



A stylized graphic of a model train engine, rendered in grey, with the words "JOURNAL" and "Box" overlaid in a large, bold, yellow font with a black outline. The "JOURNAL" is in all caps and the "Box" is in title case.

*OFFICIAL PUBLICATION OF THE SUNSHINE REGION, NATIONAL MODEL RAILROAD ASSOCIATION
"THE BEST REGION UNDER THE SUN"*



The Journal Box

Volume 81

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Publisher/Editor Mailing Address

please send all submissions and correspondence to:

Robert Leonard
633 NE 9th Ave.
Ft. Lauderdale, FL 33304
954 801 1961
Email: leonardstrait@gmail.com

Sunshine Region Members 472

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Sunshine Region Officials

President – Andy Zimmerman 4523 Bradfordville Rd. Tallahassee, FL 32309 (850) 534 4399 ajzimmerman@comcast.com	Vice Pres. – Mark Lewalski 827 Duval Court Safety Harbor, FL 34695 (727) 542 6731 vwtrainsailor@gmail.com
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Past Pres. – Gene Jameson 2557 Boyd Ave. Melbourne, FL 32935 (321) 432 5483 wejameson2000@yahoo.com	

Front page: Moving flour up the hill, from the Hudson River in Hudson, NY to ADM Milling in Greenport, NY. Short trip, three miles, but a steep grade, 92 tons of tractive effort moving over 650 tons up a 5% plus grade for 1/3 of the trip. Oh, the physics!

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Paul Beckstrom 19615 Weathervane Way Loxahatchee, FL 33470-2151 (916) 346 0026 paulbeckstrom1948@gmail.com	Jim Robertson 1199 North Lombardo Ave. Lecanto, FL 33461 (352) 746 4039 jnr@tampabay.rr.com
Jeff ‘Ski’ Guzowski 4658 N. Candlewood Drive Beverly Hills, FL 34465 (954) 401 0804 jgozowski@bellsouth.net	Ken Hoot 1621 5 th Ave. Jacksonville, FL 32250 904 874 0008 hootk@bellsouth.net

Division Superintendents

Northern - Robert Feuerstein 2616 Stonegate Dr. Tallahassee, FL 32308 (850) 901 5436 photobob321@gmail.com	Eastern – Jim Moore 5840 Red Bug Lake Rd. PMB 270 Winter Springs, FL 32708 (661) 755 8845 jim@moore-associates.net
Southern - Robert Leonard 633 NE 9 th Ave Ft. Lauderdale, FL 33304 (954) 801 1961 leonardstrait@gmail.com	Western - Don Wetmore 13738 Hidden Valley Ct Hudson, FL 32308 (402) 740 9642 stjoeterminal@gmail.com

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From the President's Corner

The President's message for this quarter's Journal Box was lost in its Transatlantic journey across the globe and then it had to cross the Mediterranean as well. It was not really lost, it did arrive, but undecipherable, garbled would be a better descriptive. Damned computer platforms, the Cyrillic alphabet is easier to read!

An unfortunate situation, but one that can be surmounted because I know that Andy has provided a message to the Telegraph Key. Nothing lost in the big picture, his focus remains, his leadership strives for mentorship, fellowship and community, all important facets of our organization. Plus, I would venture that he would re-announce our upcoming convention in October and call for participation and support from the membership. For without participation, the three facets mentioned are lost and we have a stifled organization.

So, by the time the next quarterly of the Journal Box is released, the editor will be back in the Continental United States and communications will be easier. If there are any undecipherable communications, it will be purely due to the editor making a mistake.

Robert Leonard
For:

Andy J. Zimmerman
ATCS AW USN Ret.
SSR President

From the Editor

Into the next quarter for this publication and no stones thrown ... life's good! I suppose last quarter was well received, there has not been much if any feedback other than comments from the north country (division). I suppose I should leave well enough alone!

I do appreciate those who have provided content, without their offerings the Journal Box would be front, back, officer's messages and boilerplate, plus advertisements. But we cannot rely on those who have already provided articles, to remain viable the JB needs input from all of the region's members. As it is, we have contributions from Northern, Eastern and Southern, I know we have some very talented people throughout Western, give me a hand here will you please. In general, if you have a method to apply certain types of adhesives to certain types of material, write it up. If you have a different viewpoint on what has been accepted as normal, explain your outlook, write it up. If you have methods and techniques that you use to improve on the operations of rolling stock, motive power, write it up. If you have visited a layout, a museum, a railroad, describe to the membership your impression of what you saw (hopefully with pictures), write it up. That is the only way we can keep the publication interesting and useful.

One important point to make and a request. For those who provide content, please do not send me an article that has been locked, do not send a PDF file, because I cannot do anything with it. I do not have Adobe and I do not want to buy it, I don't see a need for the region to buy it either, so please send a Word document, it is so much easier.

We have a convention coming up, a different venue, a different format, a change, refreshing in my opinion, one that I would like to see documented by those in attendance. In the past the coverage of our conventions has been sparse due to the amount of space available in 16 pages for publication. That is not the case going forward, digitally the space available is limitless, hopefully coverage can be expanded. Photography of past conventions has been relegated to the contest room and even that was thin, to nonexistent. There have been a few pictures taken of contest judges, officers holding court, glad handing, but not too many pictures have been taken of the participants. Since we have this limitless space, it would be nice to have photos of those who came to educate, be educated, and those who came to socialize with others of like minds.

Something out of the norm, in this quarter I have delved into the past and re-published a series of articles written by Mike Brock for the JB about 20 years ago. Unsurprisingly it deals with "Prototype Modeling", who would have think that? Mike was a prototype person, not a "Rivet Counter", but very devoted to the prototype and he promoted this facet of modeling heavily. Have you been to Cocoa in January? If not, you should! Mike was one of those who fostered the RPM child, I think he also fostered a freight car group online that was fairly populated with messages spanning the gamut of rolling stock.

Anyway, he wrote a four-part article on the thought process he used on conceptualizing and creating a layout based upon a real railroad, or a segment of real and freelanced. Part 1 of that series is printed this quarter. I found it to be a good read, from an eclectic mind, that still has merit today. Mike foresaw the future of model railroading as bright, some equipment that he writes about, that is on the market today, was merely a hope when written.

With our convention coming up, I am in hopes of a large turnout, I would like to see more folks, I would like to meet more. Since the location has changed to a more centralized spot within the region and have the advantage of having everything under one roof, I think it a great opportunity. A great deal of relocating to Ocala has been the efforts of Jeff Guzowski and Glenn Kopriva, they have been the point men for this change. Many

factors drove the point of change and their solution covers the many negatives of maintaining Plant City as the hub. Hopefully it will intrigue those who have been on the other end of a long journey, now the shoe is on the other foot. Although from Tallahassee and Miami not much is changed, but for once a year you can be frivolous.

I know there is a callout for clinicians and hopefully it will be answered, as I have said before, we have many talented people in the region. The convention focus of operations and modules is an interesting draw, I expect many of the folks to get involved just to experience operations. It is a big difference from running in circles around a racetrack. The folks that I am involved with have taken the idea and run with it, there will be a presence from the Southern Div., let's have folks from the other divisions follow suit. I hope to see you at the convention and safe travels to Ocala.

That is it for this quarter, again, let me know what you think.

Robert Leonard



Mason Papers, a scene from the late Dick Elwell's "Hoosac Valley" Railroad

This Quarter's Contributors

Mike Brock - Some are probably looking at this name and saying, "What? Has he risen?" No, Mike remains in memory unfortunately. Your editor thought it interesting to resurface a set of articles Mike wrote on his journey into describing prototype modeling, which he coined as PMing. The four articles of his were originally authored in 2004, this quarter carries Part 1. As most of you know, Mike was one of the initiators of the prototype rail gatherings in Cocoa Beach. His writing is unique, enjoy!

Bill Cialini - Another piece from Bill this month, except it did not come from a swap meet, Bill took on scratchbuilding a piece of rolling stock. Not his first mind you, but an effort worthy of Railroad Model Craftsman wanting to do an article about his build of a MOW gondola with a specific purpose. Once again, his work is showcased on what can be done with some styrene, a knife, adhesive, ingenuity, and talent.

Mike Collins MMR - Last quarter Mike took us back in time with a published article found in the Walthers catalog. This quarters offering is a current article of his, one that Mike had published in Model Railroader this past month, detailing his rendition of rapid transit in the bowels of New York City, a segment of his past layout.

Ed Harris - Ed provides the next segment of the "Adala – Short Line Company" its story and some of its history and his venture into modular railroading with his version of his railroad. *{I have included corrections that Ed provided to counter what I mistakenly printed}*, to bring the reader, up to speed.

Gene Jameson - Gene offered two articles this month that had been previously published in Railroad Model Craftsman magazines, describing a step by step for steel loads. Gene modified the rolling stock to represent a piece that was detailed to better represent the prototype. He also describes how he built and modeled the loads. A couple of thought-provoking articles that may inspire the reader to follow the steps and create one of their own. So, Parts 1a and 1b are a good read.

Chip Pecere - Chip has provided the first in a series, "Building Your Railroad Part 1", a look into his layout construction, his goals, his thought processes as to accomplishing the goals and the outcome. He describes the base construction of his layout, from legs to deck. So, this will be his segmented journey into creating his empire.

Andy Zimmerman - Our president provides a piece on the mysteries of (Magic Smoke) with "Modular DCC Programmable Circuit Breakers: It's all about protecting your investment". *{I think it is a must read considering the emphasis on the upcoming convention.}*

Also, Andy wrote a piece in the past that provides a synopsis on the origins of T Trak with "What Does the "T" in T TRAK Stand For?"

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E.C.H.O.E.S is a modular model railroad club located in Miami-Dade, Florida, dedicated to building and displaying our HO scale model railroad layout. Our purpose is to enjoy and promote the hobby of model railroading and preserve the history of railroading in South Florida. The club was started in the summer of 1985, with the goal of presenting a HO scale modular model railroad layout for display at "The Harvest Festival". Throughout the years, the layout has been displayed at regional conventions, four NMRA National Train Shows (Atlanta twice, Ft. Lauderdale, FL and Orlando), and other events in Miami Dade and Broward counties. We do running/operating sessions several times a year and welcome guests to join us. Membership is open and we welcome anyone who shares an interest and passion for Model railroading.

For more information, please contact:

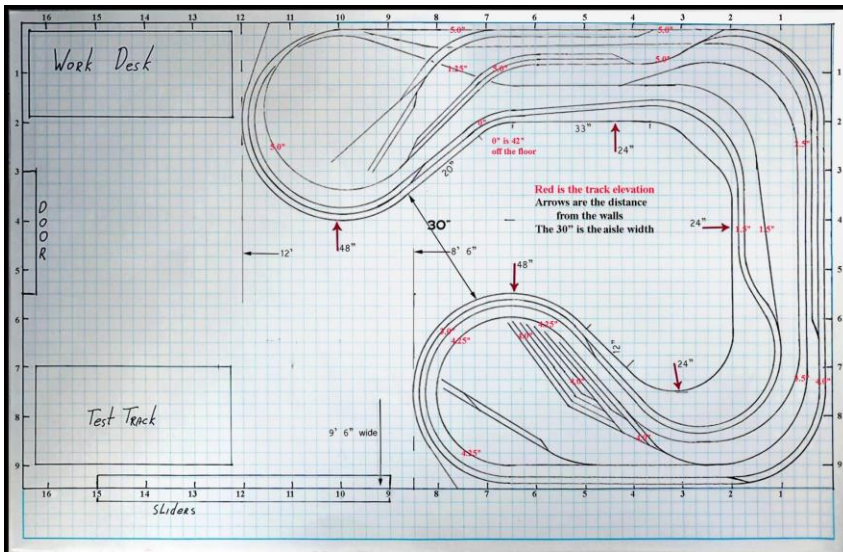
Rick Diaz	rickdiaz@att.net	305 496 9266
Tracey Sanders	tassailor@mac.com	786 514 5667
Herb Ford	ehf640@gmail.com	786 375 1424





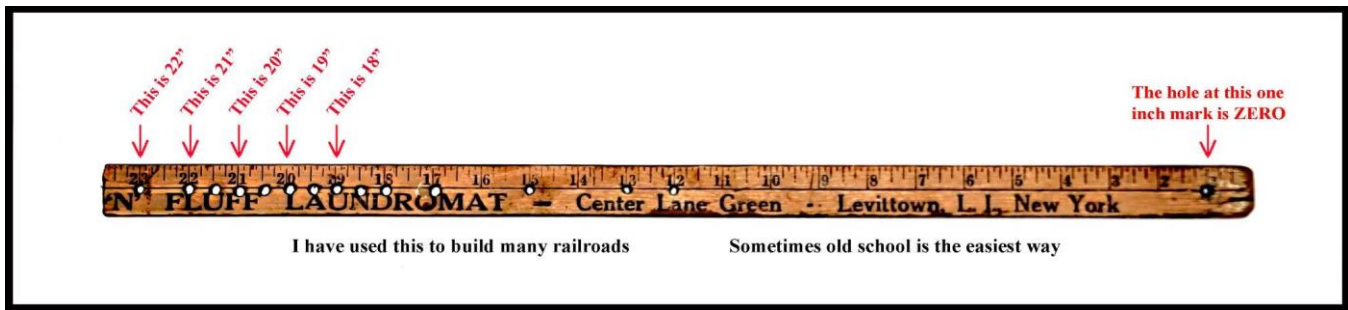
Construction begins, Let's build a Railroad...

When I designed this railroad some years earlier, I felt that I had already made all the major mistakes on my previous builds to finally get this one right. Well, that's what I've been hoping for. We've all built layouts before, but I told myself that this was going to be my last and final railroad. This time I wanted my layout completely contoured, all concave and convex fascia and background. I wanted a complete flow throughout the room. My last article explained how I designed my railroad. I chose the location that I wanted to model (the northeast region) and tried to give it purpose. Here's what I created on paper. Now I have a scaled track plan and wanted to get some trains running.



Once again, I needed the fascia to be strong. We have 8 grandkids and I want them all to take an interest in model railroading. I wanted going into the train room to be fun. We all know that kids lean and reach up. This had to be bullet proof, or as close as can be. I can also lock out the buttons for the turnouts. When they're here, I can give them a train to run and let them have fun.

So, here's the way I constructed my railroad. My layout is almost identical to my track plan. I might have a little more flow on the layout than the track plan. I knew that I wanted my lowest tracks 42" from the floor. I decided on a cookie transition. I used 4' by 8', 1/4" plywood for the sub roadbed and then sandwiched a 3/4" piece of particle board beneath it.



To sweep the radii, get a 36" wooden yardstick. Drill a hole on the 1" mark, just large enough for about a 1.5" drywall screw to fit through. Next drill a number of holes in the yardstick, starting at the minimum radius, adding the 1" because the hole for the drywall screw is on the 1" mark. I have owned the same yardstick for at least 30 years. After I swept the largest radii, the 24" curves, I shortened the yardstick because the extra length was not necessary and was also in the way. I followed my track plan and drew out as much as I could before cutting the plywood.



After the initial contour was cut, it was time to build my frame. In the past I would have built the framework first. In this case I was working in reverse. Knowing that I wanted at least 6" between the bottom particle board and the top plywood I used 1x4 and 1x3 and built an open grid frame. I spaced the 1x4's 20" apart and the 1x3's on top of them also at 20" spacing; in the tightest area there is 6" between both sheets of ply. (See the illustrated red arrows.) Knowing that there's a lot of electrical work to happen below, I cut the center out of the particle



board. So, 42" off the floor minus the 7" to the bottom of the particle board, I screwed a 1x3 to the wall around the perimeter of the railroad. This was to support the particle board. I used a 4-foot level and double checked my work constantly. The top plywood is just held in loosely. I had a friend help me support the sections towards the center

of the room while I anchored it to the 2x4's used to support the inside area. Do not place the downward supports to the floor too close to the inside area where you'll be standing. You don't want yourself and others kicking the legs.

Now that the particle board was permanently in place, I went around the layout with a 2-foot level and made



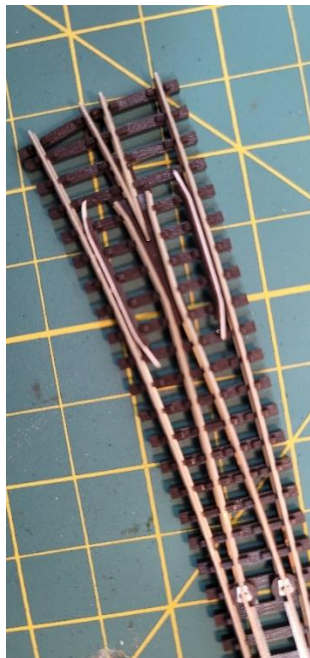
sure the top plywood (sub roadbed) was parallel to the bottom. I also followed the track plan and added the risers as I went around the room, screwing the plywood in place.

Next was to think about the background. I mounted 1x3's on the flat all around the room, then added braces at a 45-degree angle in both of the corners. The one corner visible in the photo (the 1x3's) actually has a flat surface in that 45 degree, the other one is about a 15" radius. Taking 4'x8' sheets of Masonite 1/8" thick, I stripped them down to 2'x8' sheets. I started at one end and as you can see, worked my way around the room. I kept the background about 1" to 2" above the layout.



Whenever you need to bend the Masonite, just wet the back of it with a hose. I have an area where I needed to bend it to a 12" radius. It definitely would have cracked if I did not wet it.

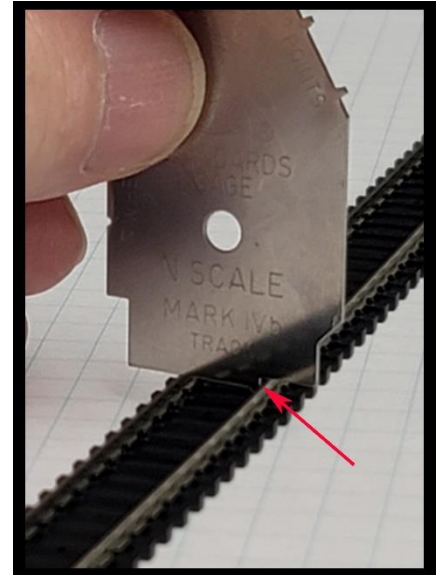
Wetting the Masonite worked well. It dried to shape with no stress. I spackled over the screws and painted it blue. After the background was in place I went to work (or play) on trackwork.



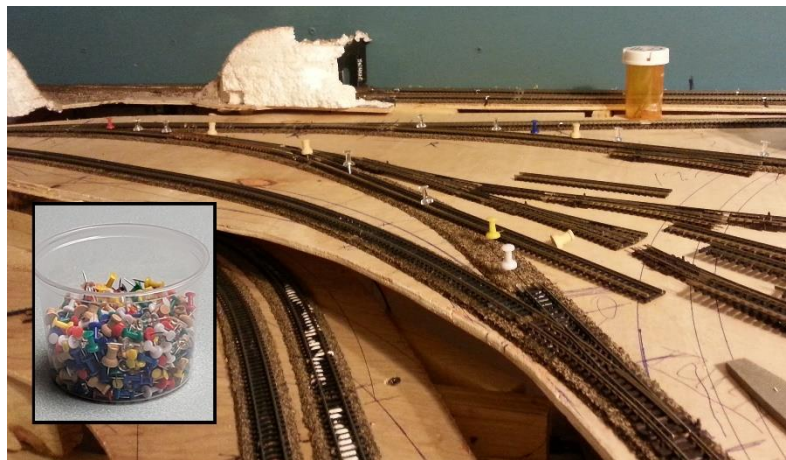
All of my track is Atlas Code 80 flex track and all Peco Electrofrog turnouts. Electrofrog, because no matter how short the wheelsets are on your powered units they will always have electrical contact passing through the turnout. Because I have a nice collection of older steam with deep flanges, I felt that the code 80 turnouts would be better for the older flanges. From past experience I found that some wheel sets would jump the points and derail. Here's a quick and easy way to ensure little to no derailments due to track work.

Before I laid down any track, I took all of my turnouts and added a .010 x .040 piece of shim stock against the guards. Starting at one end and using a toothpick with a small amount of CA, I'd

press the shim against the guard glueing it as I go. After glueing from the top, I'd flip over the turnout and add a few drops from the bottom to ensure a long hold. When all is dry take a small file and just skim the top of the track so that the styrene is flush with the rails. Doing this will ensure that the wheel sets cannot pick the frogs even if they are gauged on the wide side of the NMRA standard. When I do the scenery, the white styrene will be painted. Next was to check every piece of flex track with the NMRA gauge both straight and curved. I prefer to have the flex a bit on the narrower side (set tight) on all of the curves. Most of the time this meant that the fixed side was on the inside and the movable rail to the outside. I did have a number of pieces that were a bit too loose (too wide) for me so I would put them on the straights and add a drop of CA to bring them into a better gauge after being installed.

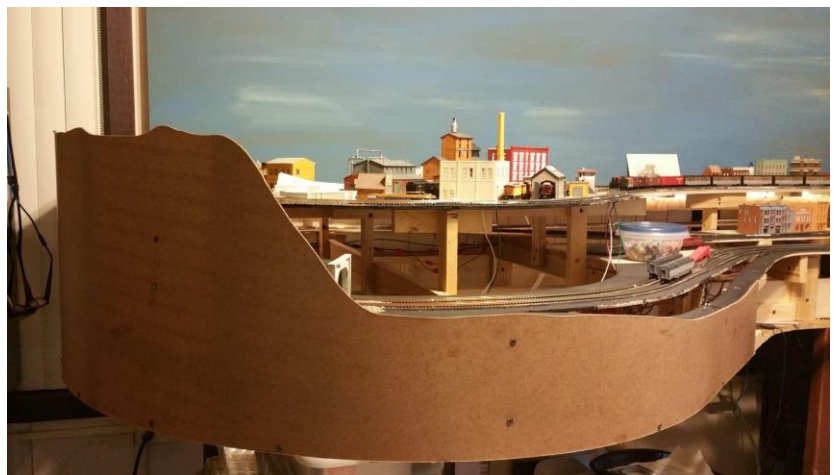


Always get your trackwork down where all the hidden runs are. Use jumpers and keep running a train back and forth as you go. I followed the schematic that was made and kept the elevations as per the track plan. The cork was glued down with Elmers glue. You can buy it by the gallon. Following the centerlines, I spread the glue with a small spatula and rubbed the cork back and forth in the glue to help the hold. I used pushpins to keep the cork in place. It dries in 24 hours. Be patient and let it dry. Before completely laying all track, I placed all the turnouts where they go and marked for the switch motors. I drilled and used a Dremel to route side to side for the throwbar. All the track was glued with DAP All Purpose Acrylic Latex Caulk Plus



Silicone. It's one of the cheapest at Home Depot and has a 40-year life. I'm 67 so I think it'll last. I did the same as with the cork, spreading it out with a spatula, rubbing the track into the glue and using push pins to hold it in place. I **SOLDERED EVERY JOINT TOGETHER...** including all my turnouts. When soldering your rail, always use Rosin core solder and a non-acid flux. Wipe the finished soldered joint with a Q-tip and alcohol. Keep it clean so that it's easy to paint later. I prefer not to use insulated rail joiner only because I don't like the appearance.

Once again keep running trains and test everything. If you do use Electrofrog turnouts, you may get a short as you install your trackwork. This meant cutting gaps for isolation. When comfortable with the track, I went back and used my Dremel with a .030" cutoff wheel to put in expansion gaps. I prefer the Harbor Freight diamond grit cutoff wheels which are thinner and stronger than the Dremel cutoff disc. I never cut the rails on a curve (at this point), only on the straights, and staggered the cuts. When I cut my rails, I took a needle nose plier and opened it slightly, then put downward pressure on the rail and cut between the jaws. I remember



years ago I didn't know this trick and a rail popped and bent. I was able to replace the piece of bent rail with a track gauge and some CA adhesive, but it's always better to learn from someone else's mistakes. While laying the track, I kept checking for shorts. It's easy to do this as you install the track. Get yourself a cheap DC power pack and a DC loco that runs well. You don't want to install 10 turnouts and not be able to find the short circuit. Please do not use a DCC system yet. If you have any reversing sections, always try to make the isolated section as long as the longest train that will be in it. Use jumper wires to travel into and out of the reversing area.

As I laid the track towards the front edge I wanted to wrap the fascia around the layout. I used the same as the backdrop, 4'x8' x 1/8" thick. I stripped them down to 16", 3 pieces from each 4'x8' board. I use a lot of clamps when working. I clamped 1'x3' to the particle board. Then as I rested the Masonite on the 1'x3"s, I used another clamp and some scraps to hold the fascia in place. I placed a few screws in place and drew the pattern to be cut out on the track side of the fascia. I'd cut the Masonite, refit it and test it again before screwing it down tight. I worked it from both ends to a center area, then I carefully trimmed the Masonite for a tight fit.

After everything was installed, I painted it refrigerator white. I came across black rubber trim in the Grainger catalog. It has double back tape but it fell off by the next morning. I then took a cork gun and added some strong adhesive to the back of the trim. Most railroads I've seen painted the fascia a flat hunter green or black. I want the room to be an extension of my home, so I went with high key. When operating the railroad, the room lights are dimmed and the layout lighting is highlighted. No scenery went in place until all the track was running flawlessly. If I can be of any assistance, please feel free to email me at chippecere@gmail.com. My next article will be on how I wired the layout for DCC.

I have to say... I was introduced to OP sessions about a year and a half ago at Al Sohl's Western Bay RR. I was hooked right away. Now I want to do OP's. In the last 2 months I did add a staging area and now working on adding a siding and possibly moving some structures. When done I will be able to have 3 operators and a dispatcher at the other end of the house using JMRI. **Chip Pecere**





The Western Bay Railroad is a 950 square ft On30 layout in Port St Lucie. We meet almost every Tuesday evening. We are looking for new members to join our group. There are OP sessions & scenery that we are still working on. If you're a

modeler and serious about learning, give us a try! Go to our website or contact Al Sohl MMR als0622@yahoo.com

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{Editor's note: In the last quarter I published some errors associated with Ed Harris's Adala Short Line story, the following are corrections to the story. Ed was very considerate in regard to my mistakes and provided the written as well as photographic corrections. There was a communication impasse, but Ed did say that he was not a computer person and that he prefers spending money on trains rather than electronic equipment, a mindset I thoroughly agree with.}

Model Railroading Is Fun

By Ed Harris

ADALA SHORT LINE COMPANY BARBEQUE



In the last article this module was without scenery. It was to have a caption saying that I did not know if I should get the animation items operating first before I added scenery. So, I added scenery. There is still much detail, such as people to be added. The animation that I would like to add is a kite flying, someone swinging on the swing, flag waving, children sliding down the hill and of course sounds. If I am lucky, I will be able to make the barbecue pit smell like it is cooking.

This picture was identified as a maintenance of way car.

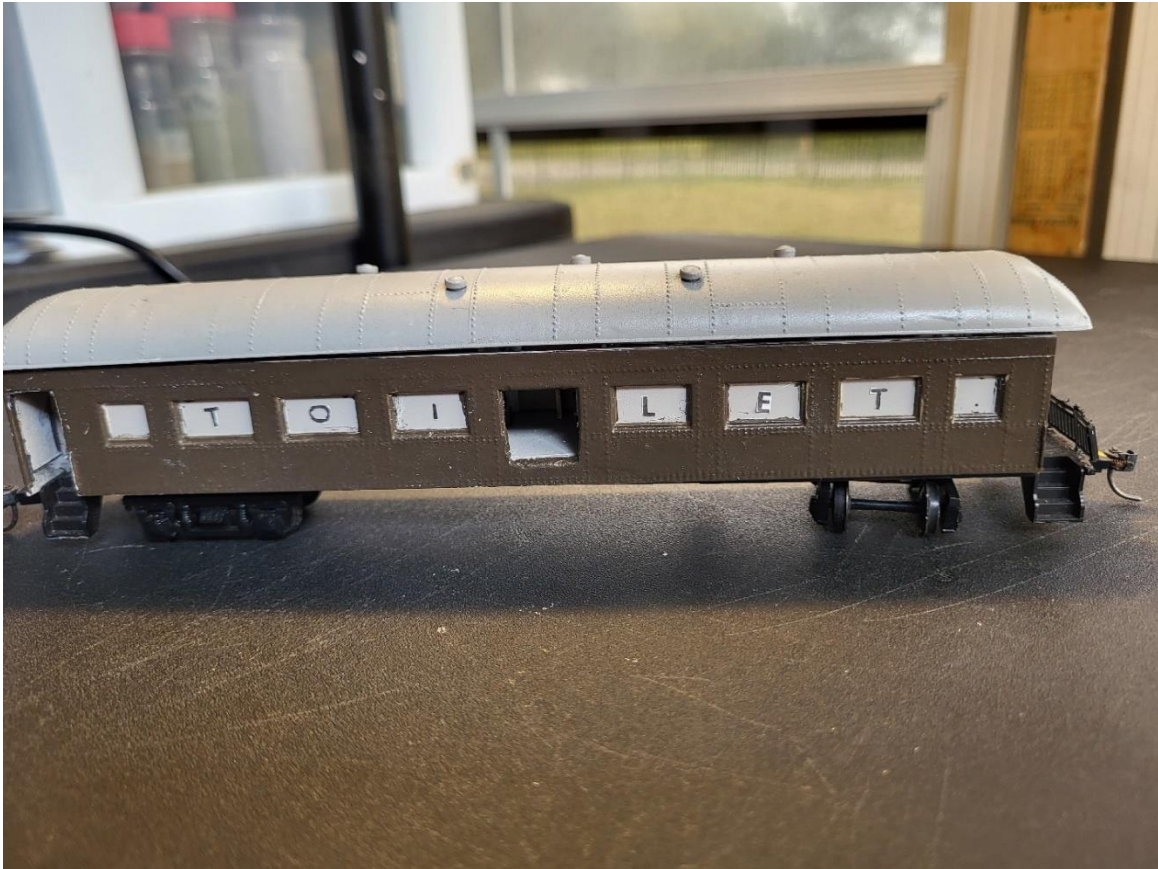


It is the kitchen car.



The boxes on the left are refrigerators and freezers. In the middle, a prep table, to the right a griddle with an over sized burner for big pots.

This is the toilet car; it was identified as being built for the railroad museum. It was built for the barbeque.



The opening in the center of the car is the handicap restroom. It would be great if I could animate a lift there.



Toilet, toilet paper, sink, mirror, paper towel dispenser, and trash can in each restroom.

It was fun building the cars and outdoor dining rooms. I cannot wait to add the rest of the details to make the module come alive. More life with the animation ideas. I reckon that should be the next step in building this module. I have been reading how to books, including an Arduino book.

There is a lot to learn, motor sizes, servos, programing and such, I ask that anybody who wishes to share knowledge or learn along with me to please contact me at: Edharris34470@gmail.com I live in Ocala. If anyone wants to stop by and help with my projects you are more than welcome. Lunch will be on me.



That is a Busch manufactured fire pit behind the flagpole, it will be animated to look like it is burning.

{So, those are the corrections and what follows is the next part of the Adala story.}

MODEL RAILROADING IS FUN

by Ed Harris

The second module of the Adala Short Line is called, View Top Mesa.



Figure 1

The story behind View Top Mesa.

After a tedious day at work, Fred arrived home to his apartment. After hanging his coat in the entry closet Fred went to greet his wife. He found his wife, Ethel, in the kitchen sitting at the table just staring at oblivion. When Fred greeted her, he startled her from her thoughts. Ethel proceeded to complain about the cramped apartment and the fact that there was nothing to look at when looking out the kitchen window. Which Ethel pointed out was the only window.

Two months later, Fred surprised Ethel with their new vacation home. Fred had found a spot, on top of View Top Mesa. He also found an old unused caboose that he had moved to the top of the mesa.

When Ethel saw the caboose, she thought that it was no bigger than the apartment. Fred took her in, and she saw that the interior was gutted. Ethel looked at Fred with a bewildered look. Fred smiled and said, "It isn't cramped." Then he said to her that she was going to be able to design the interior to her liking. Which put a smile on her face.

Fred took Ethel out the other end of the caboose onto to the deck that he had built. He told Ethel that they could relax and enjoy the view while having a cookout. Ethel wandered around the deck staring out into the distance. Finally, she turned to Fred and said, "This is not the view I had in mind. Oh, but what a view!"

While Ethel was looking at the interior of the caboose, Fred went and unloaded the camping gear that he had brought. After setting things up, Fred started cooking on the grill, out on the deck. When he was finished cooking, he got Ethel and brought her out to the table, and they sat and chatted while eating. Then Ethel got another view she did not expect. A sunset! She reached for Fred's hand, and they sat and watched the sun set.

Then Ethel got another fantastic view, a pitch black night, so full of stars. Living in the big city, Ethel had never seen such a sight. When a star shot across the sky, Ethel gasped in such amazement. When she heard a wolf howl, Ethel scooted closer to Fred and whispered, "A different kind of music."

They sat in such silence; Ethel could not believe there was that kind of peaceful noise. Ethel let out another strong gasp as she saw the moon start to rise. Ethel got closer to Fred, put her head on his shoulder, and they sat that way watching the moon enter the sky.



Figure 2

That opening in the rock face is a cave entrance where I wish to have a hiker going in and out.

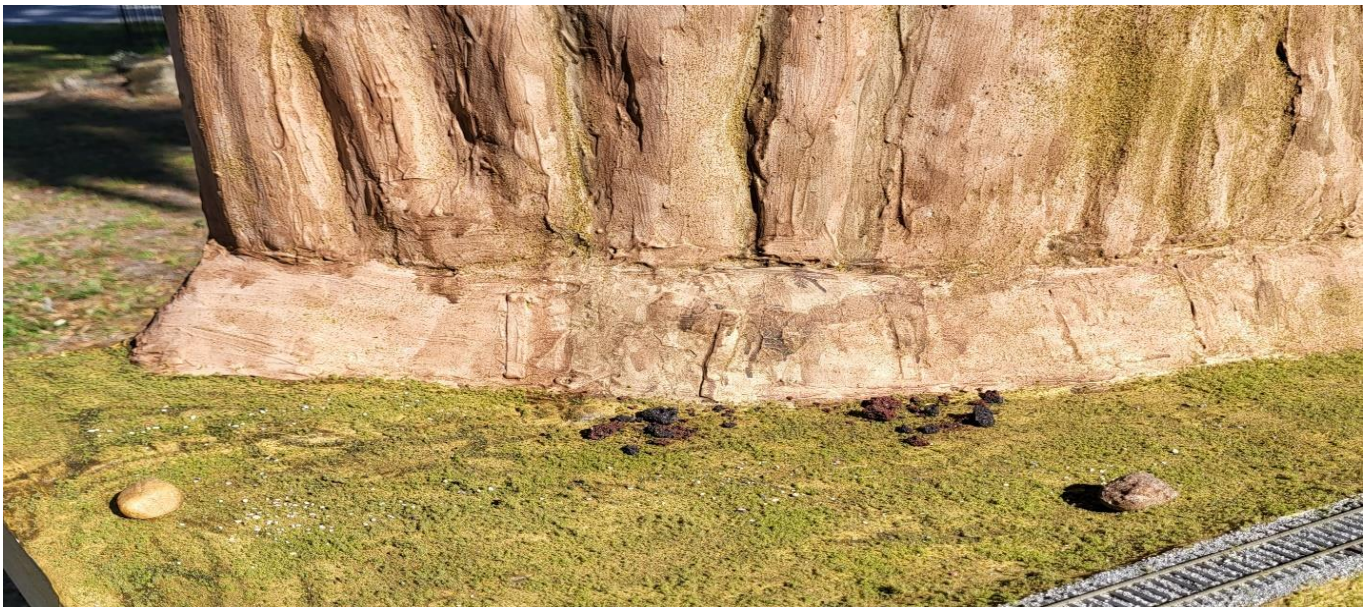


Figure 3

In between the two rocks I would like to have a roadrunner going back and forth.

Push a button, you hear Beep, Beep, and the roadrunner goes from one rock to the other. There the roadrunner waits for someone to push a button so he can do a return trip.

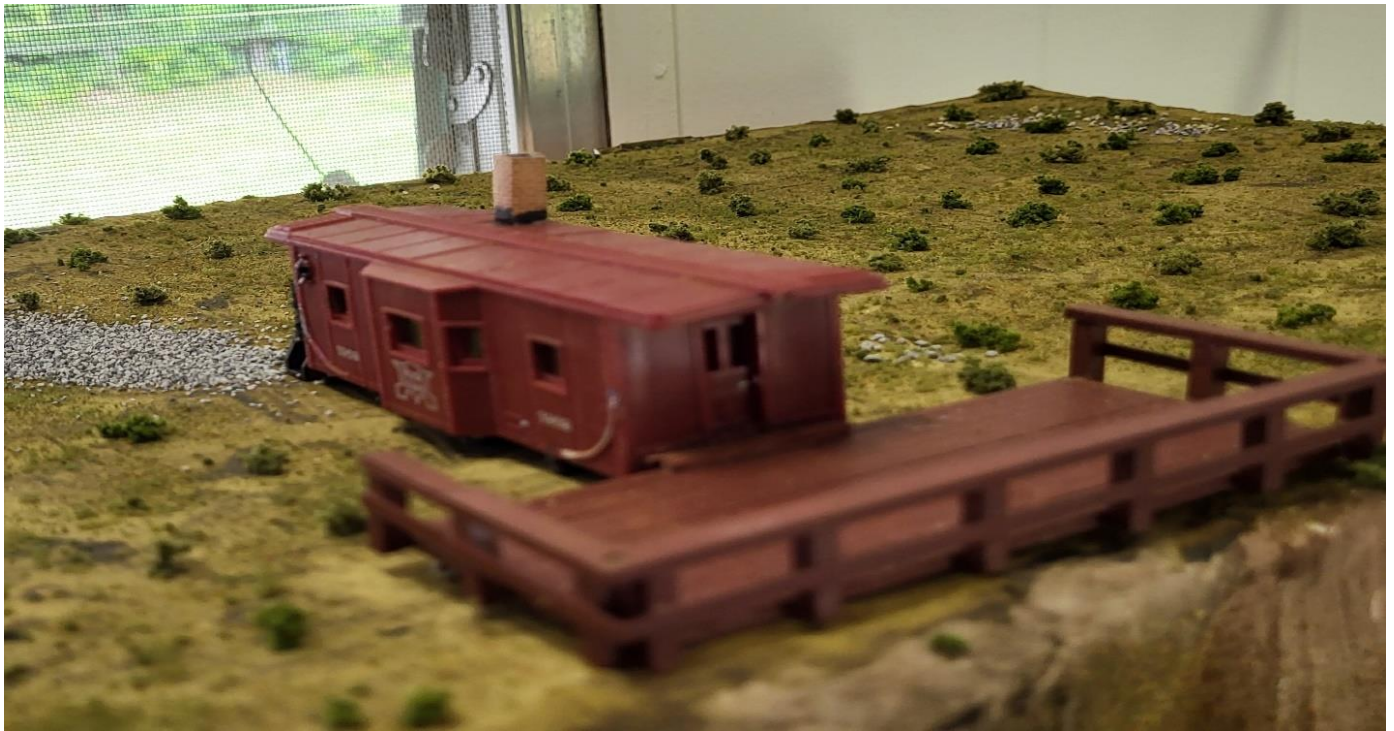


Figure 4

The chimney will smoke. I am thinking about getting a snake to slither and a rabbit to go from bush to bush. It has gotten harder to do the things I wish to do because of cancer medicine. So, I am going to invite anybody that wants to share knowledge or wants to learn model railroad knowledge. Animation ideas and thoughts will be talked about as well as the 2'x 12' switching layout that I am getting ready to start. Every first and third Saturday for the months of July, August, and September I invite any that wishes to visit to do some hands-on clinic stuff from 9 am – 3 pm. Snacks and lunch is on me. Edharris34470@gmail.com. I live in Ocala. If you are at a distance and cannot get here and have helpful ideas about animation, please get in touch.

Showcase

D&N 92440 Tie Gondola

Bill Cialini built this from scratch, shy the wheels, trucks and couplers, actually he built two of these and they will be the subject of a future RMC article. Again, some styrene panels, some deformation, and weathering techniques make for a good looking model. Another one of his patched out pieces of equipment on the Defiance & Northern.



A little bit of paint, a little bit of rust and you have a beauty



A bunch of styrene shapes and sheet stock



A work specific model



The tie load of "Northeastern Scale Lumber", the load is a model onto itself.

Step by Step

Modular DCC Programmable Circuit Breakers: It's all about protecting your investment.

If you attend and participate in enough Train shows, eventually, you will run into someone who managed to let the magic smoke out of one or more of his trains. Once the smoke is out, we can't put it back in. Whether you are running DC (analog) or DCC (digital), you must protect your investment. This applies not only to your engine but also to your Command Station. All things considered, we have hundreds to several thousand dollars in investment tied up in our model railroads, and the difference between a "Whew that was close" and an "Aww D@%%!# I lost an engine" is what is at the heart of your circuit protection. We all need protection in our lives. Whether it is our home, our car, or our layouts, proper protection is paramount for protecting our investments.



Do I need Circuit Protection?

As a T-TRAK Modeler, I am into modular model railroading, much like my NTRAK and Free-moN



counterparts, I bring modules to shows and insert them in larger layouts without much thought about what is protecting my hard work or my engines or rollingstock. We tend to trust that someone thought of it and has it set up...*but then again, maybe not.* You think you are safe until the unthinkable happens. Your engine picks a switch or runs into a metal wheelset that came loose from some rolling stock (that *really* happened), and suddenly everything goes haywire. If we or our hosts are well prepared, the track shuts down until we isolate the short and correct the situation. Someone will inevitably lose an asset if they, or the host, are not forward-thinking or underprepared. Been there, done that, got the T-Shirt. Circuit protection is paramount whether it is the DCC controller, an engine, or the DCC command station itself!

Doesn't the Command Station provide circuit protection?

Nearly all DCC systems and boosters are equipped with some form of over-current protection (protection against excessive currents or currents beyond the acceptable current rating of equipment). The overcurrent protection within my NCE PH-PRO system attempts to reset every half second (500ms) automatically and will continue until it fails or is damaged. They do not have manual breakers that will trip or fuses that will blow. Thus the need for circuit protection. The

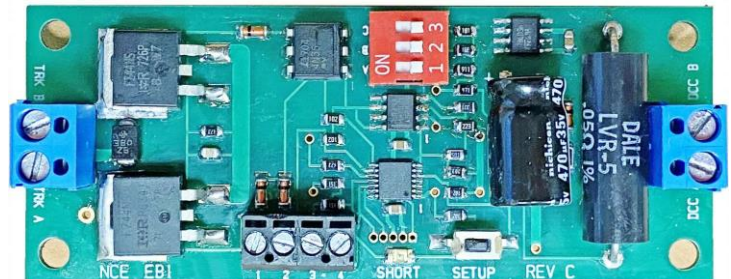


default trip rating of an EB1 circuit breaker is 16ms. That is an impressive 30 times faster (approximately) than the standard booster overload trip time.

In order to create a DCC AIO (All In One) Command Station with built-in circuit protection, I used the Digitrax PM42 Circuit Breaker. NMRA Magazine published a detailed article on that Command Station in its May 2022 issue. Having used that system at several shows since then, I have discovered the need for additional circuit protection not only where long runs are involved or where the need for boosters was required but primarily where the host has not provided any circuit protection other than what is provided by the command station itself. Once again, I found that necessity was the mother of invention. While the PM42, *when set correctly*, does a great job, we have still experienced a couple of losses due to some odd circumstances where we were not the host club. We found ourselves faced with a tough decision if the layout was not protected. Do we run trains and take a chance or not? That said, I needed circuit protection that would react quickly and could be reset manually or remotely.

Enter the NCE EB1

When using multiple engines with DCC, lights, and sound, I wanted adjustable current settings to alleviate the problems caused by in-rush currents.



What is “in-rush,” and how does it affect my system?

An electronic circuit breaker uses “current level” and “time duration” to differentiate between an actual short circuit (caused by a derailment) and a momentary high current demand (normal operation).

Typically, sound decoders contain large capacitors (although some do not), which store power to keep the sound uninterrupted while the engine rolls. Some modelers install after-market energy storage capacitors or ESCs for the same purpose. That said, the inconsistent nature of electrical power pickup during regular operation can cause more significant issues with the constant charging and discharging during operations. These capacitors must be charged up *before* the sound system will work properly. When the capacitors are first charged up, they look like a short to a booster. The short circuit current level fades quickly with time because it is momentary. When the cap has been fully charged, the current drops to zero.

In most cases, everything works as expected as long as the capacitor current fades below the short circuit trip level before the circuit breaker switches off the power. If the trip current level is lowered or reduced on the EB1 or other breaker, then the exact same capacitor current will not fade fast enough to clear, and the circuit breaker will trip.

The addition of more sound-equipped locomotives is equivalent to the addition of more capacitors in parallel. Depending on your electronic circuit breaker’s setting and your booster’s peak current capacity, your results will vary.

Several locomotives starting up simultaneously and all their capacitors charging up may well appear as a short to



your breakers or your booster, if the “in-rush” exceeds the trip current or the booster over-protection, the system will attempt to shut down or shut down. The EB1 and most boosters will auto restart after a short period and look for another short, causing continuous short-circuit current spikes unless you have programmed it to shut down and wait for a manual/remote restart. Okay, now that we understand “in-rush” let’s get back to the Modular Circuit breaker build.

Why are short circuit response time, power-up response time, and adjustable trip current desirable features?

A circuit breaker's short circuit response time can mean the difference between a close call and a show stopper. When traveling to shows or meets you don't want to lose your Command station/power booster and have to call it a day. The faster the circuit breaker responds, the better. *Adjustable power-up response times* are designed to accommodate sound decoder-equipped locomotives. You can adjust the time delay between the occurrence of a short circuit and the time the track power, or at least the power in that block, gets shut down. This will aid in preventing shutdowns due to in-rush from multiple sound decoder-equipped locomotives starting up at once. I deliberately saved *adjustable trip current* for last. Adjustable trip current allows you to fine-tune the operating parameters to match your DCC system and layout closely. Trip currents will be different for different scales and volume (numbers) of locomotives. For example, in N-Scale, you may want to use the lowest setting, 1.5 amps, where your HO might be 2.2 or 3.3 amps. As you progress up the Scales, power requirements and current loads will vary. Always start low and work your way up. Keep in mind if the trip current was set for 1.5 amps and attached to a G scale layout with multiple engines starting up, then it would likely shut down before you even got started.

To ensure optimum performance from your Command station and your circuit protection, such as the EB1, longer bus lines should be properly wired with a 12 gauge or 14 gauge bus wire to maximize efficiency and minimize voltage drop and current loss. Without this, a breaker might fail to trip, or a command station might not shut down, resulting in the loss of an engine or a command station despite the existence of circuit protection.

Why the EB1?

It was essential that I create a circuit that was both consistent and reliable, as well as compact enough to fit into a compact case that I could travel with and place anywhere along the line in the modular setup. The ideal candidate for me was the NCE EB1.1 (PT# 5240225). Circuit Breaker. Its compact size, specifications, and programmability made it an easy choice.

Features of the EB1:

- Provides short circuit protection for one power district
- Trip current adjustable for 1.5 to 8 Amps
- Easy hookup using screw terminals, no soldering
- Status indication LED
- Additional output for remote LED
- Optional manual reset
- Adjustable short circuit response time
- Adjustable power-up response time to accommodate startup of sound decoder-equipped locomotives.
- Controlled current recovery to address high in-rush current loads



DCC circuit breakers protect the booster by isolating shorts locally within the circuit breaker's power district, allowing the booster to stay powered up to power other parts of the layout. You add protection because you don't want the entire railroad to shut down if you have a short. The key is to break it up into smaller pieces or power districts. I use these EB1s to divide the modular

layout into blocks or power districts and protect the trains! Nothing worse than seeing the "magic smoke" leave the engine in the middle of a train show because the system didn't trip fast enough.

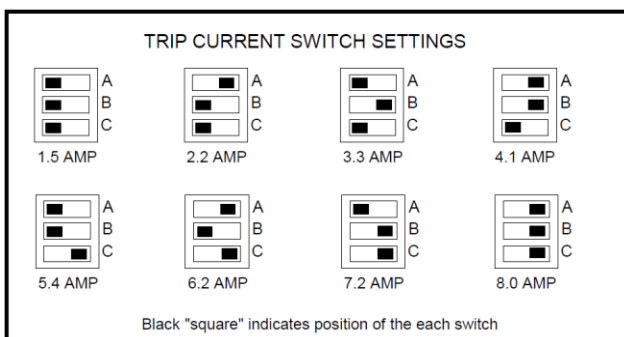
The EB1's physical size lent itself easily to creating circuit breaker modules. Each module contains two EB1s as they are used with T-TRAK modular systems and would protect each block's red line (outside line) and the yellow line (inside line).

Setting up the EB1

The EB1, once assembled in the case, was ready to program. While the EB1 can be used straight out of the box with the factory settings, you have to program it (set CVs or dip switches) in order to set it to use higher trip current settings, the manual reset function, or turn on the in-rush settings.



The EB1, right out of the box, has the sound decoder in-rush current option turned OFF CV135 Default value = 0 which turns it off. If you program the EB1's CV135 = 4, the function will be turned on.



The EB1 comes from the factory with the trip current set to 1.5 Amps. You can set the trip current for each district higher by changing the dip switch positions. If all switches are "off" (open) the trip current is 1.5 Amps. The diagram below illustrates the switch positions to set the trip current in 8 increments from 1.5 to 8 Amps.

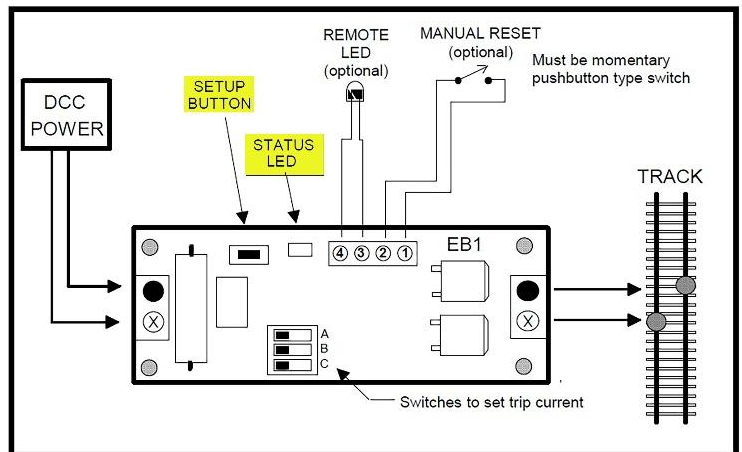
The position of a switch can be changed by sliding it with your finger or a small screwdriver. The Trip Current diagram shows the settings. **NOTE:** the A, B, and C are printed on the circuit board and not to be confused with the 1,2,3 printed on the switch.

After setting the trip current NCE recommends testing your wiring. The "quarter test" is the fastest way to test your wiring. Use a coin or other piece of metal to short across the rails at various places in a power district. The EB1 should trip and shut down the power district at every place you short out the track. Once shut down, the EB1 will try to restore power about once every 2 seconds unless you have it set for manual reset. If there is still a short, the EB1 will kill the power again until the short is removed. Personally, I set mine up for manual reset (with the buttons) and remote DCC accessory reset.

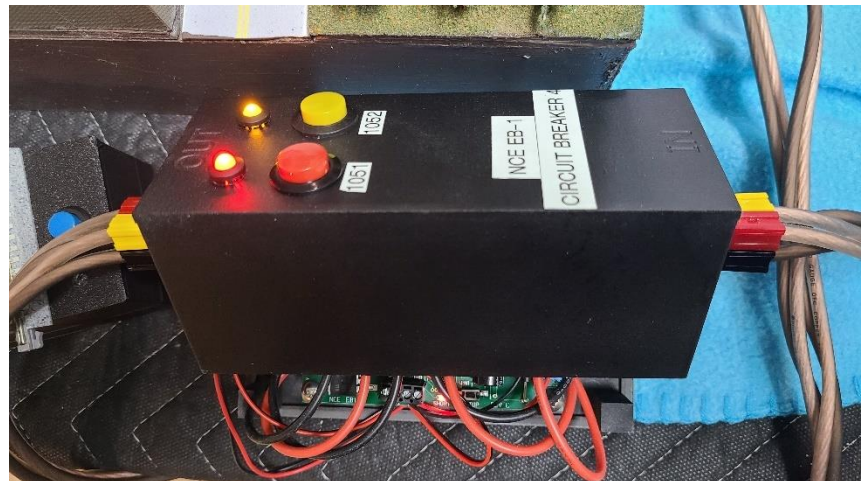
If manual reset is enabled, track power through the EB1 can be turned on/off (or turned back on after a short circuit shutdown) by controlling the EB1 as an accessory (turnout). ON/Normal turn track power on and OFF/reverse turns it off/.

Status Indicator:

There is a status indicator LED near the “SETUP” connector. The LED will light steadily if everything is OK. A flashing LED indicates the circuit breaker for the power district has tripped. LED off usually indicates the DCC power booster is turned off.



An important note is that some people tend to be confused by the LED indications when using the EB1s for the first time. I connected the optional LEDs for use as a remote status indicator to terminals 3 and 4 of the EB1. This LED duplicates the actions of the small status LED mounted on the EB1. Current limiting resistors are already mounted on the EB1, so you only need an LED. The LED will light steadily if everything is OK. A flashing LED indicates the circuit breaker for the power district has tripped. LED off usually indicates the DCC power booster is turned off.

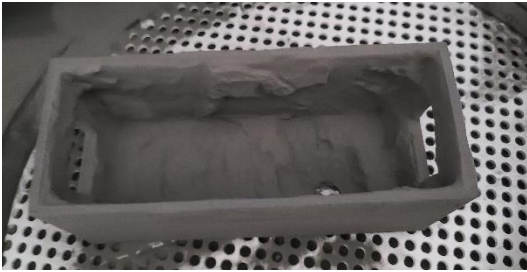


The Design Process

Each module needed an opening on either end for the Anderson PowerPole connectors for power. Each module also needed openings for the manual reset switches and the LED indicators. These cases must be robust and durable since they will be used whenever they travel to shows. The 3D-printed housings were created in an SLS Laser-sintered printer and are as sturdy as an injection-molded product. This is not your standard filament printer (FDM). Selective laser sintering (SLS) is a 3d printing process that uses high-powered lasers to sinter or bind, finely powdered material together into a solid structure. I digress...



The unit measures 5 3/4" x 2 1/4" x 2 5/8" deep and house 2 EB1s. This leaves plenty of room for wiring, switches, LED clearance from top to bottom, and the Anderson powerpole housings and connectors on either end. These housings could be manufactured on a standard 3D filament (FDM) printer, but I had an annoying issue with bowing and shifting. Since I had access to the Laser sintered printer, I decided to give that a try and see if I had better results. I absolutely did! The downside is that there is a lot of post-production cleanup (emphasis on a lot). The benefit of 3D printing is that any adjustments or additions can be made in-house and printed or re-printed accordingly, and with this method, I don't have to worry about supports that need to be removed or cleaned up. The nylon powder supports the work throughout the process. I created four of these modules to cover four separate blocks.



The beauty of these modules is I can drop them in after a booster or into a long electrical bus run closer to the actual block or set of modules it is protecting and not worry about the distance back to the main breakers in the command station whose circuit protection capabilities may be diminished due to long bus lines, smaller gage wire or both. Looking back at the comparisons between FDM and the Laser sintered prints, if you look at the picture with the four 3D printed cases, one of

them is not like the others. That one (the finished one in the middle) was printed on a standard FDM printer, while the other 3 are Laser sintered prints. Even though there is some additional post-processing, I think the additional effort is worth the final result.

You can be confident that your layout is protected with these portable circuit breakers. These lend themselves well to modular model railroading like T-TRAK or NTRAK, or Free-moN, as they can be placed anywhere in the circuit with little effort. Truthfully, they can be used in any DCC layout, but this is especially true with traveling layouts. They can be manually reset or reset off of your DCC controller. If set up correctly, they will even appear on your JMRI list in WiThrottle and Engine driver. Time and effort are well worth it when you consider the investment at risk. Now relax and run some trains with confidence!



Andy J. Zimmerman
ATCS AW USN Ret
SSR President
NMRA Standards and Conformance Manager



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{Gene Jameson has a way with loads, this quarter he provides two articles focused on Steel shipments}.

Steel Loads – Part 1A – Plate Steel

By Gene and Benita Jameson



A Little History about this Project:

Steel loads are some of the most interesting loads that you will see on the railroad. Just about any open car can be used to carry a steel load. Regular flat cars, bulkhead flat cars, 89-foot flat cars, and gondolas all can carry steel loads. After starting the large I beam that will be covered in Part 2 of Steel Loads, I decided to do three different steel loads. These are a plate steel load, a normal size I beam load, and the very large I beam load.

In this part, Part 1A, we will build a 60-foot flat car with a plate steel load. This is a very straight forward project, and a good warm up for the other two loads.

Editor's Note: *Between the time this article was first written to the current hobby scene, some of the names given in the lists of materials and tools have been lost. Specifically paints used in the build, Testors remains, but Model Master, Polly Scale have dried up, even some of the Testors brush colors may be gone. But, the replacements are many!*

Materials

Evergreen .030 Styrene #9030	2 packages
Evergreen .010, .020, .040 (Assortment) Styrene #9008	1 package
RustAll	Optional
Model Master Gunship Grey #1923 (spray)	
Model Master Gunship Grey #1723 (brush on)	
Model Master Dark Slate Grey #2056 (brush on)	
Testors Brown #1240 (spray)	
Testors Dull Coat #1160 (spray)	
Testors Rust #1185 (brush on)	
Testors Wood #1141 (brush on)	
Testors Flat Tan #1167 (brush on)	
Testors Cream #1116 (brush on)	
Testors Red #1103 (brush on)	
Micro Scale #70211 N Scale Graffiti	Optional
Polly Scale TTX Yellow #F404067 (brush on)	
Model Master #2015 Flat Clear Finish (brush on)	
A-Line #29000 Style "A" Stirrup Steps	
Detail Associates #SY 2202 Grab Irons	
Weathering chalks	
Athearn 60 foot Flatcar #92694	1 per plate steel load
Kadee #5 couplers	Optional
Northeastern Scale Limber #3030, HO 4 X 4	1 Package
Walthers Goo	
Tenax-7R	

Super glue

Pactra Trim Tape, Black

.015 Piano wire

Blue Painters tape

Tools

X-Acto knife blades, #11 and #17

Pin Vise

#80, #77, #76 drill bits

Several of each

NWSL Chopper

Touch-N-Flow glue applicator

Exxact Socket tool

NMRA HO scale gauge

Postal scale

Kadee coupler height gauge

Small file set

HO scale ruler

Hair dryer

Side cutter

Tweezers

Let's Get Started!!

Read this handout through completely before you start the project. That way you have an understanding of the complete project and may just save you from making a mistake.

I have seen plate steel on flat cars that ranged from an inch thick to six inches thick. Remember, the thicker the steel plate, the fewer number of plates that you can put on the car. A 60-foot flat car can carry about 90,000 pounds of load. Using .030 inch thick plastic for the plate steel will give you a 2 5/8 inch thick plate, and .040 inch thick plastic for the plate steel will give you a 3.91 inch thick plate.

Cut 10 pieces of .030 plastic, nine scale feet wide and 35 scale feet long. Cut two pieces of .040 plastic, nine scale feet wide and 43 scale feet long. File all edges to remove any burrs and artifacts from cutting the plastic. Wash with warm soapy water, rinse well and set aside to dry.

Modifications to the Flatcar

Remove the trucks from the car. Remove the wheel sets from the trucks and paint the trucks with the Testors #1240 brown paint and set aside to dry. Paint the outside wheel web of the wheel sets with the Testors #1185 Rust paint. Be careful not to get the paint on the wheel tread or the axle point. Keep the paint off of the lip of the wheel; this will leave a shiny rim that makes the wheel look like it has been through the retarders in the hump yard many times. After the brown paint on the truck has dried, spray the truck with Dull Coat and set aside to dry. Use the Exxact Socket tool to ensure that the truck has the correct shaped "point" for the axle of the wheel sets. This also gets any paint overspray out of the area on which the axle rides. I have found that by using this tool I have improved the rolling qualities of my rolling stock. Check the wheel sets with the NMRA gauge to make sure the wheels match the gauge. When the trucks are dry, install the wheel sets.

Paint the couplers with Testors #1185 Rust. Be careful not to get too much paint on the hinge area of the coupler.

Use an X-Acto #17 chisel blade to remove the cast-on grab irons from the sides and both ends of the flat car. Be careful not to mar the sides and end of the car when removing the cast-on grab irons. Remove the stirrups from the sides of the car also.

Use a #80 drill bit to drill the holes for the wire grab irons. Use the area where the paint has been removed as a guide to drill the holes nearest the corner of the car first. Using the wire grab irons as a guide, drill the other holes for the grab irons.

Use a #76 drill bit to drill the holes for the stirrups, using the area where the paint was removed with the plastic stirrups as a guide. Drill the holes closest to the ends of the car first. Using the wire stirrup as a guide, drill the other holes for the stirrup. Make sure that the stirrups sit squarely on the car and are the same distance out from the bottom of the car.

Install the two wire grab irons on the corner of the car. Use super glue to attach the grab irons. Be careful not to get super glue into the holes for the stirrups. After the glue has set on the grab irons, install the stirrups and glue them in place.

After the super glue has set, paint the grab irons and stirrups TTX yellow. It may take two coats of paint to cover the wire and the bare plastic where the cast on grabs were removed.

Use a razor saw to distress the deck of the car. Remember, this deck is made out of wood and it really gets a lot of scratches and damage to it during normal use. Use a sharp #11 X-Acto blade to make a small cut to extend the lines between the deck boards to the ends of the boards (see Figure 1). Cut several boards on each side at an angle to make it look like the board was broken off (see Figure 2).



Figure 1

Use a sharp #11 X-Acto blade to score several boards cross ways on the center line of the car. Use Testors #1141, Wood, to paint the boards that you just scored from the center to the side of the car. Make sure that you paint the end of the board as shown in (Figure 1). Paint the ends of the boards that you cut to look like they were broken with the Wood paint also.

Use Model Master #2056, Dark Slate Grey, to paint several boards to look like they were replaced a long time ago. Using Testors 1116, Cream, paint one board to look like it was just replaced and has not weathered yet.



Figure 2

When you are satisfied with the looks of the deck, dry brush some of the Testors #1141, Wood, on to the deck where you scratched the deck with the razor saw. Make very thin lines with the Wood paint to bring out gouges in the deck. I used some Testors #1185, Rust, on the deck to add some color. This simulates where a load had rusted in the past and stained the deck (see Figures 2 and 3).



Figure 3

Turn the car on its side; apply a heavy coat of RustAll to the side of the car and to the center sill. Let it dry completely. Do the other side of the car and let it dry completely. Apply the RustAll to the ends of the car, doing one end at a time.

Using dark brown and black chinks; darken the sides and ends of the car. On the ends, I added a vertical line just inside of the grab irons to simulate grime thrown up from the wheels of the adjacent car. You can use light brown, dark brown and black chinks to add a bit of detailed weathering to the deck. Once you have the car looking like you want it, dull coat it to seal in the chinks.

Assembling the Load

Using the Tenax-7A; glue the second 43 foot plate to the first 43 foot plate. Glue the first 35 foot plate to the top of the two 43 foot plates. This plate should be centered lengthwise on the 43 foot plates. Add the rest of the plates to the stack.

The plates need to be flush on the sides. If you want to simulate a shifted load, have the plate stack lean to one end of the car. You can have several plates that are not perfectly stacked on the ends to add a bit of interest to the load, but the sides have to be lined up. Once the load is glued together, set aside to completely dry.



Figure 4

Cut eight pieces of .020 plastic .045 inches wide and three inches long for the load clamp straps. Be very careful doing this, as it doesn't take much to mess up this cut. Stack two of the load clamp straps on top of each other and clamp them together. Use a #77 drill bit to drill a hole in the strap three scale inches from the end of the strap and centered. This hole is for the "threaded rod" that holds the load clamp straps together on the car. Repeat this step to make the other four clamp assemblies. Keep the clamp pairs together. Remove the clamp from the load clamp straps; reposition the clamp over the hole for the "threaded rod" that you just drilled. Leave three scale inches below the "threaded rod" hole. Turn on the hair dryer to the high heat setting. Bend the load clamps 90 degrees outward and let cool. Be careful with this step as the clamp is very fragile. Lightly mark the center line of the load with a pencil. Remove the clamp from the load clamp straps; remember to keep the load clamp strap pairs together.

Cut seven pieces of Northeastern Scale Limber #3030 wood dunnage nine scale feet long. Position these on the flatcar deck; center them under where the load will go; tape them down with the Blue Painters tape. Tape the load to the flatcar with the Blue Painters tape.

Position one load clamp strap on the load about six inches from the center line. Use the hair dryer again, bending the clamp down 90 degrees over the edge of the load. Make sure the load clamp is perpendicular to the side of the load. Trim the end of the clamp even with the bottom of the load pocket on the flat car. Repeat this step for the other side of the load clamp strap. Then repeat for the other load clamp strap sets.

Using the Touch-N-Flow glue applicator, and referring to Figures 7 and 8, start at one end of the car and install the clamps. Glue the clamps to the top of the load first, then to the sides. Hold the clamp against the side of the load keeping it square with the load until the glue sets. Again, make sure that it is square with the load. Install the clamp on the other side of the car in the same fashion. Cut a piece of .015 piano wire a scale two feet long. Using the tweezers, carefully insert the piano wire into one of the clamps, then carefully into the second clamp. Apply some super glue to the clamp and the rod, holding clamp vertically square with the load. After the glue has set, do the same thing with the other half of the clamp assembly. Assemble the other clamp assemblies in the same fashion. Trim the load clamps even with the bottom of the stake pockets.

Remove the assembled load from the flatcar; paint the load with the Model Master Gunship Grey #1923. Set aside to dry. After the first side is completely dry, paint the other side. Make sure that you get the edges of the steel plates with the Gunship Grey paint. Set aside to dry. Inspect the plates, ensure the edges have paint on them. You may need to touch up the edges with Gunship Grey.

Use the Micro Scale N scale Graffiti #70211 to put the dimensions of the plate (9 X 35 X 2) on one end of the top plate or down the side of the top plate. You can do the same thing on the end of the second (top) 43-foot plate (9 X 43 X 4). You can put just about anything you want on the plates, just don't get carried away with it. Don't be afraid to cover up the size markings with the banding. This is called layering the detail. It happens in real life and should happen on your models. If you want to put a small amount of light brown chalk to simulate surface rust on the top plate, now is the time to do it. Again, don't get carried away as this is "NEW" steel and will not have very much rust. Set the decals and dull coat all of the plates.

Use the 1/32 Pactra Trim Tape to band the load together. Cut seven pieces of the Trim tape about four inches long. Press the Trim tape to the bottom of the load, and then put a small amount of super glue on the end of the banding on the bottom of the load to hold it in place. Let the super glue dry, then pulling the banding tight; wrap the banding around the load. Make sure the banding is square to the load. When you have the banding in place, put some super glue on the other end of the band that you just installed (see Figure 5). When all bands are installed, very carefully paint a red "crimp clip" on each of the bands using Testors Red #1103. This "crimp clip" should be about three scale inches long (see Figure 6).

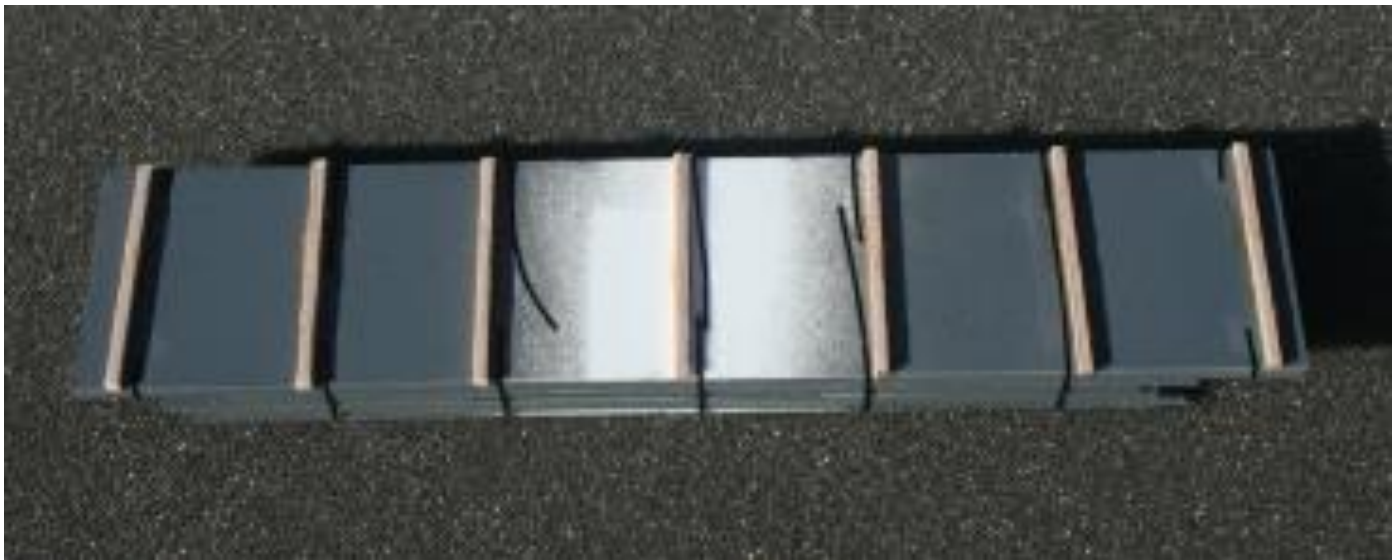


Figure 5



Figure 6

Attaching the Load to the Car

Remove the paint from the backside of the load clamps where they will contact the stake pockets. Remove the paint from the stake pockets where the load clamps will attach.

Using Walthers Goo and a toothpick, glue the seven pieces of dunnage to the bottom of the load. Space them evenly under the load. When the Goo is dry, glue the load to the car, making sure you center it on the car in both directions. The ends of the 43-foot plate should be at the second pocket from the end of the car (see Figure 7). Let the model sit over night so the glue has time to completely dry. Using the Touch-N-Flow glue applicator to attach the load clamps to the outside of the stake pockets.

Cut 10 pieces of Northeastern Scale Lumber #3030 a scale 24 inches long. These are going to be used as stakes in the stake pockets to help keep the load from shifting. Use a sharp #11 X-Acto blade to taper one end of the bass wood. You want it to fit tightly into the stake pockets. Use the Walthers Goo and a toothpick to install the stakes as shown in Figure 7.

The finished model weighs 4.5 ounces. A car of this length should weigh 5.25 ounces. Cut several pieces of the sheet lead 7/16 inch by 7/16 inches. Glue them to the underside of the car to get the weight up to the recommended 5.25 ounces.

Check the coupler height with the Kadee Coupler gauge. Adjust the trip pin on the coupler as needed. The car is now ready to enter service on the railroad.

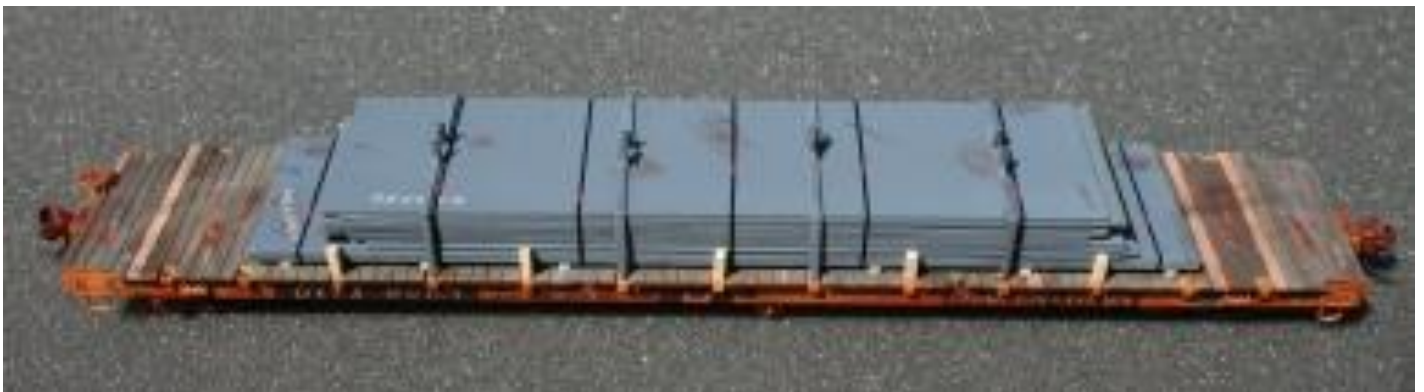


Figure 7

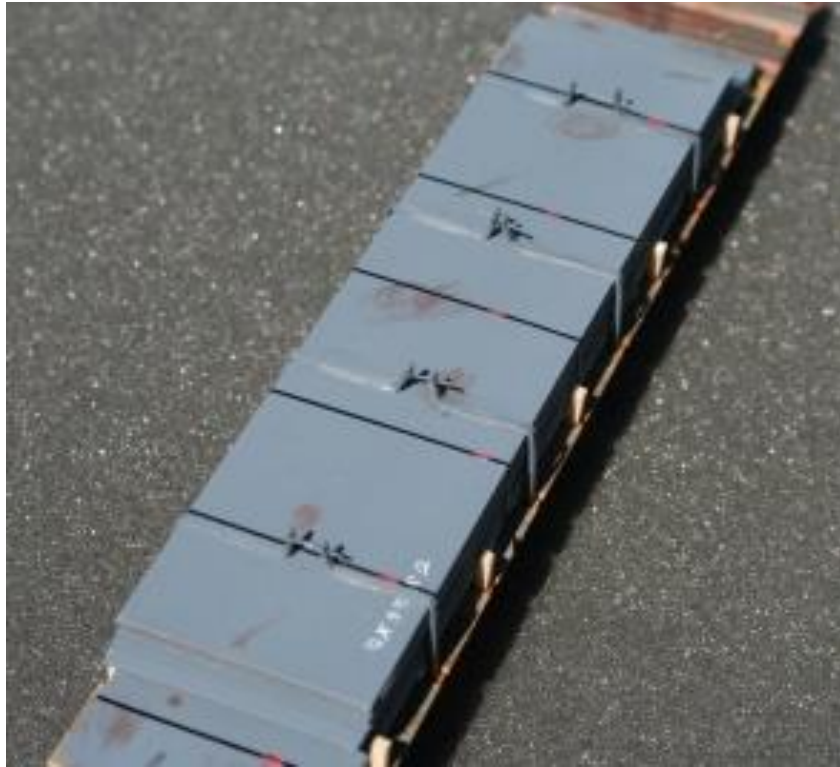


Figure 8



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Steel Loads – Part 1B – Small I Beams

By Gene and Benita Jameson



A Little History about this Project:

Part 1B of Steel Loads covers small I-beam loads on a 60 foot bulkhead flat car. You can choose just about any size I-beams you want to use for this load. Just remember the bigger the I-beam the fewer of them you can load on the car. The load limit for a 60 foot bulkhead flat car is 60,000 pounds.

Materials

Plastruct 3/16 "I" Beam #90515	Several
Plastruct 1/4 "I" Beam # 90516	Several
Plastruct 5/16 "I" Beam #90517	Several
Plastruct 3/8 "I" Beam #90518	Several
Plastruct 7/16 "I" Beam #90519	Several
Plastruct 1/2 "I" Beam #90520	Several
Plastruct 9/16 "I" Beam #90521	Several
Plastrcut 5/8 "I" Beam #90522	Several
Northeastern Scale Lumber #3030, HO 4 X 4	1 Package
RustAll	Optional
Model Master Gunship Grey #1923 (spray)	
Model Master Gunship Grey #1723 (brush on)	
Model Master Dark Slate Grey #2056 (brush on)	
Model Master #2015 Flat Clear Finish (brush on)	
Model master #1705 Insignia Red	
Model Master Camouflage Grey #FS36622 (brush on)	
Testors Brown #1240 (spray)	
Testors Dull Coat #1160 (spray)	
Testors Rust #1185 (brush on)	
Testors Grey #1163 (brush on)	
Testors Silver #1146 (brush on)	
Testors Wood, #1141 (brush on)	
Testors Rubber #1183 (brush on)	
Testors Red, #1103 (brush on)	
Polly Scale TTX Yellow #F404067 (brush on)	
A-Line #29000 Style "A" Stirrup Steps	

Detail Associates #2202 17" Drop Grab Irons

Detail Associates #2225 14" Straight Grab Irons

Detail Associates #6210 17" Straight Grab Irons

Micro Scale #70211 N Scale Graffiti Optional

Weathering chalks

Athearn 60' bulkhead flatcar #ATH88111 or ATH88112

Kadee #5 couplers Optional

Walthers Goo

Tenax-7R

Pactra Trim Tape, Black

.015 Piano wire

Super Glue

Tools

X-Acto knife blades, #11 and #17 Several

Pin vise

#76, #80 drill bits Several

NWSL Chopper

Exxact Socket tool

NMRA HO scale gauge

Postal scales

Kadee coupler height gauge

Steel HO Scale ruler

X-Acto Miter box and Razor saw

Touch-N-Flow glue applicator

Editor's Note: *Between the time this article was first written to the current hobby scene, some of the names given in the lists of materials and tools have been lost. Specifically paints used in the build, Testors remains, but Model Master, Polly Scale have dried up, even some of the Testors brush colors may be gone. But, the replacements are many!*

Let's Get Started!!

Read this handout through completely before you start the project. That way you have an understanding of the complete project, it may just save you from making a mistake.

I included all of the Plastruct "I" Beam part numbers in the "Required Materials." The Plastruct part numbers for the I-beams are "Dealer Bulk" packages. It is cheaper to purchase "Dealer Bulk" than individual I-beams. You can select the ones that you like for your load. Use more than one size beam in your load; it will make it look better. When cutting the beams, make each size beam a different length to add to the overall look.

On one load, I used the 5/8 inch and 1/2 inch "I" Beams. To build this load, cut four of the 5/8 inch beam to scale 50 feet long. Cut four of the 1/2 inch beam to a scale 45 feet long. File the cut ends of the beams smooth and square.

With the ends of the beams smooth use the Tenax-7R, in the Touch-N-Flow glue applicator, to glue the beams together side by side. When gluing the beams together, stagger the ends a bit. Repeat the above step for each size beam.

Use Model Master #1923, Gunship Grey to paint the I-beams. Set aside to completely dry.

After the paint is completely dry, use Micro Scale #70211 N scale Graffiti to put some chalk marks on the beams. This can be just about anything that you want to put there. It could be the size of the beam to just your initials. After you have set the decals, use Testors #1160 Dull Coat to cover the decals.

I built a second load using four different size I-beams, 3/16, 3/8, 1/4, and 5/16 inch. I cut six of the 5/16 beams, a scale 50 feet long. I cut three of the 1/4 beams, a scale 50 feet long. I cut nine of the 3/8 beams, a scale 45 feet long. I cut twelve of the 3/16 beams, a scale 40 feet long. Assemble and paint the bundles of I-beams as described above. If you don't use decals on the I-beams, dull coat the beams and set aside to dry.

Modifications to the Flatcar

Remove the trucks from the car. Remove the wheel sets from the trucks and paint the trucks with the Testors #1240 Brown paint and set aside to dry. Paint the outside wheel web with the Testors #1185 Rust paint. Be careful not to get the paint on the wheel tread or the axle point. Keep the paint off the lip of the wheel; this will leave a shiny rim that makes the wheel look like it has been through the retarders in the hump yard many times. After the brown paint on the truck has dried, spray the truck with Dull Coat and set aside to dry. Use the Exxact Socket tool to ensure that the truck has the correct shaped "point" for the axle of the wheel sets. This also gets any paint overspray out of the area that the axle rides. I have found that by using this tool I have improved the rolling qualities of my rolling stock. Check the wheel sets with the NMRA gauge to make sure the wheels match the gauge. When the trucks are dry, install the wheel sets.

Paint the couplers with Testors #1185 Rust. Be careful not to get too much paint on the hinge area of the coupler.

Use the X-Acto #17 chisel blade with the bevel towards the car to cut off all cast on grab irons, including the vertical (17 inch long) grab iron and the angled (36 inch long) grab iron. Use the X-Acto # 5 blade to remove the stirrups for the bottom of the car.

Use the #76 drill bit to drill holes for the stirrups. You can use the areas where the paint was removed when the stirrups were cut as a drill guide. Just be very careful to center the drill bit on the bottom of the car side sill. Drill the hole deep enough to allow the "round" part of the stirrup to completely slide into the hole.

Athearn did not do us any favors with this model. The cast on grab irons are not scale length grab irons. For the end grab irons, drill a #80 hole where you cut off the cast on grab irons nearest the side of the car. Use the Detail Associates #2202 Grab Iron as a guide for the other hole. Mark the second hole and drill.

For all of the vertical grab irons on the side, drill a #80 hole where the cast on grab irons were, next to the flat side of the bulkhead. Use the Detail Associates #2202 Grab Iron as a guide for the other hole. Mark the second hole and drill.

Working on one corner, install the stirrup, end grab iron, and side bottom grab iron. Trim the end and side grab iron to clear the wheels on the truck. Glue the stirrup and grab irons with super glue.

Trim two Detail Associates #2202 Grab Irons to fit the other two grab iron locations making sure the grab irons do not protrude to the area behind the ladder. Mark the second hole and drill a #80 hole. Trim a Detail Associated #2225 straight grab iron for the top short position. Mark the second hole for each grab iron and drill a #80 hole. Drill a #80 hole at the bottom of the vertical grab iron and the bottom of the angled grab iron. Use a Detail Associates #6210 Straight Grab Iron and mark the second hole and drill a #80 hole.

Trim one Detail Associates #6210, Straight 17" Grab Iron to fit making sure the grab irons do not protrude to the area behind the ladder. Using a piece of .015 piano wire, bend a 36 inch grab iron. Using this grab iron, mark the second hole and drill a #80 hole. Make sure that none of the grab irons protrude into the area behind the ladder. Use a toothpick to apply super glue to all of the grab irons using a paper towel to remove any excess super glue (see Figure 1). Prepare the other three corners for grab irons and install them.

Once all of the grab irons are installed and the glue is dry, paint the grab irons and areas where you removed the cast on grab irons with Polly Scale TTX Yellow #F404067 (brush on) paint. Be careful not to get the TTX Yellow on the white "reflector" on the side under the bottom grab iron. It may take two coats of the TTX yellow to cover the area where you removed the grab irons.



Figure 1

Use a razor saw to distress the deck of the car. Remember, this deck is made out of wood and it really gets a lot of scratches and damage during normal use. Use a sharp #11 X-Acto blade to make a small cut on the ends of the deck boards using the lines on the deck as a guide (see Figure 2). Use the #11 X-Acto blade to score several boards cross ways on the center line of the car to make it look like several boards have been repaired. Use the #17 X-Acto blade to score a line where the deck boards and the bulkhead meet. Cut several boards on each side at an angle to make it look like the board was broken off (see Figure 2).

When wood is exposed to the weather for a long time, it first turns a dark grayish / brown color. The wood will then start to lighten in color and take on a silvery hue. I mixed several colors to get this light Grey silver color.

I used

three parts Model Master #FS36622 Camouflage Grey

two parts Testors #1163 Grey

one part Testors #1185 Rust

one part Testors #1146 Silver

and about three drops of Testors #1183 Rubber

This will get you close to the proper color. At this point, you may need to add more Testors #1163 Grey or Testors #1146 Silver to get the correct grayish / brown silvery hue of aged wood. Paint the deck and set the model aside to dry.



Figure 2

Use Testors #1141, Wood to paint the boards that you scored from the center to one side of the car, so it looks like a part of a deck board was replaced. Paint one or more boards all the way across the car to make it look like a deck board was completely replaced. Use Model Master #2056, Dark Slate Grey to paint several deck boards to look like they were replaced in an earlier repair. Make sure that you paint the end of the board as shown in Figure 2. Paint the ends of the boards that you cut to look like they were broken with the Wood paint also. Use Testors #1185 Rust, Testors #1183 Rubber, Testors #1141 Wood, Model Master #FS36622 Camouflage Grey, Testors #1163 Grey in a dry brush fashion, to the “wood” detail on the deck. The results that you want are shown in (Figure 3).

Turn the car on its side; apply a heavy coat of RustAll to the side of the car and to the center sill. Let it dry completely. Do the other side of the car and let it dry completely. Apply the RustAll to the ends of the car, doing one end at a time. Put a heavy coat of RustAll on the deck and set aside to dry.

Using dark brown and black chalks; darken the sides and ends of the car. On the ends, I added a vertical line just inside of the grab irons to simulate grime thrown up from the wheels of the adjacent car. You can use light brown, dark brown, and black chalks to add a bit of detailed weathering to the deck. Once you have the car looking like you want it, dull coat it to seal in the chalks.



Figure 3

Give the car a final coat of Testors Dull Coat #1160 and set aside over night to completely dry.

Assembling the Load

Use the Pactra Trim Tape 3/64 wide to “band” the beams together. Evenly space five “bands” on the beam bundles. I started in the center of the beam and attached the first “band” with super glue and let it set up. Pull the “band” tight around the beam and use super glue to bond the end to the beam. Next do this for the “bands” on the end of the beam bundle. The end “bands” should be about a scale two to three feet from the end of the beam. Install them just as you did with the center “band.” The remaining two “bands” are centered between the end “bands” and the center “band.”

At this point, you have to be very careful not to stretch the Pactra Trim Tape. If you do, you will have to remove the damaged “band” and replace it. When you get the beam load completely assembled, you will not be able to repair the stretched “band.”

“Band” all beam bundles with five “bands.” Use Testors Red, #1103 to paint a small red clip on each “band” to simulate the crimp clip that holds the “band” together. Set the bundles aside to completely dry.

Measure the largest width of the largest bundle of “I” beams, and set the NSW Chopper up to cut 5 pieces Northeastern Scale Limber #3030 for dunnage. Use Walthers Goo to attach the dunnage to the bottom beams. Repeat this set for each layer of I-beams.

For loads that just have two size I-beams, glue the smaller I-beams to the larger I-beams using Walthers Goo on the bottom of the dunnage on the top bundle of I-beams.. Set aside to completely dry. “Band” the two sizes of I-beams together using the Pactra Trim Tape (3/64) as done on the I-beam bundles earlier. You need five “bands” to hold the load together.

DON'T have the final “banding” covering up any of the “banding” that was applied earlier. After the “final banding” is in place, use Testors Red, #1103 to paint on the crimp clips (see Figure 4).



Figure 4

For loads that have three or more sizes of I-beams, “band” each size of I-beams as in the above steps. Measure and cut 5 pieces Northeastern Scale Limber #3030 for dunnage for each layer. Attach the dunnage to the bottom of each of the layers as in the steps above. “Band” the top two layers of I-beams together as described in the steps above. Remember, at this point, you have to be very careful not to stretch the Pactra Trim Tape. If you do, you will have to remove the damaged “band.” Apply Walthers Goo to the bottom of the dunnage of the second layer of I-beams. Center the top two bundled layers of I-beams on the third layer of I-beams. Set aside to completely dry (see Figure 5).



Figure 5

Slide a length of the Pactra Trim Tape with the paper backing still attached through the opening between the first and second layer of I-beams. Wrap it around the second and third layers to measure the length that you are going to need for “banding.” Cut five lengths of Pactra Trim tape slightly longer than what you measured.

Using a short length of .015 piano wire, bend a 90-degree bend so you have about 1/4 inch long “hook.” This will be used to get the “banding” between the first and second layers of I-beams. Pull off the backing paper on the Trim tape and wrap the Trim Tape around the “hook” on the tool that you made so it sticks to itself. Thread the “hook” tool with Trim Tape attached between the first and second layers of I-beams. Center the length of Trim tape over the second layer of I-beams and remove the “hook” tool from the Trim Tape. Pull the Trim Tape down on the top of the second layer of I-beams, over the third layer of I-beams, and wrap it under the third layer of I-beams. Make sure it is tight and secure it with super glue. Repeat this for the other four “bands” for

this layer. If you have a very narrow bundle on the first layer, paint the “Red” clips on the “banding” that holds the second and third layers of I-beams together (see Figure 6).



Figure 6

Apply Walthers Goo to the bottom of the dunnage on the third layer of I-beams. Center the assembly of I-beams on the fourth layer of I-beams. Set aside to completely dry before “banding” the third and fourth layers of I-beams together.

“Band” the third and fourth layers of I-beams just as you “banded” the second and third layers of I-beams together. Set the assembled I-beam load aside to completely dry (see Figure 7).



Figure 7

Attaching the Load to the Car

Use Walthers Goo; glue the load to the deck of the flat car. Make sure that it is centered on the car. The ends of the 50 foot "I" beam should be at the first pocket from the end of the car (see Figure 8 and 9). Let the model sit over night so the glue has time to completely dry.



Figure 8



Figure 9

Cut 10 pieces of Northeastern Scale Limber #3030 a scale 24 inches long. These are going to be used as stakes in the side pockets to help keep the load from shifting. Use a sharp #11 X-Acto blade to taper one end of the bass wood. You want it to fit tightly into the pocket. Use Walthers Goo and install the stakes as shown in Figures 8 and 9.

The finished model weights 4.5 ounces. A car of this length should weigh 5.25 ounces. Cut several pieces of the sheet lead 7/16 inch by 7/16 inches. Glue them to the underside of the car to get the weight up to the recommended 5.25 ounces.

Check the coupler height with the Kadee Coupler gauge. Adjust the trip pin on the coupler as needed. The car is now ready to enter service on the railroad.

Observations

Meet n Greet

This past month I took up the invitation offered by the new Eastern Division Superintendent to meet him at his home for a BBQ. Jim Moore is that new Superintendent and I thought it would be worth my while to travel up to Orlando and meet him. Alan Chesler and I took the "Couch" and went north. Alan is a member of the SFRM, owner of the Couch and was once a Director of SSR, we drove up there and we were greeted by a very enthusiastic and energetic individual. We were welcomed with open arms and a great deal of food. There were a few individuals that I already knew, old faces within the region and other than one or two new folks, it was like a side gathering and social at a convention. The entertainment was interesting, war stories of the region and divisions, givens and druthers to the future outlook of the region, all very enlightening.

The idea that you would hold a meet and greet BBQ to bring people together on a divisional basis is something that I had not seen before. A wonderful idea, one I would have been proud of, if it had been mine. An idea that I believe should be followed in the other divisions, not just workshops, but just a social event. I laud Jim for coming up with this idea and instituting it. I appreciate his forethought and hospitality and I think it would be advantageous for the Southern Division to do the same, actually the entire region's divisions could benefit from Jim's idea.

After the gathering broke up, Alan and I made a visit to the Central Florida Model Railroad Club, where we met Jonathan Sodaro, Jack Treharne, Jeff Mitchell, and Jeff Wilson. Engaging and interesting folks all, they provided the ins and outs of the layout, its history and purpose. Jonathan took us on an aisle by aisle tour through the routes that can be followed and pointed out some of the significant features of the layout. A very hospitable group. Hopefully the group can be talked in to being open after the convention for those folks traveling south and interested in visiting a very impressive layout. Maybe the Orlando "N" group can also be accommodating?

From there we semi trespassed on the Yelvington property south of the Orlando AMTRAK station. They have ALCOs on the property, trespassing is allowed! From our first visit a few years ago Alan has wanted to model the aggregate loading bin. So, we were looking for a rusted Oxide Red cannister on four legs standing 60 feet in the air and we can't see it. It didn't help that all of the roads in that area are either under construction, blocked off, or no longer in existence, anyway, we couldn't find it. They wouldn't have taken it down, it was in good working order last we saw it, but as we got closer, reality struck, it was sacrilegious, they painted it! It was now a bright white and I mean bright white, it had lost all of its charm, its character, its panache. Now it was just an archaic structure that looked new once again, you know lipstick on a pig. Why would they do such a thing? What were they thinking? Don't they know that we modeler's live for such visions? Needless to say, it is not on Alan's modeling list anymore!

It was a good day anyway, meeting Jim, other new faces and the old ones! Alan's car, the "Couch" provided the instrumentation figures at the end of the trip. 468 miles, 7 1/2 hours running time, very good gas mileage at 26 to the gallon and an average speed of 58 mph. The 85 mile per hour cruising speed on the Turnpike going home helped that average, it sort of balanced the crawl on E. Colonial Dr. through Orlando. I'm glad I moved out of the area 40 years ago! All in all, a good idea of Jim's and a good day!

Superintendents, it is an idea that has merit, let's run with it, think about repeating it!

Robert

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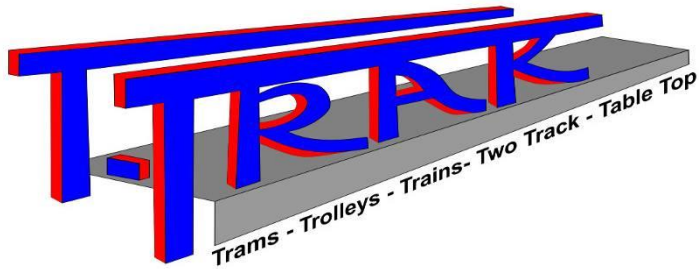
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What does the “T” in T-TRAK stand for? Despite what some might tell you, the T stands for Trams, Trolleys, Trains, Two Track and Tabletop according to Lee Monaco-FitzGerald’s original T-TRAK logo. As you read earlier the history behind the standard also bears this out.



Highly detailed and creative T-TRAK modules can compete with the best of them. Case and point, at the National Train Show (NTS) in 2018, T-TRAK modules won **first and third places out of all scales and layouts at the NTS** in Kansas City. More recently, a T-TRAK module built by Craig Laing, won the “**Best in Show**” at the recent N-Scale convention in Nashville.

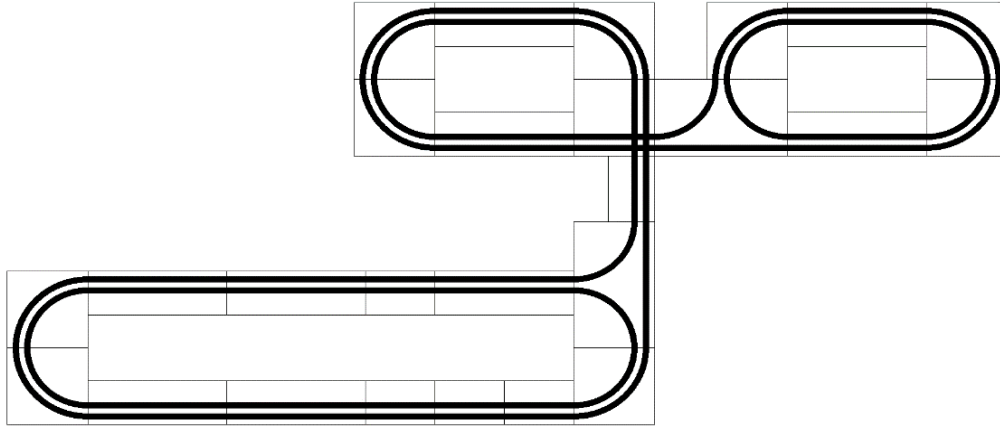
This years NTS in St. Louis awarded **second place** to Todd Blose from Virginia for his Star Wars Modules pictured here. Think about that, in any of those cases, that must have been some serious modeling to accomplish that. That was no small feat considering the sheer number of modules, layouts, and exhibits. The judges that day certainly saw master craftsmanship in these modules, far from being toys or toyish. T-TRAK is the perfect model railroading example of great things can come in small packages and make a huge impact!



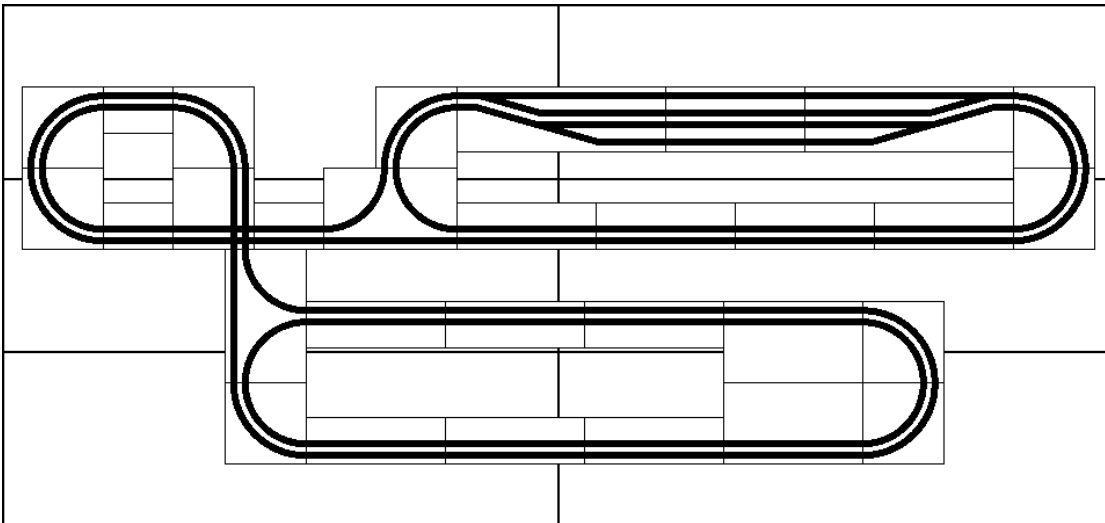
Whether you are just beginning or you are downsizing this is a standard that allows you to do great things one module at a time



Why model in T-TRAK? T-TRAK continues to grow in popularity because you can model them at your table, and you integrate them with fellow modelers from around the nation and the world into what can be some breathtaking layout designs. At shows or other meets the modules are snapped together, with no extra clamps, just level it up and snap it in. Each module is its own story either as a stand-alone diorama or as part of a larger set. And it is your story! Some can be very basic from a pasture with a few cows on it to an entire city scene with loads of intricate details. It can be your hometown, a fictitious place, real or imagined, nothing is off limits and as long as you meet the standards your modules are welcome additions.

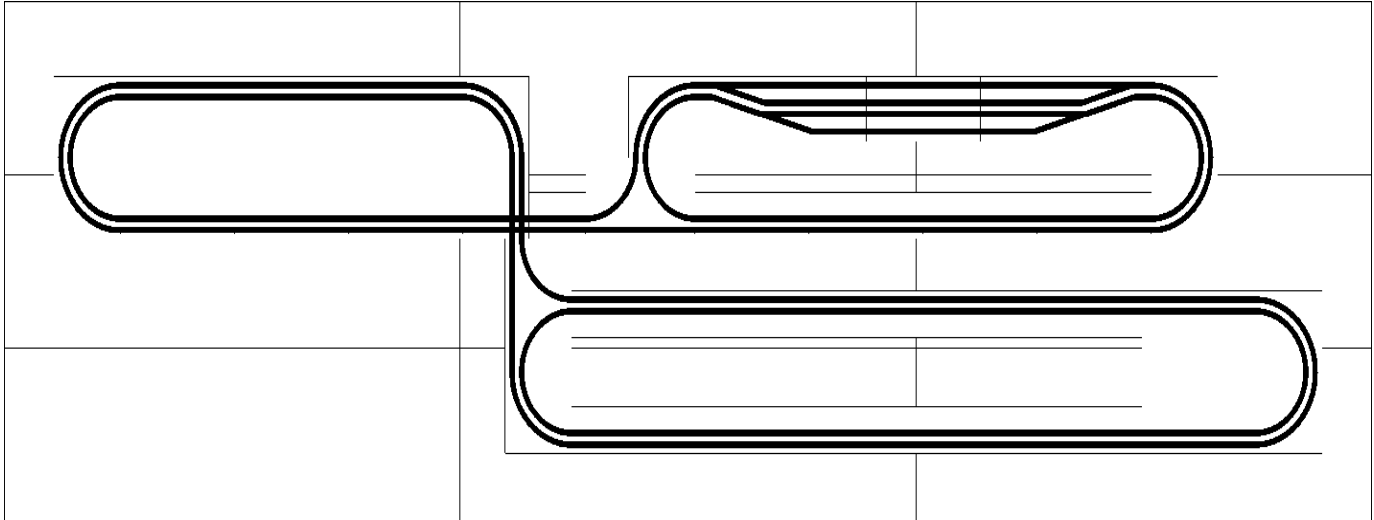


T-TRAK modules make great shelf layouts or tabletop layouts and can be easily separated and restructured to expand (or contract). Imagine your initial home layout starting out as this:



Expanding to this:

And then to this or larger within a few minutes and you did not have to tear up any track! Just shift a few



modules and maybe rearrange some tables..

Traditional home layouts are typically permanent and not readily adaptable if you want to make a change. Case and point, I had a layout all set up and operational in one of the back bedrooms (all the kids moved out) It was mostly just tracked, elevations and transitions, etc. but I could operate trains. Then my daughter decided to move back in with us when her husband was stationed overseas for a year. My wife informed me that meant I had to give up the train room. The room I was moving to had less continuous wall space and additional access that I would need to allow egress in and out of the house. Not ideal. Well, the tables I had built did not

transition well and had to be adjusted to fit the new space. This meant pulling and re-laying track. In short the adjusted plan did not work out well and my engines did not run the same.



Far too many derails. I ended up getting so frustrated I tore it all out and tossed it. For a while, it bothered me enough that I stopped trying to build anything. It felt like I was tossing good money after bad. Then I met up with the folks at the North Raleigh Model Railroad Club. They were embarking on T-TRAK along with their already established NTRAK. I brought the ideas and concepts back with me to my home club, the Big Bend Model Railroad Association, and the President, an avid N-Scaler, loved the idea and concept. The Modeling concept not only caught on with the N and Z scalers but also with the HO scalers who run a huge HO T-TRAK

display at our annual show in June. Now when I want to adjust the home layout, I add a table and press on! Or should I say snap them in?

What do T-TRAK modules offer? They offer a number of things. Layouts are easy to assemble and disassemble. The convenient size of the modules make them easy to store on a shelf or in totes when not in use, or to transport. T-TRAK allows modelers to experiment and learn techniques. Modules can be worked on and detailed in a small area like the kitchen table. They are readily adaptable to younger generations who can build a module right alongside you (investing in the future of model railroading) They can be very basic or extremely intricate. A friend of mine has a pre-teen daughter who wanted to build a T-TRAK module. She built an enchanted forest complete with unicorns, griffins, and Pegasus! Is that Model Railroading? For her it is! She now beams with pride as her module is placed alongside her fathers at train shows and club outings. T-TRAK has opened that door for her and many others like her. I can't wait until my grandkids decide they want to add to the layout with modules of their own. It will transform MY layout into OUR layout, creating memories for us and in the end a piece they can take home.



The great part is you can build a module over a long weekend, a few evenings, or a few weeks depending on the level of detail. In a larger scale, or with larger modules, a person would need a few months of building and landscaping to achieve the same result. It is a great way for modelers to enter the hobby, refine their skills and be part of something much larger even if they don't have their own layout at home. With even only one module they can participate in local club meetings or in larger shows like the National N Scale Convention this past June where everyone brings modules and simply run trains and share the experience of Model Railroading.



Andy Zimmerman is a 23 year retired US Navy Senior Chief and current Assistant Director of Information Technology (IT) at Florida State University. He is the Standards and Conformance Manager for the NMRA and the Social Media Manager and Advisor for NRail. He has a background in advanced electronics and computer systems. Andy has been a model railroading enthusiast since he was 9 and as is typical, his love of trains all started with Lionel trains. As he got older and moved around, space was limited so N-Scale became his passion. He is the current President of the Big Bend Model Railroad Association (<http://bbmra.club>) in Tallahassee Florida and a member of the North Raleigh Model Railroad Club (<http://www.trainweb.org/nrmrc/>) as well as the Sunshine Region (SSR) NMRA Northern Division (<https://www.sunshineregion.org/northern-division>) where he is focused

on NTRAK and T-TRAK. Feel free to comment or ask questions. SeniorChiefZ@outlook.com

Mike Brock

{Editor's Note} Some are probably looking at this name and saying, "What? Has he risen?" No, Mike remains in memory, but a group of articles that he wrote 20 years ago has reemerged. I have been going through some of the old editions and have found interesting articles and ideas, this is one of them. Mike originally authored these articles in 2004. As most of you know, Mike was, in my eyes, the father of the prototype rail gatherings in Cocoa Beach and for good reason, Mike was a prototype modeler. It was in the best interest of the then mid nation only style of show, display only, no contest. He saw it as a vehicle to bring prototype modeling south, hence the promotion of RPM's, which I believe enhanced the modeling community in Florida. So, the following is Mike's thesis, part 1 actually, there are four.

Ever wondered what the term prototype modeler really means? Many people seem to envision two guys peering down at a model, one guy with a calculator eagerly making additions as another guy counts rivets. Hence the term "rivet counter". Nothing could be farther from the truth, of course, I should know. I became a prototype modeler back in 1978 before many visioners were born and I haven't counted a single rivet ... let alone measured 1 ... in the ensuing 25 years. The term prototype modeler was probably coined back in the mid 70s. A magazine with this title introduced me to the concept back then and I found it to be a perfect fit. We now have Internet groups dedicated to various aspects of the subject, four magazines appear to be supporting it strongly. Historical societies associated with practically all railroads provide fertile grounds for discovering needed information to practice it and in more recent years we have seen Prototype Modeling meets springing up around the country. So, exactly what is all this about ... how does it differ from what most modelers were doing back in the 1950s?

Actually, it's really quite simple. Prototype Modeling (PMing) is the modeling of a real subject that existed at one time period. That's really all there is to it, it has nothing to do with rivets, nothing to do with accuracy, nothing to do with scale, nothing to do with era, and nothing to do with the modelers modeling skills or successes. So, a person trying to model say, a real bridge over the St. John's River may build something quite unimpressive compared to, say, a model of a bridge over the Token Ring River which exists only in the builder's imagination. Is one form of modeling better than the other? Is golf better than tennis? No. Are they different? Yes. Can one do both? Certainly, and that is an important point. One can model the New York Northern and still need to operate New York Central box cars.

One can even break prototype modeling [PMing] down into different classes... although no one really refers to them as such. First, there is what we might call "strict" [PMing]. This is the process of modeling a real railroad including its equipment, the area it operated through and its operations. Does this mean modeling all of it? Of course not. It's a bit akin to rail fanning. One never sees but a small portion of a railroad at any one time ... certainly I have never seen but a few locations on Sherman Hill ... the area I chose to model. The same is true of the N&W between Roanoke and points east and west and I've trekked around there quite a bit. The point is ... the modeler tries to present a model which conveys an impression of some part of a real railroad in some real place.

Another class might be called "Generic PMing". In this concept, the modeler models a real railroad and a real area but doesn't model any particular location. For example, the modeler might depict the area between Green River, and Rawlins, Wyoming, but not model an actual location ... doing, instead, scenes very similar to the real locations. Modeling the area between Roanoke and Blue Ridge would be a natural for such an effort as might the Southern's Rathole Division.

A third class might be termed "Fictitious PMing" in which the modeler models a real railroad in an area in which it might realistically have existed but did not. An example might be the joint C&O/N&W line between Clifton Forge and Roanoke, or the joint MoPac/CB&Q line in southern Illinois. In this case, the equipment, structure

standards, signals etc. of the real railroad are followed as accurately as possible. In fact, even the scenes might be models of the real thing ... only now, there's a railroad in them.

There are probably other classes as well, but three will show that PMing is rather flexible and not as unimaginative as some might envision. Speaking of the need to use imagination, the challenges involved in achieving success in any of the types of PMing as defined above require significant amounts. Unfortunately, the space required to model even small parts of a railroad is greater than the available space to most of us. A common approach is to build individual scenes, possibly separated by miles of terrain not modeled at all. The Trick is to select the right scene so that the impression of continuity is maintained. In this case, designing the layout so that trains running through different scenes do so in the same order as they do, or did, in the real world. The lack of sufficient space impacts the modeler again as the space needed to model a real scene isn't available. Much has been written about this challenge ... the art of compression of scenes and structures. It does require imagination. Often a scene can be constructed which, when viewed from one angle, portrays a very accurate image of the actual location, but does not from others. The job of the designer is to direct the viewer to the location desired or use scenery blocks. Smoke and mirrors.

Later on, we'll address compression in more detail and address issues like how one might choose a railroad to model, how one might choose what parts of it to depict, how different railroads dictate turnout and minimum radius requirements, how available structures, motor power and rolling stock dictate railroad choices and what pitfalls might need to be avoided. We'll even discuss what the rolling stock population should look like for different railroads.

In the mean time, on January 9 - 11, 2004, consider dropping in at Prototype Rails 2004 Cocoa Beach and see first hand what it's all about [if you haven't already done so]. Oh ... no counting rivets now.

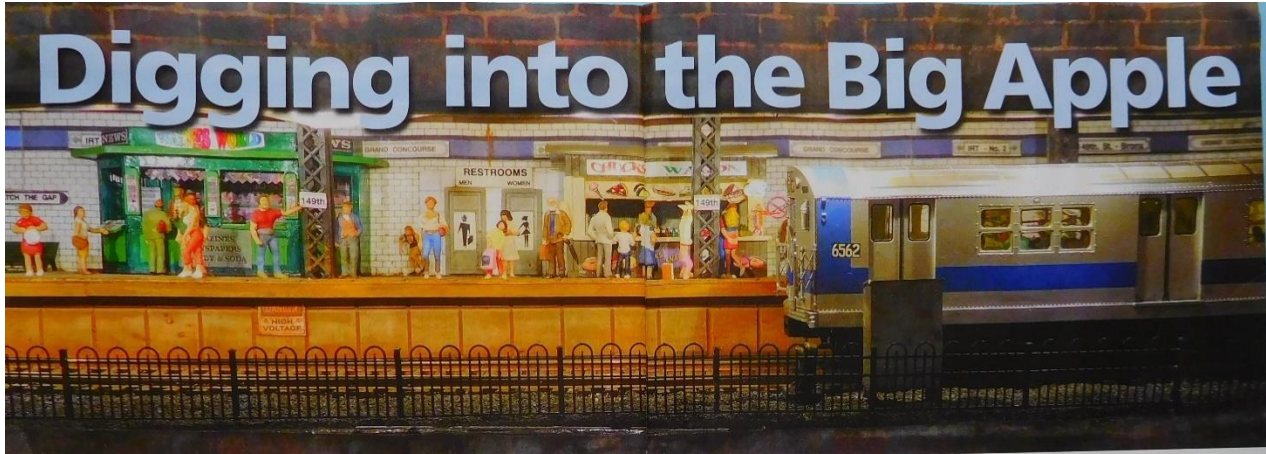
{There are four parts to this and there will be one part for each quarter.}



Hoosac Valley Engine Terminal

NYC Subway #2 & 5 Trains

By Michael Collins, MMR



Adding subway operations to an HO scale layout

By Michael Collins • Photos by the author

When I was building my HO scale New York Harbor — Lehigh Valley RR, featured in the November 2018 issue of the NMRRA Magazine, I decided to include a subway line. The loop of track under the Mott Haven neighborhood in the Bronx features a stop at the Grand Concourse Station, with two passenger entrances on the platform and two at street level. There were no HO scale subway sets on the market when I started the project. I found an out-of-production Walkers Proto 1000 four-car R21/22 set on eBay. The direct-current models did a nice job depicting Metropolitan Transit Authority's (MTA) No. 2 train. Later, MTH released a four-car R-17 subway set in MTA's silver-and-blue

scheme with Digital Command Control and sound. I converted the layout to DCC and replaced the Walkers subway set with the MTH offering, calling it the No. 5 train.

Prototype history

The New York City subway system started in 1904 and grew into three rail networks, the IRT (Interborough Rapid Transit Co.), IND (Independent Subway System), and BMT (Brooklyn-Manhattan Transit). In 1965, all 25 lines became the Metropolitan Transit Authority.

Starting at the top of the Bronx, the Red Line (MTA train route 2) begins at Wakefield (241st Street). Nearby, the 5 route starts at Eastchester (Dyre Avenue). These two trains meet at East 180th Street, then the rail lines split at

Metropolitan Transit Authority R-17 subway car 6562 eases up to the Grand Concourse Station on Michael Collins' HO scale New York Harbor — Lehigh Valley. The scene is illuminated with a bookshelf light-emitting diode fixture.

149th Street — Grand Concourse Station, not far from Yankee Stadium. In Manhattan, the No. 2 line heads west, then south, while the No. 5 train goes straight down Lexington Avenue.

At the end of Manhattan, near City Hall and the Financial District (Wall Street and South Ferry), both trains cross under the East River to Brooklyn (Borough Hall), ending at Halibush Avenue (Brooklyn College).

Grand Concourse Station

To model the Grand Concourse Station, I first cut an opening in the benchmark frame side and backdrop so visitors could view the below-laying scene. Then I pasted a stone wall sheet around the opening, as seen in the photo at the top of this page.



This in-progress image shows how the subway line fits under Michael's HO scale New York Harbor — Lehigh Valley RR. The opening for the Grand Concourse Station is partially visible behind the craft paint bottles.

Next, I built the raised platform using poster board. I then installed a stamped foam sidewalk and painted it a weathered concrete color. One hallmark of the station is the tile walls. I printed a picture of the tiles on

glossy photo paper. Then I used my computer to make appropriate signs. Three-dimensional details include benches and restroom doors. I used Micro Engineering bridge parts to model the support columns.

I added N scale tunnel portals for the passenger entrances on both ends. To further enhance the scene, I installed two Walkers newspaper stand kits (933-9773). One is named Wayne's World for my friend Wayne Sittner. The other is

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Michael cut an opening in the benchmark and hardboard backdrop where the Grand Concourse Station scene would be located. The Buda Rail Diesel Car is making a test run on the subway track. The backdrop is in the lowered position.



The 149th Street subway entrance is visible to the left of the tunnel portal at Patriot's Plaza. Sidewalk artists, food carts, and a New York Police Department vehicle reinforce the Big Apple theme of Michael's layout.

called Chuck's Wig on for friends Chuck Davis and Chuck Huhmaker, complete with two horses to reinforce the Western theme. I populated the platform with an assortment of Preiser figures in various poses waiting for the subway.

In the viewing window [See bottom photo, opposite — Ed.], I installed a third rail, station sign, dwarf signal, two electrical control boxes, a vent, and Atlas

HO scale hairpin fence (0774). I weathered the scene to capture the look of a well-used, underground train station. The scene is illuminated with a light-emitting diode bookshelf lamp.

The layout backdrop is attached with hinges and secured to the frame with wing nuts on screw studs protruding through the hardboard. If necessary, the entire backdrop can be lowered.

28 Trains.com



Running trains

When I give visitors a tour of my railroad, I run the subway without telling them. They hear the subway sounds, then I activate the station announcement and horn. I point out the surface vent on top of the layout as the subway rolls by. A 2 x 6-inch opening in the side affords a quick glimpse of the passing train.

Finally, I show visitors the station scene, which amazes them. As the train approaches the station with its horn blowing, it passes the platform and I again activate the next station announcement. Then I use the buzzer sound, also known as jingles, a few times to re-create "subway talk" between the motorman and conductor.

I stop the train halfway around the loop so visitors can hear the conductor apologize for the delay. Then I start the train, bring it up to the station, and ease it to a stop at the platform. You can hear the passengers depart and the conductor's safety commands.

Michael cut the sides off one of his MTH Electric Trains R-17 subway cars so visitors can see the seated and standing passengers inside. The open sides also provide a view of the station platform behind the car.

For variety, I cut open both sides on one of the MTH Electric Trains R-17 subway cars so the seated and standing riders are visible, along with the station platform. This often leads to visitors sharing their stories of riding subways.

Celebrating success

A picture of the platform was included in a 7-foot backdrop that I entered in the Celebration of Models contest at the 2017 National Model Railroad Association National Convention in Orlando, Fla. It earned second place in the Kit Built Display category.

In addition, a picture of the Grand Concourse platform took first place in the Photo-Model Print People's Choice Awards at the same event.



Tile walls serve as the background for the station scene. Michael used poster board to model the raised platform. He then added two Walkers newspaper stand kits and several Preiser figures to the scene.

Adding a slice of the Big Apple's railroad scene to my HO scale layout has been an enjoyable project. If you're looking to try something different in the hobby, consider modeling a subway.

Michael Collins is National Model Railroad Association Master Model

Railroader No. 157. He lives in Pembroke Pines, Fla., and is an active member of the Florida Citrus Model Train Society (fcmts.org). You can learn more about Michael's HO scale New York Harbor — Lehigh Valley RR layout and see videos of trains in action on his YouTube page. Search for @michaelcollins8320.

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This quarter Mike provides an insider's view of the article he submitted to Model Railroader with some visuals of his fondness for New York City. The article that was published, modeling an underground train and a platform was part of his home layout. The article was recently published in the June 2024 Model Railroader magazine, with the title "Digging into the Big Apple".

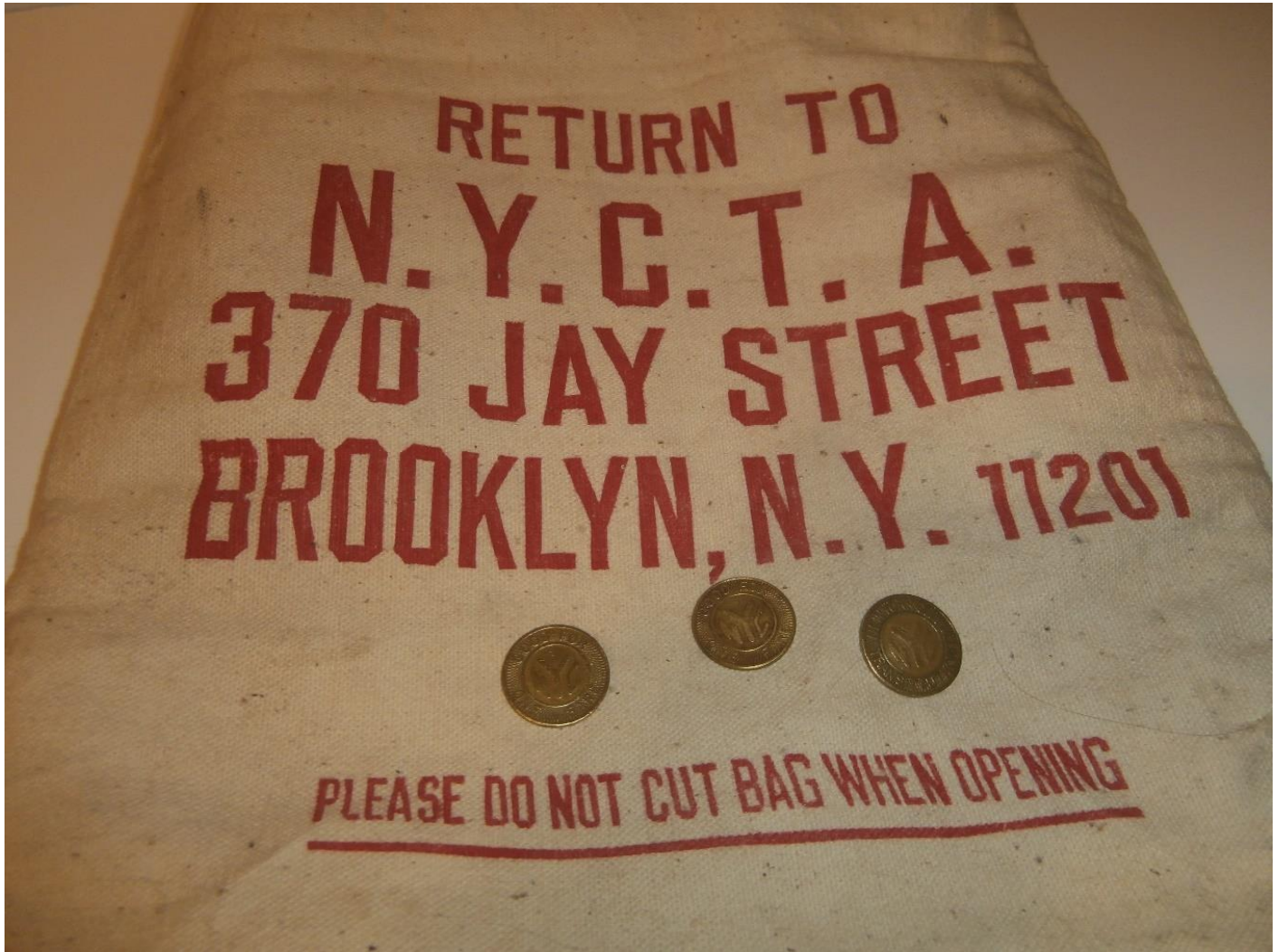
Mike is originally from "up north"; therefore, his modeling directly reflects his memories of the area, in the article he goes on to add a brief description of the IRT, IND and the BMT {*You will need to read the article to decipher the acronyms.*} in the article. A factoid from him, the New York City rapid transit subway system handles 3.2 million riders per day across 472 stations with 6418 rail vehicles.

The Grand Concourse station is the focus of his article, he modeled both the entrance and the platform, 149th St station is one the oldest in the Bronx.



Street Entrance and Subterranean Exit of the Grand Concourse

He adds, in the beginning, riders used a metal token. From 1953 to 2003, the subway used different types and styles of tokens until they converted to Metro Cards.



New York City's Propensity to Change

Mike describes in detail how he built the subway section, by going to the Florida Citrus Model Train Society website ... fcmts.org/layouts/mike-collins-new-layout/ his descriptions are found in reports 3, 4, 5, 11 and 15.

You can also see and hear the subway on YouTube.com videos (search) Michael Collins model railroad Part 2, Part 9 and 12, around ten minutes of sights and sounds. Mike says he gets a kick out of the conductors' New York accent. The videos can also be found on nmra.org (by selecting the upper right arrow symbol box), to find the videos.



New York City's Labyrinth of Transportation Routes both Above and Below Ground