to the mall, making sure the trains ran well and that the scenery was acceptable. Overall we had eight working layouts and several other modules set up as static displays. All the major scales were included, even Z scale, which was a big hit. We decorated many of the layouts with Christmas decorations, miniature trees, figurines, and added a sprinkling of Woodland Scenics Snow. Due to the amount of work involved, we had to delay our opening until November 23rd, so we were just in time for Thanksgiving.



Photo 1: Christmas Layout in our Holiday Show

Our main layout at the front near the opening contained three large ovals of O gauge track and one S gauge oval all going around a 4' tall snow-covered Christmas tree mounted in the center of the table (**Photo 1**). We kept trains running on these tracks almost constantly which required a fair amount of attention and troubleshooting, but the people loved it. One of our most popular displays was a large collection of wooden trains on the floor that kids could play with, and many of them did for hours at a time (**Photo 2**). We used an old television to run YouTube videos of trains almost constantly. One of our tables had an almost finished layout that one of our members was still working on while visitors came in. We also had a table full of scratchbuilt models. Our team members greeted everyone as they came in and explained the different scales and answered questions for them. All who visited seemed genuinely interested and excited about what we were doing, especially when we told them about the museum which will be opening in March in the same space (**Photos 3-7**).



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7

So, here we are. Our holiday show worked our very well. We averaged about 200 visitors a day. Here is what we have learned so far:

- Everybody loves trains,
- Especially kids. (There is hope for the future of model railroading).
- We were able to keep at least eight layouts running continuously with three supervisors on site with only rare derailments.
- Teachers and students alike are excited about our plans for a STEM program.
- We are stimulating interest in model railroading. Several of our visitors have signed up to become members and volunteers to help in the museum, including teens and middle-aged people.
- Future plans include working on getting grants, advertising, sponsorships, more donations, and building more layout modules and historical displays for the museum.
- We are ready for the next step -> building more layouts and developing the museum.

We will let you know how it goes here in future issues of *The Local*.





NMRA Achievement Program Update

By Kurt Thompson, MMR
MER AP Manager

Kurt Thompson, MMR

Since the October report, we have two new Master Model Railroaders:
Jack Dziadul, MMR 781 and James Murphy, MMR 785. Both are members of the
Carolina Piedmont Division. Congratulations to them both.

NJ Division, Division 1:

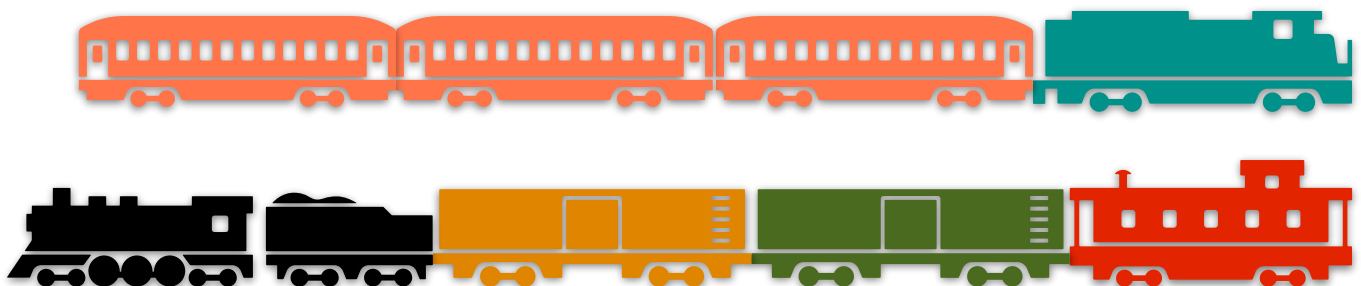
Joseph Zebrowski - Chief Dispatcher
Joseph Zebrowski - Model Railroad Engineer - Electrical
Joseph Zebrowski - Master Builder - Scenery

Potomac Division, Division 2:

Lee Stoermer - Chief Dispatcher

Carolina Southern Division, Division 12:




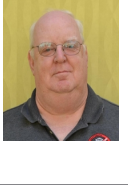




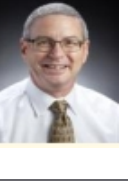

Dave Myers - Master Builder - Scenery
Scott Davenport - Chief Dispatcher
Andrew Stitt - Master Builder - Scenery
Gordon Miller - Golden Spike Award
Marcus Neubacher - Golden Spike Award




Board of Directors & Administrative Staff

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MER Division Superintendents


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	<p>Tidewater Division 4 John Robey (571)217-0599 jrobey2019@gmail.com Division web page: nmra-mer-tidewater.org</p>				

IPSWICH HOBBIES



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Jack Dziadul



IpswichHobbies.com

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UPCOMING MER CONVENTIONS

- 2025 — Philadelphia Division — “Philly Express,” October 16-19, 2025, Crown Plaza Hotel, King of Prussia, PA
- 2026 — Tidewater Division — “Tidewater Triangle,” Virginia Beach, VA - TBD

MER BOARD OF DIRECTORS MEETING SCHEDULE

- Board of Directors Budget Meeting — January 11, 2025, 3 PM, by Zoom
- Board of Directors Business Meeting — April 2025, King of Prussia, PA

From the Editor's Desk...



Educational Value of Model Railroading

By Greg Warth

Over the past few years, there has been considerable interest and focus on STEM concepts in education within our school system. In case you haven't heard, STEM is an acronym for Science, Technology, Engineering and Math. Other related disciplines are involved as well, like physics, architecture, geometry, commerce, industry, social sciences and others, all related to *science* of one kind or another.

Model railroading is the epitome of all these disciplines. If you want to choose a hobby that would help you learn about basic scientific principles, and even go beyond that into computer programming, automation and artificial intelligence, this is the one. I am hopeful that the more the knowledge of this spreads, the greater appeal the hobby will have to younger people and budding engineers. Furthermore, hopefully, promotion of the hobby in this way will result in more people who will have an acceptance and appreciation of science, which has been waning in recent years.

Being involved in a holiday model train show recently, I was pleasantly surprised at how many young people showed up. Many of them already had model trains at home. We encouraged the ones who didn't to consider it. Several of them even decided to join our group.

Renewed interest in science, I believe, would help tremendously in the prevention of many conspiracy theories, which have been harmful to our society. Currently, there are many who choose to believe incorrect fantasy theories and obvious misinformation over hard scientific evidence. Perpetuation of these theories over and over again doesn't make them true. Science and evidence bring us back to reality and critical thinking. This is what will make us stronger as a society.

Wow! How did I get off on all that? Suffice it to say, that model railroading is based on science and I am glad of it. But there is one more thing about the hobby that makes it great: the integration of *humanitarianism*, teamwork, art and creativity along with the science. That is what really connects us to it, our human aspirations, goals and expressions that are intertwined with it. Operating trains within a beautiful landscape of scenery is what drives me to the hobby along with the fact that I created it. It is something that I designed, built and accomplished that others can appreciate as artistic. Even more than that, it is unique. There is nothing else in the world that is exactly like it. It may not be the greatest scenery in the world, but it is an expression of myself as I strive to make myself and my modeling better over time.

This issue of *The Local* is unique also. We have lots of original articles that will help bring *your* creative modeling to the next level. Martin Brechbiel, MMR continues to create a trolley car out of sticks of wood in Part 2 of his series. An article from Marty Steele explains how he created

Mat Thompson, MMR provides us with a nice book review on layout design and operation. Alan Balma shows us how to make better windows. *And congratulations to our two newest MMRs, Jack Dziadul and James Murphy.*

So, sit back with your favorite beverage and enjoy reading about your favorite hobby.

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

Jack Dziadul, MMR

Alex Belida, MMR

Martin Brechbiel, MMR

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

Happy railroading,



Advertising in The Local

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

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.

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

Elections 2025

THE MER NEEDS YOU!

Now Accepting Nominations for Directors

If you are a member in good standing and want to support your region with good ideas and real involvement, we need you to volunteer to serve as one of the three Directors for the Mid-Eastern Region (MER). The MER Board of Directors generally meets three (3) times per year, once in January, once in April, and again at the MER convention. The deadline for nomination entry is **May 30, 2025**. The term of office is two years, with a limit of two terms for the President or Vice-President, five terms for Treasurer or Secretary.

Any qualified MER member in good standing can be nominated, either by him or herself or by another member with the candidate's permission. The process is very simple:

Prepare: A 200-word (max) statement outlining the nominee's interest and qualifications for the position, AND a photo of the candidate. Send the nominations package – by May 30, 2025 – to ALL of the following nominations process officials:

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

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

Deadlines and Schedules for 2025 Nominations and Balloting: Our Bylaws require the publication of deadlines and schedules for nominations and balloting in the first issue of The Local of each year. The dates and schedule for nominations, ballot and election results are in the Executive Handbook, Section 5, Policies, Article VI.

May 30, 2025 -- Deadline for receipt of self-nominations sent to the Nominations Committee. Date for Nominations Committee to notify Board of Directors of slate of nominees validated by the Business Manager.

August 1, 2025 -- Deadline for mailing paper ballots to members and for commencing electronic voting.

September 3, 2025 -- Deadline for electronic voting, also last day as shown by postmark for mailing paper ballots.

September 7, 2025 -- Deadline for receipt by Balloting Committee of paper ballots sent by mail.

September 14, 2025 -- Deadline for Ballot Committee to transmit results to President, the Director overseeing this committee, and the Business Manager.

September 21, 2025 -- Deadline for The President to communicate the election results to candidates. The Business Manager also notifies the MER Web Master and the NMRA of the election results.

October 10, 2025 -- Deadline for publishing election results on MER's website.

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

Send in Your Articles

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

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

We love our authors and we love our jobs in creating *The Local* for you to enjoy. We receive many articles with great content and we are always anxious to publish them. However, so many articles that we receive are not in a good format and require many hours of work to get them ready for publication. When you are preparing your article to send to the Editor, please follow the instructions presented here. It won't require any more work for you in writing the article, but it will save us many hours of proofreading and publishing time. Depending on the size of the article, it may take as many as 10-12 hours to actually get it in the newsletter. We can save at least half that time if it comes to us prepared according to the instructions.

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

1. **Please read** the article written by Martin Brechbiel, MMR on "[Preparing Your Manuscript for Publication in The Local](#)."
2. Compose and submit your text in Word format (.doc or docx).
3. Use Times New Roman font in 12 pt size.
4. The title should be **centered** and in **bold**.
5. Directly under the title should be "By (your name)" - centered, not bold. If you are an MMR, put it there.
6. If the photos are yours, enter in parentheses (Photos by the author) right after your name.
7. Enter your text with no paragraph indents. Justify the text so it is even on both sides.
8. In your text, refer to your photos this way: (**Photo 1**) - in parentheses, bold and blue.
9. Between paragraphs in your text, write "**Insert Photo 1 here**" where you want the photo to appear. DO NOT put your photos there. Otherwise, we just have to take them out.
10. Include the number of the Photo in the file name of the Photo so we know which one goes with which number.
11. Photos must be clear and sharp or they cannot be accepted. JPG, GIF, TIFF and PNG formats are acceptable.
12. Photo captions should be listed at the end of your article, or in a separate Word file, and numbered with the same number as the photo.
13. Send your text and your photos separately by email to [The Local Editor](#). They can all be sent in the same email as long as the total file size is less than 25 MB. If the size is larger than that, you will have to split them into two or three emails.

What Happens to Your Article after You Send It In?

First, the substance and context of the article has to be reviewed. Is it original? Has it been used before, or published elsewhere? Was it borrowed from someone else's work? Is it an appropriate topic for our newsletter? We've had to reject a few articles because they were more about rail fanning than they were about model railroading.

Then the text is carefully reviewed line by line by four different sets of eyes to check for typos, grammatical errors, wording or phrasing problems that have to be rewritten to be more understandable. Punctuation has to be corrected. If there are photos in the text, they have to be removed. Photos frequently require editing to make them look brighter and more appealing. File names of the photos have to be changed to include the number of the photo.

After the proofreading is finished, the text has to be entered into the publishing program, paragraph by paragraph, sometimes line by line. The text often has to be resized to make it fit properly without looking inconsistent. When we come to a point where a photo has to be inserted, it has to be resized so that it fits in with the text and in the right order with the proper caption. If a photo is missed, the whole article may have to be redone in order to get the photo in the right place.

It's just like putting a model together in many ways. You start with the raw materials or the parts that come in a kit. The materials and instructions for the kit are what the author provides. In this case, the various parts include the words that have to be put together properly. Then the paragraphs and the photos may have to be rearranged. Then you have to fit the pieces into the right places, so that they make sense and look appealing. There are many details that have to be added or corrected. Eventually, we glue them all together by converting them from Word into a pdf file.

What Kinds of Articles Do We Like to See?

1. Anything about modeling, whether it be about just putting a kit together, kit bashing, scratchbuilding, or just adding details or weathering to a model.
2. Any type of "How to..." article, as long as it is about model railroading.
3. New tips or techniques, or even old ones used in a new way.
4. A tour of your layout or that of a friend, including its name, location, theme, era, scale, size, best features and biggest challenges.
5. Summary of a model railroad conference you visited.
6. Tell us about your workbench, or any special tools you use.
7. Tell us how you fixed a problem you encountered with your model or layout.
8. If you received an AP or MMR Certification, explain how you did it, what were the challenges. What would you recommend to others working on the same project.
9. New electrical techniques that you performed, new automations, how you set up signals, how you installed sound or flashing signs, billboards, or other details.
10. Scenery techniques, mountains, water, river rapids, trees, forests, ground cover.
11. Building a bridge or trestle.
12. Photographing your layout or model.
13. How to recruit more people into the hobby.
14. Your summary of a clinic you attended.
15. How we can help each other.

Special Notes for Authors:



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Designing and Operating Yards

A book review by Mat Thompson, MMR (Photos by the author)

One of the best Kalmbach (now Firecrown) model railroading books in my opinion is Andy Sperandio's *The Model Railroader's Guide to Freight Yards*. Unfortunately, the book was published in 2004 and new copies have not been available for years. Secondary market prices can be \$100 or more.

Now Dave Abeles has filled the gap with *Designing and Operating Yards*. Dave is a professional railroader and author of the previous Kalmbach book, *The Model Railroader's Guide to Signals and Interlocking*. His HO scale Onondaga Cutoff, based on Conrail in the 1990s, has been featured in *Model Railroader*, *Model Railroad Planning*, and *Railroad Model Craftsman* multiple times. He is also an avid operator and well known in that community. His prototype experience, enthusiasm for the hobby, and willingness to share knowledge make him the perfect candidate to carry on Andy's work ([Photo 1](#)).

Dave has expanded the scope by including both freight and passenger yards. He has also expanded the time span to cover from the early steam period to the modern era – some prototype pictures are from 2023. To my knowledge, this is also the first book written for the model railroad audience to cover in depth modern yards built to efficiently handle the intermodal and unit train traffic that define today's railroads. Yard practices such as block exchange yards and ladder tracks are explained in detail.

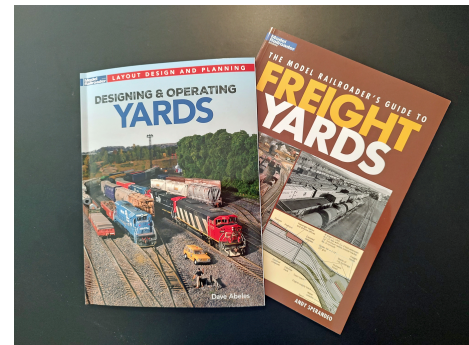


Photo 1

Dave's text is clear and to the point. He starts with a history of yards and their development. Chapters Two and Three explain the purposes and operations of several different types of yards. Chapter Four deals with blocking and the changes to blocking operations as railroading has evolved. Layout builders will find Chapter Five, and Chapter Six, useful guides for constructing or modifying their own yards. Included are diagrams of small and large yards. There is a track by track description of the purpose of each track.

Adding to the author's broad knowledge, the story is further explored with short inserts by several prototype railroaders and experienced model railroaders, even including this reviewer. My subject is car float operations. Many readers will find the three written by Andy Sperandio and included in his book years ago particularly useful because they clearly explain key subjects: Car cards and switch lists, how to work yards, and ladder tracks.

A bonus is that the book, like other recent Kalmbach/Firecrown offerings, contains one hundred eleven pages, a nice increase from Andy's book and other earlier offerings which were only ninety pages. The extra pages are well used, there is a lot to learn from this book.

But let's be honest. We model railroaders know text is just a way to separate the pictures. In this case there are almost 200 photographs, charts, graphs, and maps, all reproduced in the high quality format common to Kalmbach/Firecrown books and well-chosen to complement the text. Captions are pertinent, precise, and provide a surprising amount of useful information in just a few carefully crafted sentences.

Early steam era model railroads are well represented with photos of Doug Tagsold's 1900's Colorado & Southern and a case study of Perry Squier's 1923 Pittsburg, Shawmut & Northern, among others. Photos of Tony Koester's Nickel Plate and Bill Darnaby's Maumee Route Transition Era layouts are the most prominent of several photos of that period. Interestingly, Tony Koester's Nickel Plate is well known from his books and articles but Dave took many of the pictures in this book, giving a fresh view of Tony's noteworthy creation.

Sammy Carlisle's 1990s based Santa Fe Hereford Sub and Dave Abeles' own Onondaga Cutoff are examples of how modern prototype practices can be incorporated into model railroads. Even newer practices are illustrated with prototype pictures.

A standout photo on page forty-seven is of three Norfolk Southern diesels pulling a string of double stacks en route to Roanoke. It's a scene begging to be modeled (**Photo 2**).

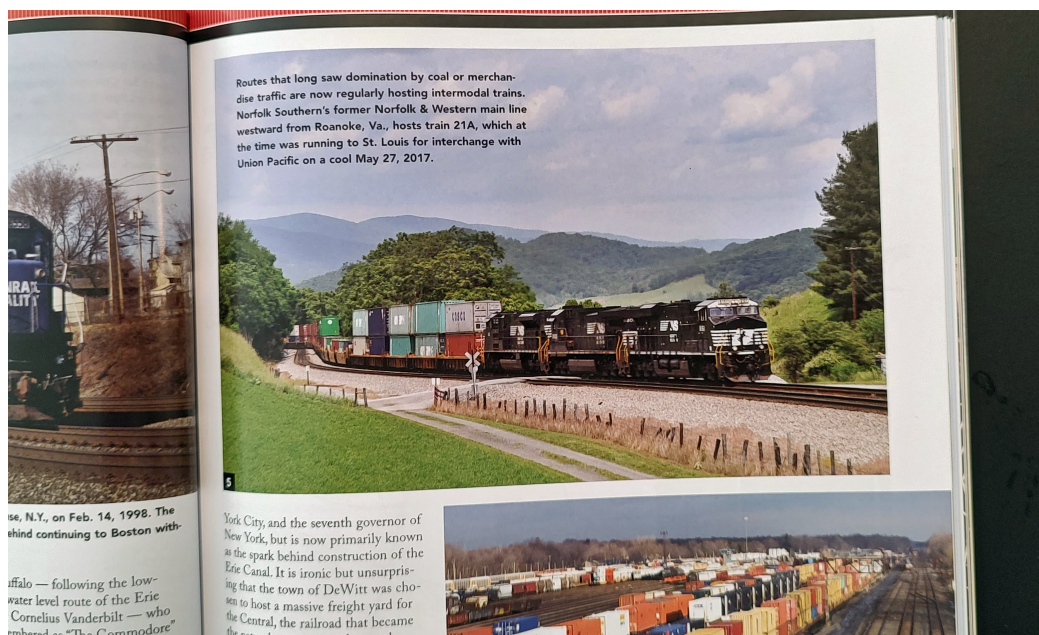


Photo 2 (permission granted)

Both model railroaders and railfans will find this book a worthy addition to their railroad library.

Constructing the West Theater

By Marty Steele (photos by the author)



Photo 1: Completed model on my layout, nighttime view.

Ever since I saw the Derek Verner article “The Lido Theater” in the March 1976 Model Railroader, I had an interest in building something similar. The highlight of his theater was the marquee chase lights that capture the true flavor of actual chase lights, not groups of lights trying to fool the viewer into thinking they are seeing the typical four channel chase sequence (i.e. Miller Engineering’s signs).

Verner scratchbuilt the entire HO scale structure, not just the marquee, but the proportions seem a bit off. The building was only 30’ wide by 41’ deep and the marquee itself is about 20’ deep and the full width of the building, so it seemed to overwhelm the building. He included a lobby that probably took another 10+ scale feet out of the interior of the structure, leaving maybe 30’ for the theatergoers to view the movie, so rather small for a movie theater.

Being the 1970s when Verner built his model, he controlled the lights with a motor rotating an acrylic wheel masked to block one fourth of the lights as it rotated. What is amazing to me is how he was able to cram the chase light mechanism into such a small structure. Maybe he was an N scale modeler at heart.

When Walthers came out with their HO scale Rivoli Theater kit, I thought that would be a great starting point for what I wanted to do for a theater. I believe it was first offered as a built-up building named the Palace Theater with a Miller marquee. The proportions of the kit look much more appropriate at 44' wide by 59' deep (for comparison, the restored Cary Theater in downtown Cary North Carolina is about 36' wide but 104' long). Happy with this larger size building as well as the basic layout of the kit, I decided it was time to bring Verner's Lido Theater into the 21st century (at least from a construction standpoint).

In Verner's model, he used 20 mil (0.5mm) fiber optic filament for the chase light "bulbs." I considered the use of LEDs for the actual chase lights but quickly got overwhelmed by the prospect of how to place them close together and be able to wire the four distinct circuits needed. I decided to stick with fiber optic filaments for the bulbs. Someone more accomplished in electronics than me might be able to make a circuit board with LEDs instead of using the fiber optic filaments.

3D MODELING

Verner had to build his marquee out of styrene shapes and precisely drill the holes for the fiber filaments. I had an option available that he didn't have in the 1970s, 3D printing. I designed my own marquee in FreeCAD, including the holes for the fiber optic filaments. I also designed my own vertical name sign and included internal dividers so that each letter could be lit individually. I limited the name of the theater to a word with four letters because that seemed to be the best fit. Not completely sure on how the sign would turn out, I wanted the name for the theater to consist of letters that didn't have "islands" within the letter in case I had to make a through cut in the sign (so that eliminated words containing A, B, D, O, P, Q, and R). As it turned out, that was unnecessary, but I'm still satisfied with naming it WEST, although I suppose that I could have stuck with LIDO.

The front wall of the Walthers kit had a large opening for the lightweight marquee of the kit that wasn't well suited for my marquee design, so I also designed a replacement front wall to accommodate my marquee. I measured the kit wall and tried to duplicate the pins and grooves in the styrene wall as part of my 3D model. I included mounting holes for four 5mm LEDs to light the marquee and slotted holes to segregate the fibers into the four channels as they pass through the wall. I designed the marquee to be bolted on to the wall so I could complete all of the fiber installation with the marquee loose and then easily align and install the marquee without worrying about getting any adhesive on it or the fibers. The 3D model is shown "assembled" in [Figure 1](#).

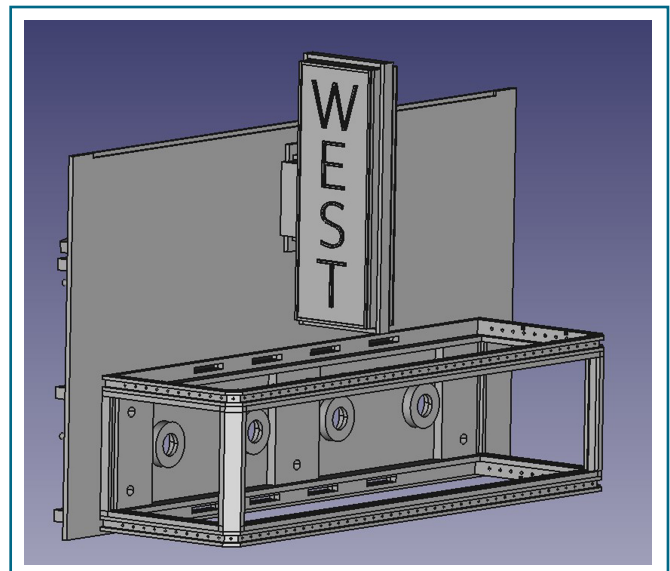


Figure 1: 3D Model

After developing the model, it was time to print. A fellow Carolina Piedmont Division member graciously printed the parts with his 3D resin printer. The WEST sign covers were printed with clear resin (you can just make them out in the top right portion of Photo 2) with the rest in standard gray resin. The overall length of the wall came out about 1mm shorter than I intended (not sure if it was the 3D print or if my design was short, but there is some tolerance to a 3D print). That was easily remedied by adding a small piece of styrene to the kit trim piece. Unfortunately, due to the shortening of the wall, my alignment pins on the back of the wall weren't as useful as planned. The holes in the 3D print for the fiber chase lights came out slightly small, which was preferred, so I used an appropriate size drill bit to make sure the holes would accommodate the fibers.

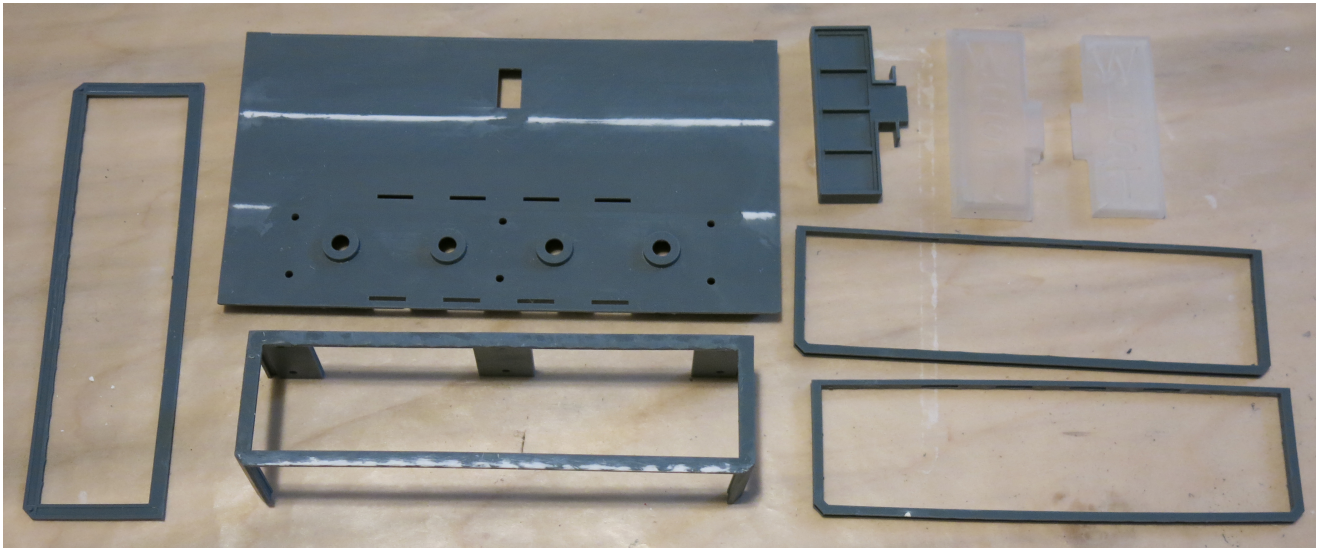
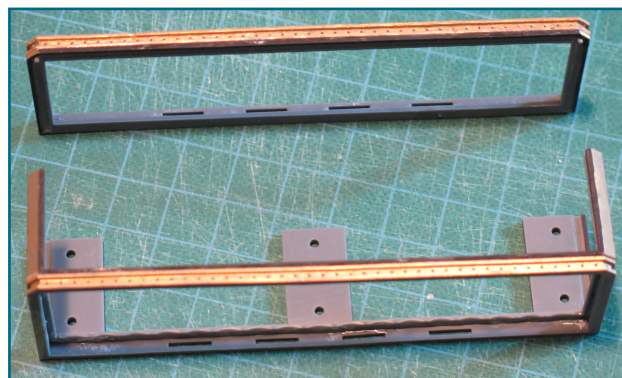


Photo 2: 3D printed pieces with a little plastic putty in a few places.

MARQUEE CONSTRUCTION

In my design, the frame for the bulbs is a separate piece from the frame for the acrylic marquee. I thought I needed to keep them separate to give more room for installing the fibers. Although this made painting a little easier, I found that the two pieces were going to be hard to align properly so I ended up gluing the two pieces together before continuing (**Photo 3**).

Photo 3: Marquee framework showing chase light frames attached to marquee frames.



The marquee field is cut from 1/16" translucent white acrylic sheet that I bought on eBay. The grooves in the frame were shallow, so I had to carefully cut the pieces then sneak up on the size to make sure it fit snug and secure in the frame.

In Verner's model from 1976, he had to go through an elaborate process to create an oversized version of the artwork, photograph it, create negative and positive films in the correct scale, and then apply these to the acrylic. I was able to develop the signage in Microsoft Word, then print it on clear decal paper on my inkjet printer. I like to keep my layout kid friendly and since my layout is set in 1979, I selected "The Muppet Movie" for the marquee with Kermit and others listed as the stars.

After final assembly of the marquee frame, I glued the bolts to the back of the marquee so that they wouldn't turn when tightened later. The assembled marquee is shown in **Photo 4**.

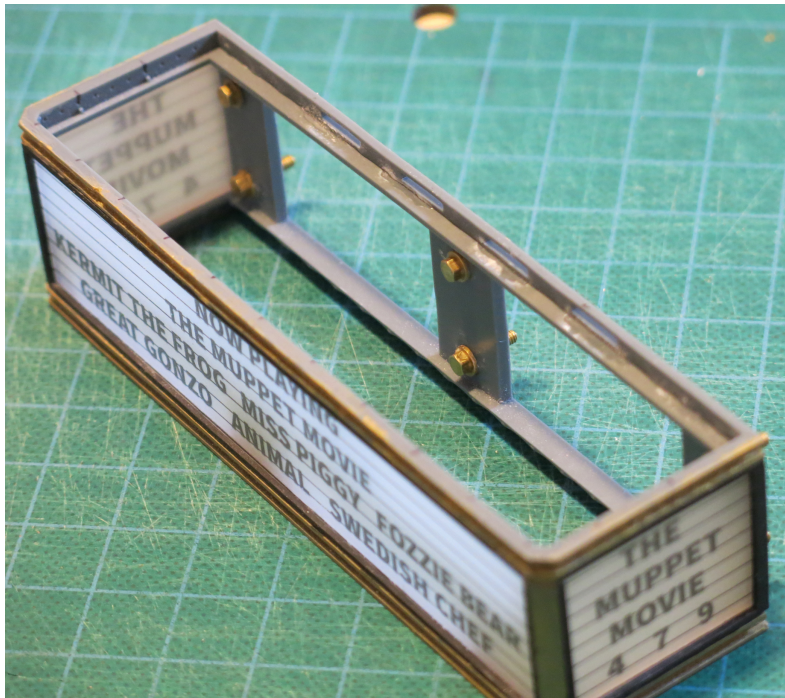


Photo 4: Assembled marquee

My original thought was to have the fibers enter from the back of the frame and stop just inside the outside face of the frame, then have clear 1mm microbeads simulate the bulbs. I was always concerned with how well the fibers would stay attached to the back of the frame. I tested this approach and it seemed to work okay, although the microbeads didn't disperse the light as much as I had hoped. I began trying to glue the microbeads to the outside of the frame, using the holes to position them. But I was making a mess of things, so I abandoned that approach in favor of the method Verner used in the 1976 model.

I cut the fiber optic filament to length, then enlarged one end to about 1mm diameter by holding the end close to, but not touching, the shaft of my hot soldering iron, watching carefully through my Optivisor to make sure the size was consistent from fiber to fiber. Verner did something similar, but being the 1970s his method was to use the lit end of a cigarette. I wonder how many packs he went through just to have a heat source! Hey – it was the 1970's when even my high school at the time had a designated smoking area. The mushroom end also helps prevent the fiber optic filament from pulling through the frame.

Verner's model used strips of translucent yellow tape placed on top of the fiber bulbs in order to disperse light at the end of the fibers, since they are otherwise fairly directional. In the photos accompanying the article, this seemed to really detract from the look of the bulbs when the room lights were on. In order to get light to disperse laterally I scuffed up the end of the fiber with fine sandpaper which produced more adequate results.

After the fibers were prepared, I threaded the filaments from the outside of the marquee frame through the rectangular slots at the back (**Photo 5**), being careful to keep the fibers in order. I chose to have the chase effect begin in the middle of the marquee and run toward the outside, so that affected the order of the fibers. I could reverse this and have the lights chase from both sides and collide in the middle by making a minor change in the software controlling the lighting. Having them run from one side of the building to the other would require a different installation sequence for the fibers.

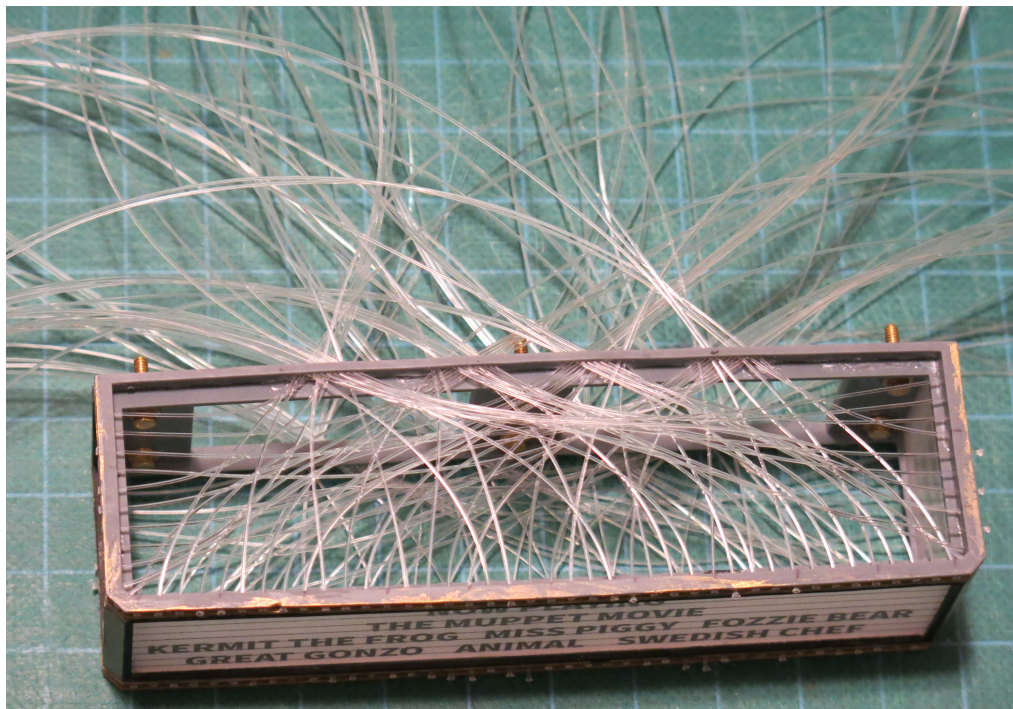


Photo 5: Fiber optic filaments installed in marquee.

I prepared pieces of 0.02 black styrene for the top and bottom of the marquee. The bottom piece has a grid of holes to allow light from the marquee to illuminate the area below. I applied these to the model later.

VERTICAL SIGN

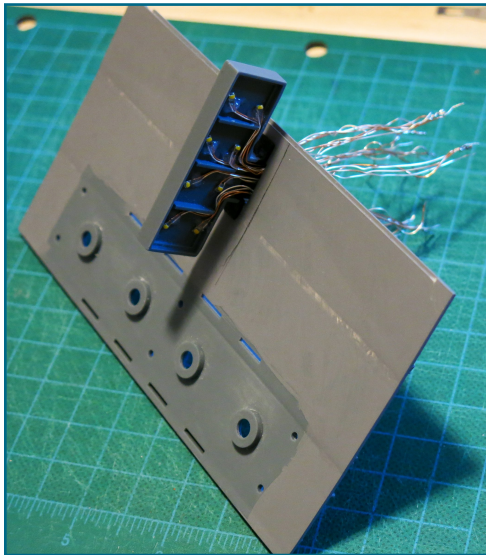


Photo 6: Vertical sign core with LEDs attached to upper front wall

was stripped of primer and painted with Neon Orange craft paint on both the inside and outside. Both the inside face and the outside face have a slight projection for the letters (Photo 8). Lots of coats of black paint were applied to the rest of the sign, both inside and outside, to block light bleed-through.

Moving on to the vertical name sign, I glued two LEDs for each letter on each side to the core piece. The LEDs were located away from being directly behind a letter to avoid a “hot spot” of light. Next, I threaded the LED leads through the hole in the wall and glued the sign core to the front wall, being careful to keep the sign vertical (Photo 6).

I soldered resistors and wire extensions to the LED leads, then gathered them together with electrical tape to keep them grouped together. The other end of the wire has a DuPont connector (Photo 7).

The sign covers were primed, then the top surface of each letter

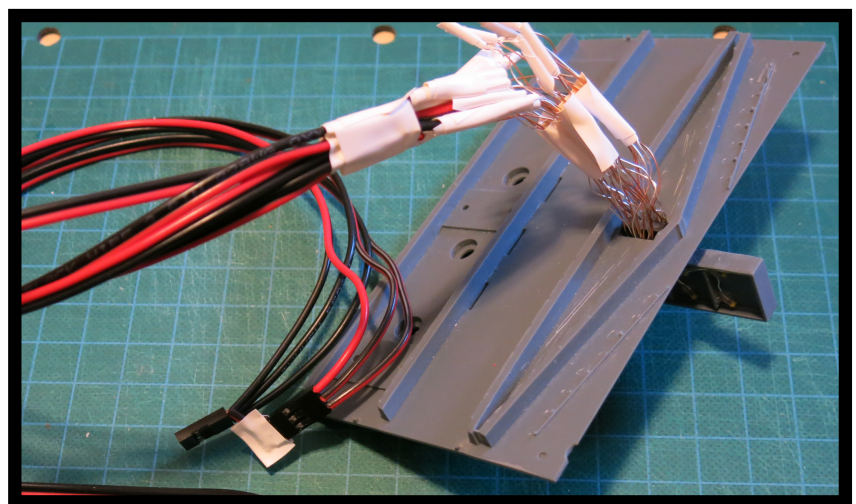


Photo 7: Wiring for the vertical sign



Photo 8: Letters painted on vertical sign covers

DISPLAY CABINETS

The Walthers kit comes with a place for movie posters of coming attractions. In the Verner model, he backlit his coming attraction posters. I wanted mine to be front lit, so I constructed small light boxes with an LED at the top and bottom of the box. I found several images of appropriate movie posters from 1979 on the internet and added “Now Playing” or “Coming Soon” text across the top (**Photo 9**).

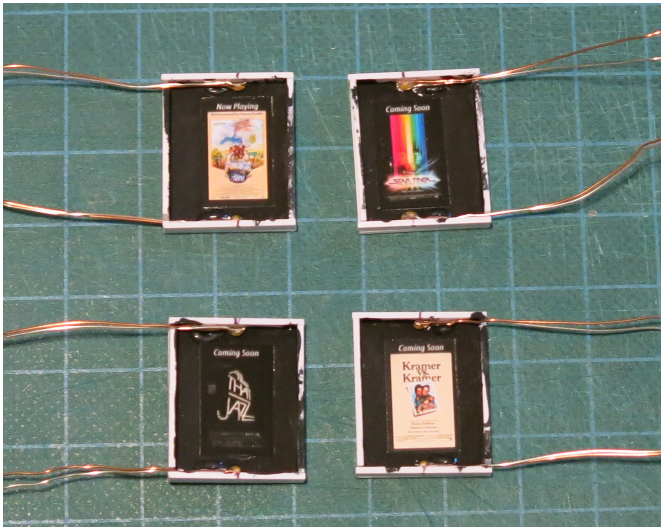


Photo 9: Movie poster display light boxes with LEDs.

I mounted the posters to the back of the kit -provided lower front wall. For window and door glazing, I used glass microscope slide covers (**Photo 10**).

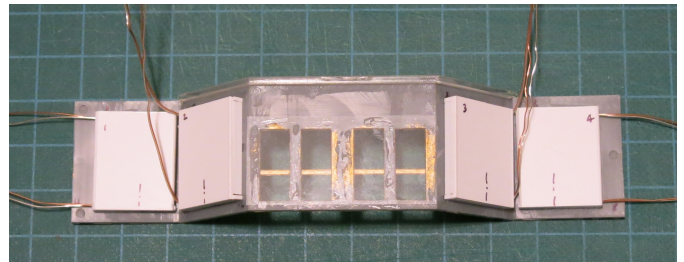


Photo 10: Rear view of lower front wall with movie poster display boxes installed.

ASSEMBLING THE COMPONENTS

With the upper and lower walls assembled, I was then able to glue my custom top front wall and kit bottom front wall pieces together, along with the side and top trim pieces provided in the kit. Next, I threaded the fibers through the rectangular holes in the wall, then drew the marquee into position and completed the bolting it to the wall. I gathered the fibers with electrical tape and cut them to final length. At the cut end of the fiber I put a red mark some distance from the end to help me judge how much would be inserted into the lighting frame.

I constructed an assembly of styrene sheet and 3/8” OD styrene tube to transmit the LED light into the fibers. I painted the outside of the tubes black to keep light from leaking out into the interior of the building, but also drilled some small holes in the tube to hopefully vent any heat put out by the LEDs. Where the fibers enter this assembly, I drilled appropriately sized holes for the fibers in a grid pattern. I kept the top row of fibers going to one set of LEDs and the bottom row going to its own row of LEDs. The assembly was designed to hang from stiffener pieces added to the roof. In addition to the electrical tape wrapping, I applied a generous amount of Pledge Floor Gloss acrylic where the fibers were grouped to try and keep them locked into place. The light assembly is shown in **Photo 11**.

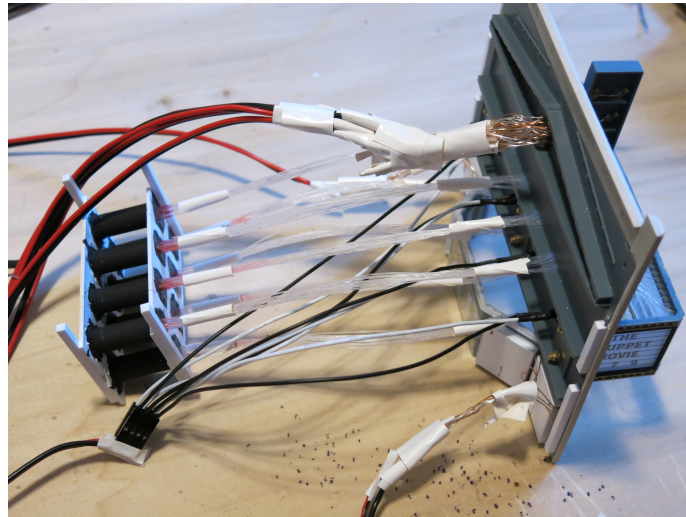


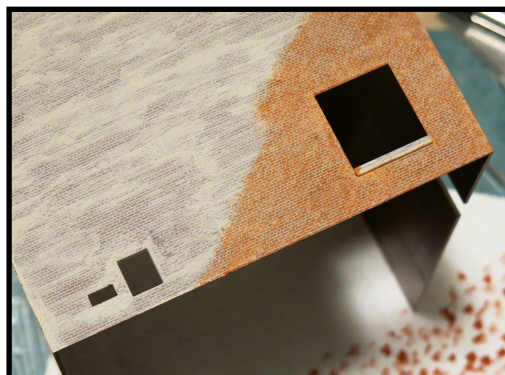
Photo 11: Light assembly and fiber optic filaments.

For the marquee, I initially used diffused warm white LEDs that were supposed to be 3500K, but they were much more yellow than I expected and didn't look right. I switched to diffused white LEDs that were described as 6000K. These had a somewhat blueish cast to them (particularly when photographed), so I coated the lens with an orange Sharpie to help shift the light to be a warmer tone. I think that a true 4000K LED would have been about right, but I wasn't able to find any in a 5mm diffused lens style with a wide viewing angle.

For the chase lights, I used a 5mm clear lens LED with a narrow viewing angle. These were described as about 3000K, which was fine for these lights since they are intended to represent incandescent light bulbs. They also were described as having a high luminous intensity which was important for lighting up the fibers as much as possible.

I assembled the sides and back of the building as provided for in the kit. My brick technique is to paint the wall the mortar color first, then dry dab the brick color on the mortar with the flat side of a brush. I like the way this method creates some variety to the brick color. Intentionally letting the mortar coat be uneven over the red styrene walls also helps with the variability. Partial progress on the brick painting is shown in **Photo 12**. For the upper front wall, I used some tube acrylic for texture, then overcoated with beige.

Photo 12: Painting brick on the rear wall



The main roof section in the kit includes a couple of oversized vent stacks that didn't make much sense, so I cut those off. After completing the walls, I attached the kit roof pieces to the walls and installed the windows and doors. I shadowboxed the windows on the rear of the building with styrene to keep them dark.

With the walls complete and the roof installed I suspended the light assembly from the roof and completed the wiring. Because of the length of the fiber optic filaments and the placement of the light assembly, the fibers are curved quite a bit between the wall and the light assembly. This tended to put pressure on the fibers at the marquee end, so I used more Pledge to try to keep them close to the frame. The curved fibers are visible in **Photo 13**.

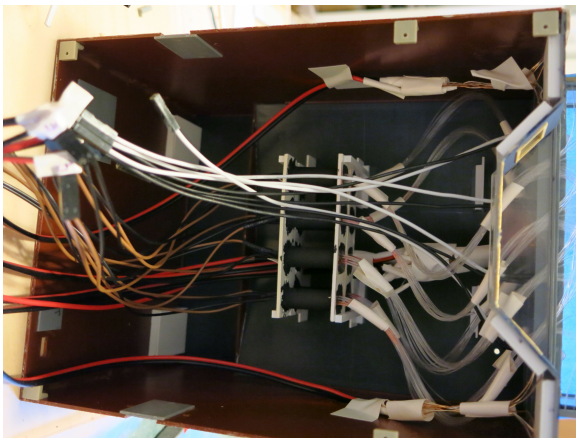


Photo 13: Light assembly mounted to roof and additional wiring.

I built a lobby of sheet styrene and used pictures from the internet, modified in Photoshop Elements, for the refreshment stand. The carpet was done similarly using an image of carpet for theaters with boxes of popcorn and film reels. Some Preiser figures completed the lobby (**Photo 14**). Three LEDs are mounted in the ceiling.



Photo 14: Lobby

CONTROLLING THE LIGHTS

The lights are controlled by an Arduino with a DMX512 shield running the same program as my layout room lights, so they are programmed to come on as “sunset” nears and then turn off sometime after “midnight.” I used an Arduino MEGA although a regular Arduino Uno is probably fine. All twelve channels available in the controller are used in this one structure (An additional controller controls other structure lights on the layout). My Arduino program allows me to adjust the speed of the chase lights, the intensity of each circuit, and the on and off time for each circuit. The DMX LED Controller allows for a considerable amount of current - up to 5A at 12V per channel (way more than needed for this structure). I’ve found it to be an effective workaround for the limited amperage available directly from the Arduino. I ran two CAT6 cables from the controller to where the building is located on the layout. The Arduino and the controller are mounted on plywood, which is mounted to the wall beneath the layout as seen in [Photo 15](#).

I mounted two RJ45 board kits with pin headers to a styrene assembly on the raised portion of the kit base ([Photo 16](#)). The intent was to bring the CAT6 wiring through the base and connect to the board with the DuPont connectors attached to the pins. Unfortunately, the wiring was so congested that this didn’t work as planned. I removed the connectors, added more holes to the base for the internal wiring to go through, and relocated the boards below the benchwork.

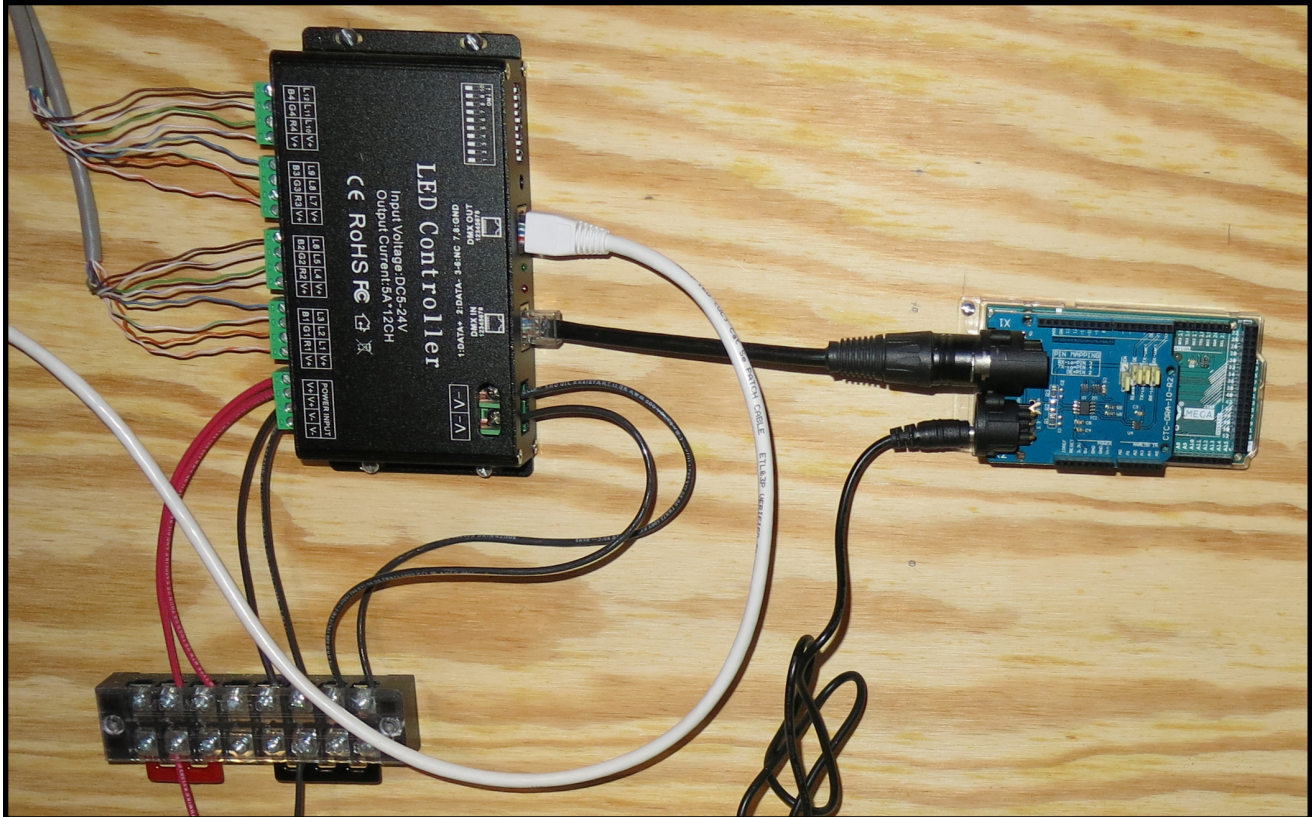


Photo 15: Arduino with DMX shield and DMX LED Controller.

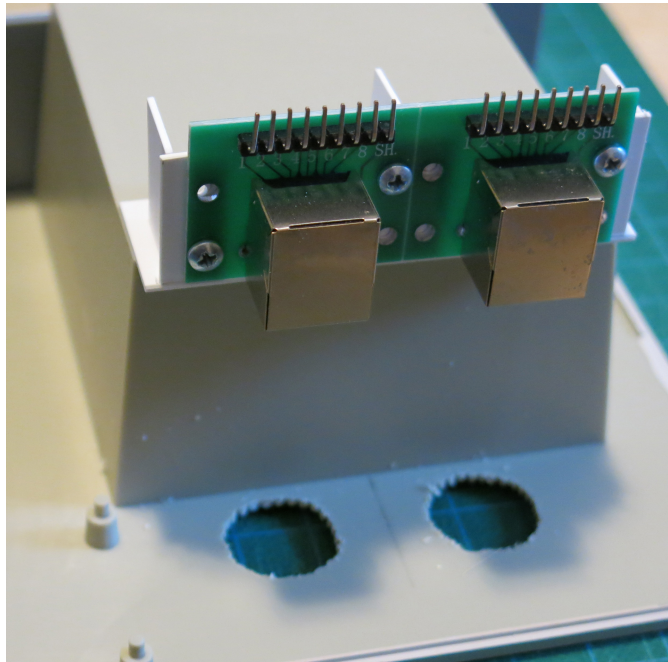


Photo 16: RJ45 Connectors in initial location, later removed

FINAL STEPS

For final touches, I added rod hangers to the marquee, an LED wall lamp over each side exit and the rear loading door, some scuppers and downspouts, fine gray ballast on the upper roof, an A/C unit and hatch on the upper roof, and interior gutters and metal roofing for the sloped main roof. I also added decal wall signs, one I made from a photograph that I took in Hendersonville, NC, “View Jump Off Rock” (fortunately I photographed this sign years ago before it was repainted – it looks too new now) and one pulled from Google Street View “Cheerwine,” both modified and scaled in Photoshop Elements to align with the brick. A black wash was applied to the walls for weathering.

The completed model is shown in both daytime (**Photo 17**) and nighttime views (**Photo 1**).



Photo 17: Completed model on my layout, daytime view

LESSONS LEARNED

Although I'm happy with the result, there are several things I would do differently if building another one of these. Here are my lessons learned should you want to build your own:

1. I would make several changes to the 3D model:
 - a. I would combine the chase light frames and the marquee frames into one single piece for the top and one for the bottom, especially since I ended up gluing them together earlier in the build than I had planned. The combined section would be stiffer and straighter. I was concerned about the difficulty of installing the fibers (especially from inside the marquee as originally planned) and thought it would help to keep these two parts separate but it turned out to not matter, especially since I ended up not trying to glue the fibers to the inside of the frame. It would have been a little more difficult to paint the gold portion of the assembly separately from the black border, but it could be masked. A narrow slightly raised band between the two parts could be used to help differentiate between the two sections. Combining these two pieces would allow the groove for the acrylic sheet to be deeper, similar to the depth of the back groove on the vertical portion where I had a deeper groove, making it easier to size and install the acrylic sheets.
 - b. For the front wall replacement, I would leave off the stiffeners in the 3D print and just stiffen the wall with styrene strip. The stiffeners caused a depression in the front face of the wall during the 3D print. It also wasn't perfectly flat even with the built-in stiffeners, so adding stiffeners later would allow the wall to be restrained in a flat position when the stiffeners were added, thus keeping the wall flatter.
 - c. I would add registration pins between the vertical sign and the front wall replacement to aid with locating the sign and keeping it vertical. An alternate design for attaching the sign to the wall would be with bolts similar to what was used on the marquee, if I determined there was sufficient room to insert the bolts (although the bolt heads would need to be covered somehow).
 - d. I would add registration pins from the top to the bottom of marquee halves along the back supports. I had pins at the front corners which aided alignment there, but similar pins along the back would have been helpful.
 - e. I would add front to back struts within the top and bottom frames to maintain straightness of the marquee. The struts would need to stay out of the plane of the chase lights so as not to block the path of the fibers heading for the wall.
 - f. It might be possible to have more bulbs in the chase lights. I spaced mine at 3 mm because of my plan to use the microbeads as the bulbs and my thought that I needed that spacing to even be able to place the microbeads. Since I dropped the microbead idea, I would consider decreasing the spacing to 2 mm and increasing the number of filaments. Verner's model spaced the holes at 1/16" (1.6 mm), so maybe even that close spacing would be possible.

The rectangular openings for the fibers through the wall were 10mm wide and should be large enough to accommodate 50% more fibers, although I'm not sure if twice as many fibers would fit. If more closely spaced, the corners of the marquee might be better rounded instead of at the 45° angle I used. The 45° angle spaced out well for the 3mm spacing and allowed the fibers on the inside to curve out of the way. But at a closer spacing the installation of fibers in the corners might become more challenging. It appears that Verner was able to run his fibers right to a 90° corner so I may be overthinking this.

2. I should have used liquid masking on the top of the vertical sign letters before priming. It was more difficult to remove the primer from the letters than I expected.
3. For the assembly for lighting the fiber optic filaments, it likely would have been easier to 3D print the end pieces with a grid of 0.5mm holes for fibers in one piece and 5mm holes for LEDs in the other. The end pieces could include a round groove to register the tube in the proper place. The tube part of the light assembly could also be included in a 3D print, But the assembly would need to be in two parts to print and may not turn out very well, so I think I would just stick with styrene tubing there.
4. Would consider bundling the fiber optic filaments to go into one large hole in the light assembly instead of individual holes for each filament, although that hole size would have to be determined during the build to keep it as small as possible. There would also be more potential for light leakage with a single hole since there would be gaps around the outside.
5. I could have shortened the fibers so that they could have gone straight to the light assembly eliminating, or at least reducing, the curve in the fibers that put some unneeded pressure on the fibers. The curving doesn't impact light transmission but could push the fibers out of the holes.
6. It is possible that one LED could have been used for both the top and bottom rows of chase lights. Although, I think keeping the top and bottom separate still offers some advantage by keeping the middle of the marquee open allowing easier access to the marquee LEDs. A single LED for both top and bottom would definitely require bundling the fibers since there was just enough room in my grid of holes for the number of fibers present in either the top or bottom.
7. The bolts holding the marquee to the wall cast a shadow on the marquee end panels, something I didn't anticipate. It isn't particularly noticeable at a quick glance, but is more noticeable as you look closely at the model. One possible solution would be to have the whole marquee in a large pocket in the front wall so that projections are pushed back away from the wall face, although that may cause issues with the lower part of the kit provided front wall where the display cabinets are located. The pocket would probably need to be as shallow as possible to not distort the 3D print of the front wall.
8. The fiber optic filaments seem to pick up some light from the marquee lights. This is not particularly noticeable and I don't know of a good way to prevent this since coating the fibers could have detrimental effects on their light transmission. Perhaps a piece of the 0.02 black styrene could be placed to isolate the chase light frame from the marquee portion of the frame.

9. I forgot the vertical lines on the marquee decal. The grid on most marquees that the letters are attached to have vertical elements to keep the horizontal elements straight. I tried adding some lines with a fine Sharpie to blank portions of the decal sheet as a test, but decided I was likely to mess it up so just let it go. Not all marquees have these vertical elements anyway.
10. Although I drilled quite a few holes in the bottom styrene sheet below the marquee, there isn't as much light from the marquee on the ticket booth area as I had hoped. A few surface mounted LEDs would probably help but they would need to be recessed from the bottom so that they couldn't be seen. Additional LEDs would definitely be required if more styrene was included to isolate the light in the marquee from the fibers as described above.
11. For my wiring, I used unnecessarily heavy wire. The current draw is low enough that much finer wire would have been suitable, which would have eased the congestion inside the building.
12. When lit, the lettering for the marquee washes out somewhat. An alternative to using a decal would be to print two identical sets on clear transparency film then overlay the two so that the ink thickness could be doubled. It would take careful alignment of the two sheets, but I think they could be carefully glued around the edges with clear glue to keep them aligned. The groove for the acrylic sheet would likely need to be a bit wider since the transparency sheets, unlike the decal, have some thickness to them. A third option would be to use individual dry transfer lettering on thin clear styrene or perhaps directly on the white acrylic.
13. An alternative for the vertical name sign would be to use the 1mm microbeads to create the letters. This would involve having closely spaced 0.5 mm through-holes in the sign cover pieces to create the letter. That would open up the full alphabet for the name of the theater. The covers could be made in the standard gray resin instead of clear resin. It would still be important to keep the LEDs in the sign off to the side to avoid a light hot spot. Since the covers on my sign are not glued to the core, I can remove them and replace with this alternate should I choose to try it.

PARTS LIST

- Walthers Rivoli Theater kit (933-3771)
- Walthers Small Rooftop Air Conditioner from Modulars Roof Details (933-3733)
- Walthers 2-56 x 3/8" hex head screws – brass (947-1155)
- Walthers 2-56 hex head nuts - brass (947-1253)
- Woodland Scenics Size 2 washers – brass (785-894)
- We_Honest Wall Lamps (#R56BG) [eBay]
- Rail-Scale-Models Downspout with Scupper (RSM-M7031)
- Evergreen Scale Models Standing Seam Metal Roofing, 3/16" spacing (4521)

- Evergreen Scale Models 0.100" Angle (293) for interior gutters (264)
- Tichy Train Group NBW representing a 2" bolt 3" nut and a 5" washer (8144)
- AZIMOM PMMA Fiber Optic Cable 0.5mm (0.02") 100m (328'3e) Roll [Amazon]
- Plasticsacrylic White Transparent Acrylic Plexiglass [\[JD1\]](#) sheet 1/16" x 6" x 12" (No. 2447) [eBay]
- EDGELEC Pre-wired 5mm Warm White LEDs with Clear Lens (for the chase lights) [Amazon]
- EDGELEC Pre-wired 5mm White LEDs with Diffused Lens (for the marquee) [Amazon]
- Bowerful Pre-soldered Micro Litz Wired Leads Warm White SMD LED 0603 (interior lighting, vertical sign, display cabinets) [Amazon]
- Teensic RJ45 8-pin Breakout Board Kit with PCB Board and Pin Headers Network Port Adapter Test Board Connector (Horizontal Socket) [Amazon]
- Arduino Mega 2560 [Amazon]
- CQRobot DMX Shield MAX485 for Arduino [Amazon]
- GIDERWEL 12 Channel DMX Decoder RGB LED Controller 60A PWM DMX512 Dimmer Driver for RGB LED Strip [Amazon]



Completed Model..



HO Covered Hopper from the Cincinnati Division

Hello once again to NMRA, MER, Division Superintendent, Assistant Superintendents, Directors, News-Letter Editors, Web Masters, Facebook Managers and members in-general.

I last reached out to you in the Fall of 2022.

I am getting in touch with you once again with a request to publicize and promote Cincinnati Division 7's limited-edition, HO scale, N&W HC-46 ACF 2-Bay Covered Hopper cars that we have for sale. This car is unique in that it is a repaint scheme with patched-out data.

The following link provides details about it as well as pricing, shipping and ordering information.
<https://division7mid-centralregionnmra.godaddysites.com/car-projects>

It would be greatly appreciated if you would make your membership aware of this limited-edition freight car by publicizing it in your Region's and/or Division's web page, newsletter or email blast.

We thank you in advance for your support!

Paul Maciulewicz
 NMRA; MCR; Cincinnati Division 7
 Car Projects Chairman

Walt's Coal Breaker

Built by Walt Dietz and submitted by Thomas Radice



Breaker built by Walt Dietz for the Garden State Central (GSC) Model Railroad Club.

The plans for the breaker were derived from two photographs in the club's archives. Dimensions were tailored to the available space on the layout while maintaining the overall image. The original photos' authenticity was corroborated by a study conducted by the Lucerne County Historical Society at our request.

The structure was constructed of 1/8" clear acrylic obtained from the Canal Plastics Center in NYC. Craftics #33 cement also from Canal was used for building the structure. Internal bracing ensured a quite rugged structure. The material was neatly cut on a band saw. The windows were 3D printed by Dave Guthrie on the club printer. They were cemented to the structure with CA adhesive. Waxed paper on the inside provided the frosted appearance. The corrugated wood siding is from Micro-Mark. It was primed, weathered with various powders to represent sheet steel and sprayed with a dull sealer. Siding was attached using Walthers Goo. The roofing structure is 1/16" black acrylic covered with corrugated metal roofing from Northeastern Scale Lumber; it was weathered in a manner similar to the siding and also attached with Goo.

Total time expended on the model was roughly 80-100 hours.



The model fits nicely in the corner of the GSC Layout. Walt also built the structure in the foreground as part of the plant.

Do you have a model or diorama that you would like to publish in [The Local](#)? If so, please send photos and a brief description similar to what you see here to the [Editor](#). We would love to see it! We like layout articles too.

Scratchbuilding Styrene Windows

By Alan Balma (Photos by the author)

I was motivated to scratchbuild double hung windows because I wanted to increase the scratchbuilt content of a structure for merit evaluation. As much as I like Grandt Line and Tichy injection molded windows, I thought I could build reasonably satisfying windows out of styrene. This article is a styrene beginner's take on how to do it and end up with something similar to the model in **Photo 1**.



Photo 1 – Railside view of the nearly completed Canandaigua Kraut Company showing some of the 21 Scratch Built Windows using the methods in this article.

I am also a 1:1 woodworker. Thus, I am most comfortable building model structures using basswood sheets and stripwood from Mt. Albert Scale Lumber. Using jigs, I even cut model sheet material with a 10-inch table saw. I probably should also mention that I am an S scale modeler. I chose Mt. Albert because they sell their material sized for multiple scales. I can buy S scale 2"x10" without having to calculate the nearest HO or O equivalent! But all of that is a story for another article. I thought glueing up small pieces of stripwood might be much more difficult than using fast setting glues with styrene.

As a relatively new model railroader, I thought this was a good opportunity for me to explore the material. Seeing scratchbuilt windows in other scales, a large portion seem to be built using strip styrene. A cursory look for articles on the subject did not yield anything useable for me, so off I went to experiment. I cut my own strips from styrene sheets. It is difficult to get consistent widths as well as

one needs to deal with filing off the pesky left-over cutting ridge on these tiny pieces. Thus off I went to the internet to buy some pre-cut Evergreen strips to further the experimentation. (Not sized for S scale) I was after a replacement for Tichy Nos. 3537 and 3510 windows which scale out to 33" by 60" and 30" by 66" respectively in S. (In case I did not like the result, I could pop out my windows for the commercial ones.)

My objective was to build a window of a style common in the early 20th Century – 2 panes over 1. I learned that 0.06" width (about 4" in S) and 0.02" thickness looked good for the sashes. The jambs worked best with 0.1" x 0.04", the muntin with 0.02" x 0.04" and the casing with 0.1" x 0.02". (For HO, I would try 0.04" width for the sashes and 0.06" wide for the casings.)

I was building the period appropriate (1956) Canandaigua Kraut Company factory. It was located in Canandaigua, NY and served by the PRR Elmira Branch that I model. The model is designed to capture a condensed flavor and function of the industry. Since I could not find any photos, I also based the model on the Sanford Maps footprint. I needed 21 windows in the two sizes noted above. I knew I needed a jig and my NWSL chopper to replicate pieces. I use a styrene blank to mark the outlines for cutting the window openings in the basswood walls (**Photo 2**). I built the jig out of strip wood around this styrene blank. The strip wood is glued to a piece of hardboard. I felt the shiny side of the material would help keep the styrene from sticking to the bottom of the jig. (an observation on that later) A couple of notes – 1) the gaps in the top and bottom of the jig are the width of an X-ACTO chisel blade which I use to help pry out the window from the jig and 2) the depth of the jig should be very close to the width of the jamb. This facilitates getting the casing perpendicular to the jambs.



Photo 2 – Window Jig with the styrene blank used to trace the wall openings to be cut.

The following is a list of the parts, but the lengths will need to reflect your own modeling requirements (**Photo 3**). I cut two sets of parts and constructed one window. When I was satisfied with the result, I used the other set to replicate all the parts that I needed.

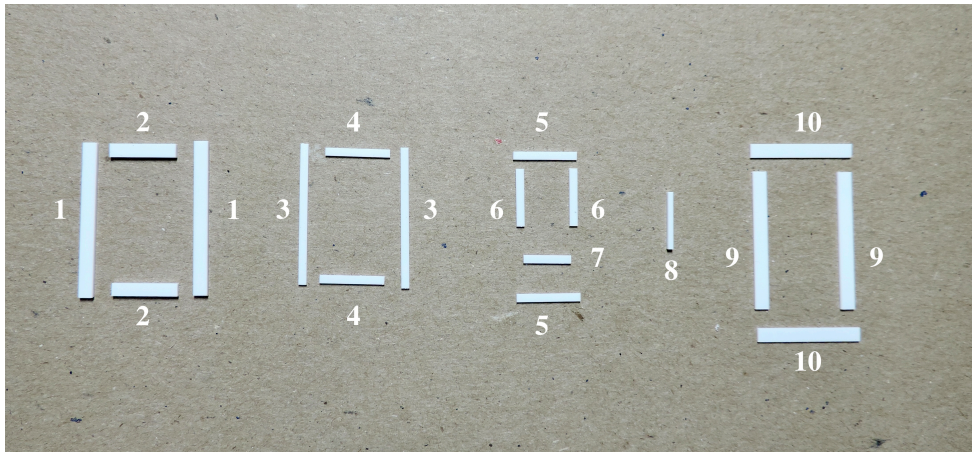


Photo 3 – Labeled individual window parts in the basic order of assembly.

1. Jamb Sides 0.040" x 0.100" (Qty 2) – Cut to height of the jig
2. Jamb Top/Bottom 0.040" x 0.100" (Qty 2) – Cut length to fit between Parts No. 1
3. Sash Styles 0.060" x 0.020" (Qty 2) – Cut length to fit between Parts No. 2
4. Bottom Sash Rails 0.060" x 0.020" (Qty 2) – Cut length to fit between Parts No. 3
5. Upper Sash Styles 0.060" x 0.020" (Qty 2) – Cut length to fit between Parts No. (same length as Parts 2)
6. Upper Sash Rails 0.060" x 0.020" (Qty 2) – Fits between Parts No. 5 and length to give equal exposed glass in top and bottom sash.
7. Lower Sash Style 0.060" x 0.020" (Qty 1) – Same length as Part No. 4. This piece sits under the lower Part No. 6.
8. Muntin 0.020" x 0.040" (Qty 1) – Same length as Part #6
9. Vertical Casing 0.020" x 0.100" (Qty 2) – Length is distance between Parts No.2
10. Horizontal Casing 0.020" x 0.100" (Qty 2) – Cut a quarter inch or so over the length needed to span Parts No. 9 and then trimmed to length after gluing up.
11. Not shown is clear styrene for glass. The piece is the same dimensions as the styrene jig blank.

For construction, I used Bondene applied with the tip of a brush allowing the glue to wick into the joints by capillary action. Any other liquid styrene cement can be used. For the casings, I used Testor's Liquid Cement for Plastics. This is a thicker cement that I applied with a toothpick. I used a file for final fitting of the pieces. You want a snug fit but not one that buckles the pieces. If a piece was too short, I cut another or filled the gap with some Tamiya Putty and then sanded the patch after construction. The general strategy is to first construct the jambs then build the sashes up in layers. After drying, I apply the casings.

The steps in construction:

1. **(Photo 4)** Place the Jamb pieces (Parts 1 and 2), the Sash Styles and Rails (Parts 3 and 4) into the jig. Adjust the lengths of the pieces for a snug fit. Place any gaps in the Sash Styles (Part 3) at the top of the jig. Use tiny amounts of Bondene applied with the tip of a small natural bristle brush and allow it to wick between the pieces. I hold the pieces tightly together near the points of application with the tip of my tweezers.
2. **(Photo 5)** Place the Upper Sash Style (Part 5) and just the top of the Upper Sash Rail (Part 6) into the jig and glue as in step 1
3. **(Photo 6)** Place the Upper Sash Style (Part 5) over the Lower Sash Style (Part 7) and glue as in Step 1. Part 7 sits under Part 5 and is not visible in the photo.
4. **(Photo 7)** Allow the assembly to dry for a few minutes and then carefully pry the window from the jig. My MAJOR learning was that I started with way too much glue which softened the underside of the bottom pieces. This stuck the window to the jig bottom making it very difficult to remove. The glue is still a little soft at this point. I put the window on my glass plate and make sure everything is where I want it. I put a weight on it to make sure it will dry flat.

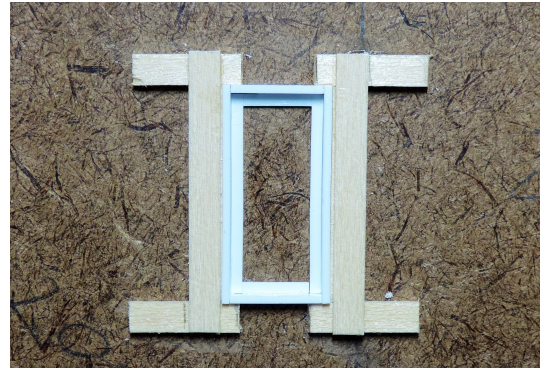


Photo 4 – Assembly of the jamba and part of the lower window sash which sits under and supports the upper sash.

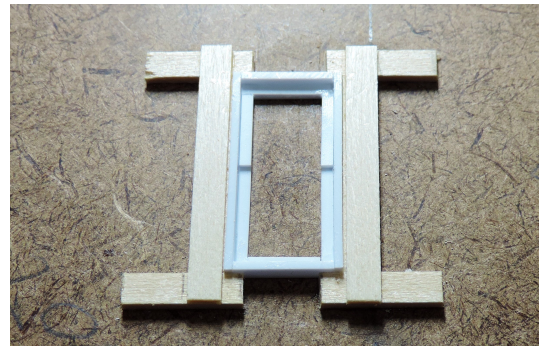
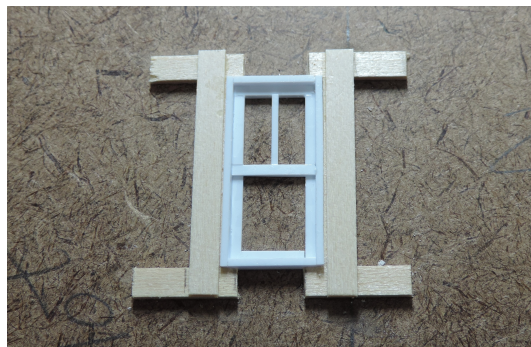


Photo 5 – Assembly of the upper sash rails and upper style.

Photo 6 – Assembly of the upper sash lower style. There is a support piece Part 7 directly under it which is not visible in the photo.



5. After the glue is fully dry, I place the window back in the jig and glue the Muntin (Part 8) in place. Note that the face that shows is the 0.02” dimension. I use a spacer cut from bass wood to center it in the opening.
6. **(Photo 7)** Apply Testor’s Liquid Cement to the top Jamb (Part 2) with a toothpick. Install the Upper Horizontal Casing (Part 10). Follow with the glue and installation of the two Vertical Casings (Part 9) and then the Bottom Horizontal Casing (Part 10). To make sure everything is square and tight, I place the window upside down on my glass plate. I can then press the casing pieces flat to the plate with a straight edge while the glue joint is still malleable. This assures that the casing is all on the same plane.

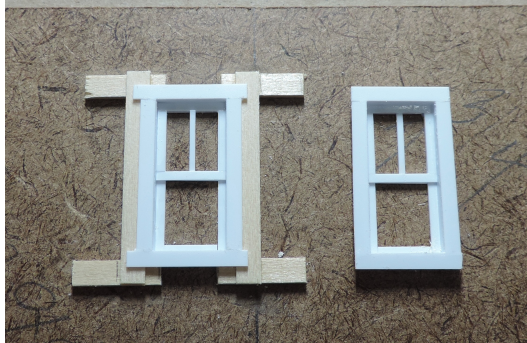


Photo 7 – “Casings glued to the jambs. The finished window on the right shows the top and bottom pieces trimmed to length after the glue-up.”

7. **(Photo 7)** After all is dry, I use a knife and a file to trim the excess length of the Horizontal Casings (Part 10). I fill any gaps in the window with Tamiya Putty and then file and sand any rough spots. Everything is now ready for priming and painting. I use a rattle can grey primer and finish with an acrylic finish coat.
8. Install the clear styrene with canopy glue before installing the windows in the structure.

I built 21 windows with two of these jigs. The most important advice is to go very sparingly with the glue. After I got the hang of it, the window easily popped out of the jig. Before that, it was a challenging undertaking, requiring a little clean-up of the jig (shiny hardboard surface or not). Second, be sure to push the pieces snugly together as you apply the Bondene. This reduces misalignments and gaps.

I think that I can comfortably extend this technique to 4 over 4 pane windows. I probably do not have the patience for anything more complex. I would also probably reduce the casing width to 0.080” for S scale and probably to 0.06” for HO.

Re-Visiting Building a LaBelle Trolley Kit – Part 2

By Martin Brechbiel, MMR (Photos by the author)

I'm going to pick up and resume this story as close as possible to where I halted building out the ends of this trolley. I had the two window and door sections glued into place against the formers (**Photo 1**). By the way, remember there are two identical ends that get built out at the same time so everything here is doubled.

First off, those “ears” from the sides got cut off using a razor saw and sanded flat to match the profile front of the end window sections. The piece of stripwood with both ends colored blue that seemed correct was cut, beveled, and fitted across the top of the ends to form the letterboard (**Photo 2**).

Quarter round trim was fitted around the side doors (**Photo 3**). Here's where the real problems began to arrive. The various color coded strip wood parts to fill in the ends simply were wrong in size and in some cases the wrong shape. This is when it's time to improvise, adapt, and overcome, and not get thwarted by a kit.

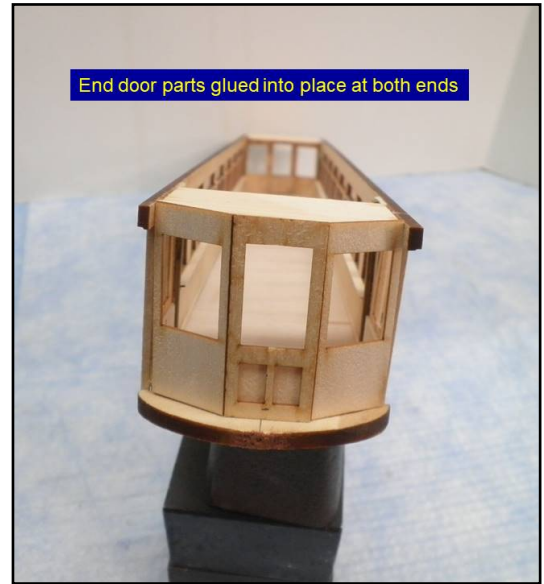
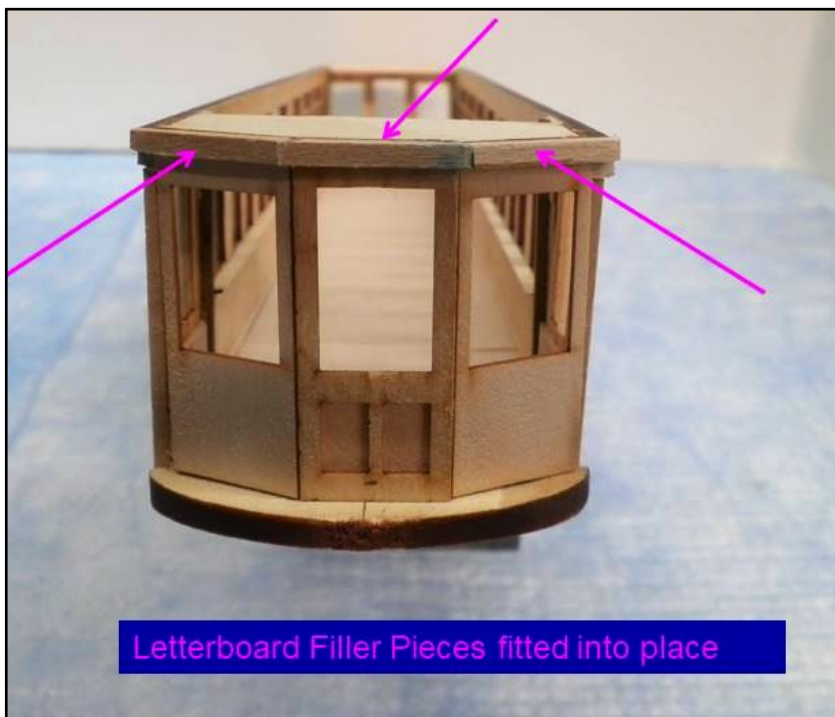


Photo 1: End door parts glued into place at both ends.



Sadly, this is also that point where all too many toss their hands in the air, toss the kit in the trash, and declare never again. You have to be aware that very few kits are not flawed in some way and that you have to just push through to the other side. It's your kit and you are allowed to make **changed** to traverse pitfalls along the way. This is where the isometric drawings and the rest of the instruction illustrations guide one's decisions.

Photo 2: Letterboard filler pieces fitted into place.

The instructed one end yellow board was way too wide for the window sills so I substituted some O scale 1"x 3". The red end bevel casing was way too wide while the green end board was useful, but did not address the gap between the front side panels and car sides. There was some smaller quarter round trim that was fitted around the front door. The gap was filled with some O scale 4"x 4" (Photo 4). The end panels were glued into place and then the green end bevel casing was added. Additional end panel trim (O scale 1"x 3") was added (Photo 5). More window trim and framing was added using O scale 1"x 3" and O scale 1"x 2". At this point you need to locate Template E. It

is of course on the last page of the instructions. This is where having downloaded the pdf of the instructions is used – just print out the page you need. This template sets the curvature shape of the letterboard. Gently sand to shape and sneak up on that using some sanding blocks (Photo 6).

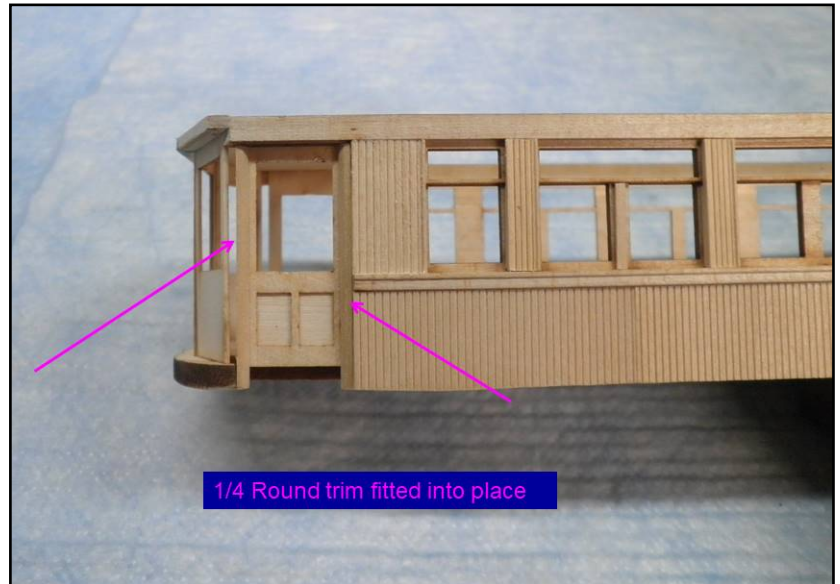


Photo 3: 1/4 Round Trim fitted into place.

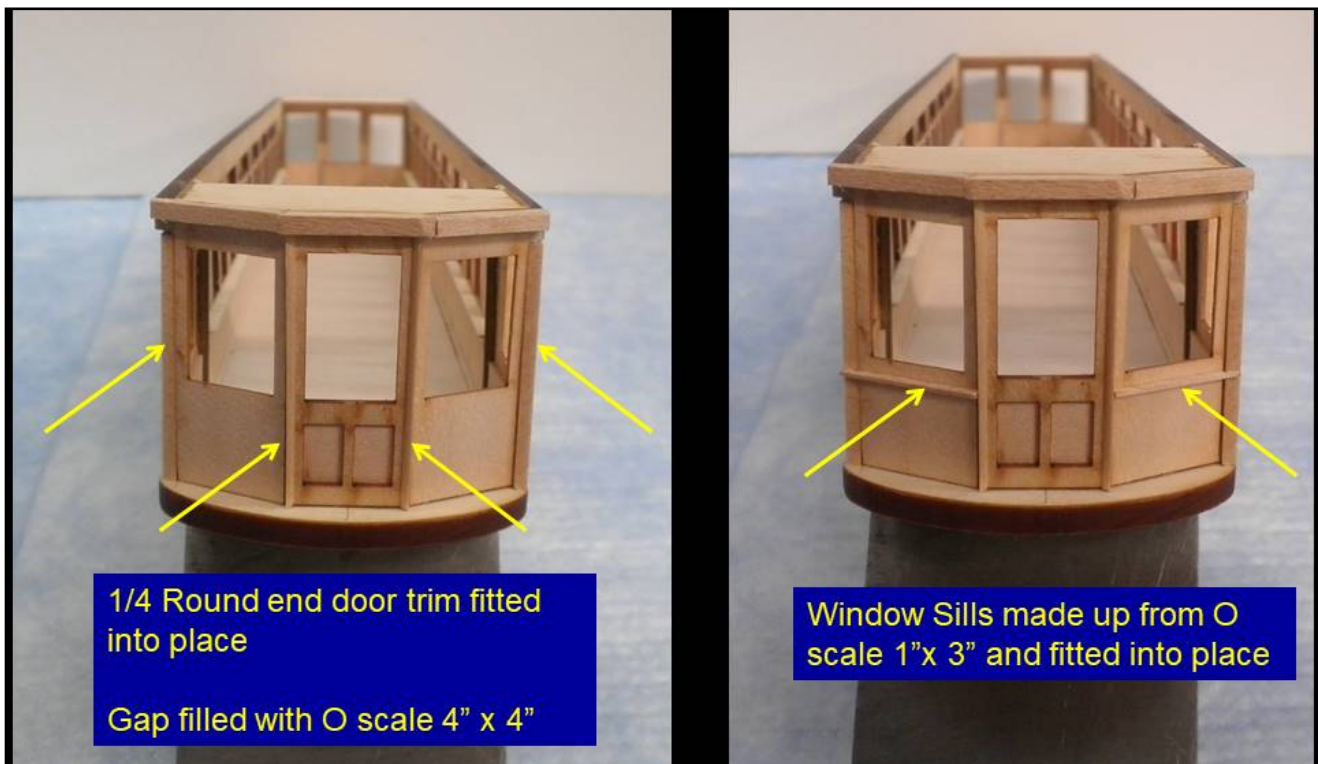


Photo 4

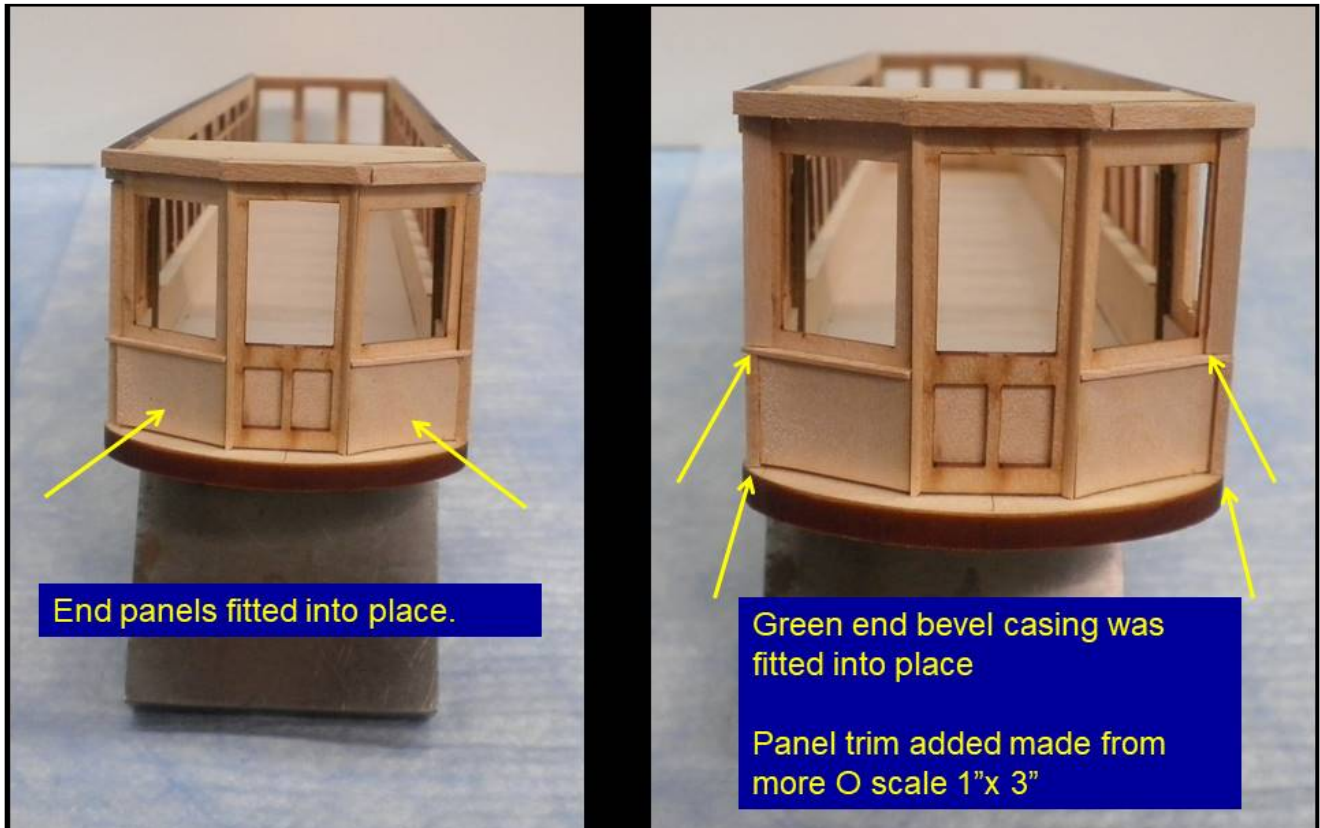
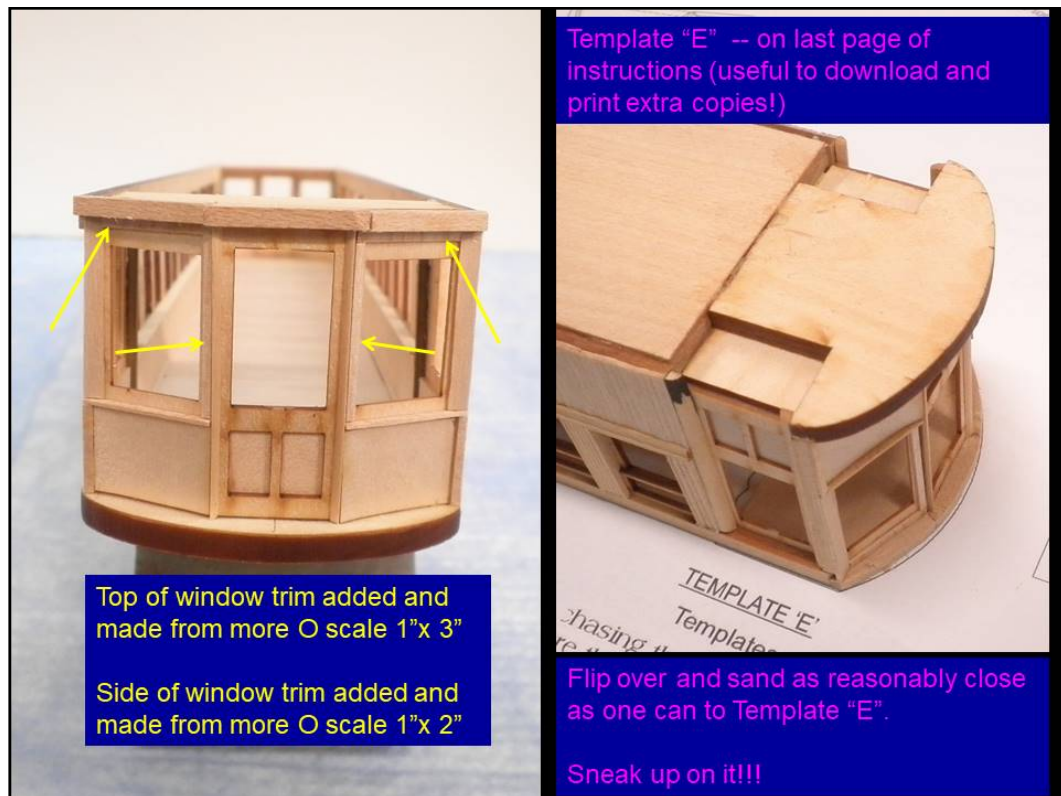


Photo 5



With the end smoothed to the Template E curvature, the next step was to add the letterboard overlay. This part was in the box! But it's thin and prone to breaking so its tension was relieved by rolling it over a glass vial (Photo 7). After the glue set, the excess was trimmed away and the ends were sanded smooth (Photo 8).

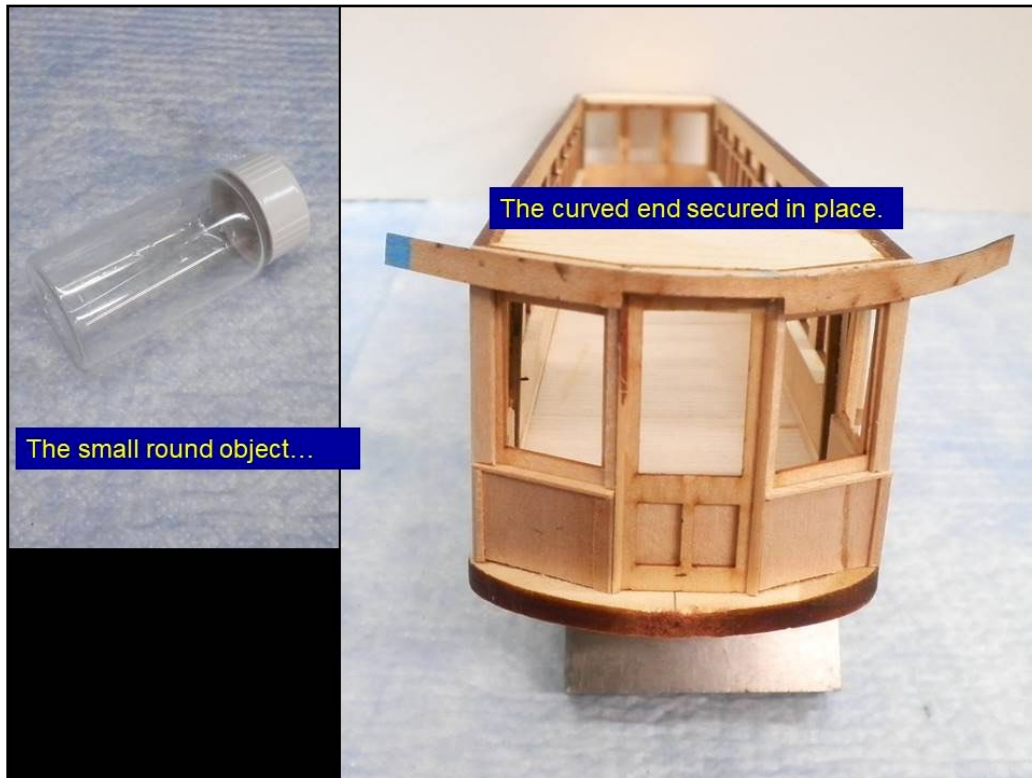


Photo 7

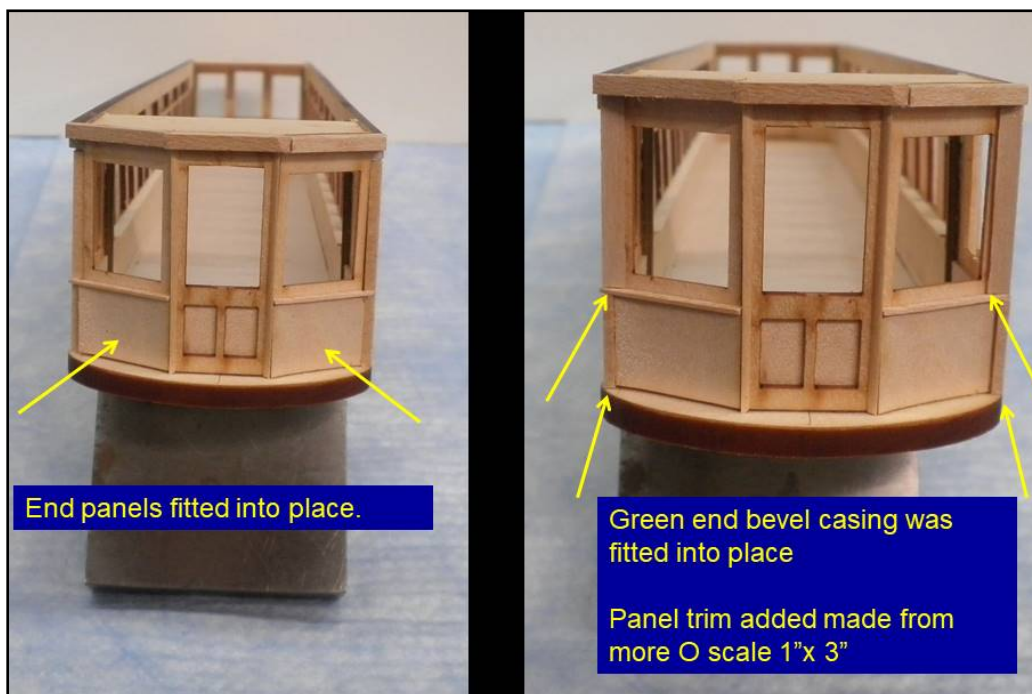


Photo 8

Now it's time to look at the roof parts and get all those sorted out. The parts are shown in **Photo 9**. However, the brown end stick was way too small for its purpose per the instructions, while the blue both ends stick was way too large. Clearly there was going to be more improvisation getting this kit together. And here you thought that shaping the ends of the roof was where all the drama was going to reside! So, the first step here was to glue the clerestory window inserts in place. Next step was to cut piles of sticks from O scale 1" x 3" and HO 2" x 12" for the window framing and moutons, and then glue all those bit into place (**Photo 10**). Now the roof was ready to move on to the infamous shaping of the ends step.



Photo 9

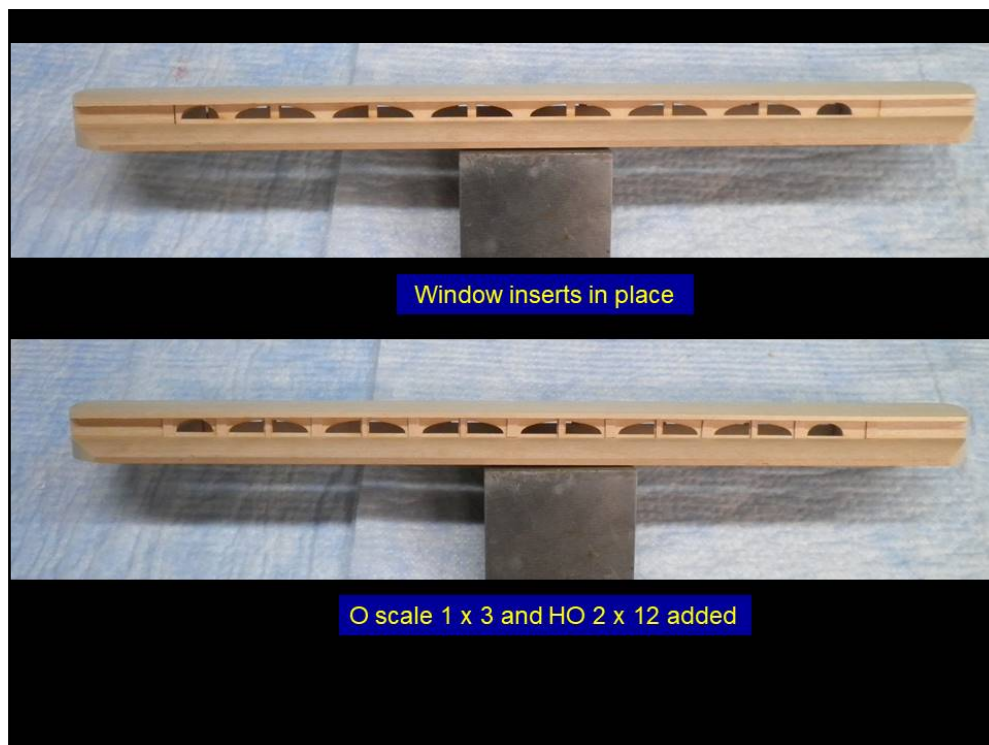


Photo 10

Except that the more I looked at this when test fitting it, the more it looked short (**Photo 11**). I'd had this thought about the sides and floor section not being quite matched up in size, but that visual seemed to resolve. So, I whipped out my handy-dandy wood stretcher from Acme products and got to work. Okay, so I have a lot of vintage tools in my shop but all of those are real and not in play here...yet. I extended the milled roof stock by applying two layers of 1/32" flat sheet basswood to each end. The 1st layer was secured to the end grain of the roof stock using Goo & CA. The 2nd layer was secured using Titebond (**Photo 12**). Of course, almost all of this added wood was removed when the ends of the roof were shaped.

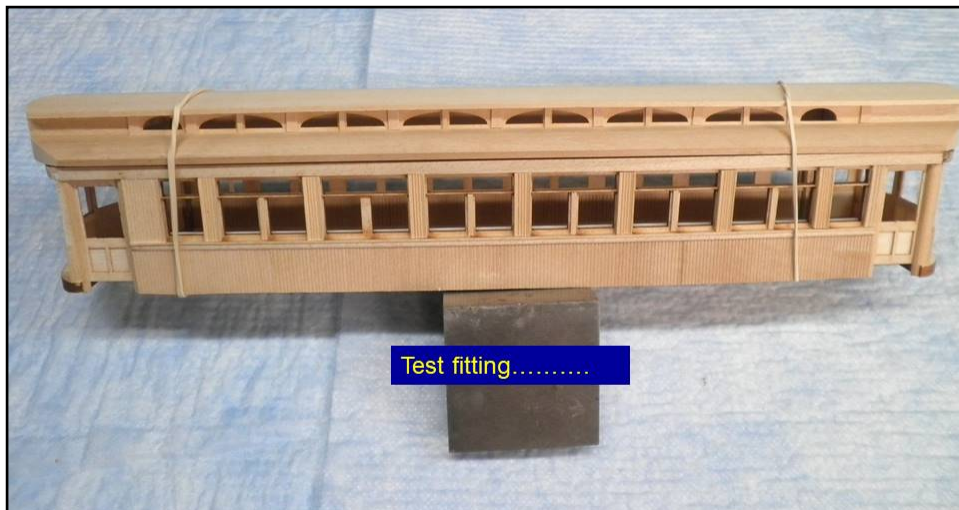


Photo 11



Photo 12

Now is the time of the shaping of the ends of the roof. The kit provides templates that you can cut out, glue to card stock, and use to gauge the shape (Photo 13). This kit also included in the box the roof shaping kit packet from LaBelle (Photo 14). I used neither. I shape passenger car roof ends free hand using an upright 4" belt sander and a 4-in-hand (Photos 15, 16). Final finishing used some sanding implements (Photo 17). That shaped the center upper section of the clerestory roof and the side sections, but that also removed the overhang that have to be filled back in to place. Some stripwood of appropriate width was fitted, the lower curve dimension marked with the excess cut away, and then these parts were glued into place. Carving and sanding removed the excess and nearly finished these ends (Photos 18-20).

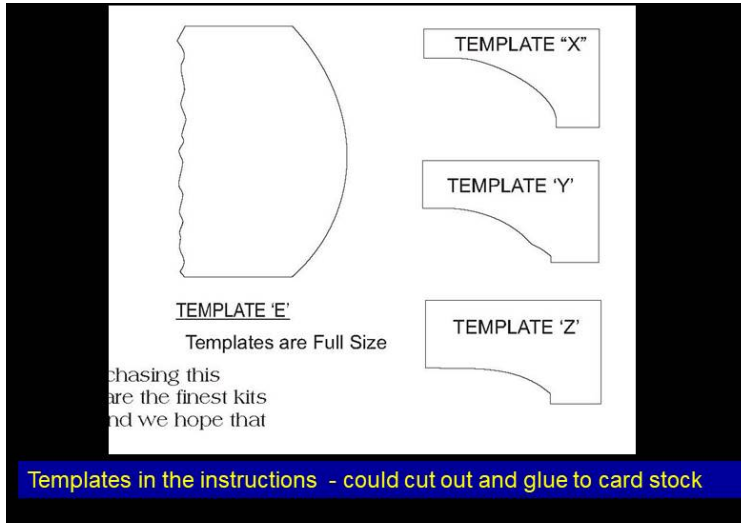


Photo 13

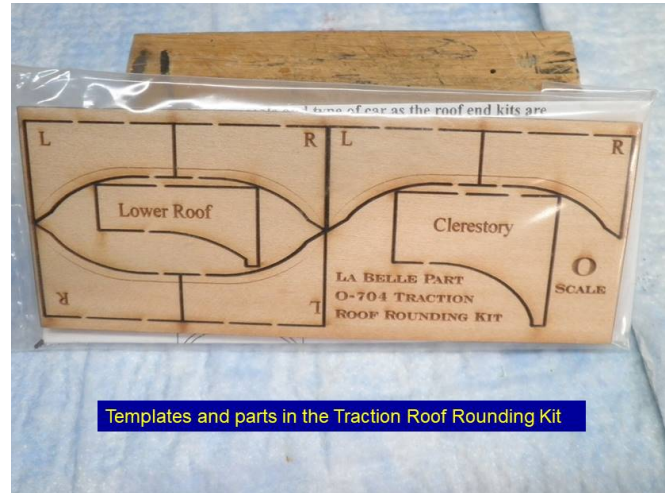


Photo 14



Photo 15



Photo 16



Photo 17

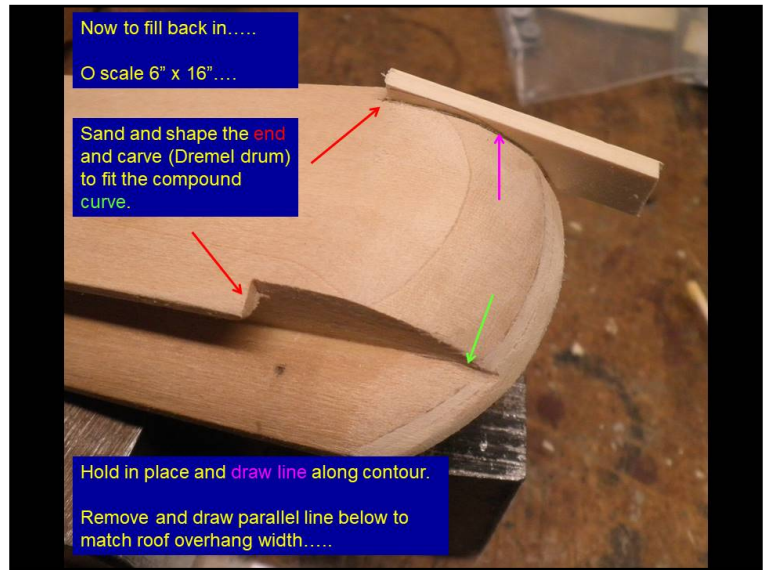


Photo 18



Photo 19



Photo 20

The final step that finished the roof was to add a layer of “tarred canvas” which of course can hide a plethora of sins. Single ply napkins (I like the stack I got from Panera...) applied with a 50% overlap painted into place with ~50% aqueous Titebond served to make this covering. A healthy (unhealthy?) application of Floquil Dark Lark Gray paint finished the roof (**Photos 21, 22**). The roof walk supports were added prior to the canvas.



Photo 21



Photo 22

The next installation will address interior and exterior details, and the final steps to finish this project, I hope!



Did You know...

2025

is the 90th Anniversary of the NMRA!

Happy Anniversary!

That's 90 years of helping model railroaders.

Thank you!

UPCOMING CONVENTIONS



2025 NMRA National Convention

Station No.VI - hosted by the North Central Region of the NMRA



July 14-19, 2025

2026 NMRA National Convention

July 27 to August 2, 2026



NATIONAL CONVENTION



www.facebook.com/NMRATakesChatt

nmra2026.org

From the Divisions...

Branch Lines

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

Divisions	Newsletters
1 - New Jersey Division	<i>Train Orders</i>
2 - Potomac Division	<i>Potomac Flyer</i>
3 - Philadelphia Division	<i>The Dispatcher</i>
4 - Tidewater Division	<i>The Callboard</i>
5 - James River Division	<i>Crossties - Index</i>
10 - South Mountain Division	<i>Wheel Report</i>
11 - Susquehanna Division	<i>Sidetracks</i>
12 - Carolina Southern Division	<i>The Brass Pounder</i>
13 - Carolina Piedmont Division	<i>The Herald</i>
14 - Chesapeake Division	<i>The Relay</i>

Reminder: Here’s how to access the [Digital NMRA Magazine](#):

1. Go to <https://www.nmra.org/user/register>
2. Answer a few questions.
3. Click on Create a New Account.
4. You will receive an email on how to set your password.
5. If you need help, watch the [YouTube Video](#).

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Back on Track...

Best Wishes for the New Year

By Greg Warth

I'm looking forward to a New Year of renewing my enjoyment of model railroading. Not that it ever left. I just feel a new excitement for doing new things within the hobby. I want to really work on getting some AP (Achievement Program) certificates this year, work with our team to build new layouts in our museum, add more electronics and automation for the kids to enjoy, include historical landmarks in the scenery, and, of course, write more about it.

You are probably thinking about what new projects that you could do as well. How about a new scene on your layout, adding some street lights, trying out either the Dwarvin or the Woodland Scenics lighting system, or a new diorama for the October convention in King of Prussia? You may want to bite the bullet and try the Touch Toggle system to activate turnouts, or get started with JMRI computer control which you've been putting off for years, like me. If you are a solo modeler, perhaps think about starting a club in your area. Get out that craftsman kit you bought last year and build it with lots of special attention to detail so you can win an award with it, or just for the personal satisfaction of doing it. Invite more people in to see your layout at home. I'm sure there are a hundred more things you can think about doing.

The important thing to do is to get excited about it and spread that enthusiasm to your family, friends and neighbors. That includes your friends here at *The Local*. We would love to read your stories about what you are up to in your modeling. Your interest and your knowledge can stimulate others to enjoy the hobby. Try to involve younger folks. It is not all that easy for them to get into the hobby even though they may want to.

A word to the manufacturers of model trains and accessories, perhaps as a resolution for 2025: Try to think of ways to make it easier for teens to afford the items you sell, particularly the basic things they would need to get started, like high quality train sets, locomotives, tracks, turnouts and structures. If young people can more easily purchase these items, you may create more customers for yourselves in the future so that it wouldn't really affect the bottom line much. I don't propose to be an expert in the model railroad business, but I would just like to see younger people be able to get into the hobby more easily. The current reputation of model railroading as "too expensive" is not really helping.

Finally, thank you for reading and contributing to *The Local*. And best wishes to all for a Happy New Year! May all your trains stay on track.

We hope you enjoyed this issue of *The Local*. Please continue to send in your original articles. Let us know what you are working on. Whatever it is, if it's related to model railroading, I am sure it will be of interest to the rest of us. If you want to learn more about any particular topic, let us know about that as well. We'll do our best to research it and write about it.

Thanks again to our fantastic [editorial staff](#) for their assistance in putting this together. The quality of these issues is largely due to their expertise, wisdom and "eagle eyes."

[HOME](#)