

# HUB Headlight

HUB Division Inc., Northeastern Region, National Model Railroad Association - [www.hubdiv.org](http://www.hubdiv.org)  
Volume 41, Number 2, November - December, 2024

---

## RAILFUN TIMETABLE

---

### Understanding LCC

By Erich Whitney

1 PM to 3 PM Saturday, November 16, 2024

Chelmsford Public Library, 25 Boston Road, Chelmsford, MA

Layout Command Control (LCC) is a technology that provides a significant path forward for model railroaders. However, much like most new technologies, using this technology can be problematic for users. There has been a lot written about LCC over the past few years, but modelers seem to find the information too technology focused and not very well suited to helping them use it. I am going to try something a little bit different in this clinic from my previous presentations. Rather than focusing on presenting slides and talking about all the wonderful things you can do with LCC, my goal is to make this an interactive clinic where you can bring your questions and concerns about LCC technology, and I will address them live. I will have some basic examples to talk about, but I think it will be much more useful if you bring your questions and we discuss them as a group. I look forward to seeing you on November 16th.

---

### New England Passenger Trains

By James VanBokkelen

10 AM to Noon, Saturday, January 18, 2025

Marlborough Public Library, 35 W. Main Street, Marlborough, MA

This will be a computer slide show covering sources of information about passenger trains of past eras, specific car types commonly used in New England, how to identify cars in photos of consists and how to model them using plastic Ready-to-run, brass, simple kits, complex kits and kit-bashing.

---

### Uncle Sam Wants YOU!

By Bruce Robinson

OK.....maybe not Sam, but how about HUB MoS? By the time you read this, HUB volunteers will have spent three weeks, October 14 through November 2, creating the magic of Holiday Trains for the Boston Museum of Science. Beginning November 20 you could be a volunteer/docent at the museum greeting the thousands of visitors that have come to enjoy this HUB "labor of love" exhibit. The contract with the Boston Museum of Science requires the HUB to fully staff the exhibit for the first three weeks, but it would be best to have HUB representation on site throughout the whole exhibit time. Being at the exhibit

(Continued on Page 3)



David "Shack" Haralambou works on one of the MOS layouts via an access opening in foam scenery supports.  
Photo by Peter Higgins.

### 3D Printing Part III: Software & Getting Started with your own Projects

By Robert Manna

Greetings all. This is a continuation of the series on 3D printing. You can find previous articles in the March-April 2024 and May-June 2024 issues of the HUB *Headlight*. The previous articles addressed printers and their underlying technology, followed by a discussion about materials and other consumables used by the printers. This time the discussion will address type of models, the software used for modeling and some of my own projects.

As you may have seen in the hobby press or online, pre-made models are available for free or for a fee. Common websites where you can find them are listed in the side bar. Model quality can vary, as well as success in printing. Some models are well suited to filament printing while others may be more appropriate to different printing technologies. It is important to keep in mind the capabilities of your printer in terms of level of accuracy compared to the level of detail of the model itself. If it has overhangs or bridges you

(Continued on Page 6)

---

### Also Inside This Issue

Page 2.....The President's Car,  
Achievement

Page 3.....Shanty Talk

Page 4.....AP Program - Civil

Page 5.....Holiday Party,  
Expo Show Volunteering

Page 8.....Lakeshores '24 Contest

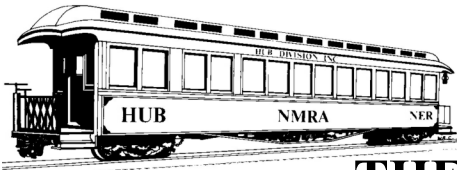
Page 9.....Building Up Your Layout

Page 10...Erich's Electronics Notebook

Page 11...HUB Leadership,  
From the Module Superintendent

Page 12...Calendar of Events

(Refer to Page 11 for information about  
RAILFUN updates and cancellations)



## THE PRESIDENT'S CAR

By Manny Escobar

**W**ow! It's hard to believe another year of modeling has started. Hope you accomplished everything you wanted to do in 2024. With the change back to standard time, you will have more time to spruce up those modeling techniques and spruce up your layout or modules.

Leaves have fallen and winter is around the corner. HUB had a good start with RAILFUN thanks to **Pete Watson** and **Robert Collins** on the modular group displays. Let's not forget Museum of Science (MOS), where the volunteers started early to set up the new larger layouts in the bigger space. I want to thank the committee and the volunteers who made it happen so smoothly, including **Boris Maznek, Dana Andrus, Dick Ball, Pete Watson** and **David "Shack" Haralambou**. Of course, we do need HUB volunteers to man the display. Please contact Boris and check your email on "MOS Signup" to volunteer. **"The HUB Needs You!!!"**

As September/October came and went, we had our first two installments of RAILFUN. Pete Watson, temporary RAILFUN

coordinator, has a great schedule coming up. Please check the *Headlight* and the calendar of events for the particulars. Also, if you have an idea or can recommend a topic / lecture, please contact Pete at [railfun.coordinator@hubdiv.org](mailto:railfun.coordinator@hubdiv.org), or [officemanager@hubdiv.org](mailto:officemanager@hubdiv.org). September's RAILFUN had two of our members recognized for achievements. We want congratulate **Ken Belovarac**, who received his AP Master Builder Structures certificate and **Bruce Robinson**, who received his 50-year NMRA membership pin from Peter Watson, MMR. Wow, 50 years!!!!

Do not forget about our "New England Model Train Expo" December 7-8, 2024, at the Best Western Royal Plaza Trade Center in Marlborough, MA. We need the support from our members, so please contact **John Russo**, the show chair, for details and to volunteer. Remember this is our "SHOW" and fundraiser, so please help.

Just a reminder that the NMRA has selected the month of November as "Model Railroad Month." Promote the hobby that we love to your co-workers, friends, and family. Bring a train to work, bring a friend to see a show, display, a club or your own layout. We have a few shows and modular displays coming up also, so keep checking our website under "Calendar of Events" and, go spread the word about what a great hobby we have for all. Introduce these new trains enthusiasts to our membership chairperson, Peter Higgins, for that special deal when joining NMRA .

Getting in the holiday spirit, our HUB Holiday Party will be early this year, on Saturday, December 14, 2024, 12 PM to 4 PM. Check inside this *Headlight* for reservation details and menu. Remember our traditional "Yankee Swap" is after the meal.

As you see, our calendar of events is especially busy. So join us, volunteer and, who knows, you might meet new friends or learn something like I did. Check the "Calendar of Events" on our website [www.hubdiv.org](http://www.hubdiv.org) or in the *Headlight* edition.

Remember to explore the HUB Division "Facebook" and "Twitter" sites. But more important is our own two-way communication via the Google email list. I have gotten fantastic feedback lately from our members on how successful it was to find information and ideas through this media. Please contact our Office Manager, Pete Watson at [officemanager@hubdiv.org](mailto:officemanager@hubdiv.org) to be added to the list.

We are still looking for a new facility. If you can help to recommend or point me to a contact, please reach out to me [president@hubdiv.org](mailto:president@hubdiv.org). Time is running short, Please!!!

There are a lot of activities happening within our division because we are very active. So come and join us, remember November is "Model Railroad Month" and also, I want to thank all of you for your support of the HUB. Have a safe and wonderful holiday season and New Year!

**"Keep 'Em Rolling"**

### Achievement



*Left: Ken Belovarac (left) receives his AP Master Builder Structures certificate from Peter Watson, MMR at the September RAILFUN. Photo by Manuel Escobar*

### 50 Years!



*Right: Bruce Robinson receives his 50-year NMRA membership pin from Peter Watson, MMR. Photo by Manuel Escobar*





## Shanty Talk

By Rudy Slovacek

### Late Fall 2024

Last issue I spoke about the use of wreck cranes to repair tracks in the event of accidents or washouts. The pictures came from a visit to the Cooperstown and Charlotte Valley (CCV) several years ago. Photo 1 shows the Station in Milford, NY, located on the southern end of the line. It is effectively a museum and tourist line that terminates in Cooperstown, home of the Baseball Hall of Fame. It originally was a branch line connection to the D&H just north of Oneonta. The connection is currently cut, so there is no exchange of freight traffic. Power is limited to a couple of Montreal Locomotive Works (MLW) Alco-type switchers, one of which is shown in Photo 2. Proof of my cab ride appears in Photo 3. I won it in a drawing held on the train ride. It might interest you to know that for a fee of \$450 you can become a guest engineer operating the locomotive over the line. As I was thinking of showing more pictures of equipment, I got to thinking about just how many cab rides I've taken. It probably all started when I worked for Corning and I took my two young sons down to the small yard in Painted Post, NY. There we used to watch a Conrail GP-38 switcher shift cars around. One day, a crewman spied us and invited us to climb up into the caboose. There he told us they were going to phase out the caboose and replace them with flashing end-of-train-devices (FRED). He then gave each of the boys a small plastic bottle of water from the cooler, which they treasured and called them "Caboose water." But this was just the beginning as he then invited us up into the locomotive cab where he blew the horn and proceeded to run up and down the track a few times.

Having later discovered where the Batten Kill Railroad ran in upstate NY, I would make trips to Salem with my boys during summer vacations with my parents to ride the Batten Kill Rambler. On several occasions we'd take the train from Salem



Photo 1: Milford Freight House



Photo 2: CCV 3051



Photo 3: That's me

to Shushan then ask for a cab ride back to Salem in their Alco RS-3. Bill Taber, who was usually the engineer, was more than willing to oblige us.

When I moved to the Boston area and met the late Mark Harlow of the HUB division, he first introduced me to the Hobo Railroad running between Meredith and Weirs Beach on Lake Winnepesaukee in NH. We observed the engineer giving a child a ride back to Meredith on the ex B&M Alco S-2 and had only to ask on the next trip. Later, while Mark and I were attending an NER convention in Kingston, NY, we heard an evening talk by a Conrail engineer who owned an old Rutland Alco RS-1 in Kingston who was willing to start it up for us. We arranged for the following morning but he got called on duty. We made plans for the railfan trip on Saturday where he was the volunteer engineer to operate an old Whitcomb switcher on the Catskill Mountain Railroad. Imagine the Division's surprise when the ride was

over, and they were loading the buses as Mark and I climbed aboard the little switcher and took off down the track. We had to double clutch the transmission through its gears to work up speed. That was also the time when I gained the respect of the late Dick Toll for showing him the best photo spot to catch that little switcher coming down the track through the weed overgrowth. Dick would later reciprocate by inviting me to ride up in the cab of the Conway Scenic Railway's Alco switcher during our "Unconvention" in North Conway.

So yes, I've had a few coveted rides in the cab and thoroughly enjoyed every minute of it. With the mergers and acquisitions closing off opportunities, you should take them where you can find them. Often, you'll find them on smaller tourist lines not connected to the main lines. So for now, see you and enjoy the trip.

## Uncle Sam Wants YOU!

(Continued from Page 1)

means looking after the exhibit, answering visitor's questions, monitoring trains as they move through the snow-covered scenery and representing the HUB Division to the general public.

You will be required to wear a HUB-branded shirt while at the exhibit so visitors can easily recognize you as part of the display and available to interact with. Wearing a HUB-branded shirt presents the HUB Division to the general public in a very positive way and invites questions about what the Division is all about.

When you sign up to be a representative / docent, the Boston Museum of Science will issue you a security badge that gives you access to the museum at no cost, provides validated parking and gives you a 35% discount at the food court. The time spent at the exhibit will fly by quickly as people from all over the world (that is literally!) will be constantly interacting with you in very positive ways.

Everyone on the Division e-mail list should have already received the sign-up website link. Like ol' Sam used to say "We need you now!" I have signed up, how about you? I hope to work a shift with you.

# The Achievement Program Model Railroad Engineer – Civil

By Peter Watson, MMR

In order to have a model railroad, you need track for the trains to run on. That is the subject of the Civil Engineer certificate. Many of us, after getting our feet wet in the hobby by building a layout from a published track plan, decide to design and build a layout. This lets us have a layout that more accurately reflects our own interests. If you have done this already, then you probably have met many of the requirements laid out in the AP Model Railroad Engineer – Civil Statement of Qualifications. Let's take a look.

First of all, don't be intimidated by these requirements and don't read more into them than is there. It may look complicated but if you take them one at a time, they really aren't.

## Section 1

You must prepare an original track plan that identifies the scale of the drawing, the overall size, curve radii, turnout sizes and track elevations. These are all the things that you will need to know in order to build the layout. Additionally, you will need to include the following:

- A. Terminal facilities for handling freight and/or passenger cars. This would typically be a yard. For a small layout it could be just two or three tracks or many more for a larger layout.
- B. Facilities for storage and servicing locomotives. You don't necessarily have to build these facilities, but you need to include them in your plan to demonstrate that you know what the design of a logical terminal facility would look like.
- C. A minimum of one mainline passing siding.
- D. A minimum of four switching locations (industries).
- E. Provisions for turning engines. A turntable, wye, or reversing loop.
- F. You have to provide for running two mainline trains in either direction.

Remember, you do not have to actually build everything on this plan, only the minimum required parts. One member had been building modules for years and

had several that he included in his track plan. These were the only pieces that actually got built but they met the requirements.

## Section 2

You have to construct and demonstrate the operation of a completed section of the above plan. For Z, N, or TT scales you need to build 25 feet of track. For HO or S scale you need to build 50 feet of track. For O scale, 75 feet of track and for G, F, or #1 scale, 100 feet of track. This trackage must include appropriate ballast, drainage facilities and roadbed profile, and may contain spurs, yards, etc.

The trackwork must have examples of at least any six of the following:

- Passing Siding
- Spur
- Crossover (A diagonal track connecting two parallel tracks)
- Reversing Loop
- Wye
- Simple Ladder (Minimum of 3 tracks)
- Compound Ladder
- Turntable
- Transfer Table
- Super Elevation (banking the track and roadbed on a curve)
- Simple Overhead Wire (a single overhead wire such as on a trolley system)
- Compound Overhead Wire (catenary, with one wire that carries power and another wire above to support it such as on high-speed electrical lines)
- Scale Track (a track with a scale for weighing cars)
- Cog Railway Track
- Coal Dump Track (could also be for dumping something besides coal)
- Ash Pit
- Service Pit Track
- Grade Elevation (any change in the slope of the track, like at the top or bottom of a hill, to demonstrate the transition smoothly between grades)

## Section 3

You will need to construct scale models of any three of the following:

- Turnout (straight, curved or wye, point or stub
- Crossover
- Double Crossover
- Single-Slip Switch
- Double-Slip Switch

- Crossing
- Gauntlet Track
- Gauntlet Turnout
- Dual Gauge Turnout
- Gauge Separation Turnout (narrow gauge splitting off from dual gauge)
- Double Junction Turnout (one set of parallel tracks diverging from another)
- Three-Way Turnout
- Spring Switch
- Operating Switch in Overhead Wire

Commercial frogs are not permitted to be used in any of these items and all must demonstrate "proper operation." This means that a locomotive must be able to travel through them under its own power through all possible routes so be sure to include enough track on either side for that purpose. These models do not have to be part of your layout or even in the same scale or gauge. I modeled in On2 when I did mine but constructed an HO-scale three-way switch as one of the models.

## Section 4

All three models in Section 3 must earn a Merit Award. Note that the rest of the trackwork in Section 2 above only needs to demonstrate that they work.

## Section 5

Submit a completed Statement of Qualifications which includes the following:

- The track plan required in Section 1 that includes the identification of all scratch-built features, all commercial components used and materials used in building the model
- Description of the track work features, methods of construction and identification of commercial components used in Section 3.
- Verification of the Merit Awards (Photocopies of the certificates or signed evaluation forms.)
- Witness Certification showing that each of the above models meets all applicable NMRA standards.

This article is intended to give a brief overview of the requirements. All of the information needed for this AP award can be found on the NMRA web site at: <https://www.nmra.org/civil>. If you want more help or have any questions, feel free to contact me at [hub.ap.chair@hubdiv.org](mailto:hub.ap.chair@hubdiv.org)

## HUB Holiday Party

Saturday, December 14, 2024  
12 PM to 4 PM

Reception from 12 PM to 1 PM  
with hors d'oeuvres and wait  
service cash bar

Buffet Lunch starts at 1:00 PM

Yankee Swap at 2:30 PM  
(or shortly thereafter)

The Common Market Restaurants  
97 Willard Street  
Quincy, MA 02169  
(617) 773-9532

[www.commonmarketrestaurants.com](http://www.commonmarketrestaurants.com)  
(Large off-street parking lot)

Price: \$49.00 per person

Reservations only, no walk-ins.  
No reservations after December 12.

Questions: contact Gerry Covino  
[Treasurer@hubdiv.org](mailto:Treasurer@hubdiv.org)

Bring a gift worth at least \$15 - \$20  
to participate in the Yankee Swap.

### Appetizers:

Scallops and bacon  
Fresh melon with prosciutto  
Tomato, basil & mozzarella sticks w/  
balsamic glaze or pesto sauce

### Entrees:

Baked stuffed haddock  
Chicken Marsala  
Pasta marinara

### Included:

Tossed salad or Caesar salad  
Seasonal vegetables  
Rice of the day  
Rolls and butter  
Coffee and tea station

### Dessert:

Frozen dessert with fudge sauce

Please let us know if you have any  
allergies or dietary restrictions, so the  
restaurant can accommodate these.

## HUB Holiday Party Registration Form

Name: \_\_\_\_\_

Food allergies: \_\_\_\_\_

In case of inclement weather, please provide your email and/or phone  
number where we will be best able to reach you.

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

Number Attending: \_\_\_\_\_ x \$49.00 = \_\_\_\_\_

Please make check payable to: The HUB Division, Inc.

Mail to:  
The HUB Division, Inc.  
P.O. Box 672  
Hollis, NH 03049-0672

*To purchase using your credit card,  
email [Treasurer@hubdiv.org](mailto:Treasurer@hubdiv.org) and  
an invoice will be sent to you.*

## New England Model Train Expo, December 7<sup>th</sup> and 8<sup>th</sup>

By John Russo

The Division needs your help to make the  
2024 NEMTE show a success. Please sign  
up to volunteer for one of the open assign-  
ments, preferably on both Saturday and  
Sunday. Volunteers are allowed free show  
access.

We are using SignUpGenius to track the  
work schedule. I have sent out an email  
with the link and instructions for accessing  
SignUpGenius, which you are encouraged  
to use, but I am happy to enter in your  
selections if you do not want to use the  
tool. I just need your email and cell phone  
number. The email is needed for the tool  
to send you a reminder. The cell number  
is optional and I would use it to find you  
at the show if required. If you need help  
with SignUpGenius or want me to enter  
your selections, please email me at  
[nemte.director@hubdiv.org](mailto:nemte.director@hubdiv.org). Looking  
forward to seeing you at the show.

Special note – Please consider helping  
Dan Fretz Friday evening and/or Sunday  
evening. He has a large amount of dona-  
tions that need to be unloaded from a  
trailer on Friday and loaded back on  
Sunday.

Descriptions of possible assignments:

- Admissions Table – Collect admissions  
fees and attach wrist bands to guests.
- White Elephant – Sale of trains and  
related items for the members, the Divi-  
sion charges a commission.
- Donations Table – Sale of trains and  
related items donated to the Division.
- Scout Merit Badge – Help with kit  
building.
- Membership – Talk to and encourage  
visitors to join the HUB Division.
- Security – Watch at the doors to be sure  
visitors have a badge or wrist band.
- Available for Assignment – Be open to  
helping where needed.

HUB Division Module Group – Time for  
the Module group will be entered in a  
different link sent by Bob Collins.  
Module group volunteers must also volun-  
teer to help with other aspects of the show  
in order to receive free show access.

## New Members

The HUB Division welcomes the  
following new members:

- Tom Ogden, Tewksbury
- Samantha Ogden, Tewksbury
- Amanda Ogden, Tewksbury



## 3D Printing Part III

(Continued from Page 1)

will need to consider a strategy for supports. Some sites and/or the authors that post their models may provide printing profiles, instructions or suggestions on how to successfully print the model. Lacking further information, experience, testing and experimentation are likely to be your best guide to successful printing.

### 3D Printing Websites:

- Thingiverse - [www.thingiverse.com](http://www.thingiverse.com)
- Printables - [www.printables.com](http://www.printables.com)
- Cults3d - [www.cults3d.com](http://www.cults3d.com)

### 3D Modeling Applications

If you want to get started with creating your own models to print, you will need software to create model(s). There are many applications of varying degrees of complexity. If you're not familiar with CAD (Computer Aided Design) then you will want to start with something more basic and work your way into more complex applications. Regardless of the application you are using, you will need something that is capable of operating in three dimensions. Your application of choice will need to be able to export a file format that is compatible with the 3D printing software. The most common supported formats are STL, STEP or OBJ. Each format has its own advantages. I personally prefer STEP as it maintains a higher level of geometric fidelity without excessive triangulation.

The second important concept to at least understand about your choice in application is what kind of models it creates. There are effectively two types of 3D models; solid models and mesh (or surface) models. Many advanced applications can do both, some of them have their roots in one type or the other. Solid models are going to print more effectively, because they create "closed" forms. 3D printing requires "closed" forms to properly compute the tool path for the print head to traverse. Conceptually, the simple way to think of this is that the shapes you model need to behave like 'bathtubs' and hold water. If the shapes 'leak' the print may fail, or the printer software may not be able to compute a proper tool path. Mesh or surface modelers introduce a

higher possibility that shapes will not be properly closed.

Another consideration to selecting or working in software is what is the application's target market. There are three major markets that, to a degree, affect the features and functionality of an application:

- **Product / Mechanical Design** – focused on designing objects (items that can be purchased off-the-shelf) of nearly any scale. Usually, these tools include features that help with the overall process of product design, be it how the object will be manufactured, or to evaluate its performance or integration with other products and objects.
- **Architectural Design & Building Engineering** – tools meant to help with the design of buildings as opposed to individual objects. Features and functionality focus more on the scope of the overall design and coordination of the different responsibilities of the project's design and construction teams.
- **Media Arts & Entertainment** – tools used to produce visuals for everything from TV commercials to blockbuster movies and video games. These tools focus on being able to model a variety of shapes and forms in large scenes, all of which can be animated. At the same time, these tools need to be efficient from a computer resource perspective and allow for a diverse variety of graphic styling.

What programs are on the market that you might consider using?

- **AutoCAD** – a perennial mainstay, fully functional application that can handle solid and mesh modeling, expensive, and honestly not the 'go to' choice of applications. AutoCAD is a jack-of-all-trades, master of none with nearly a 30-year legacy of code. If you happen to be familiar with it and have access, or care to pay for a license, it will work.
- **Sketch-up** – entered the market 20 years ago as an "easy" application for architects. It generates surface models, but if you are deliberate and check your work it can be used to create volumes that will be printable. There are plugins available that can help to make 3D printing from Sketch-up easier.

- **TinkerCAD** – owned by Autodesk (owners of AutoCAD) is a solid modeler with roots in mechanical design. It is quite popular for creating models for printing. Since it was intended for introducing students to 3D modeling, it is easy to use and has a large community.
- **Blender** – a completely free, open source-based modeling tool, rooted in computer graphics for animation, which means it shares more in terms of capabilities with popular commercial packages used in Media, Arts & Entertainment. Being open source it has a large and passionate community.
- **Fusion** – Autodesk's "new" (10 years old) tool targeted towards smaller companies looking to prototype and design products. Highly functional with free and paid tiers. Best for someone already familiar with working in 3D but not an insurmountable learning curve. Has a fairly large community of users, is very fast and very facile with many features suited to modeling for 3D printing.
- **Solid Works** – another product and mechanical design package with no free tiers but very popular in the commercial space.

By far the easiest tools to get started with are **TinkerCAD** and **Sketch-up**. Each has a relatively low barrier to entry (cost and experience) and good supporting documentation and tutorials. If you find that you can't produce what you need or want, you can always move into more advanced applications. Getting started in 3D modeling programs can seem intimidating, particularly when faced with a blank canvas. The reality is that it is not much different than taking on any new project or technique. A big advantage of the computer is you have an undo button; nothing is forever in the computer and there are no mistakes that you can't change or fix. Perhaps the biggest challenge with 3D modeling is getting comfortable and familiar with the tools used to create geometry. You will find that the base toolsets are common amongst nearly all products, even the tool names will often be similar. Focusing on learning how to generate basic shapes and forms is also the best place to start. As you become more comfortable with the basics it becomes easier to develop more complex forms and shapes.

(Continued on Page 7)

## 3D Printing Part III

(Continued from Page 6)

### Makin' Stuff

Once you've selected an application and spent some time with tutorials and familiarizing yourself with modeling, the question arises of what to print? To get to know the behavior of your printer and simply become more familiar with modeling for printing, I recommend starting with something relatively simple. One place to start is something that is more two-dimensional than it is three. An example is a jig, stencil or pattern, something you could likely laser cut as easily as it can be printed. The idea is to keep things simple to begin with and grow in complexity as you build confidence and experience.

In the context of our hobby, the objects we create with 3D printers need not be the final model nor even the whole model. Printed objects can be pieces and parts that will attach to a larger model, for instance decorative or ornamental window and door frames. Something like a detailed window or door frame may not make sense for N or even HO-scale, but given the growing popularity of O-scale and its rich amount of detail, printing 3D parts for an O-Scale model would certainly be appropriate. Door and window frames are also good examples of something that should be relatively easy to model in 3D. Another place to consider 3D printing is jigs and tools to help you build models with other materials. While you are not likely to print a jig to replace Fast Tracks (though nothing is impossible,) how many other opportunities might there be to print jigs to help with holding, bending, cutting or aligning models as you build them. Another consideration is accessories such as throttle pockets or, with the growing popularity of RC actuators for turnout control, accessory pieces for control wire routing and/or device mounting. Where before you may have had to buy something off the shelf and modify it or wait for someone to develop and sell what you need, printing gives you a different avenue to accomplish the same goal.

### Projects So Far

Generally heeding my own advice, I've worked to design more complex models to be printed, while getting to know my

printer better. I have the advantage of having 20+ years of 3D modeling experience with a variety of tools, so that certainly gave me a head start. Initially I started by printing some models that were available via a website hosted by my printer manufacturer. This included a dinosaur model puzzle, where you print several flat shapes that have slip-lock friction connection points that allow you to build a model.

Moving on from that, my wife needed some tools to assist her with her hobby of making soap. She took care of the 3D modeling, while I took care of the printing, but again these were effectively simple 2D shapes with a thickness. One good example of something that was still more 2D than 3D was a cookie cutter shape. To make it easier to handle it had a thicker profile on top with a thinner profile to make the cut; not something a laser cutter could do in a single pass.

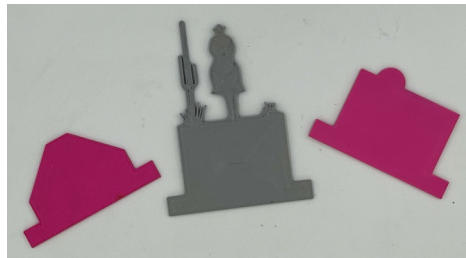


Figure 1: Simple profile tools for soap making.

Another great example of a relatively simple print that would be hard to do in any other medium was printing the classic comedy and tragedy masks for my daughter's school project. She was able to find an online model that we then printed. She then spent time sanding and priming the masks to improve the finished surface prior to a finish paint job. They came out quite well, though there was likely more opportunity to improve the finished surface, but it was sufficient for her needs.



Figure 2: 3D printed masks with finish paint.

A project that I started working on in conjunction with the acquisition of the printer is a custom-designed turnout for Lego train track. While not terribly complex from an overall printing perspective, modeling a turnout accounting for actuation, and getting the dimensions within Lego tolerance, all posed significant challenges. Over the course of the design, four or five prototypes were printed, as well as several smaller samples to get the stud gauge correct to ensure compatibility with real Lego bricks. This project is also particularly illustrative of the notion that you do not need to print a single object, you can break your design up into smaller pieces that fit together, and since this is plastic typical adhesives will work. In fact, for this model, glue is used for its final state, both to ensure that the actuation of the points works properly and to avoid having to make sure that friction connections work perfectly. With the final prototype printed I'm ready to start production on the quantity of turnouts I need. The beauty is that with 3D modeling I'm able to easily mirror my design to print left or right turnouts. Furthermore, since I have the original model and because of how I built the model itself, I can easily take the model I have and create variations in terms of the geometry of the turnout itself.

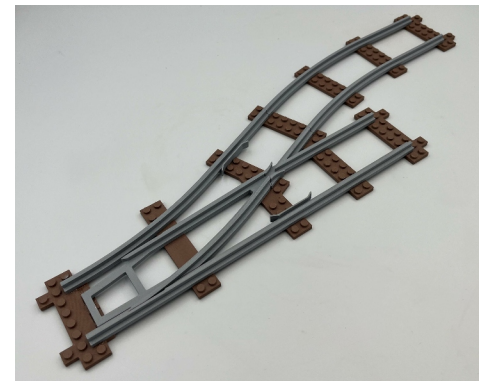


Figure 3: Printed Lego compatible turnout.

### Conclusion

I hope that, overall, you've found this series useful, or at least informative. Maybe it confirms your decision that 3D printing is not for you, or maybe it piques your interest enough to do your own research. Without a doubt there is a place for 3D printing in the hobby as whole, it's also not for everyone, just like any other sub-interest in the hobby. What drove me

(Continued on Page 10)





# LAKESHORES

## NMRA Northeastern Region Annual Convention '24

### Contest Results

By Bill Barry

The NER convention was held and several HUB Members received awards. The HUB award was earned by a member of the Seacoast Division.



Mal Houck's NYO&W Ry. Class X 2-10-2 "Bullmoose," "Scratchbuilt Steam Locomotive" earned an AP Certificate, was the "Peoples' Choice" model, and earned First Place making it Mal's fourth time winning the Baldwin Trophy Award. Photo by Mal Houck



Left: Mal's "Train 1, the Ontario Express Northbound at Roscoe NY depot" photo that took first place in the model black-and-white category.



Tom Oxnard, MMR earned the second highest point total in the contest and won the HUB Award. This is a model of the Burnham and Morrill Baked Bean Factory, inspired by the prototype in Portland, Maine. It is 1/3 the size of the original building to fit on Tom's layout. The building has three sections with the middle one recessed. The interior is filled with 9 LED lights to show off the interior detail. The roof has scratchbuilt AC units. The whole building is scratchbuilt except for the Tichy windows. See Tom's article in the August, 2024 issue of Railroad Model Craftsman magazine, page 58. Photo by Tom Oxnard



Andy Reynolds' Polar Cold Storage won first place in display and earned an AP merit award in structures. Polar is based on a Bar Mills Seckler's Cold Storage kit. Also note the interior spaces with lighting on the first floor. Photo by Andy Reynolds



Andy Reynolds' Georgetown station was named in commemoration of Mr. Sellios himself since this is based on the Fine Scale Miniature Brownsville Depot craftsman kit. This model earned second place in display and earned an AP merit award in structures.

To the right is a close-up of the interior spaces with lighting within the Georgetown model.



Photos by Andy Reynolds



Andy Reynolds' McCauley, which he made in commemoration of our own Bob "MacCauley" (his spelling). This model earned third place. It is based on a FOS Scale kit. Photo by Andy Reynolds

Stay tuned for the next issue of the Headlight where you can read more about how Andy built these kits



## Building Up Your Layout

By Andy Reynolds

I attended the Lakeshores '24 NMRA Northeastern Region Annual convention September 19th to 22nd. On Friday evening I put on a clinic "Bar Mills Make-and-Take" where all attendees went home with an almost-completed Bar Mills kit. I've been doing this at these conventions for several years now. It's amazing to me to see how enjoyable this clinic is to people who've never built a kit before.

I also wanted to bring three craftsman structure kits to the contest room that I had been working on since May. I explained to the judges I wanted to see how each manufacturer got rated. Cutting to the chase, all three kit-built structures won awards. First Place went to Polar Cold Storage that happens to place Bar Mills on top of my mini-contest, with their Seckler's Cold Storage. Second Place went to Fine Scale Miniature Brownsville Depot, renamed commemorating George Sellios as Georgetown. Third-place winner went to FOS Scale Models – McCauley Steam and Hydraulic Packing Co., which I built commemorating our own Bob Macauley. He graciously assisted me until his passing on December 16, 2021, with the monthly RAILFUN clinics. Merit Awards for Kit-built are harder to get as the point scales favor scratch-built, but nevertheless I earned AP Merit Awards in AP-Structures-Kit-built category based on the scoring of the Bar Mills kit with 93 points and the FSM kit with 89 points.

The three craftsman kits all had a unique methods of construction. I started with my FOS Scale kit. The kit's main brick structure is made from four separate pieces of white hydrocal, which now becomes the palate for your creation. Contrary to some manufacturer's instructions, I DID NOT spray-paint a base coat with a primer. Doug Foscale suggests layering the hydrocal with coats of washed-down acrylic paints. I used Deco Art craft paints – Heritage Rock, Burnt Orange, Cranberry Wine and Tuscan Red, letting each layer dry before a new application. I finished the bricks with bathroom tile grout and rubbed off the excess just before it finally set. I'm no longer a fan of heavy weathering as I think it spoils a good model if

you are happy with your results. The wooden office and garage were braced, then stained with an India ink and alcohol solution, and then dry-brushed with white paint. The gooseneck exterior lamp and office light were purchased from [www.evandesigns.com](http://www.evandesigns.com) and the quintuple had a tarpaper provided in the kit, but this looked better with shingles due to the roof pitch.

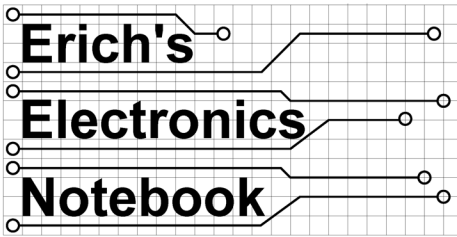
The Bar Mill's Seckler's Cold Storage was started shortly after picking it up at the Amherst Railroad Hobby Show and put aside for further deliberation. I'm impressed with how the main structure is manufactured with beefy 1/4" material, so it goes together smoothly. The stucco effect was created with seven-year-old Artist Loft Unbleached Titanium acrylic tube paste. As it was becoming almost like a cement texture, it worked well for this purpose. Holding back on the completion allowed me to rethink opening both bays and creating mini scenes in each with proper lighting. I chose 3-volt DC power supply with nano LED lights and wanted to show off the incandescent "warm white" to the brighter florescent-like "Cool White." Instead of the water tower provided, which was a thin layer of wood to wrap around circular parts, I used dowel wood in the same size and cut to length. Then I glued on individual HO Scale 3x4 stained wood strips using black tinted Weldbond and allowed the mix to seep out the edges. After this dried, I added very small railroad tie pins to the back, which I used to make a continuous loop of thread representing the wire strapping on the tank. The name was changed to Polar Cold Storage (after the PawSox field in Worcester) as I was having trouble remembering and pronouncing Seckler. So, thanks to Art Fahie for the design and helping me win first place!

The final craftsman kit I brought was the Brownsville Depot that I renamed Georgetown. I made this kit before and have it on my River Plate Station module that many people have seen at train events. This can still be seen on You Tube at "The Building of River Plate Station (Fine Scale Miniatures - Brownsville Depot)" [www.youtube.com/watch?v=HIFYuE5-brQ](http://www.youtube.com/watch?v=HIFYuE5-brQ). I have not deviated too much from those instructions, so please look them up.

The miniature of George Sellios near the newly named Sellios Taxi building creates a startling effect when found on the scene, and there is also a phone booth near the magazine stand. Both were purchased from [www.miniprints.com](http://www.miniprints.com). Figures in the scene have been repainted in many cases using Vallejo paints with several washes of colors. Some Presier figures have been repainted and I now have a more diverse set of figures at this station than the first one. As I bring up in my video, I used a double-layer technique of creating my roof with Northeastern Scale Lumber, mostly HO scale 2x10 in 22-inch strips that I cut to size. I went over the roof horizontally and then vertically. My chimneys during transport tend to fall off if just glued them to the shingles, but I guarantee they won't because of the way as I niched them in between the second layer of roofing. You also have a better drilling point for vents and signage in a real wooden roof. Again, internal lighting in the freight house and news stand were the warm white lights from [www.evandesigns.com](http://www.evandesigns.com). I created additional details inside the buildings to give an appealing perspective. George's building came in second place, just by 3 points behind Bar Mills, with finishing and scratch-built getting a slightly higher score. This makes sense, but I do love anything coming out of Fine Scale Miniatures. I will be proud to show these off on my new layout currently under construction. I hope you learned a few modeling techniques today. If not, consider going to my annual NER kit-building clinic in Concord, NH next year!



*This is a FOS Scale Models "Rizzi Biscuit" which I have repurposed as a Railway Express Agency (background kit). The technique I wish to point out is how I did the stone foundation. I have taken tiny pebbles from the beach (Cape Cod) and glued them to a backer board, then added bathroom tile grout to finish off the effect.*



By Erich Whitney

## Understanding LCC, Part 2

**B**efore I start diving into the technical details of Layout Command Control (LCC), I thought it would be a good idea to take a step back and review some of the motivation for LCC. The goal is to answer a very common question I hear, “Why LCC?” Ever since DCC came out, modelers have found ways of doing most of the things that LCC is capable of. This leads to other questions such as, “Do I need LCC?”, “Why do I need LCC?”, “Do I need to replace my layout control system with LCC?”, etc. No matter what I say in this column, I can’t answer these questions for you. The most I can hope for is to provide the information you would need to answer these questions for yourself.

Let’s look at how and why LCC came about. By the time LCC started, which came from the OpenLCB open-source, open-standard project, there were many systems available to implement multiple layout automation tasks. Layout signaling, block detection, turnout control, dispatch panels, crossing gates, animation, and lighting are just a few of the many things that modelers do in addition to controlling trains. As I mentioned in my previous article, C/MRI is a layout control system that has been around for many years since it was adopted in the 1980’s. When DCC came along in the 1990’s, layout control and automation functions were also implemented using DCC, either replacing systems like C/MRI, or augmenting them with DCC functions. This has been the status-quo for many years. As modelers and layout designers began to explore new technology to increase the sophistication and size of their layouts, the technical limitations of the existing systems began to create problems. When you start to add up all the actions a layout control/automation system must do within a specific period, it’s not difficult to come

up with scenarios that exceed the capability of older systems. The search for a next-generation system capable of not only handling all the existing layout control and automation tasks, but also enough capacity to handle the future evolution of layouts were motivations for OpenLCB and thus, LCC.

I think the easiest way to understand LCC is to view it as a specialized computer network for model railroads. Not only does it currently use the same connectors and cables as the ubiquitous Ethernet standard, LCC defines a network protocol that shares a lot of similarities with Ethernet. LCC is actually a customized version of the CANbus, which has been the computer network in automobiles for decades. However, just because LCC is implemented with CANbus today, that does not prevent it from running on other standards such as Ethernet or WiFi. Conceptually, LCC is a standard that defines how information is transferred from one device to another. How it does that is not constrained by a specific physical interface. This separation, or abstraction, is one of LCC’s biggest strengths because it means that as system requirements change over time, the LCC network can use faster network technology without making all the accompanying software obsolete.

Another key concept with LCC that’s important to understand is that it does not require a central control point or computer to function. LCC is a distributed system made up of devices that either produce or consume data, i.e. Producers and Consumers. This means that you can make devices as simple or as complex as you like, depending on your needs. Using the term ‘computer’ in this context can be confusing because when I say “computer” you could think of this as a traditional Personal Computer, PC, or a portable computer, or laptop. However, today a “computer” can also be a very small and simple device. If you look at the line of LCC products from RR-Cirkits, for example, each one of their LCC nodes contains a sophisticated computer chip that’s running software to make the node function. At a high-level, the computer chip on these LCC nodes converts the LCC protocol into wires that connect to the layout and does cool things. The good news is that as a modeler, you don’t have to write the software that does

all this. All of that is taken care of for you. The bad news is you still must configure these nodes to do what you want, but that’s something that does not require a computer science degree.

It is at this point that I think a lot of modelers start to have difficulty with LCC. Configuring LCC nodes to do what you want them to do can be a very confusing and frustrating experience. This is not directly caused by LCC itself, but rather it is a consequence of the way that LCC is implemented on products. The configuration interface for LCC nodes is nothing more than a piece of software whose job it is to provide a way to tell the LCC node how to respond to certain events. Because it’s just software, it means it can be changed, improved, or re-written and the underlying investment in hardware doesn’t get replaced. It is important to point out that this software is needed to make LCC useful, so unfortunately we can’t make LCC simpler by not using software. On the bright side, software does make these LCC nodes quite powerful and upgradeable.

*(Continued on Page 11)*

## 3D Printing Part III

*(Continued from Page 7)*

to finally make the investment was the ease of use the new printer(s) are starting to provide. As I said early on, I was not looking for a hobby within a hobby, I was looking for something that can supplement my hobby and have an impact in my life outside the hobby.

### Learning Points:

- Find a 3D Modeling application that fits your skill level and goals. Once you learn one, you can likely transition to more feature rich applications.
- Be aware of file formats when designing projects for printing.
- Be aware of your printer’s capabilities when creating models or downloading models from online sources.
- Start with simple projects to build confidence and get to know your software and hardware.
- Printed objects may be tools or accessories to support your layout and modeling projects.



## HUB Headlight

Volume 41, Number 2, November - December, 2024

**HUB Headlight**, published by The HUB Division Inc., Northeastern Region, National Model Railroad Association, is issued in January, March, May, September and November. Contributions may be sent by email to the Editor or by mail to the Office Manager.

**Editor** Bill Barry - [Editor@hubdiv.org](mailto:Editor@hubdiv.org)

**Chief Grammarian** - Jay Stradal

### HUB Division Board of Directors

**President** Manny Escobar - [President@hubdiv.org](mailto:President@hubdiv.org)

**Vice President** Malcolm Houck, MMR - [VP@hubdiv.org](mailto:VP@hubdiv.org)

Mike Dolan - [HUBboard6@hubdiv.org](mailto:HUBboard6@hubdiv.org)

**Donations Chairman** Dan Fretz - [Donations@hubdiv.org](mailto:Donations@hubdiv.org)

#### Membership Chairman

Peter Higgins - [Membership.chairman@hubdiv.org](mailto:Membership.chairman@hubdiv.org)

Bruce Robinson - [HUBboard1@hubdiv.org](mailto:HUBboard1@hubdiv.org)

Rudy Slovacek - [HUBboard8@hubdiv.org](mailto:HUBboard8@hubdiv.org)

#### Office Manager

Pete Watson, MMR - [Officemanager@hubdiv.org](mailto:Officemanager@hubdiv.org)  
65 Branch Road, East Bridgewater, MA 02333-1601

#### Online Activities Coordinator

Erich Whitney - [onlinecoordinator@hubdiv.org](mailto:onlinecoordinator@hubdiv.org)

### Other HUB Division Leadership

**Treasurer** Gerry Covino - [Treasurer@hubdiv.org](mailto:Treasurer@hubdiv.org)

**Secretary** *Vacant* - [Secretary@hubdiv.org](mailto:Secretary@hubdiv.org)

#### RAILFUN Coordinator

*Vacant* - [Railfun.coordinator@hubdiv.org](mailto:Railfun.coordinator@hubdiv.org)

#### Module Coordinator

Bob Collins - [ModCoordinator@hubdiv.org](mailto:ModCoordinator@hubdiv.org)

**Webmaster** Dave Insley - [Webmaster@hubdiv.org](mailto:Webmaster@hubdiv.org)

**Librarian** Ken Belovarac - [Librarian@hubdiv.org](mailto:Librarian@hubdiv.org)

#### Model Train Expo Show Director

John Russo - [NEMTE.Director@hubdiv.org](mailto:NEMTE.Director@hubdiv.org)

#### Model Train Expo Show Business Manager

*Pending* - [NEMTE@hubdiv.org](mailto:NEMTE@hubdiv.org)

**Public Relations Director** *Vacant* - [PRDirector@hubdiv.org](mailto:PRDirector@hubdiv.org)

#### MOS Director

David "Shack" Haralambou - [MOSDirector@hubdiv.org](mailto:MOSDirector@hubdiv.org)

#### MOS Volunteer Coordinator

Boris Maznek - [MOSVolunteer@hubdiv.org](mailto:MOSVolunteer@hubdiv.org)

#### NMRA North Eastern Region - Eastern At-large Director

Michael Tylick, MMR - [MA.NERdirector@hubdiv.org](mailto:MA.NERdirector@hubdiv.org)

#### NMRA Achievement Program Chairman

Peter Watson, MMR - [HUB.AP.Chair@hubdiv.org](mailto:HUB.AP.Chair@hubdiv.org)

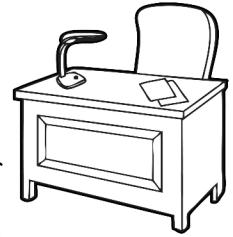
**Membership:** National Model Railroad Association members residing within the boundaries of The HUB Division: zip codes 01400 through 02699. (Barnstable, Dukes, Essex, Franklin, Middlesex, Nantucket, Norfolk, Plymouth, Suffolk, and Worcester counties of Massachusetts.)

#### Headlight Printer

Versatile Printing Services, LLC, Burlington, MA

## From the Modular Superintendent's Desk

By Bob Collins



One often overlooked aspect of being part of the modular group is the excellent mentorship our members give one another. On any given Sunday you can sit back and watch members of all ages sharing their experience and expertise. It is especially apparent when watching our senior members teach the tricks-of-the-trade to not just the next generation, but those two or three generations distant. Some of the topics I have seen shared are helping program a locomotive, sharing the history of a particular road name, or cautioning the member to the dangers of a string line derailment both on model railroads and the real deal.

Operations, scenery design, and model building all take knowledge and experience to succeed. It's great to see the camaraderie develop among the active members of the module group. Because of these shared experiences, I am confident that, unlike so many other hobbies, the old-time tricks-of-the-trade will make it through to future generations of model railroaders yet to be born.

If you have developed an area of model railroading that you are skilled in, please consider joining us at one of our shows this year and sharing that knowledge with members young and old.

Well, that's all for now HUB Division, okay to go to Wilmington!

## Erich's Electronic Notebook

*(Continued from Page 10)*

I hope this has provided some background and motivation for LCC. Implementing LCC on your layout is going to take some effort to learn the nuances of configuring nodes to do what you want. I think the best piece of advice I can give is to start out small, get familiar with the software tools then expand the system as you become more familiar with it. Stop by RAILFUN in Chelmsford on November 16th and bring your questions.

## HUB Division Nametag, Headlight Subscription and Donation Forms, Module Kit and Branded Merchandise Store Information

Please see the [September-October 2024 Headlight](#) for all order forms and module kit information along with information about the online HUB Branded Merchandise store.

## RAILFUN Updates or Cancellations

RAILFUN Updates or cancellations will be posted on the division website ([www.hubdiv.org](http://www.hubdiv.org)) and issued via the HUB email list and via Constant Contact.

# HUB Division Calendar of Events (Subject to Change)

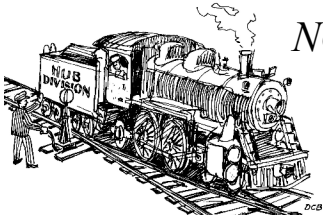
## 2024

- Nov 16 (Sat) HUB RAILFUN Meeting, 1 PM, Chelmsford Public Library, Chelmsford, MA
- Nov 16-17 (Sat-Sun) HUB Modular Railroad display at the Greenberg's Toy & Train Show, Shriner's Auditorium, Wilmington, MA
- Nov 20 (Wed) Museum of Science exhibit opens to the public
- Nov 24 (Sun) Submissions deadline for the HUB *Headlight* Jan-Feb issue
- Dec 7-8 (Sat-Sun) The HUB-sponsored New England Model Train EXPO at the Best Western Royal Plaza Trade Center, Marlborough, MA
- Dec 14 (Sat) HUB Holiday Party at the Common Market, Quincy, MA

## 2025

- Jan 18 (Sat) HUB RAILFUN Meeting, 10 AM, Marlborough Public Library, Marlborough, MA
- Jan 18-20 (Sat-Mon) HUB Modular Railroad display at the Wenham Museum, Wenham, MA
- Jan 20 (Mon) Museum of Science exhibit closes
- Jan 25-26 (Sat-Sun) HUB Modular Railroad display at the Amherst Railway Society's Railroad Hobby Show, Big-E Fairgrounds, West Springfield, MA
- Jan 25 (Sat) Submissions deadline for the HUB *Headlight* Mar-Apr issue
- Feb 21 (Fri) HUB RAILFUN Meeting, 8 PM, Online

*RAILFUN.....*



*NO MOTIONS.....*

*NO SECONDS.....*

*NO BUSINESS.....*

*NO YAWNS.....*

**HUB Division Headlight**  
**65 Branch Road**  
**East Bridgewater, MA 02333-1601**