THE BRASS POUNDER

Newsletter of the Carolina Southern Division 12, Mid-Eastern Region, National Model Railroad Association

Volume 20 Number 5 May 2020

Division Coming Events
(See CSD Website for further details)

IN KEEPING WITH GOVERNOR COOPER'S STAY AT HOME ORDER, ALL DIVISION ACTIVITIES FOR THE MONTH OF MAY HAVE BEEN CANCELLED.

Superintendent's Corner

By Alan Hardee

Welcome to May, or at least I think it is May. It is hard to keep track of the days sometimes. I hope everyone is doing well during this Stay at Home order. While we will not meet in person during May, there are many great ways to keep in touch via Facebook Live or Zoom. Just last weekend, Metrolina Model Railroaders had a virtual Meeting via the Free Conference Call App. The NMRA is hosting virtual conventions on their Facebook group page. Our very own Seth Gardner was featured during the first one. They will be posted on the NMRA YouTube channel soon so be sure to check them out. A few Rescheduled train shows have been announced recently. NC Railroad Expo show in Hickory is now on for June 13th. The NC Transportation Museum Train Show has been rescheduled for Aug. 29-30th. Hopefully, this will be a sign of good things to come.

Be Safe and hopefully we can get together soon.

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MID-EASTERN REGION 2020 CONVENTION
CAROLINA SPECIAL

OCTOBER 15TH – 18TH 2020
Crowne Plaza Charlotte, Executive Park
CHARLOTTE, NORTH CAROLINA

Carolina Southern Division is proud to be hosting the MER 2020 Convention

REGISTRATION IS OPEN AT THIS LINK

Convention activities will include:

- A wide selection of model railroading clinics, including by some nationally recognized names in the hobby
- Tour of the North Carolina Transportation Museum Back Shop and other non-public areas
- Tour of the Southeastern Narrow Gauge and Shortline Museum
- Tour of Wade's Train World in Brookford, a layout maintained by the CSD
- HO, S and N scale operating layouts in the Convention Hotel
- Home layout tours in the area, to include The Piedmont & Western and NYC Piney Fork Branch, which were both cover stories in *Model Railroader*
- Operating Sessions
- Shane Wilson, President of Scale Trains to be keynote speaker at banquet

MORE INFORMATION IS ON OUR WEBSITE

http://carolinasouthern.org

UPCOMING AREA TRAIN EVENTS

RESCHEDULED
18th Annual NC Railroad Expo
Saturday June 13th
9:00am – 4:00pm
Hickory Metro Convention Center
1960 13th Ave Dr SE
Hickory, NC 28602

Historic Spencer Shops Train Show
Saturday August 29th
9:00am – 5:00pm
Sunday August 30th
12:00 – 5:00pm
1 Samuel Spencer Drive
Spencer, NC 28159

SCHEDULES FOR OTHER AREA TRAIN EVENTS ARE NOT CLEARLY DEFINED.

MEMBERS WILL BE NOTIFIED OF SCHEDULED EVENTS OF INTEREST WHEN NEW INFORMATION IS RECEIVED.

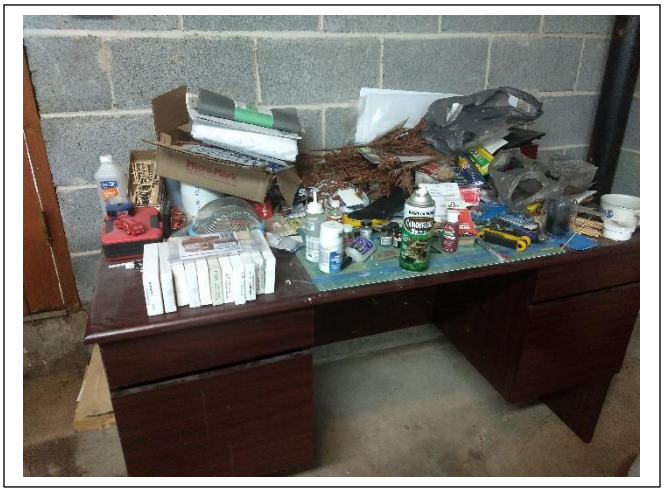
IN THE MEANTIME, STAY SAFE AND HEALTHY.

Editor's Notes

By Ed Gumphrey

Well, the last month has certainly marked a change in our lives, not to mention a change in the Division's activities. With group activities suspended, each member has to pursue the hobby solo.

It is encouraging to see some activity as posted by members on social media. I particularly enjoyed following Scott Perry's Facebook page as he posted step-by-step progress on his latest scratchbuilding project – a wooden water tower for his On30 layout. You'll find a picture of the finished project in the news section. Speaking of Scott Perry, after he submitted his article on cleaning up your workshop, I sent him a picture of mine. Obviously, I need to heed the advice in his article.



As virtual meetings become more common, the NMRA has joined in. They launched NMRA-X April 24th and 25th. See the details on page six along with links to the presentations that you may have missed. It will continue in May, and word is that Scott Perry will be participating with a scratchbuilding clinic.

As always, I solicit your feedback about the newsletter.

Stay safe and healthy and enjoy your model railroading.

SUBMISSION GUIDELINES

I target the 1st of each month for publication. Please submit articles for publication by the 27th of each month.
The preferred format is MS Word, but I can convert most other formats.
For questions and help, email me at editor@carolinasouthern.org

DIVISION AND REGIONAL NEWS

By Ed Gumphrey

The Division cancelled its April meeting. In keeping with Governor Cooper's executive order, all Division activities for the month of May have also been cancelled.

There were some posts by Division members on social media during April. I captured a few pictures from Facebook posts that highlight some of the activity…

This photo from Seth Gartner's Piney Fork Branch of the NYC now graces the top of the NMRA Group on Facebook. Photo from Facebook post.

Neal Anderson, MMR, posted this photo on the CSD Facebook group as an example of how to obtain social distancing with a flatcar sleeper inserted into your train.

After posting a series of step-by-step photos of a scratchbuilding project on his personal Facebook page, Scott Perry posted this photo of the finished On30 water tower on the CSD Facebook page. As usual, an exceptionally fine structure from Scott.

I particularly enjoyed Superintendent Alan Hardee's multiple posts on CSD's Facebook page of links to videos from the North Carolina Transportation Museum. You can find them all on the Museum's Facebook page at

https://www.facebook.com/pg/nctrans/videos/?ref=page_internal

Perhaps the most exciting social media activity was on NMRA's Facebook Group page, where NMRA-X was launched. As Alan Hardee mentioned in Superintendent's Corner, fellow CSD member Seth Gartner's Piney Fork Branch was featured during one of the

sessions. Here's a re-print of the announcement from the NMRA eBulletin in case you missed it. The hyperlinks will take you to the video archives on the NMRA Group page.

An NMRA first! Introducing NMRA-X...our virtual, online convention

By Christina Ganzer Zambri, Marketing Consultant

Some of you may have noticed a strange occurrence on Facebook between April 24th and April 25th and still might be wondering what happened to the NMRA. Well, the NMRA-X is what happened, and it is here to stay!

NMRA-X is the new virtual experience formed to bring some of the benefits of the organization love, right to your computer screens! Our very first NMRA-X Virtual Convention was held from 7pm EDT on April 24th to 7pm EDT on April 25th and consisted of 25 straight hours of clinics and tours from around the globe, featuring a new presentation every hour. Broadcast through both the NMRA Facebook page and group, NMRA-X was a huge success with both members and non-members alike, and it definitely broke the mold in the model railroading community.

If you missed out on any of the action, all the videos are saved in the NMRA Facebook group:

https://m.facebook.com/groups/46322574676?view=permalink&id=10157397645434677

https://www.facebook.com/groups/nmragroup/permalink/10157396398094677/

https://www.facebook.com/groups/nmragroup/permalink/10157395550039677/

https://www.facebook.com/groups/nmragroup/permalink/10157394387419677/

and on the NMRA Facebook page:
https://www.facebook.com/pg/NMRA.org/videos/?ref=page_internal

Eventually, the videos will be edited and added to the NMRA YouTube Channel: http://www.youtube.com/c/NMRAORGModelRailroading

Marketing has been pushing for this and plans on making NMRA-X the virtual model railroading destination by continuing to bring you more valuable content over the coming months.
The next event is "Ask the Master Model Railroader" scheduled for Saturday, May 2nd at 5pm EDT.

Additionally, four, 12-hour NMRA-X Virtual Conventions are set for May 16th, May 30th, June 13th and June 27th. These can all be accessed from the NMRA Facebook group and the NMRA Facebook page. It is our hope to add additional streams soon. We hope to see you all there!

A special "thank you" goes to Gordy Robinson (BR), Brad Anderson (AR), Martyn Jenkins (AR), Gert "Speed" Muller (LSR) and Jordan Kramer (MCR) for pulling together and running the entire event, the presenters for sharing their knowledge and time, and the group from the "A Modeler's Life" podcast for wrapping up the event!

Simple Turnout Ground Throw

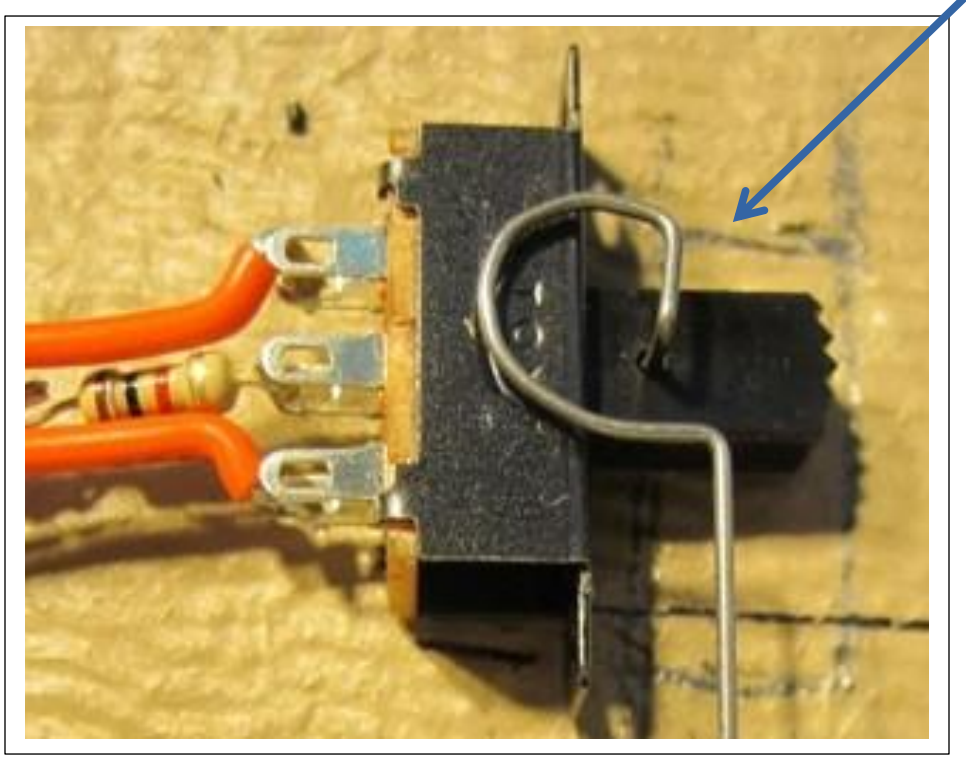
By Duncan Parker

The turnout ground throw consists of only two main parts. A small SPDT (single pole, double throw) slide switch and a spring throw-wire made from .025” music wire, K&S #5005. Adding the two LEDs, a resistor, and some hookup wire to the mix brings the parts count up a little. The ground throw is suitable for both N and HO scale turnouts.

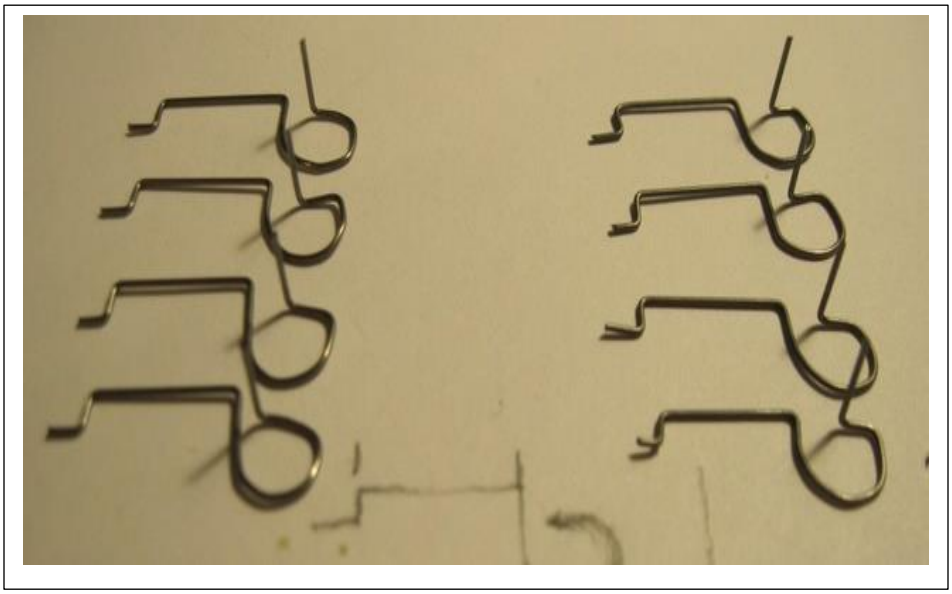
The ground throw can be made with or without LED position indicators, however, with the addition of the LEDs, you can see the turnout point position from a distance (for example, main green and diverging yellow). In addition, if a DPDT (double pole, double throw) slide switch is used, the second set of contacts can be used to provide an output to a computer or a remote signal display board.

Construction:

- Drill a hole in the slide switch handle for the spring throw wire.



- Bend the Spring throw wire to the shape as shown below.

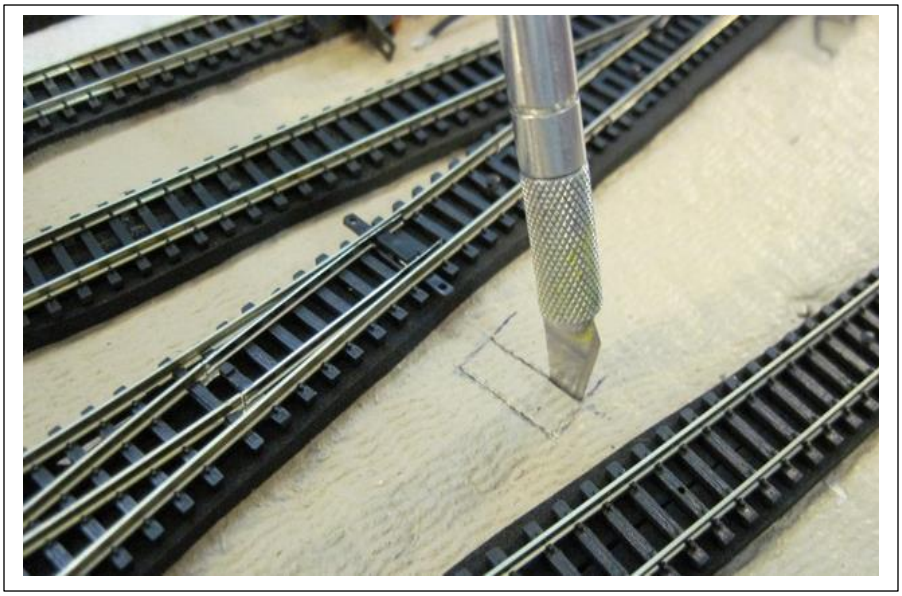


- Solder the wires and resistor to the slide switch terminals as shown. The use of one resistor attached to the common terminal of the switch is OK since only one led at a time is powered on. Wires can be color coded or tagged.

Resistor value depends on the voltage used to power the LED. In this case a 1K Ohm at 12vdc gives a good light.

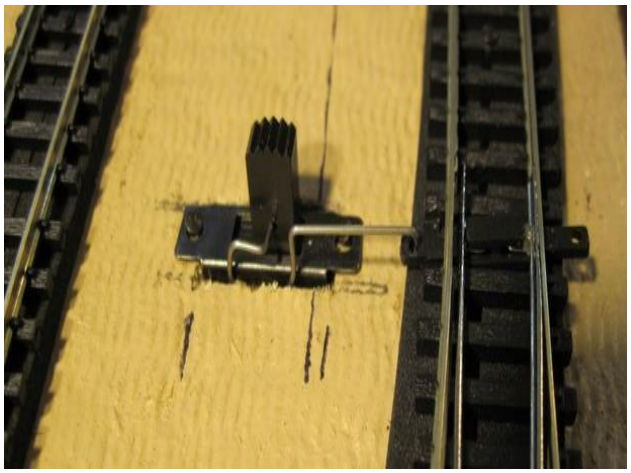
Installation:

Locate the place you want to install the slide switch. It can be located on either side of the Turnout. The side of the slide switch where the spring throw-wire will be mounted should be lined up with the hole in the turnout throw-bar.



Draw a line perpendicular to the track from the turnout throw-bar hole past where the slide switch will be located. From that line measure the width of the slide switch plus the spring throw-wire and draw a second line a little over the length of the slide switch. Make sure the hole in the deck will be wide enough for the spring throw wire to ride alongside the slide switch and move freely yet remain secure in the hole in the handle of the slide switch. Now, establish how far the end of the slide switch closest to the turnout will be from the turnout throw-bar and draw a short line at that point across the two lines previously drawn. Now measure the length of the slide switch body and draw a second line between the two lines. You should now have drawn a rectangle the size of the slide switch which outlines where the hole in the layout will go. See the above picture. What material your layout deck is made of will determine how you will cut the hole for the slide switch. My layout deck is Homasote and cuts easily with an X-Acto number 11 blade as shown above.

After cutting the hole for the slide switch it should look like the left picture below. To feed the wires and resistor through the layout deck to connect power, you will need to drill a hole in the bottom of the rectangular slide switch hole. The picture on the right shows the Turnout Ground Throw installed. The LED's are not installed yet. The LED's will require separate holes for installation adjacent to the slide switch. Location of these is up to your personal preference.



Two finished Ground Throws installed and operational.

The upper LED (yellow) shows the turnout points in the diverging position. The lower LED (green) shows the turnout points set for the main line.

Scratchbuilding - Cleanliness is Next To...Impossible

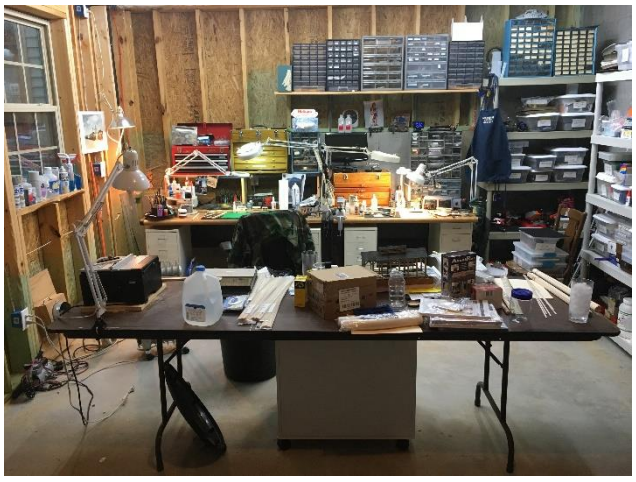
How to Get Your Workshop Back in Order

Text and Photos by Scott G. Perry

I've made it a hobby of studying other people's model workshops. The difference between one person's shop is staggering and you can learn so much. Some modelers have large shops that are full of mess and clutter and you wonder how they can ever find anything. Others like Pelle Søeborg of Model Railroader Magazine fame work on a tiny table with virtually no tools or paint anywhere in sight. It makes you wonder how can he possibly build those amazingly realistic models in that area smaller than a broom closet. One of my mentors Mike Callaghan, MMR worked on his wobbly kitchen table under terrible lighting and won NMRA National awards. We all have a different style.

My style is to stay organized and to spread it out as far as the basement will allow (Pic 1). I'm a tool junkie (I founded the TrainTools Yahoo e-group many years ago) so I often have several varieties of the same tool. One thing that I do focus on is keeping the work area clean and in order. Come along with me as I clean up the shop today!

My clean up schedule is based on several different things. The first is that I clean up once a month no matter what is going on. The second is that I clean up right before I start doing very fine detailing and finishing of a model so that dust and clutter won't interfere with the delicate work. The last reason is when I'm starting a new project which helps me get the clutter of the past model out of the way and all the tools put back where they belong. Today we have a rare instance where all three are going on. It is the first of the month, I've got two models going into the finishing phase and I am about to start on a bridge model. Let's grab a bottle of water and a dust mask and get started.



Pic 1: My shop is currently in an unfinished basement and has two work benches and a craft table.

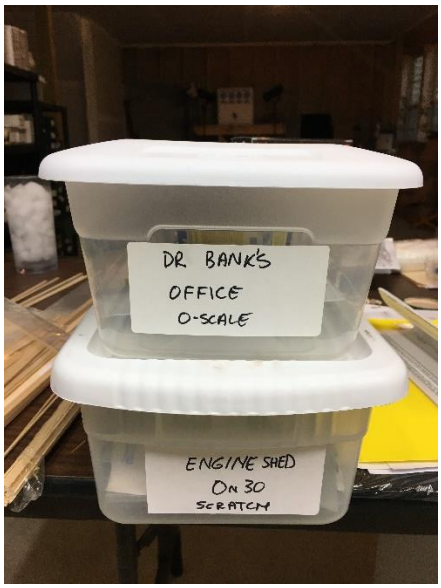
Pic 2: I have finally traded up to a large 30-gallon trash can because I got tired of emptying the little one.

The first thing I do is search the room for any and all trash. Amazon boxes, used paper towels, old kit boxes, scraps of wood, drink cans and anything that is cluttering up the shop has to go first. Oh! I wondered where that sandwich went! Collect everything you can find that needs to go to the trash and bag it up (Pic 2 on previous page). Be careful of sharp objects you may have thrown away like hobby knife blades! As a rule, I put old blades in a metal candy container, so no one gets hurt (Pic 3).

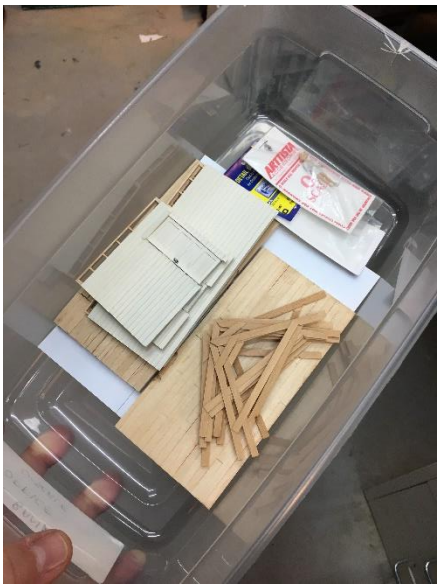
Pic 3: Safety first! Keep used sharp objects in a metal container then tape it shut when you throw it away.

The next step is to move all models that are being worked on to a safe place, away from dust and accidental damage (Pic 4). I have a model display cabinet upstairs, so I carefully place the model and key sections there for safe keeping. I keep a Sterilite brand clear shoe box container (dollar store $1.25 a piece) for each model that I'm working on at the time (Pic 5 on next page). On workbench #2 I was working on the Dr. Bank's Office project. There is a storage container for it, so I picked up the rafters, jigs and fixtures and associated parts (and rejects!) that needed to be preserved (Pic 6 on next page). The storage container is then put away for safe keeping on the shelf. Partially painted doors and windows as well as other work-in-process is bagged and labeled, then put into the appropriate storage box (Pic 7 on next page).

Pic 4: My engine shed is rather large for a model, so I moved it out of the room during cleaning. Even as careful as I was my shirt sleeve caught the model and broke a small board.

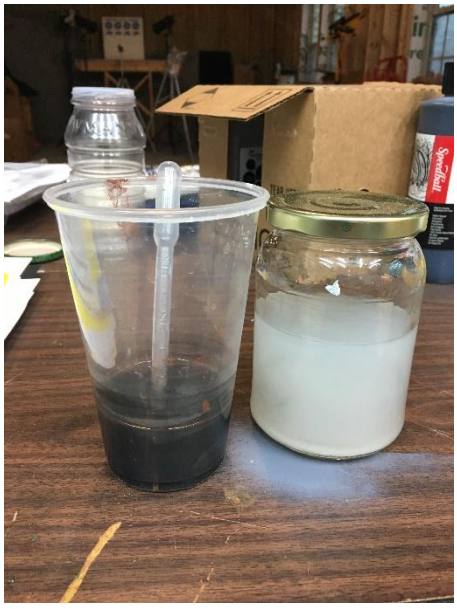


Pic 5: I'm working on two models right now, so I have a storage box for each, clearly labeled, and it contains parts, fixtures and jigs, and anything small related to the project.



Pic 6: Take all the sub-components off the workbench and put them in storage. For Dr. Bank's Office I stored the rafters, assorted jig and fixtures and Nurse Goodbody for protection.

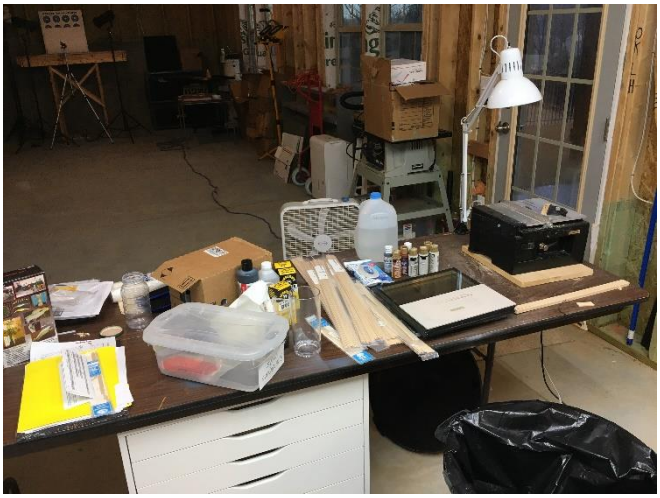
Pic 7: Using small sandwich bags I put together assorted work-in-progress components and store them away.



Pic 8: Open containers of brush cleaning water and partially filled drink cups are dangerous to models that can't swim. Use sealable containers.

Another important step is to remove all open liquids from the workspaces. I'm a bit smarter now and try to make sure I pick up drink cups daily when done and to not use open cups for brush cleaner (Pic 8.) Just recently I knocked over a glass of water on the workbench when reaching for a tool. Now I'm using drink mugs with lids. For cleaning brushes, I switched to heavy glass pickle jars with lids that I seal with a lid after using. Empty out the old liquids properly and wash the containers.

Next, we'll want to put away all modeling materials so they don't get damaged (Pic 9). I often leave out the wood or plastic packages that I'm currently using just for speed, so I'll put those back where I can find them. My smart home has the Alexa system, so if I see that I'm running low on something I just say "Alexa, add O-scale 2x4's to Hobby List" and she'll make a note for me to order them. Take the time to label materials and put them into protective bags when needed. Warped or damaged wood is hard to work with, so take the time to protect it.



Pic 9: Put away all modeling materials first so they don't get damaged, then clean and put away your

I only keep power tools out when I'm using them. Some are very sharp, other are very heavy and they all have power cords that knock things off the workbench. Using my small wet/dry vacuum (Pic 10) I vacuum up all the dust and dirt I can find. My mini table saw is a constant source of sawdust so I open it up and vacuum it out very carefully so that I don't cut a finger. The sander needs vacuuming too. Once all the power tools are dust-free I secure their power cords and return them to their homes on the shelf.

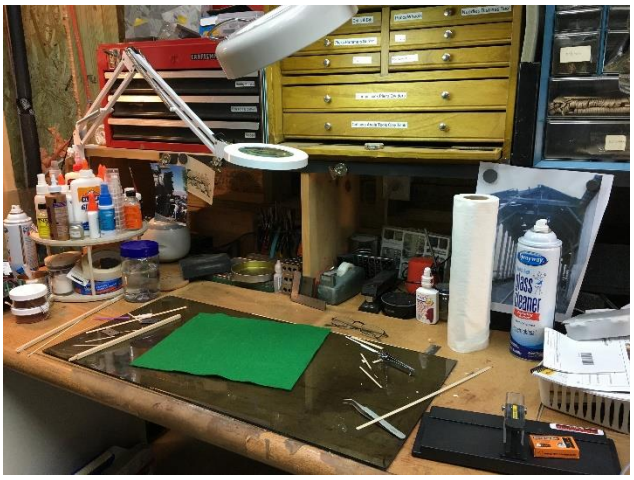
Pic 10: A small wet/dry vacuum is inexpensive and very useful in the shop, as well as around the house. This is a two gallon "Stinger" from Home Depot for about $35.

Pic 11: Wet wipes are handy for wiping down small areas. They pick up weathering powder dust and some paints very well. I wash my hands frequently with them when I'm painting models.

Once everything is put away, I start cleaning up the lights and surfaces. Wet wipes (Pic 11) are very handy for cleaning and I use them all the time. They pick up dust well and even remove weathering powder from the workbench. I use them often to wash my hands when painting. My craft table is a spare workspace behind my workbenches. I often use this to hold models off the bench or to do messy work like painting or sawing. It gets cluttered very easily. With everything put away I clean it thoroughly with 409 spray and a rag (Pic 12 on next page).

Now on to the workbenches. They don't get as messy as the craft table but workbench #1 (Pic 13) is my main assembly area so it gets messy. Usually it's just clutter and modeling tools. Often, I'll sort out the larger pieces of wood and plastic building material and store them in their proper place. The countless small pieces 4 inches long or longer go in the scrap wood or plastic bag. The rest gets swept into the trash. You must be careful when cleaning the workbench as small detail parts can be laying anywhere. This is when you find all the parts that have sprung out of your tweezers and bounced to Never-Never-Land. I often find socks when I clean off the workbench. Put back all the special tools in their properly labeled places. Check through your adhesives and make sure lids are secure and leaking bottles are dealt with. Put away paints and weathering materials making sure they are clean and sealed properly. I work on sheets of glass which are extremely flat and stable as well as glue resistant. Using an old razor blade, I scrape off any glue and paint then spray it with glass cleaner and clean with a piece of newspaper. Dust off the workbench with a brush then put back the clean glass and you are ready to go (Pic 14).

Pic 12: The craft table should be clean and free from clutter, as it is used heavily to sort materials and for messy building steps like painting, sawing and sanding.



Pic 13: The clutter on the workbench is usually material leftovers and small tools. Dust and weathering particles can ruin a model so detailed cleaning is important.

Pic 14: A clean workbench is inviting! You feel like you just have to mess it up.

Pic 15: A cluttered workspace is the sign of a busy mind…. or just home for a messy guy like me. I build fast, and part of fast is having everything at hand which means on the table.

Workbench #2 is the area where I do detail work, wiring and other electrical work. It doesn't get as messy as the other workspaces, but it is the most likely to have loose detail parts running around (Pic 15 on previous page). Here is where I also do detail painting so there are often a dozen paint bottles lying around. I check and seal all paint and adhesives and put them back in their storage racks. The rest is cleaned much like workbench #1 with one exception; I brush all the dust into a box and with a flashlight I look for detail parts that might be in the mess. Those are saved and put back into the parts bins. There! Its ready for a new model (Pic 16).

Pic 16: A place for everything and everything in its place. Sound advice for the Model Railroader.

Pic 17: Bare concrete is the worst floor for model building in that it generates its own dust.

Pic 18: Sweep the floor first so you can collect detail parts for sorting. Then you can vacuum or mop.

Pic 19: Carefully sort through the floor sweeping for tiny parts that escaped. I always find a few.

The floor is the last thing to work on (Pic 17 on previous page). Bare concrete is the worst kind of floor to have because it generates dust. Unfortunately, I've not be able to finish my basement yet, but will one day. The first thing I do is sweep the area very carefully (Pic 18 on previous page). While sweeping I'm looking for lost parts and pieces. It is easy to sweep up and throw away $50 worth of parts, and even more in a smaller scale. Sweep everything into a dustpan and sort through it with a pair of tweezers (Pic 19 on previous page). Then you can vacuum or mop to get up the rest of the fine dust particles.

Pic 20: A clean shop is a happy, inviting place to work! When was the last time you cleaned yours?

There! The shop is clean and ready for more model building (Pic 20). Other things I do infrequently are change out light bulbs, check the smoke detector and fire extinguisher and check power cords and terminal strips for wear and damage. Your shop will have special things you will need to do like replace the filter on your airbrush booth or throw out old paint. Take some time this weekend to clean out your shop. It only took about an hour and a half to do mine. You'll find you like spending time there a lot more. Happy modeling.

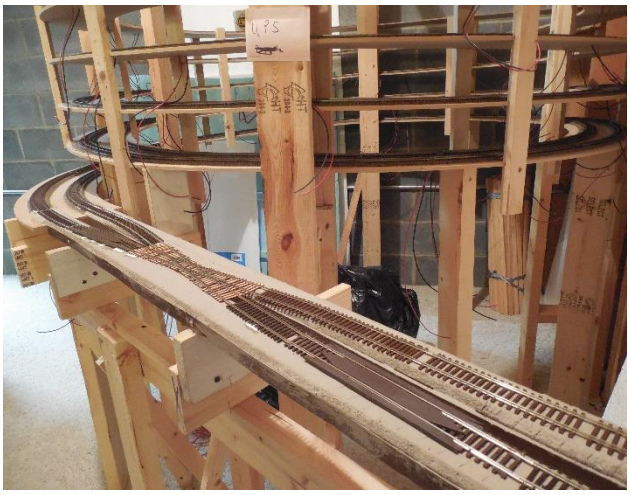
SELF QUARANTINE

By Ed Smith

Boy, things can really change in a blink of an eye. Last month, it was “full speed ahead” on my mainline project. The lower deck was completed and I was on schedule with the upper deck. Then, everything changed.

First, I had to resolve a mainline orientation problem as it moved from one level to the next, via the helix. Because my helix is located at one end of my layout (pic 1), the double track main reverses orientation, from one level to the next. To put that in and operator’s perspective, it means that on the lower level, east is to the right, whereas on the upper level east is to the left. I experimented with a crossover on the leads to the helix on the lower level (pic 2). This solved the orientation problem. The eastbound main remained in the forefront always and the westbound main was always the inside track. But the crossover just created more angst when it came to using a helix. Besides the out of sight problem, I now had to add detection to control the crossover situation. I decided this wouldn’t be operationally prototypical and wasn’t worth the effort. The crossover was removed and I’m allowing the mains to flip the viewer’s orientation. This may prove to be more efficient and is certainly more prototypical with regards to the location of industries and the order of towns along the main line.

Pic 1: The helix is at one end of Ed Smith’s double deck railroad. But remember, it’s the midway point between the ends of the point-to-point layout.

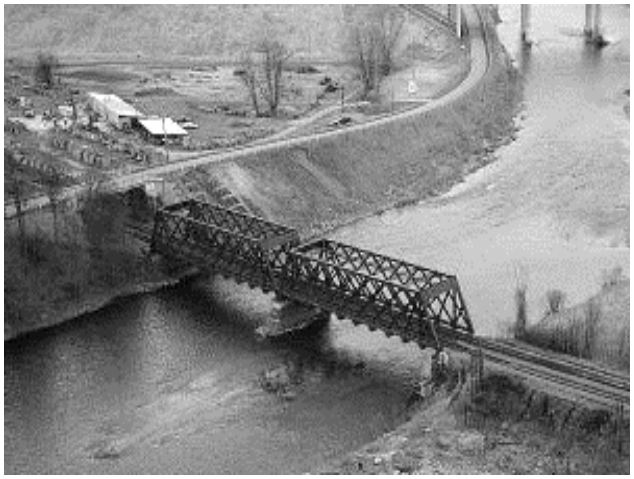


Pic 2: Ed Smith experimented with a crossover on the helix leads, but decided against it because of unnecessary operational complexity.

Editor's note: Ed and I had an email discussion about this orientation dilemma at some length. Our discussion went something like this…. We are all accustomed to thinking about east being to the right, and west to the left. That default perception is because we always look at maps with north oriented at the top. Think of yourself alongside a railroad track, looking north. Indeed, east is to your right. Now, after looking both ways, cross the track and turn around. When you're looking south, now you find that east is to your left. If Ed had stayed with the crossover, he would have injected a very un-prototypical shift in operation along the mainline of his railroad – specifically by reversing the "right hand running" rule of the Erie. The crossover also would have shifted specific industries and depots to the wrong (north vs south) side of the mainline from the prototype's orientation. I'm glad that Ed took the crossover out. Operators simply need to remember that when they're on the lower level they are looking north at the mainline. After passing through the helix to the upper level, the operators have "crossed the track" and are now looking south at the mainline.

Next, and more importantly, the Covid-19 pandemic. This virus has shut down all plans of socializing. As of now, our National Convention, SER regional convention, and our monthly meetings are cancelled. The unknown future, in my opinion, jeopardized our MER Regional Convention in the Fall. With that pessimistic view, I decided to take a break in completing the mainline and reverted back to what I love; scenery.

This month, I'm going to describe how I used two Walthers Cornerstone Truss Bridges, a clinic diorama, and a scratch-built wood shop to create the entrance to the upper level from the helix. This area on my layout is Deposit, NY. I found a picture of the Erie mainline crossing a river on truss bridges on the East side of Deposit (pic 3). This was perfect for my situation.



Pic 3: The Erie railroad bridge near Deposit, NY.

Pic 4: Locating Richwood Wood Shop .

I decided to use a 3-piece diorama that I built for a scenery clinic at this year's RMU. It consists of a painted backdrop, 3-dimensional tree-lined mountains, and a foreground industrial spur. I added the scratch-built Richwood Wood Shop and built two truss bridges (pic 4, 5). Using blue foam board, card board lattice work, red rosin paper, and added background painting, these scenes were blended together (pic 6). The river bed was built on top of ¼" plywood, using foam board, carved with a knife. Once again lattice work and red rosin paper created the land forms (pic 7). The river bed was poured using soupy plaster. Ground Goop, Super Trees, and assorted ground foams were used for the surrounding river valley (pic 8). After the plaster dried, around 24 hours, the entire river bed was caulked. This is mandatory. You have to prevent leaks. Using Realistic Water and Murky Accents paint from Woodland scenic, the river was poured (pic 9). The

upper level tunnel portal was created using foam board and Flat Black paint (pic 10). This creates a dark entrance to the helix.

Pic 5: Two Walthers truss bridges set in place.

Pic 6: Scenery structure uses various materials.

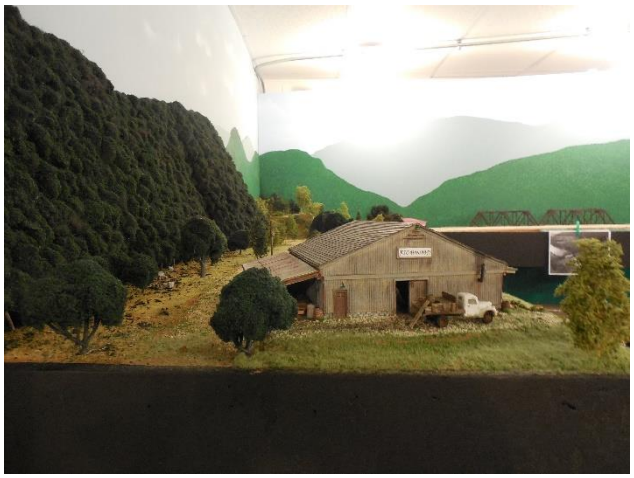
Pic 7: Basic landforms starting to take shape.

Pic 8: Working in scenery around the river.

Pic 9: The river is colored and poured.

Pic 10: The backside of tunnel is darkened.

With the river poured, you have a good 24 hours to work elsewhere. Using Bachmann gravel, Super Trees, ground foams, and puff ball trees, the entire scene was tied together (pic 11, 12, 13). Finally, details were added around the shop area, such as: the shop truck, cut lumber, uncut trees, saw dust, and a Woodland Scenics Rural Saw (pic 14, 15). A wood platform for the spur still has to be scratch built. Last but not least, the finished Walthers Bridges were weathered and set in back in place.



Pic 11: Puff ball trees along backdrop, details in the foreground.

Pic 12: From the other end looking down the spur to Richwood Wood Shop.

Pic 13: The tunnel enters to the helix to transition between levels of the two-level layout.

Pic 14: This view shows how the entrance is partially obscured by the scenery.

Pic 15: An aerial view of Richwood Wood Shop with the rural sawmill and lumber stacks in place.

This project took a little longer than I planned, but it was worth it. Although I'm behind on the upper level now, this was a great distraction. Nobody knows what the future will bring, but I believe model railroading is the perfect hobby for this period. Hopefully, in the not too distant future, we can get together again and discuss our endeavors during these trying times.

Until then, stay safe and wear your protective gear, like my assistant does (pic 17).

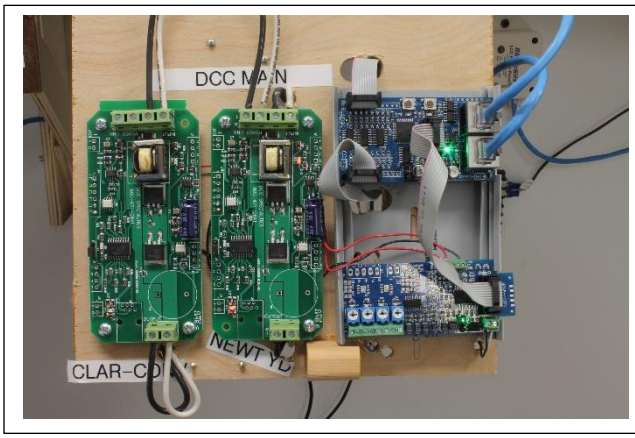
ED

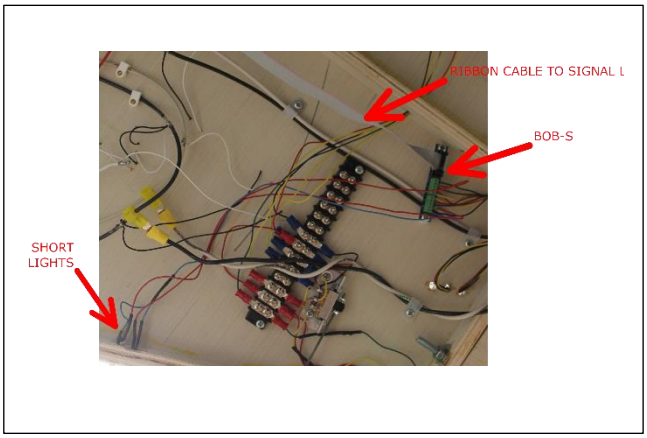
Pic 17: Follow Elway's example and stay safe.

My Southern S-Line First Project – Short Circuit Light 2 Configuring Outputs

By Tim Rumph

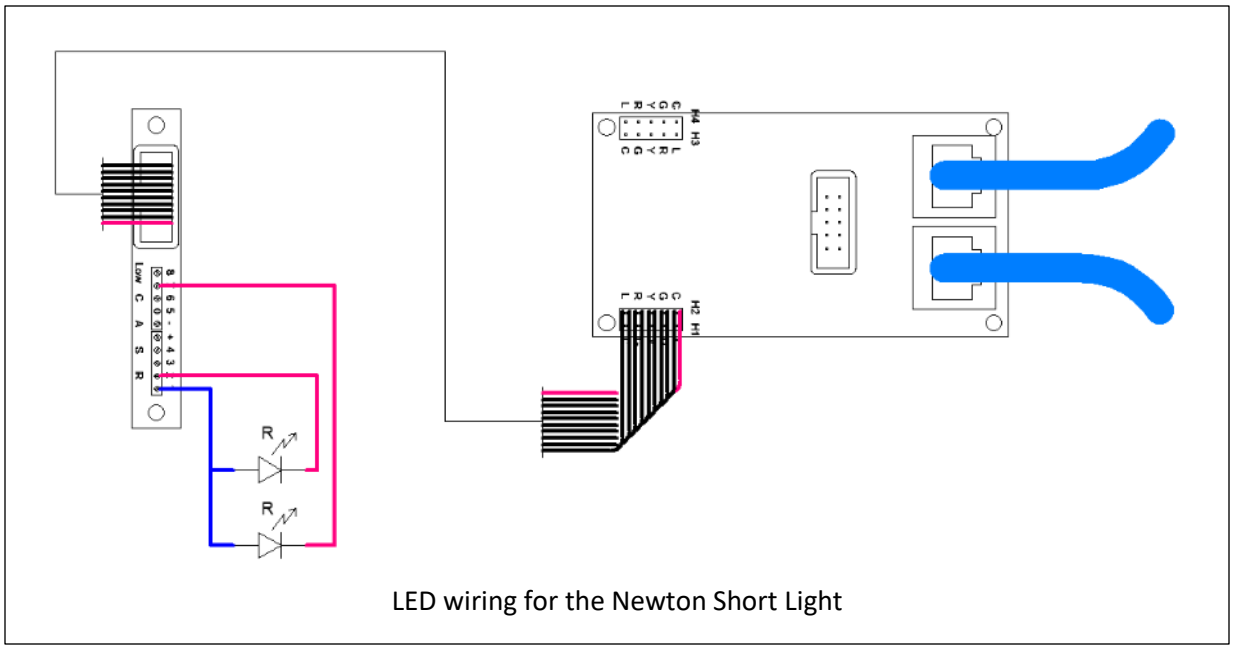
The input circuits are wired and the two events (that's LCC for when something happens) are defined for the Newton short circuit lights. Now it's time to turn on some lights to help the engineers figure out why their engines have stopped.





Hardware for Newton Short Circuit Light

Above is a picture of the hardware for the Newton short circuit light, and also a light for the Conover – Claremont main track. It works just like the one for Newton, but the connections are a little different. It will be a little easier to follow in the circuit diagram on the next page.



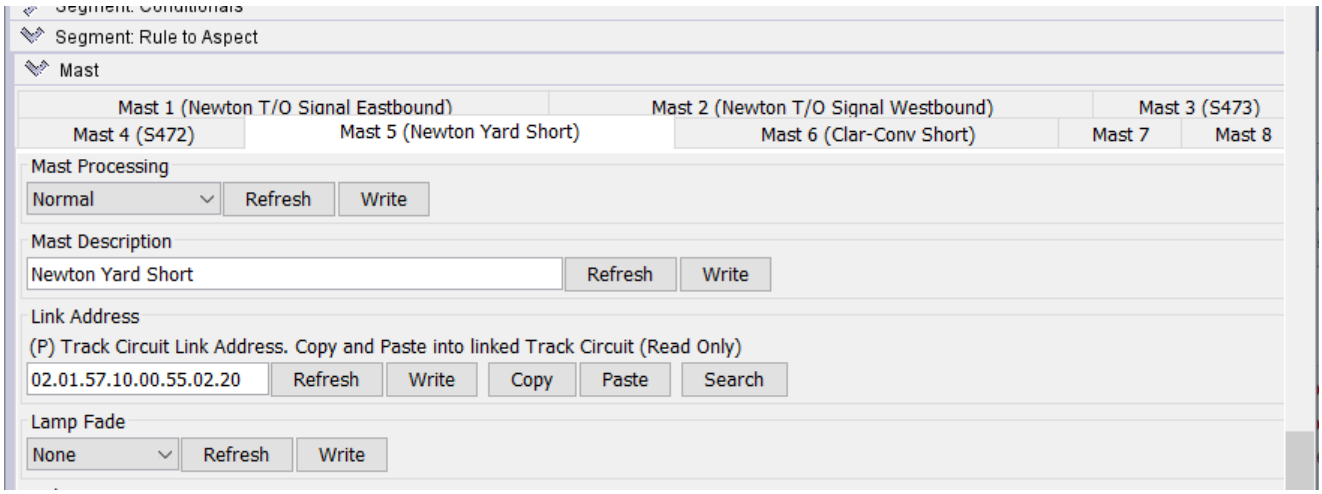
LED wiring for the Newton Short Light

The LCC nodes from RR-CirKits have a couple of different ways to power LEDs. The Signal LCC has sixteen LED drivers on the node. The one show here is the Signal LCC-P and it has four rows of pins to connect to LEDs. The rows of pins are called H1, H2, H3, and H4. The pins in each row are C (common), G (green), Y (yellow), R (red), and L (lunar white). These are just labels, and you don't need to connect any particular color of LED to any pin. You might have a yellow LED connected to the R pin, and a white LED to the G pin. These rows of pins are in two groups and you can plug a 10 wire ribbon connector to each pair. There is also a Signal LCC-S that has screw terminals, but the connections are the same. My signals tend to come in pairs, so it's easier for me to use the -P version and run ribbon cables to the signal locations. If there are a lot of signals close together, it would be better to use the -S version and put it close to the signals it is controlling.

The C (common) connection can be set up for either common anode or common cathode wiring. My signals are common anode, so the C is + and is connected to the + side of all the LEDs controlled by that node. Do not connect an LED to a pin on one node and the C on another. It won't work and you may damage something, but all the C connections on each node are connected together, so you can use any C connection ***on that node only***.

This installation uses a break-out board called a BOB-S. It has a socket for a 10 wire ribbon connector at one end and 10 screw terminals to make things easy to hook up.

This circuit uses the H1 L pin and the H2 C pin to drive the LED. There is no resistor required since they are built into the Signal LCC LED drivers. As noted before, the C connection goes to the anode (+) side of the LED.



Mast Configuration for Newton Short Light

The configuration for the LED drivers uses masts and rules. Above is the mast for the short light. Note that there is comment field. Fill these in so you can figure out what's happening later. A mast is all of lights on a signal mast. For those of you modeling modern railroads, where there is one mast with lights on both sides, a mast is all the lights on one side of the mast. This can include more than one head (group of lights). The rule is what the railroad calls a particular group of lights. For instance, on CSX the rule for Medium Approach Medium is a red lamp on the top head, a yellow lamp on the middle head, and a flashing green lamp on the bottom head. This example is not that complicated and there are only two rules. "Stop" means that the red LED is flashing because there is a short circuit. "Dark" means that it's off because there isn't a short circuit.

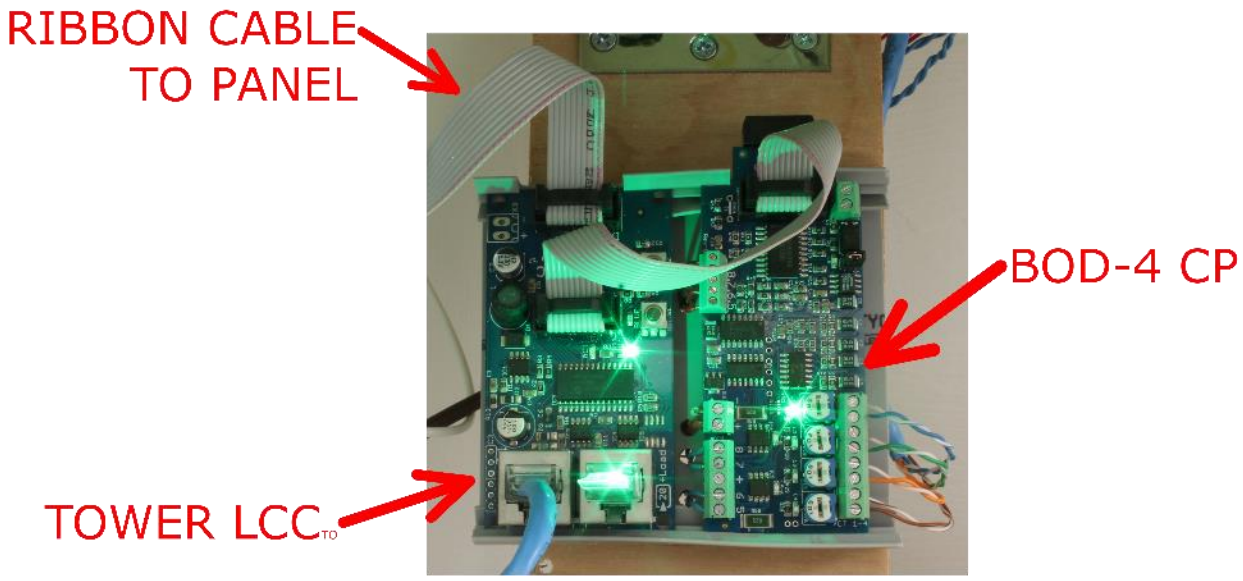
Mast 5 Rule 1 Mast 5 Rule 2

Two Rules for the Short Circuit Light

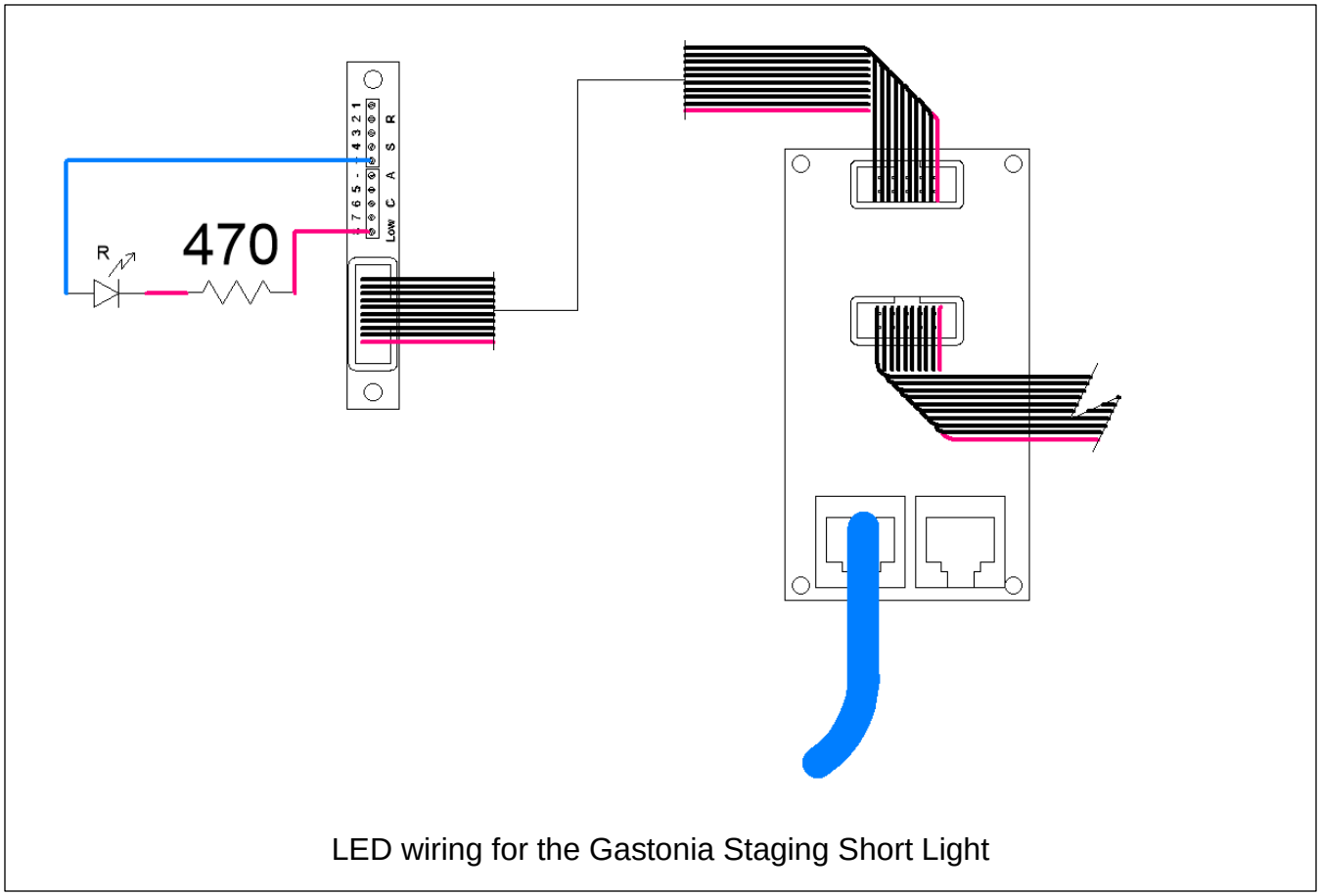
On the left above is the configuration for Mast 5 Rule 1. Rule Name is set to Stop. That is just for our reference and doesn't actually do anything. What we're interested in is the field called, "(C) Event to Set Aspect." The EventID should look familiar. It is the same one that the input circuit produced in last month's column, ending in ".00.36". This is the event created when there is a short circuit. Lower down is a set of tabs for up to four lamps. Lamp 1 has the Lamp Selection set to #4 H1-L. This corresponds to the pin that is connected to the Newton Short LED. I've set the Lamp Phase (A-B) – Flash Rate to A-Fast. This will make the lamp blink at a fast rate, to get the engineer's attention. The other lamps are set to "Unused" on the Lamp Selection.

Rule 2 is similar, except the Rule Name is Dark. The EventID ends in ".00.37" which is the event produced when the short circuit is cleared. Lamp 1, and all of the other lamps, are set to "Unused" so the LED turns off.

This seems like a lot of work to turn on one little LED. Why not just wire the LED to the PSX? There is a connection for this (J11-1 and J11-2). However, using LCC lets us easily add more short circuit lamps. The Newton power district on my layout includes the three track Gastonia staging yard (7 feet long) and all of the tracks in Newton except the main track, which is another 18 feet long. It seems like it would be helpful to have another lamp on this 25 foot long stretch of railroad. The Claremont to Conover section of main track is about 50 feet long, so multiple lamps would come in very handy.



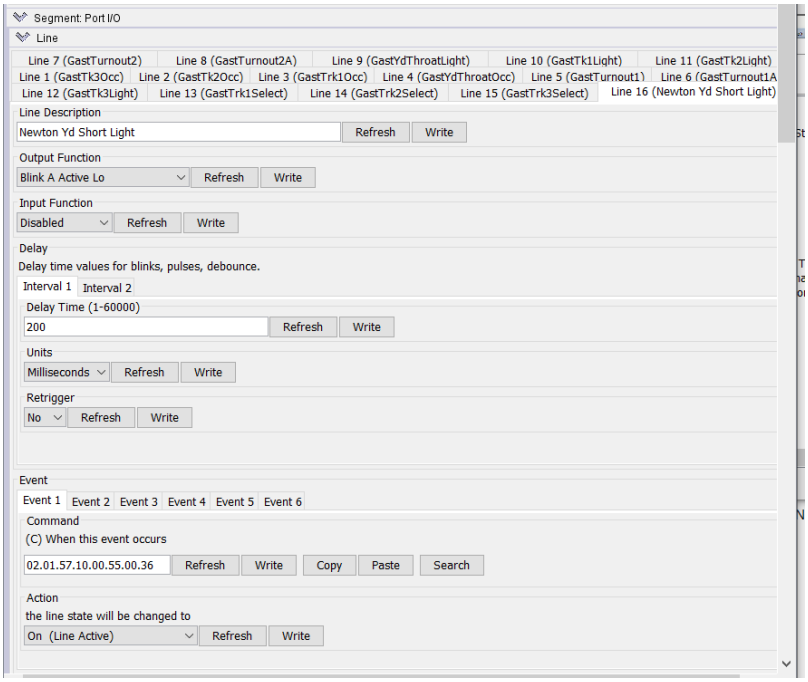
Gastonia Staging LCC



LED wiring for the Gastonia Staging Short Light

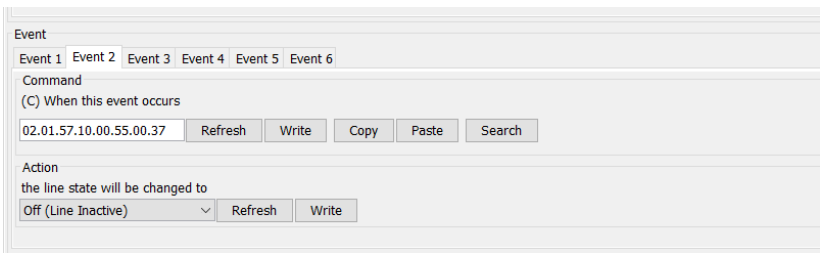
The Gastonia staging yard is part of the Newton yard power district, and the staging yard is controlled by LCC. I had a spare I/O line and used it to add another indicator light. The two photos above shows the LCC installation for the Gastonia staging yard and the LED wiring. It uses a Tower LCC. The Tower LCC has two sets of eight I/O connections. There is also a BOD-4 CP which has four block detector circuits and drivers for two stall motor (i.e. Tortoise) switch machines. The ribbon cable at the top goes to the control panel.

The circuit diagram shows the connection for the short light. Since this uses a general I/O line rather than the LED driver I've added a 470 ohm resistor to limit the current through the LED. The + supply voltage is 5 volts



Configuration for short light ON for the Gastonia LCC node

Here is the configuration for the short light here. The light is connected to pin 8 on I/O connector 2. This is listed as Line 16. The description is “Newton Yd Short Light.” The Output Function is “Blink A Active Lo.” This means that when the output is ON, it will be connected to (-) and it will blink. For Delay, Interval 1 is 200 milliseconds. Not shown, but Interval 2 is also 200 milliseconds. Next the Event 1 for the output (C) When this event occurs is the same event as above, 02.01.57.10.00.55.00.36. This is one of the advantages of LCC. We now have this event created when a short circuit occurs turn on lamps in two different places using different types of LCC nodes.



Configuration for short light OFF for the Gastonia LCC node

Above is the Event 2 configuration. The EventID here ends with .00.37. This is the event that is generated when the short circuit clears. The action is Off. That turns the light off so it stops blinking.

We now have two lights located on opposite ends of the Newton Yard section that will start blinking when there is a short circuit. An event created on any LCC node can be used to control outputs and that card or on any other card on the network. I mentioned this before, but it bears repeating. The EvenID that I have shown are for these LCC nodes. In nearly all cases the EventID

should be left at the default for the event the creates it. Do not use the EventIDs that I've used here. Your EventIDs will be based on the LCC node numbers for the nodes that you are using.

Next month I'll wrap up this series with an example of using LCC to control a block signal. The 2020 national NMRA convention has been cancelled, but so far our convention in October is still going to happen. I'm still looking for more layouts to include in out layout tours. I'd like to include your layout. Please contact me and I'll send you a layout information form.

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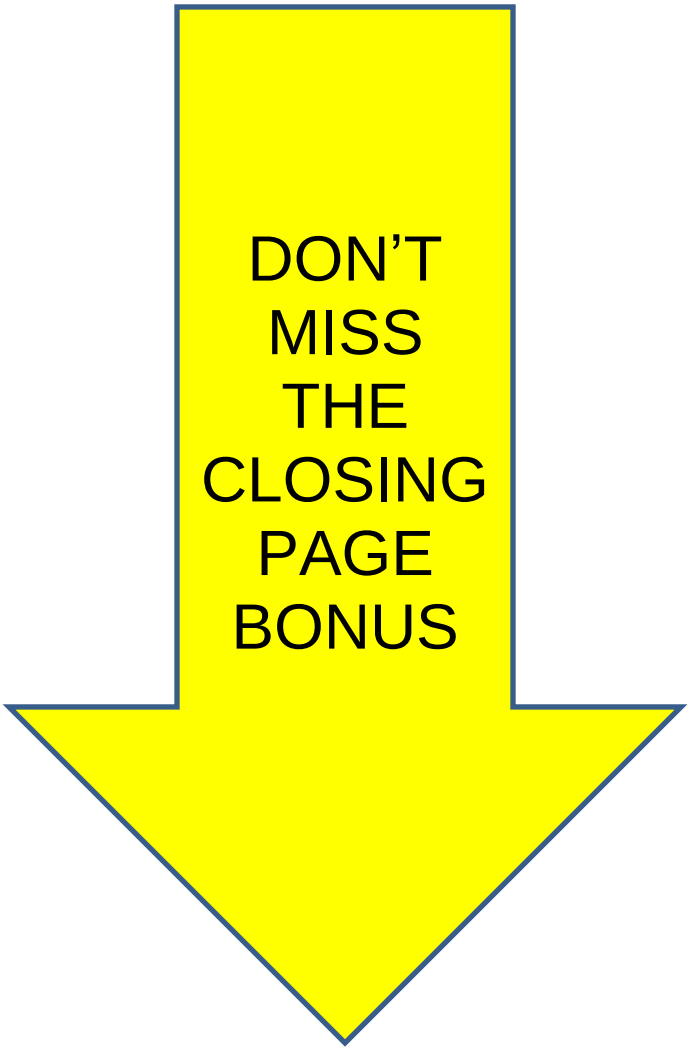

CLOSING PAGE BONUS

Norfolk Southern's Operation Awareness & Response (OAR) program train. OAR was launched in 2015 to cultivate and strengthen relationships with local first responders by providing classroom, we classroom, web-based, and field training on hazardous materials transportation, as well as information about rail operations.

Photo from internet search

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