THE SCALE RESOURCE

NEWS, REVIEWS, INFORMATION TO USE

February/March 2017
Volume 3 No. 3

Sound Decoder Install in a Brass Locomotive with a Video Extra

Craig Wright's Cumbres & Toltec Western

Developing an Industrial Scene PT 3

New York Central X-29 Box Car

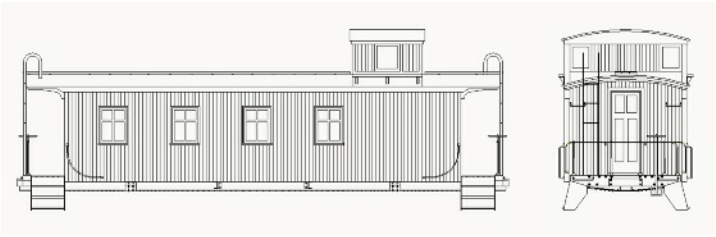
"Pogo Stick" Revisited

Shows, Meets and So Much More...

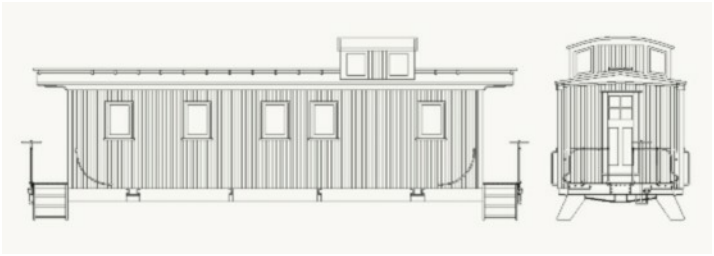
DES PLAINES HOBBIES

1524 Lee Street Des Plaines, IL 60018
www.desplaineshobbies.com

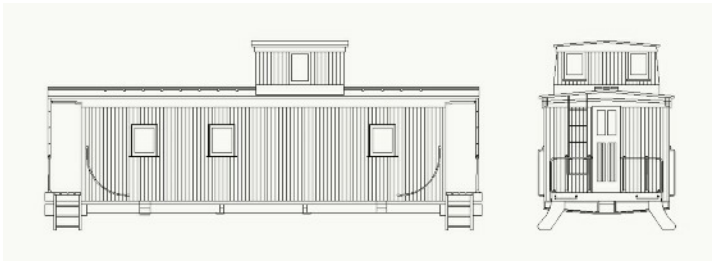
Laser Cut Wood Caboose Body Kits
Includes Laser Cut Interior Details



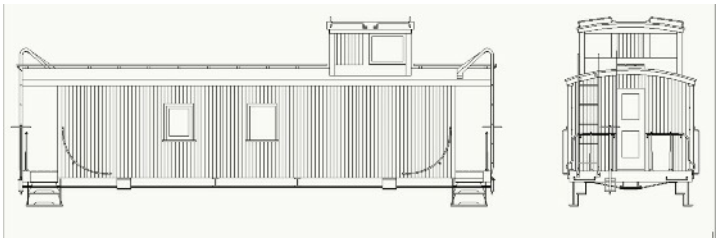
Pt #SSA60 **CB&Q 30' car**



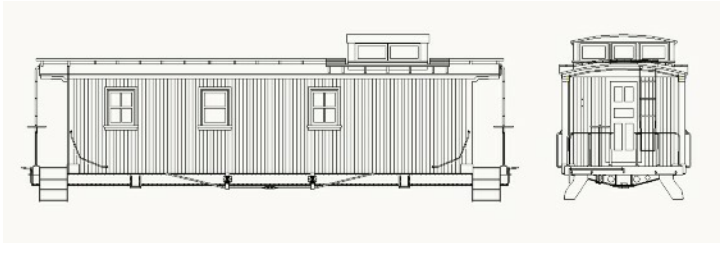
Pt #SSA61 **C&NW**



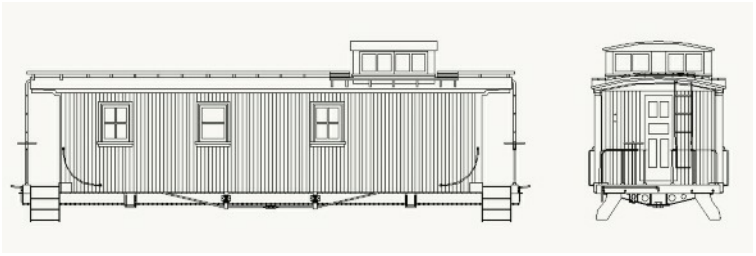
Pt #SSA62 **SOO Line**



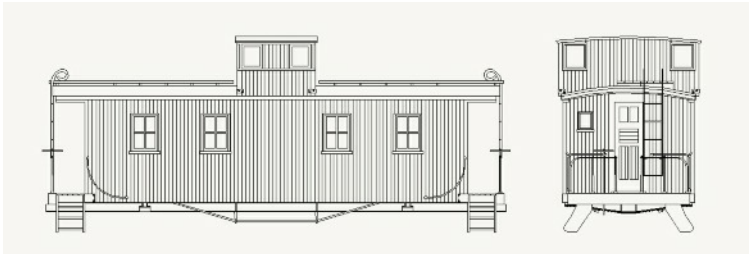
Pt #SSA63 **Canadian Pacific**



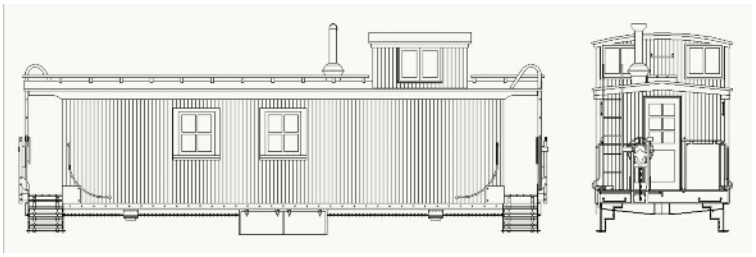
Pt #SSA64 **NYC 19000 series**



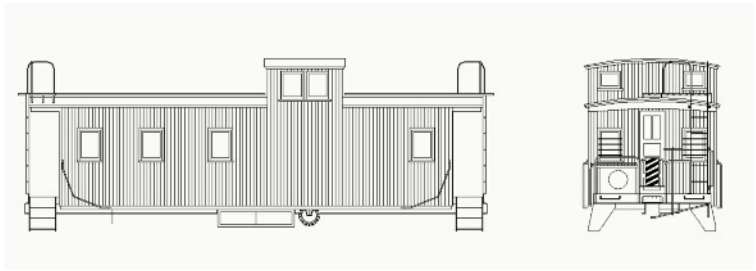
Pt #SSA65 **Boston and Albany**



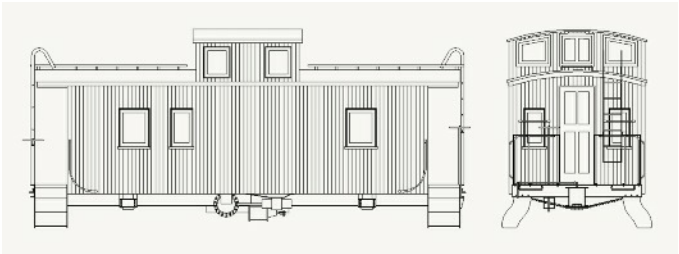
Pt #SSA66 **Big Four**



Pt #SSA67 **Canadian National**



Pt #SSA68 T&G siding **Pt #SSA69 Plywood Great Northern**



Pt #SSA70 **B&O Class I-10**

Manufactured exclusively for Des Plaines Hobbies
Kits are $90.00 each

THE S RESOURCE
NEWS, REVIEWS, INFORMATION TO USE
SCALE

Published Bi Monthly

The Model Railroad Resource LLC
407 E. Chippewa St
Dwight, Illinois 60420

Owner / Publisher
Amy Dawdy
amy@sscaleresource.com

Managing Editor / Advertising Executive
Daniel Dawdy
daniel@sscaleresource.com

Februry.March

Volume 3 No. 3

Welcome to the online *S Scale Resource* magazine. The magazine is presented in an easy to use format. The blue bar above the magazine has commands for previewing all the pages, advancing the pages forward or back, searching to go to a specific page, enlarging pages, printing pages, enlarging the view to full screen, and downloading a copy to your computer.

Front Cover Photo

Beautiful scene from Craig Wright's Cumbres & Toltec Western

Photo by Craig Wright

Rear Cover Photo

Another beautiful scene from Craig Wright's Cumbres & Toltec Western

Photo by Craig Wright

Bill Of Lading

The Model Railroad Resource LLC publishes *The O Scale Resource* and *The S Scale Resource*. Be sure to look at both of our magazines. There are many articles in our magazines that are not scale specific and will be of interest to you. Click the magazine title in this announcement to see the magazine.

From the Publisher's Desk

As I mentioned in my note last issue, we are always looking for articles and layout or modeling photos. This magazine is all about YOU, the model railroader and reader, and, we can't do it without you. Please continue to submit your photos, comments and articles to us so that we can share them with everyone in the hobby. Willy Monaghan did just that by sending us some photos from a recent show in Atlanta.

We know you are all working on things, but we did not get any submissions for "On the Workbench" this month. Even if it's a work in progress, send it in. I've said it before, but I'll say it again, **people like to see other modeler's work!** Don't think you can write an article? Sure you can; send us some photos and we'll work together to accomplish it. We want to continue to promote the hobby and see what everyone is doing, so send your thoughts, articles (or article ideas) and photos to:

amy@modelrailroadresource.com or daniel@modelrailroadresource.com

Last issue, we also asked for your thoughts at the end of the couple article. Dick Karnes heard our request and did just that by submitting his take on the "pogo stick effect" of couplers. Be sure to take a look at his article in this issue.

I'm sure that you've all been inspired by the "real thing" when it comes to modeling, whether it be scenery, locomotives or rolling stock, and this issues highlights some of that. Craig Wright's article featuring the Cumbres & Toltec Western shows us how he was inspired by his surroundings, and how he has created his layout to mimic reality. Jim Kindraka is back with an article focusing on New York Central's X-29 boxcar, and what we can learn from a photo. Dan continues the reality theme with his sound decoder install and video extra. What better way to mimic reality than with sound? Also, Glenn is back with Part 3 of Developing an Industrial Scene. Remember, the reality is in the details!

Dan and I visited the Phoenix area in December, and enjoyed visiting with Bill Winans and Steve Hatch and seeing their layouts, so be sure to look for some highlights in upcoming issues. In the next issue, Jim continues to model reality as he builds loads for his gons that were featured in the June/July 2016 issue of *The S Scale Resource*. So stay tuned, and keep coming back for more!

Happy Reading & Happy Modeling,

Amy Dawdy

Indianapolis O Scale Show

S Scale Midwest Show

Come to Indy and kick off your modeling season!

The best of O Scale and S Scale in one Show

September 21-23, 2017

Wyndham Indianapolis West 2544 Executive Dr. Indianapolis, IN 46241

WYNDHAM

Room rate $105.00*
Per night
until 8/20/17
*Based on availability

317-248-2481
877-361-4511

DEALER SETUP
Thursday 4PM - 7PM
Friday 8AM - 9AM

*** **SHOW TIMES** ***
Friday 9AM - 5PM
Complimentary Hors D'Oeuvres
and Cash Bar 5PM - 6:30PM
Saturday 9AM - 2PM

Buy/Sell/Trade
Modeling Clinics
Model Contest
Modular Layouts
Layout Tours

Meet old friends and make new ones

Please print clearly – Detach and return lower portion with payment

Name: _____
(Exactly as you would like badge printed)

Business: _____
(Exactly as you would like badge printed - table holders only)

_____
MAILING ADDRESS

_____
CITY/STATE/ZIP

Phone: (_____) _____

Email: _____

Make checks payable to: Model Railroad Resource LLC
Mail registration form to: 407 East Chippewa St
Dwight, IL 60420
Or register and pay online at:

Registration (Both days included) $25.00 **$25.00**
(Table holders must pay the $25.00 registration fee)

 # Of 6 ft. Tables ____ $50.00 ea/$60 after 8/1/17 **$_____**

O Scale vendor ◯ S Scale vendor ◯ No preference ◯

Number of add'l registrants ____@ $25 each **$_____**
(Please list below/Use back if needed/Children 15 and under free)

Name: _____

Name: _____

Spouse's Name:_____
(No charge/only needed if attending show)

TOTAL AMOUNT ENCLOSED: **$_____**
(No refunds after 8/1/17)

Electrical needed? **Yes** ◯
(Subject to availability)

IndyOScaleShow.com or SScaleMidwest.com

Contact info@indyoscaleshow.com or call 815-584-1577 with any questions

The parties, whose names appear on this registration form, have agreed to hold harmless all of the organizers, sponsors, Model Railroad Resource, LLC, The Wyndham Indianapolis West, and others, single and collectively, for any injury, harm, loss, damage, misadventure, or other inconvenience suffered or sustained as a result of participating in the Indianapolis O Scale Show and S Scale Midwest Show 2017, or in connection with any activity related to this event, whether of negligence by agents under their employ or otherwise.

NEWS YOU CAN USE

Monster Modelworks has a new building out.

Based on the East Deerfield Yard Tower in East Deerfield, MA. This tower has three sister towers located through out the East Coast. Dimensions: 5.2"L x 3.25"W x 6.5"H Price: $54.99

Union Station Products continues to bring out new passenger car sides. Our sides are done with a white styrene outer side and a crystal clear plastic inner side that are to be glued together. The clear inner side is also used for window glazing. All sides are undecorated and require a core kit (roof, floor, ends) to make a car shell, or the use of a donor car, unless otherwise indicated. The diagrams shown on the website are three or four colors: white lines are the outlines of the sides and doors (if the kit comes with separate doors), green lines are generally window openings, red and blue lines are details cut into the sides. Descriptions of the cars are of the prototype and usually tell the builder, number of cars made, the original owning railroad, and disposition of the cars. Check their Website for more information.

Model Tech Studios LLC has some new S scale figures. DO YOU HAVE ICE DELIVERY TRUCKS or ICING PLATFORMS for your Reefers to get supplied? Homes or business customers that need delivery? Do you have a Fishing Waterfront scene? We have the "ICEMEN" to get your scenes accurately detailed....as they should be!The ICE DELIVERY MAN, with Ice Blocks, Finished. Blocks of Ice, often harvested from local bodies of water, were used to chill the ice boxes in homes and for business customers. Also used heavily for the fishing and Produce industry.

He has an Ice Tong in hand delivering his daily Ice Blocks.

Fisherman with his fishing pole and Line, Finished. Gone to Fish: this fisherman comes with his fishing pole and line. S Scale Custom Figures made in the USA *** Boat NOT included with fisherman...illustration purposes only. Check out all their offerings at Model Tech Studios LLC.

Ron Sebastian of Des Plaines Hobbies has some new S Scale product they will be releasing shortly. They just got a huge pallet of parts this month. It is a 1/64th scale 40' corrugated hi-cube container. For the intermodal guys, this is the most common international shipping container. A lot of model railroad product comes in these containers.

The kit SSA330 will consist of a one piece body, floor and separate door rods. Stock number will be SSA330. Check out Des Plaines Hobbies for full information.

Bill Morris from NE Prototypes says: I am pleased to announce that NE Prototypes will be offering MEC diesel - green and gold decal sets in a few months for the following locomotive types: F, E, RS, GP, and a switcher set for the SW and NW series switchers. Pricing should come in under $15 a set. These will include a variety of nose logos so that you can detail your model to the era you wish to model. If you are interested in purchasing same, please contact me as I will only produce these in limited quantities as reserved. REMINDER the B&M Maroon and Gold sets are still available in very limited quantities and may sell out soon. Contact Bill direct at billmorris52@hotmail.com

Michael Ostertag writes: I would like to announce that Century Models is producing 3D printed parts in S scale. There are many parts being made available for printing and many more to come. Among the parts available are GP38-2 long hoods in both dynamic and non-dynamic versions, EMD dash-2 cabs w/81" nose, fuel tank ends (allows you to model any size EMD fuel tank with that profile), EMD locomotive pilots both notched and non-notched, radiator fans, grills and much more.

Robert Frascella and I are developing detail parts that can be 3D printed to fit many second generation EMD diesel locomotives. There will be many more parts to come in the future, including Alco C420, EMD GP39-2, GP40 and 40-2. Possible conversion kits to convert an AM GP35 into an EMD GP30 (very far down the line, but in the works) and also a potential MP15AC.

Also, we are working on parts that will allow a modeler to build a PS 4750 3 bay covered hopper. This project is also down the line a bit, but is being worked on. All of these parts will require the modeler to build there own chassis using strip styrene, but the end results are incredible! So come check out the Century Models Store. https://www.shapeways.com/shops/century-models?li=pb

Poverty Flats Model Company has some new small 3D-printed details. Shown below is their 1-64 Car Shop Saw Horse modeled after one fould in Alamosa, Colorado. Check their Shapeways site for more information.

Eastern Road Models announces an S scale kit for the Canadian National Railways center cupola, single sheathed Diamond Road Flanger. These cars were built at the CNR's Moncton Shops between 1926 and 1938.

This kit includes the special diamond flanger blade, stirrup steps, wind deflectors for the cupola, brake cylinders and handbrake wheels, and a choice of smoke jacks for coal or oil fired stoves (H shape for oil). Extras of the stirrup steps and brake wheels are included. Check out their Shapeways shop.

PC Ties and hard to find SUPPLIES
Sheet Metal – Barrels
Hand Tools – Plastics – Poles
Blackened Cable & Chain
Window Glass – Wood Ties
Eye Bolts & Rings – Paint
Straight & Coiled Wire
Black Nylon Filament
Nylon & Brass Screen
NMRA Standards Gauges
Kits, Castings & Parts
DRY TRANSFER LETTERING
Over 2100 Dry Transfer Lettering Sets for all Periods and Scales
Shop Online - cloverhouse.com
Or Order Catalog #14 - $6.00
Clover House
Box 215D, Veradale, WA 99037-0215

Announcing the Early Berkshires In S Scale Brass
AT&SF, B&A, B&M, IC and SP
COMING SOON

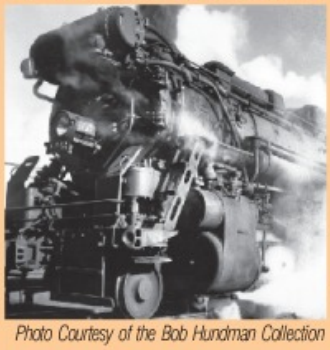



Photo Courtesy of the Bob Hundman Collection
River Raisin Models
6160 Upper Straits Blvd.
West Bloomfield, MI 48324
248-366-9621
for Complete Details and to Reserve Yours, visit:
www.riverraisinmodels.com

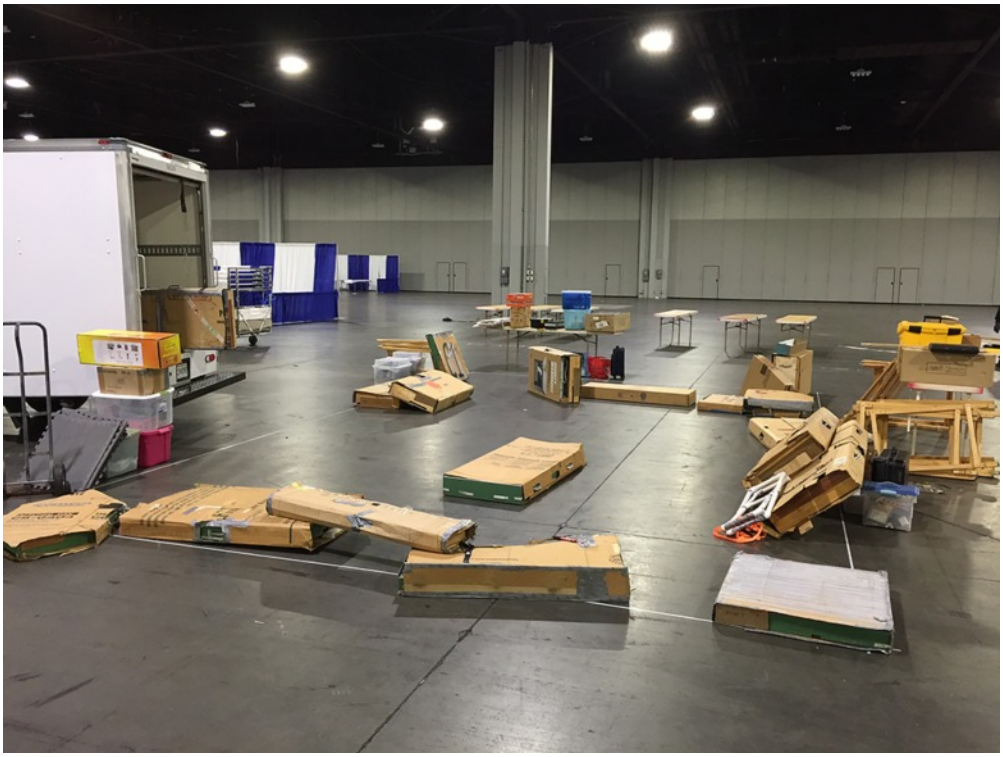
WWW.SBS4DCC.COM
SOUNDTRAXX
Tsunami2
ACCUTRACK II SPEEDOMETER
WOWSound
ESU
FULL THROTTLE
DCC concepts
DCC Specialties
TCS
DIGITRAX
TAM VALLEY DEPOT
NCE The Power of DCC
SPROG DCC
TEAM DIGITAL
IN STOCK - OPEN 24-7
Featuring "Ultra Bass" Speakers

Have an upcoming S Scale event? We would like to help publicize it. Send us the information up to one year in advance, and we'll place it on our show page, along with a direct link to your Website and/or Email. Click here to send us your information.

Show Action

Photos by Willy Monaghan

Willy Monaghan sent us some pictures of the Crescent City S Scalers set up at a recent show in Atlanta. Lot's of work, but seeing the people's faces, it was well worth it.




K-LINE

Developing an Industrial Scene… Adding More Details

Part 3

In this article, I want to add some of the details found on the two small tanks shown here.

By Glenn Guerra

This is the third article in the series about building a plastic pellet storage facility. Part one is in the October/November 2016 issue of *The S Scale Resource*. In that article, I went through the thought process involved in how to develop a scene based around a plastic pellet storage facility near me. The second article was in the December 2016/January 2017 issue of *The S Scale Resource*. In that article, I built the basic storage tanks and silos. In this article, I will add some details to the two smaller tanks.

The two smaller tanks have a railing around the top along with some machinery. There is a caged ladder on one of tank to reach the top. A small walk connects the two tanks at the top. I looked around a bit for some suitable ready made components I could use. There were some caged ladders available, but I did not care for how they looked. The railing posed a problem. I could make it out of styrene, but I was afraid it would be too delicate. Lastly, part of my purpose in writing these articles is to share some ideas with you. Even if you don't want to build this, or a similar complex, the techniques may help you with your projects.

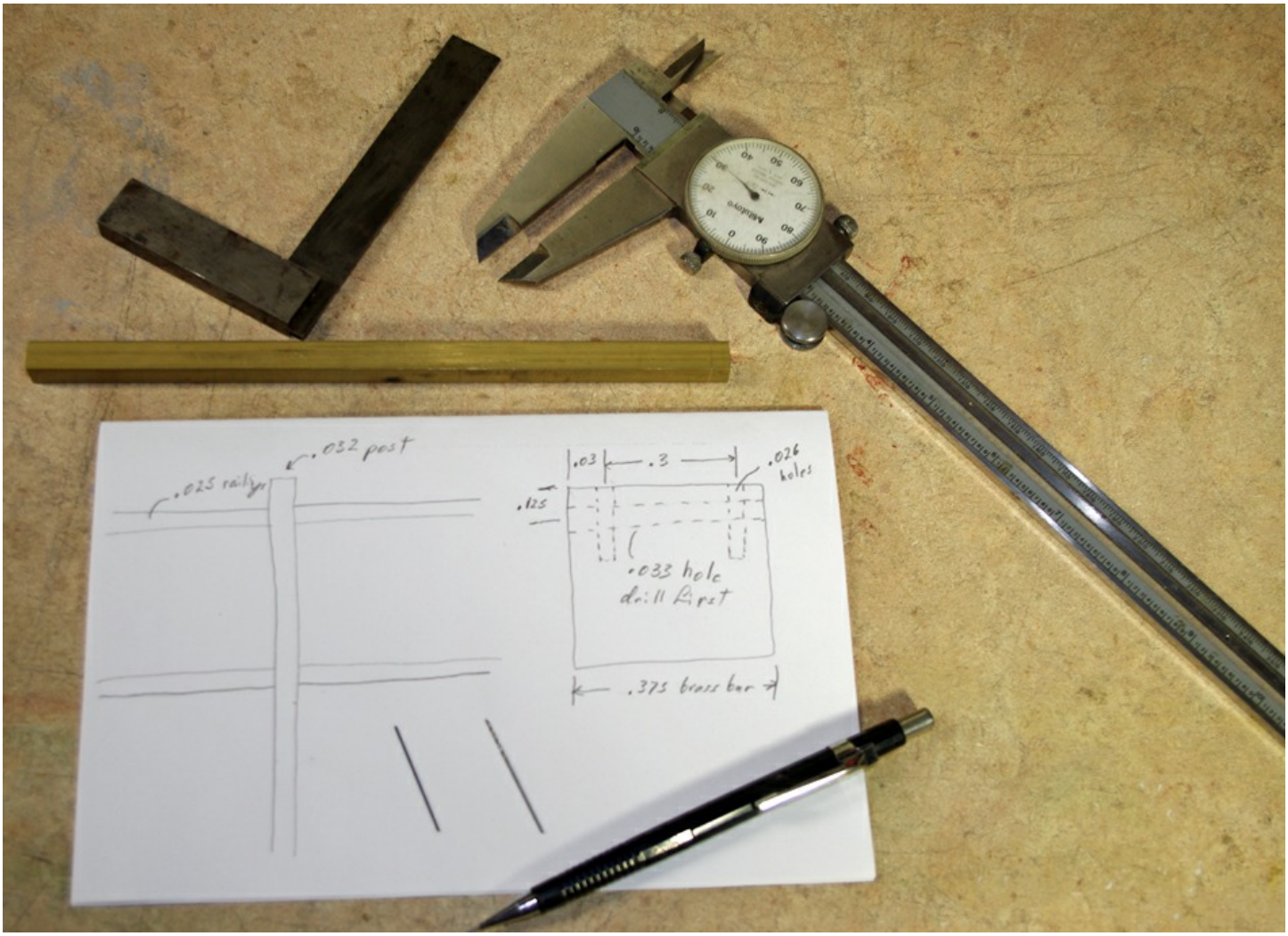
I decided to make the railings out of brass. This would give me the strength I needed, and would be a good use for a clever drilling technique that was told to me. I had some trouble with this and re-made them a few times before I was done. I will get into more of that in the captions of the photos. I also decided to make the


DANGER
CONFINED SPACE
ENTER BY
PERMIT ONLY

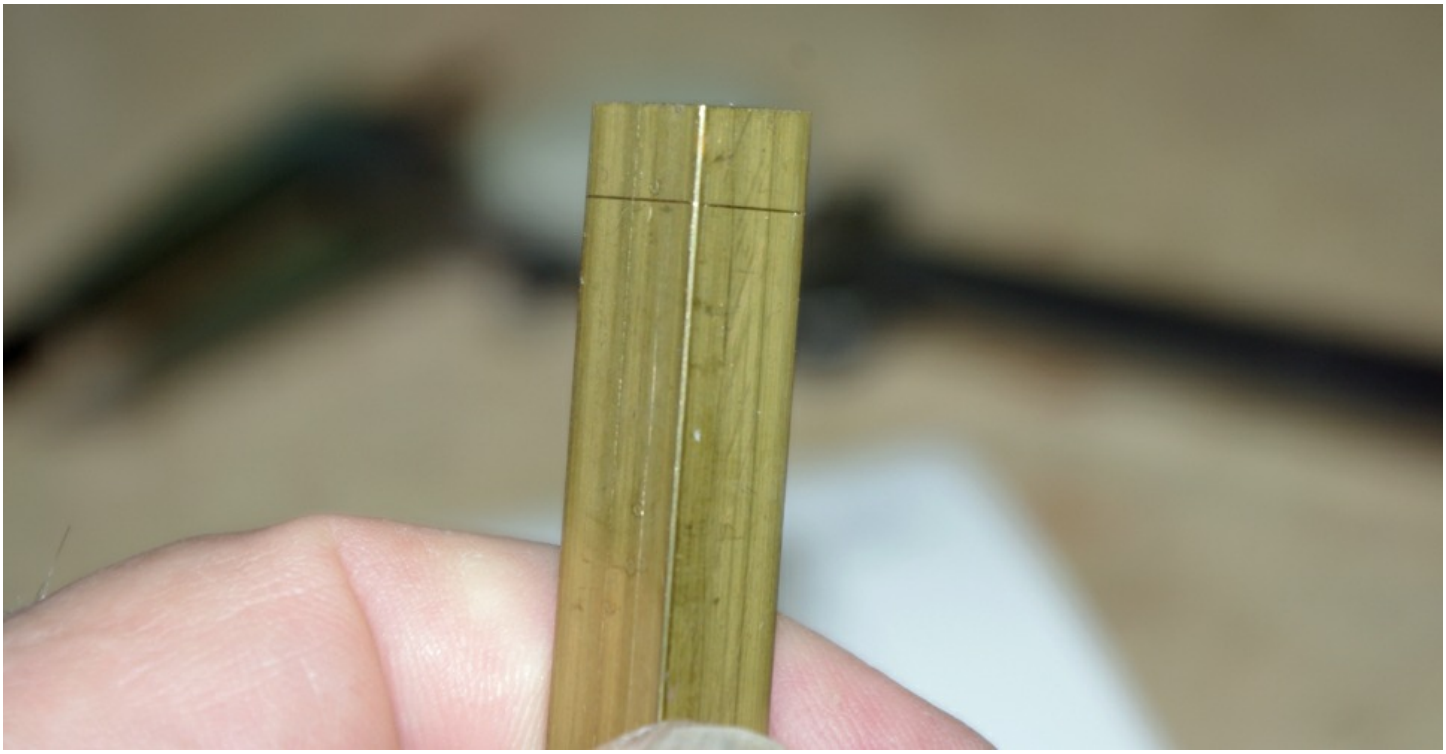
caged ladder out of brass. I like the delicate look of the finished ladder. I made the cage twice, and as mentioned, will get into some of the problems with that in the photo captions. Many people shy away from working with brass, and I thought some projects like this would help people get a little more familiar with working in brass.

I wanted to add more detail to the tanks and used some of the weld line 3D decals that are available. This was the first time I used a product like this and I liked it. I will give a little of my impression on them. I also did some things with styrene tube that I had never done before, and will show how that worked out as well.

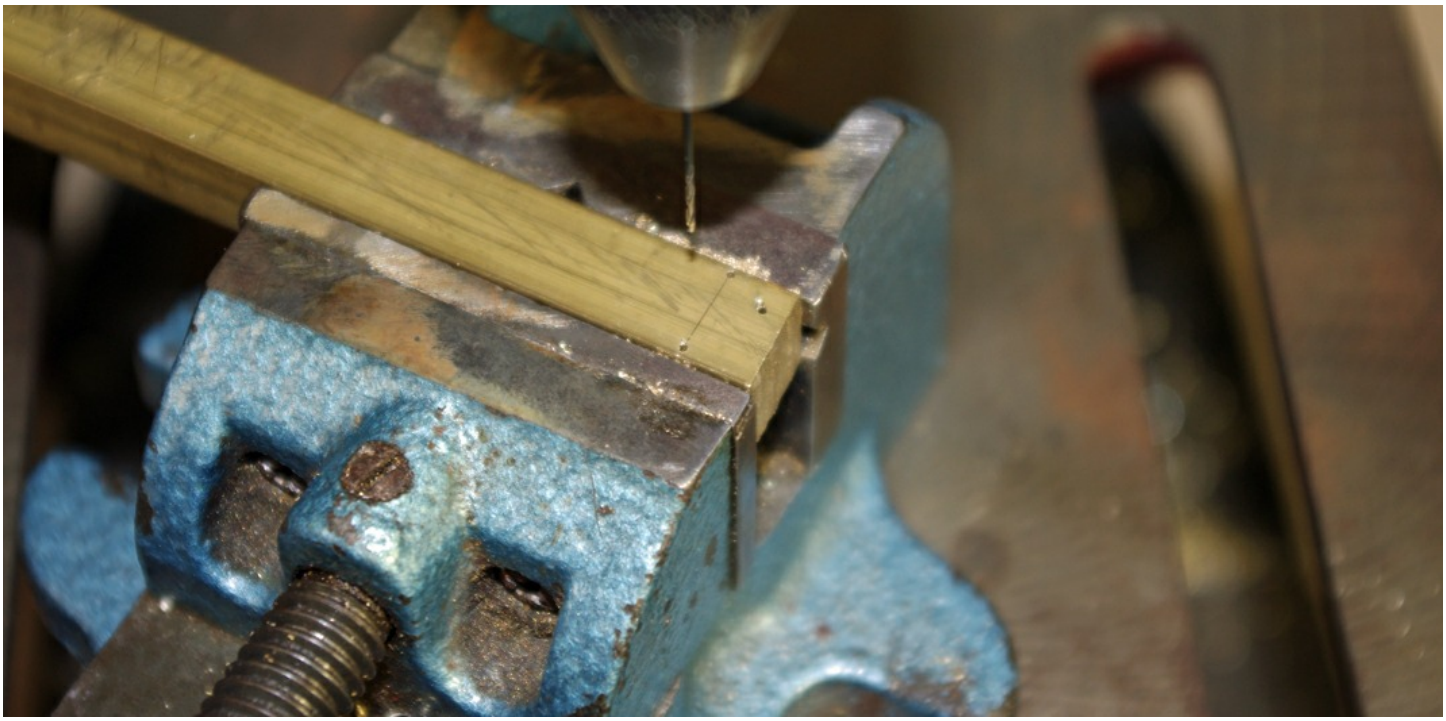
Like the other two articles, this will be primarily a photo article with the captions describing what is going on, so let's move on and see how the project is coming along.



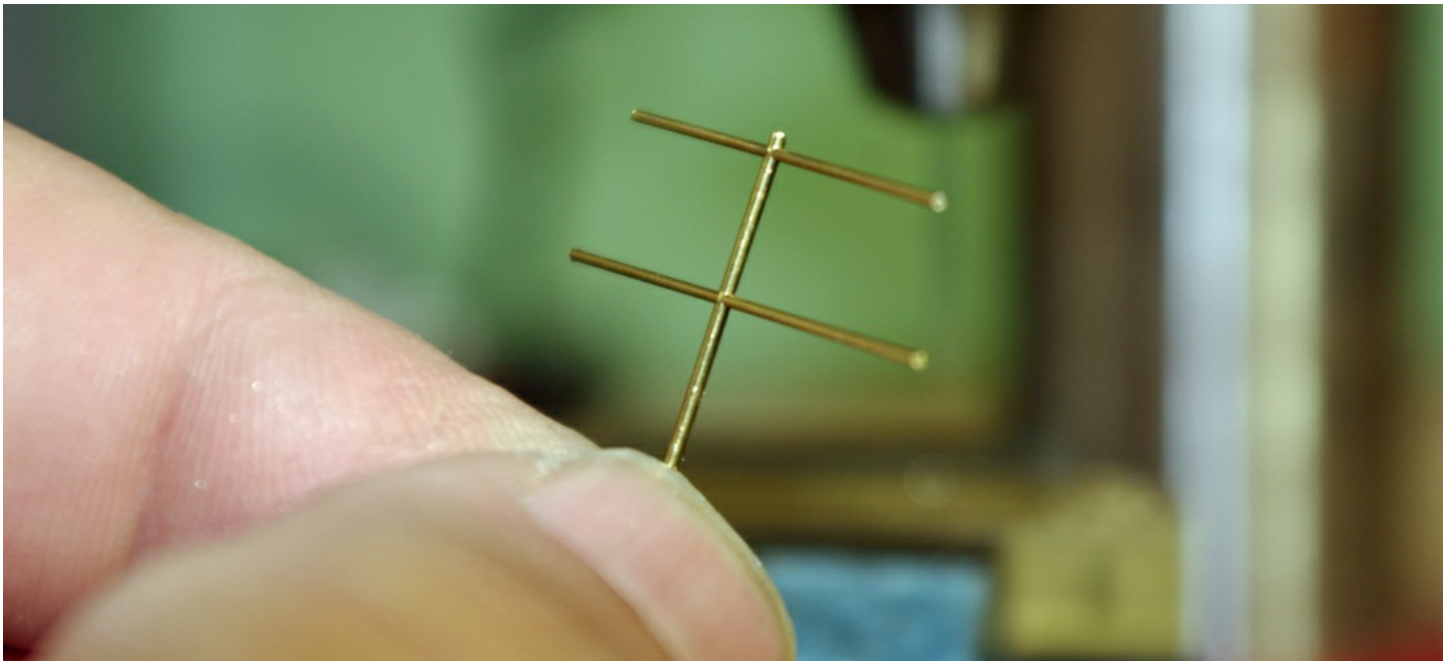
I started with the railings at the top of the tanks. Harmon Monk told me a trick he learned from Bernie Gallagher. Look at the railings on the previous page, and you will notice the railings merge into the post. It would be nice to make the model railing do the same. The problem is, how do you drill a hole in a piece of wire? Not only one hole, but a bunch and have them the same. This is what they told me to do. Drill a hole the size of the post in one side of a piece of brass. Then, on the other side, drill a hole the size of the railing and have it go through the first hole. Next, put a piece of wire in the first hole and drill through the second hole. The second hole will keep the drill from wandering, and it will drill through the wire. This works well, but it does take some careful layout and drilling. I made a sketch first. Notice I will drill two holes for the railing locations. This will ensure all my railings will be parallel. I always recommend making a sketch like the one above. Think about what you have for materials making the dimensions something that will work for you. In my case, I had some 3/8" square brass around. By making the railing holes 0.3" apart, it came to around 19" in S Scale. That's about the right spacing for a railing.



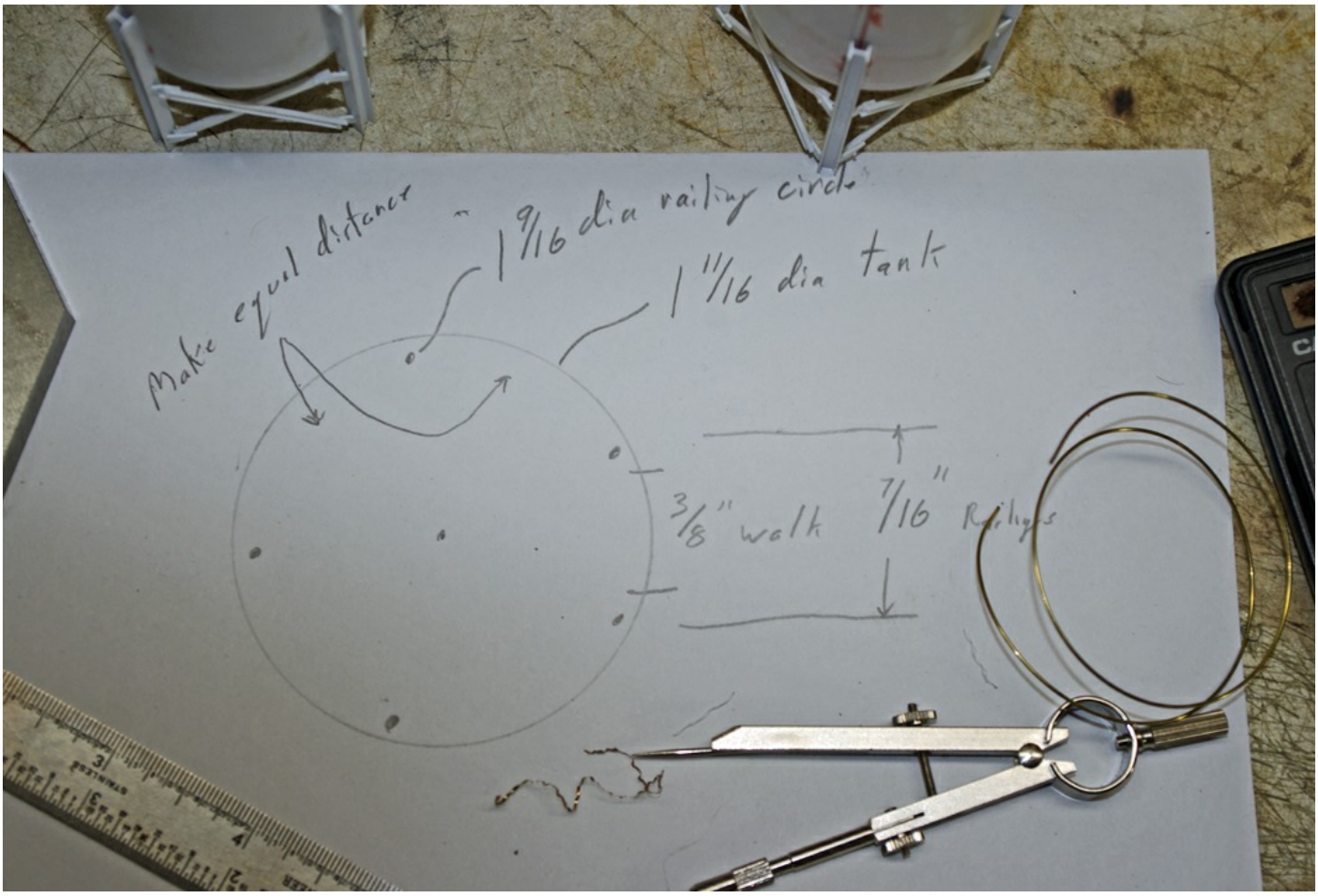
In this photo, I have scribed my two layout lines. These must be accurate and meet at an edge. On one line, I will drill a hole for the railing post. On the other line, I will drill the two holes for the railings.



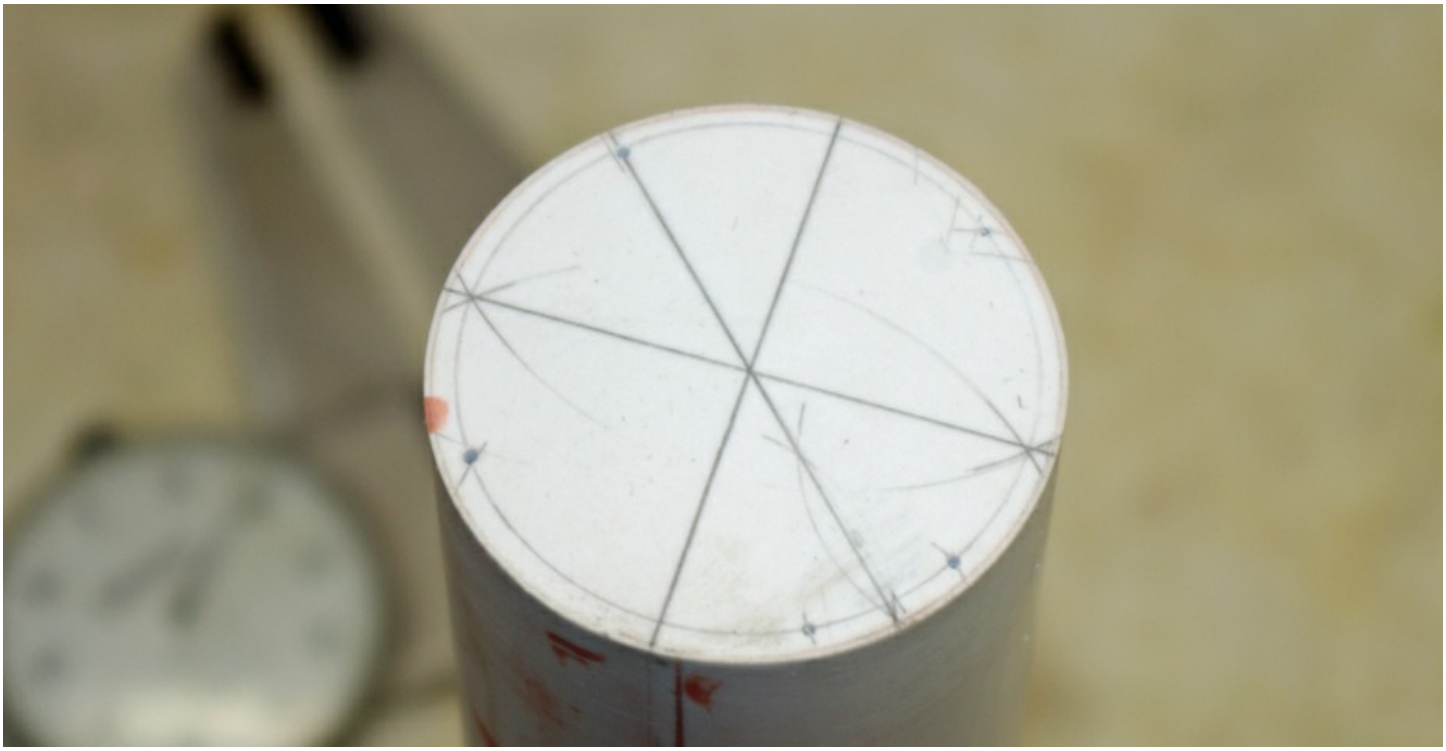
In this photo, I am drilling the two railing holes. These must be on the line and not off it at all. We are trying to drill a .026 hole in some .032 wire. My drill press is not very good, so I generally start holes like this with a small drill in a pin vise. You can use a starting drill, but as I mentioned, my drill press is not that good and the starting drill may wobble. Once you have the hole started with the pin vise, the .026" drill in the drill press will find the center. Drill clear through the .033" hole you drilled first. When the holes are drilled, move the brass bar until it hangs out of the vise. I cut some .032" brass wire to length for the posts and inserted them into the hole in the brass bar. Next, drill the two .026" holes through the posts.



This is what you should get. Two holes that are parallel and through the post wire. This worked very well, as shown here, but I had some problems later on. When trying to make a curved railing there was just too much handling and the posts would break at the holes. More on that later.

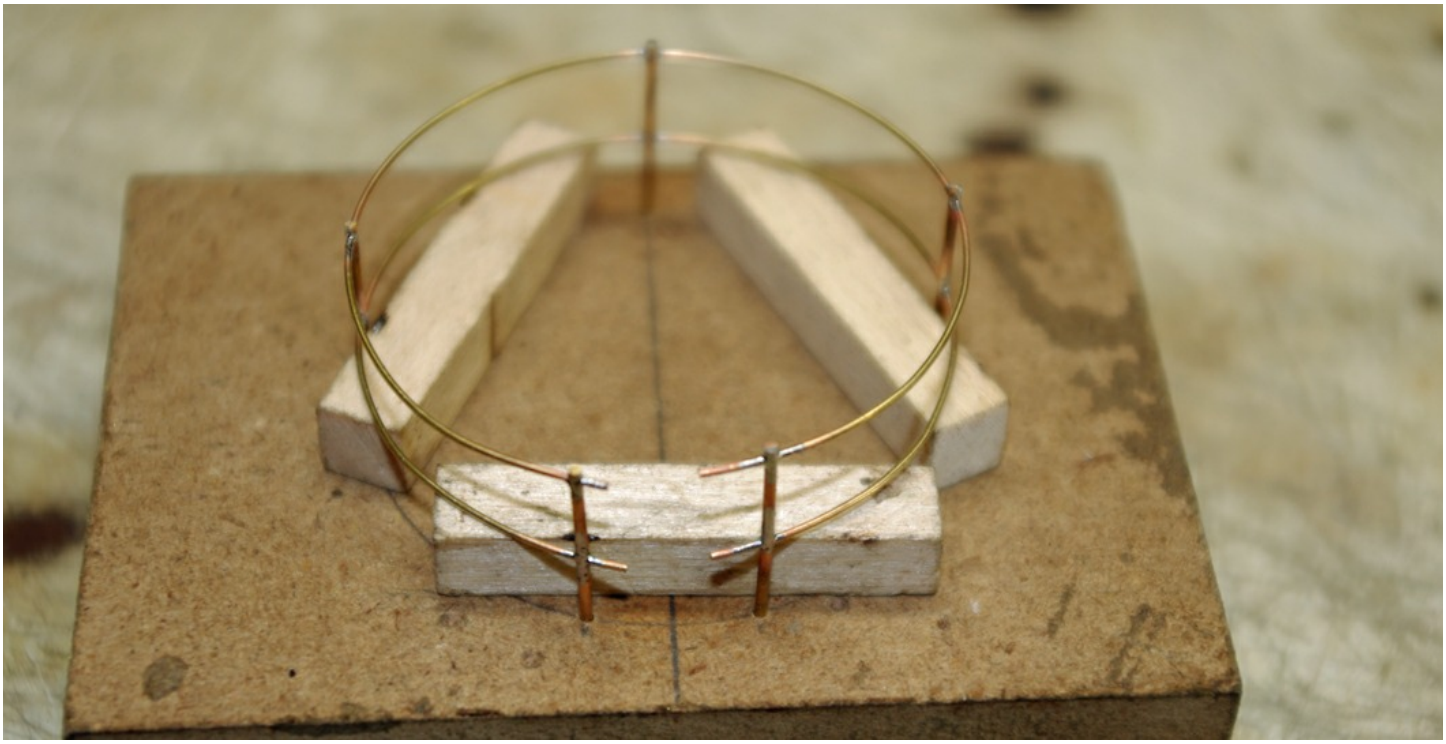


I made a sketch again to determine where to drill the holes for the posts in the top of the tanks. You can see I have also pre-bent some wire for the railings. I bent this around a piece of tube, and will cut it to length later.

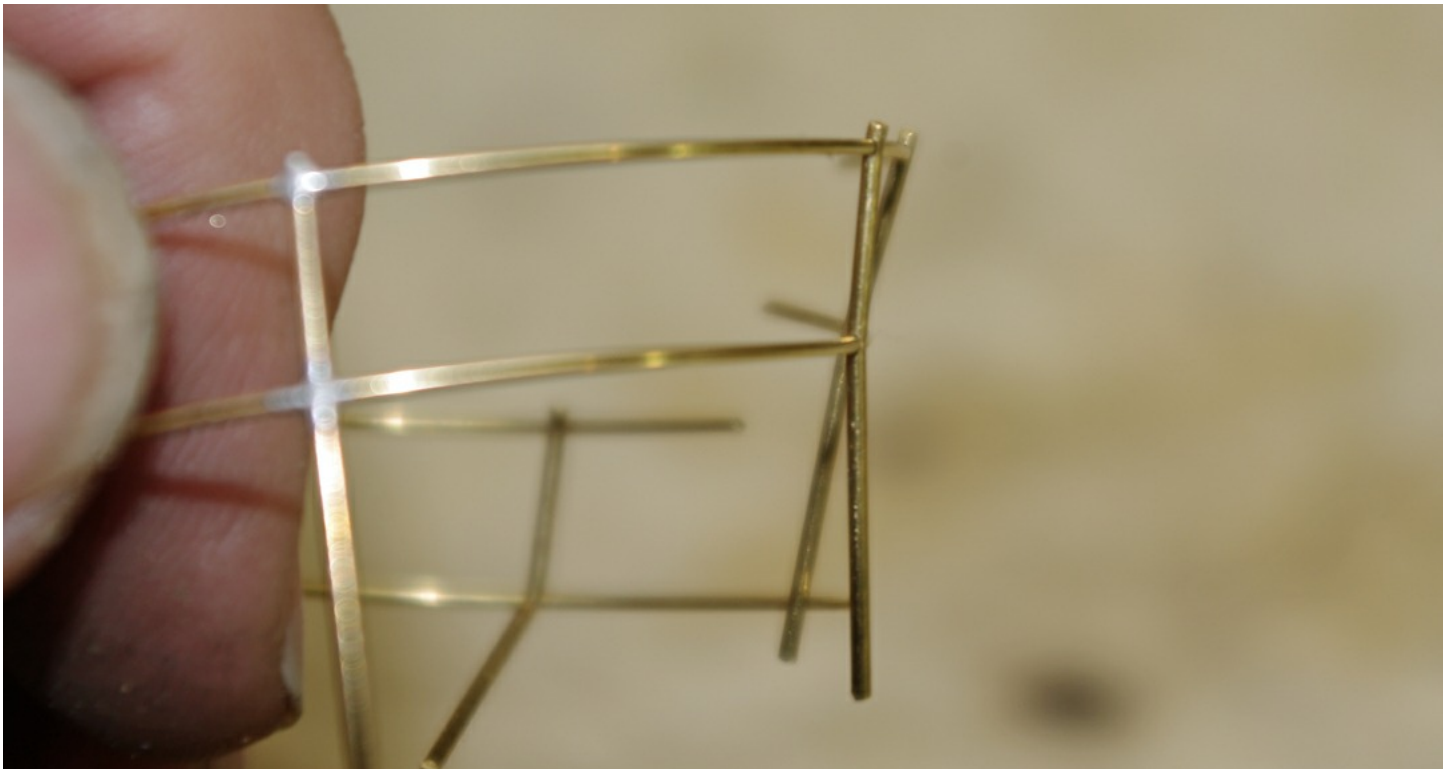


Here is the top of one of the tanks showing the holes for the railing posts. I drilled the single post hole at the top left first and then the two at the lower right. Next, I set the compass to about half way and scribed two marks to help locate the other two railing post holes. Look closely and you will se the compass lines near those holes.

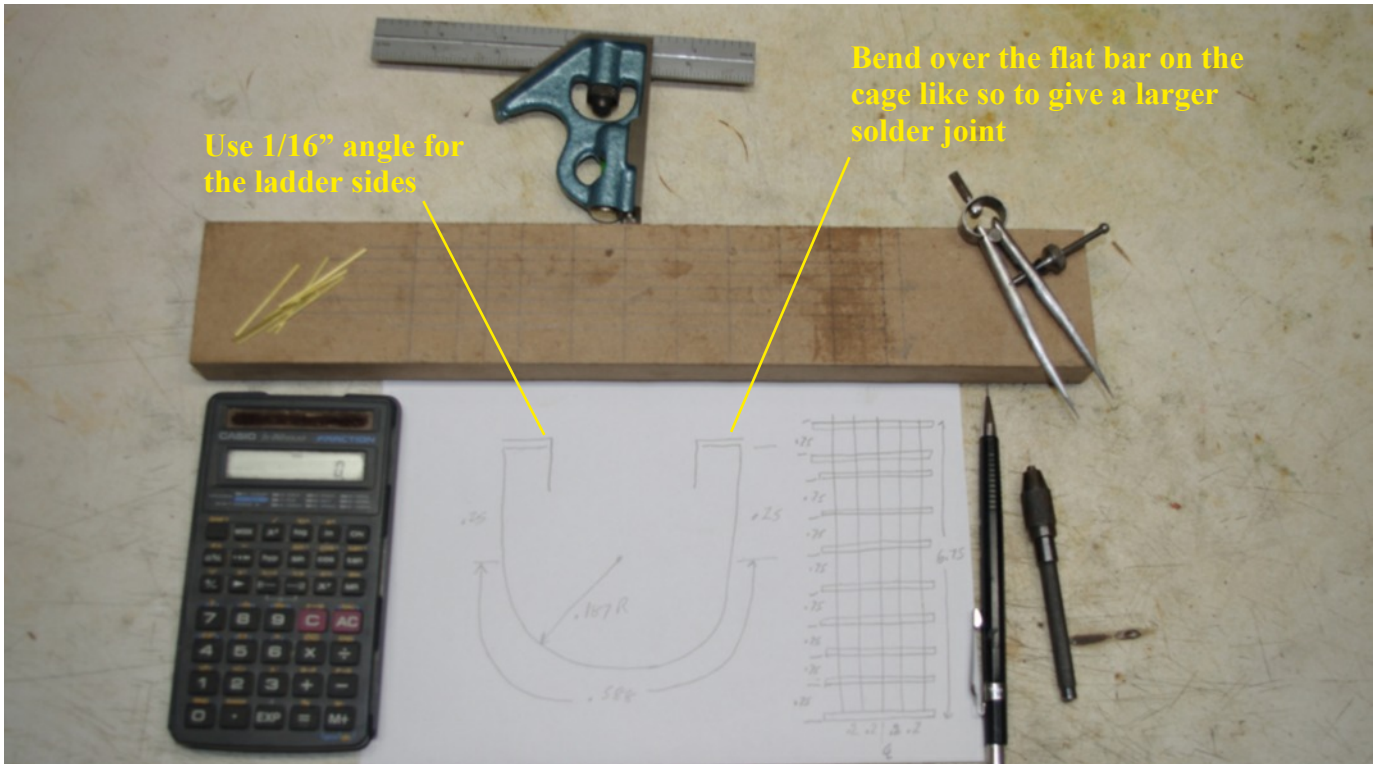
I thought the location of the posts would be tricky, so I decided I would solder the single post opposite the two opening posts first as shown. Then, I would slide the remaining posts on, and insert it all in the top of the tank. The posts would be located by the holes in the tank top, and all I would need to do was slide the wire around for adjustment. After that, I would tack the joints in place. This almost worked, and the joints could be soldered without melting the styrene if I was quick. However, the wire was too stiff to move around, and the posts were too weak at the holes I had drilled in them for the railings. I started breaking posts, making me think I needed a more ridged fixture.



This is the fixture I came up with. It worked, but the railing wire was still too stiff and hard to bend to the right curve. It was so stiff that it would pull the posts out of square as you can see in the photo. I was getting close, but I wasn't there yet, so I kept trying.

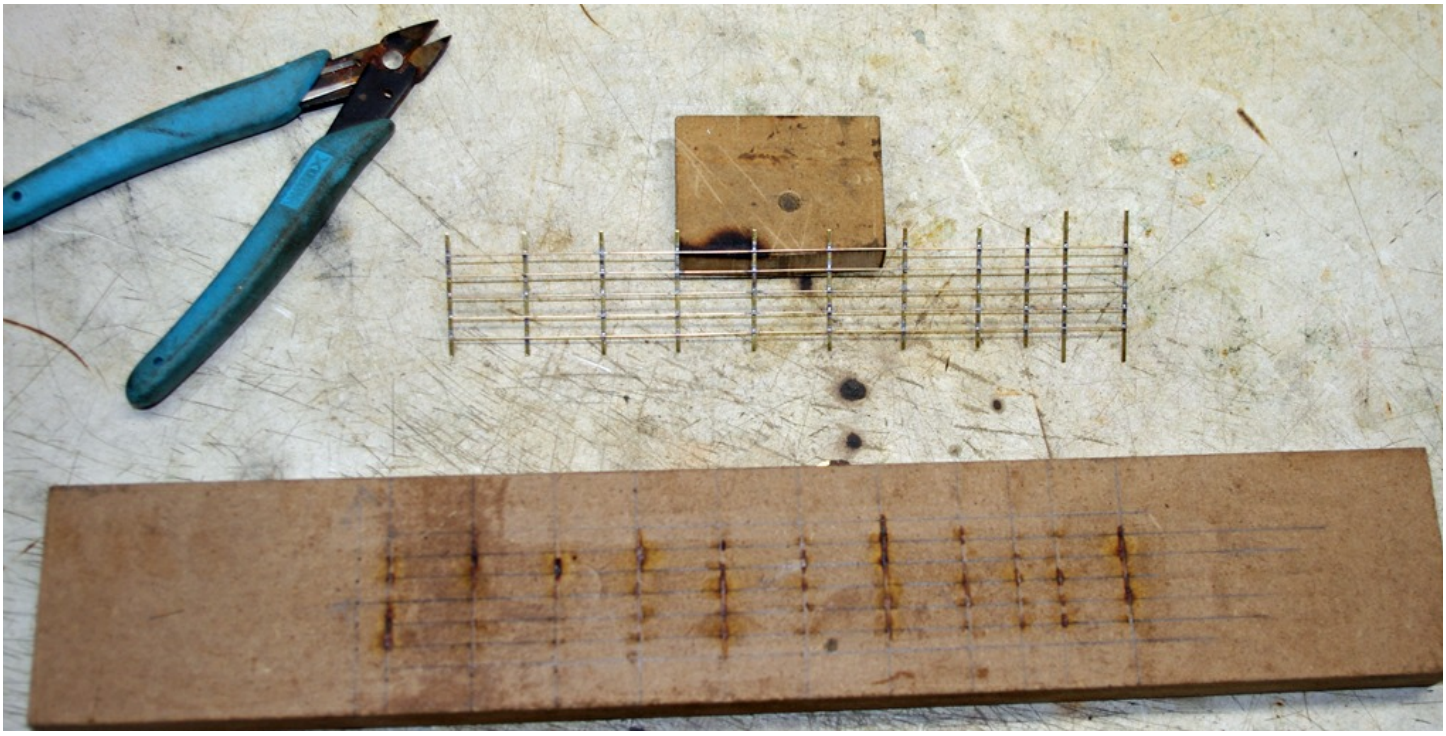


Here you can see what was going on with the railing posts. At this point, I decided to start over, this time using .020" wire for the railings. In the first try, I had a .026" hole in .032" wire. That only leaves .003" of post around the railing hole. I could tell that I was also not on the dead center of the post either, but you have to be impressed with what you could do with this method. I think for straight railings of a chain link fence, I would have been fine. My problem was bending the curved railings. That was solved a little with the .020" railings, leaving more material around the railing holes in the posts and less stiffness in the railing. I still had a few posts break, but I was able to make some passable railings.

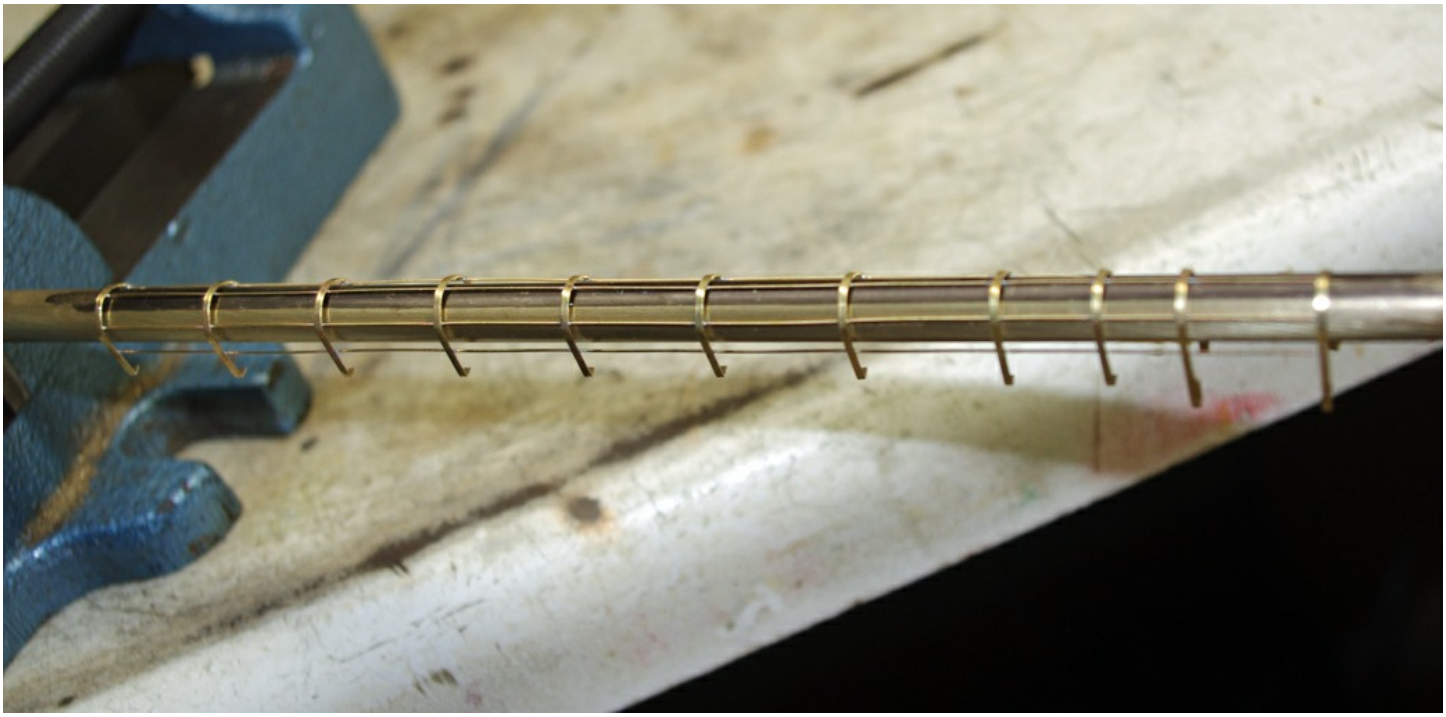


Next came the ladder and ladder cage. If you look at the photos of the prototype, you will see the sides of the ladder are very small bars. I have done long ladders like this in the past from etchings, but they are not very strong and hard to keep straight. I decided to use 1.16" angle for the sides of my ladders. That would also give me a larger solder joint for the cage attachments. I also made a soldering fixture to hold things in alignment while I soldered them. I decided to use .020" wire for the cage and .015" X .040" flat bar for the cage wrappers. This would be a problem and also was changed. More on this later.

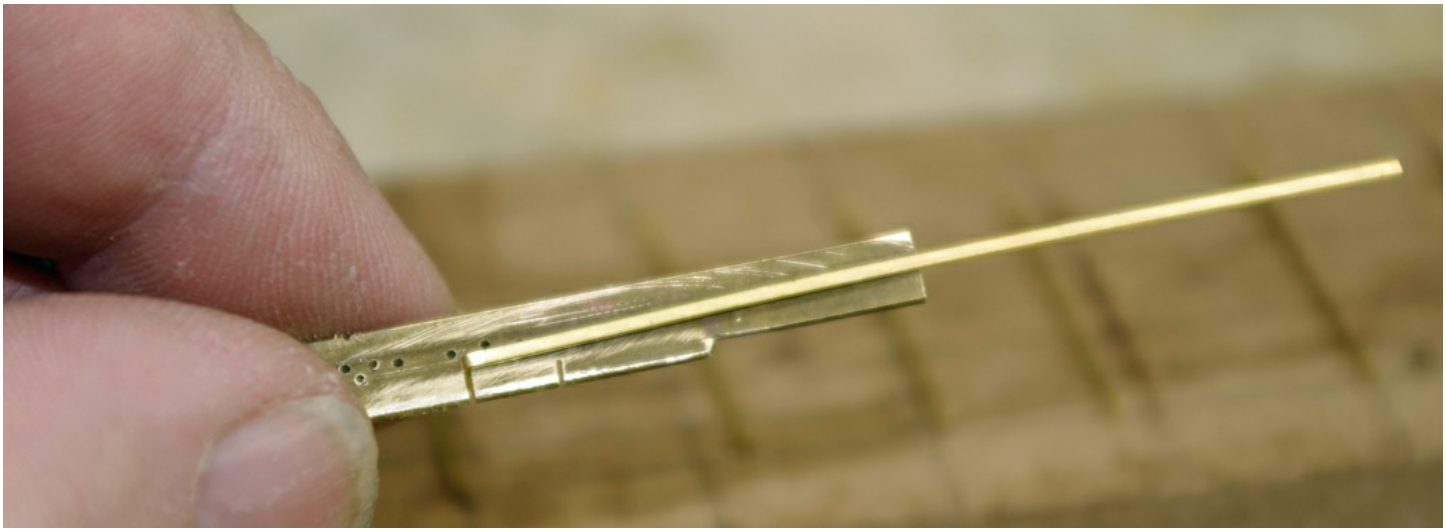
This is my set up for soldering the cage. There were some problems in design and technique here. First, the design. I used .020" wire and that works out to around 1-1/4" in S Scale. That was too heavy and did not give me the delicate look I wanted. Then the technique, I tacked the ends first and then started soldering the rest. Things expand when they get hot, and with no where to expand, the wires started to buckle. When I made the final version, I started at one end and worked to the other end with much better results.



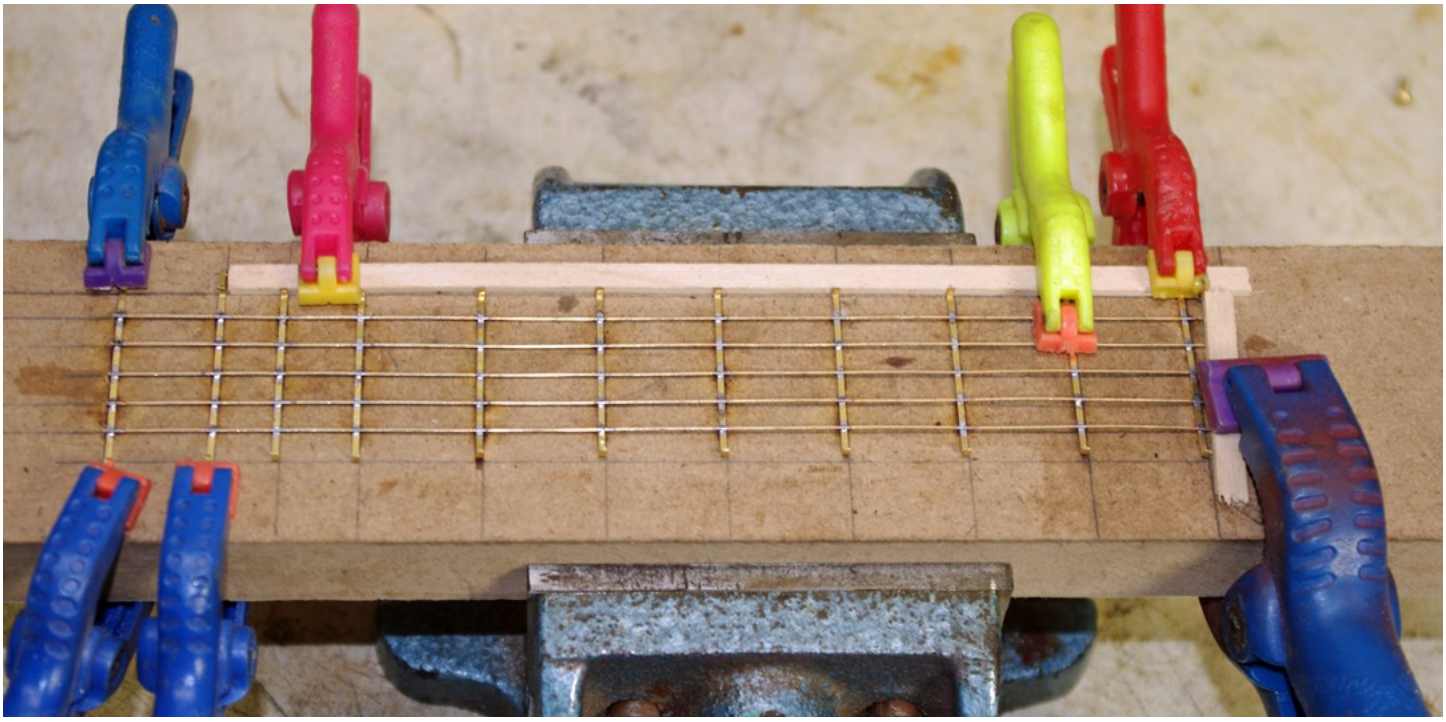
Here was my first attempt at the ladder cage. Not bad, but I thought the wire was a bit too heavy. Notice I do not have the "feet" on the flat bars bent to solder to the ladder. After I bent this one, and then decided to bend the feet, I realized I had worked myself into a corner. There was no way to get a pliers into the flat bar to bend it, and the chance of them all being bent the same was slim. I needed to try this again.



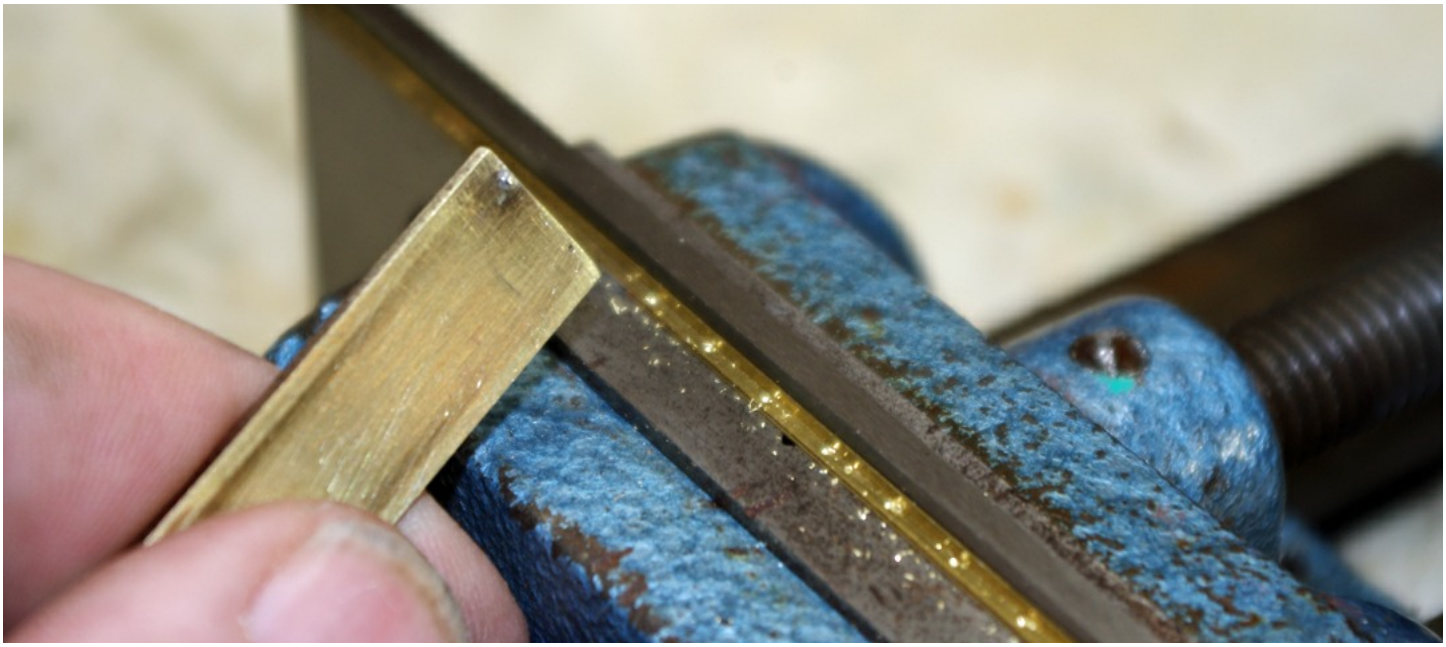
Before I show you how I fixed the problems mentioned, above let me show you how I formed the cage. I had a piece of brass tube that was the right size for the inside of the cage. I colored it with a marking pen and scratched a center line on it. The marking pen works like layout dye, making the scratch line easier to see. I laid out the wires so one of them would be on the center. I laid that on the scratch line. Then I started bending the cage around. Go slow and do a little at a time. This is the second one I built. Look close, and you will see that I have the "feet" for a solder joint already bent. I will show how that was done next.



I have a little tool laying around my work bench that I made for bending grab irons. It's a piece of brass angle that I drill holes in for grab irons. I bend a piece of wire and insert it into one of the holes. Then I bend the wire over the edge of the brass. It's easy to make a lot of grab irons all the same. Look close by my thumb and you will see some of the holes. I cut a slot in this tool and bent the flat bar for the cage the same way as shown here. Now all my flat bars were bent in the same place, and were the same length. As long as I had them positioned right in my fixture, the "feet" would all line up when I bent the cage. I was ready for a second go at this.



Here is my second attempt at soldering up the cage. I clamped a piece of strip wood to the fixture to make sure all the flat bars were lined up. I also used .015" wire on this one, and soldered from one end to the other. That minimized the wire moving around. I did this with my soldering iron and 60/40 Tin Lead solder which melts around 350 degrees F. A project like this will help you with your soldering, and show you a lot. First, I put flux on the joint first. After that, I picked up a small bit of solder on the tip of the iron. When touching the joint, the solder will flow to the joint because of the flux cleaning the metal. Look close though, and you will see the solder joint is on one side of the wire only. The solder flows to the heat and that is where the iron was, so now touch the other side of the joint to draw the solder through the joint. This is an important lesson in soldering, and a good example to see how it works.



Now to the ladder itself. I made the ladder sides out of 1/16" brass angle that I cut extra long. Then I tack soldered the angles back to back in three spots. The next task was to drill the holes for the rungs. There are a few concerns when doing something like this. One concern is how to make the left side of the ladder the same as the right side. That was solved by soldering the two halves together. Next was the spacing and location of the rung holes relative to the edges of the ladder. That was solved with the simple drill jig shown in my left hand. This does two things for me. First, all the holes will be the same distance from inside of the angle. The second thing it does is make all the holes the same distance apart. First, scratch a line parallel to the edge of the drill jig that is the distance you want the holes from the inside of the angle. Then drill two holes on this line that are the distance you want the rungs apart. I held the jig in place and drilled the first hole with a pin vise. I used .020" wire for rungs so I drilled the holes .022" in diameter. When I had the first hold completed, I soldered a small piece of the .020 wire in one of the holes. If you look close, you will see the wire in the top of the fixture where the dark spot is. To use the jig, place the pin in the first hole you drilled and start a second hole in the ladder side using the hole in the jig. You don't need to drill all the way through, just start the hole. Then relocate the jig and start the next hole. Keep going until all the holes are all started. I finished the holes using the drill press. Notice I have a stop in the vise behind the angle. Make sure that the top angle is pushed up tight to that stop when you finish the holes.

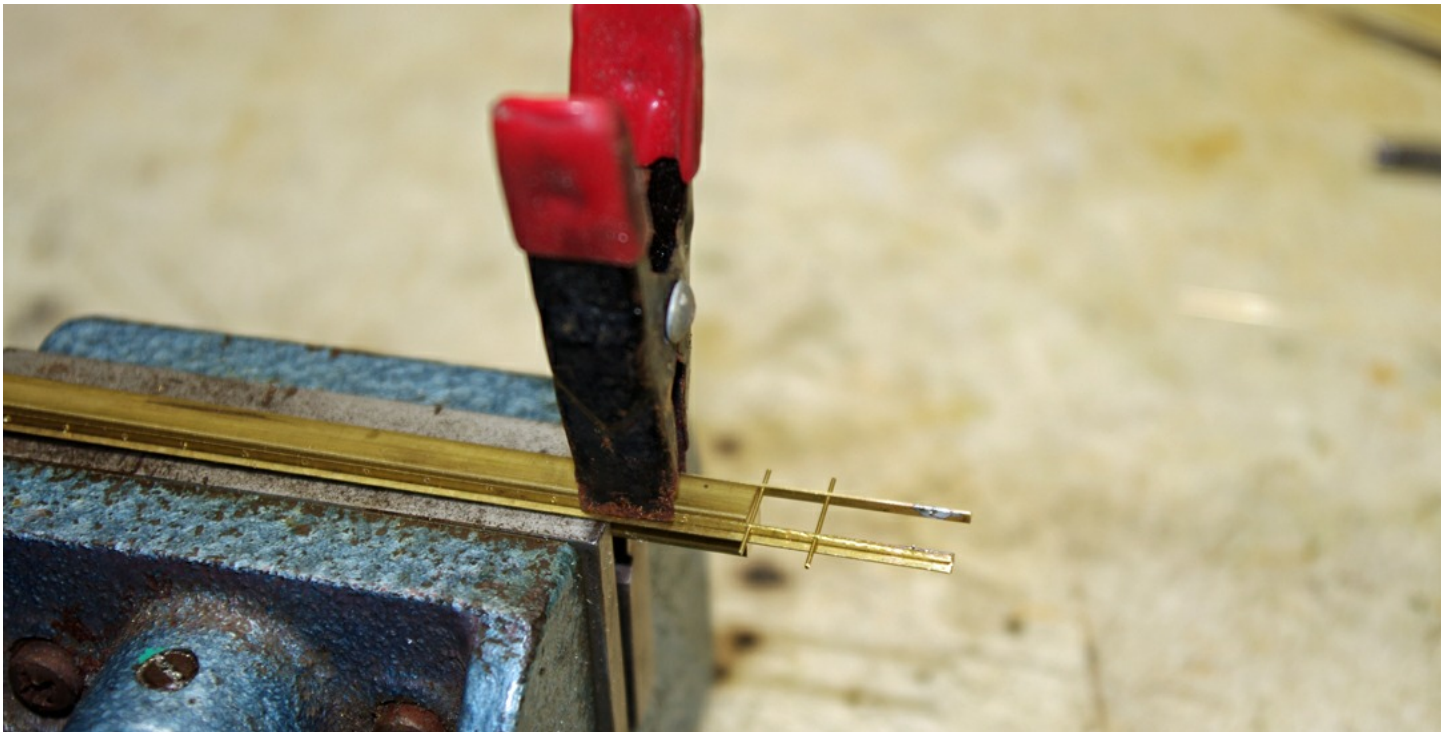
THE S SCALE RESOURCE

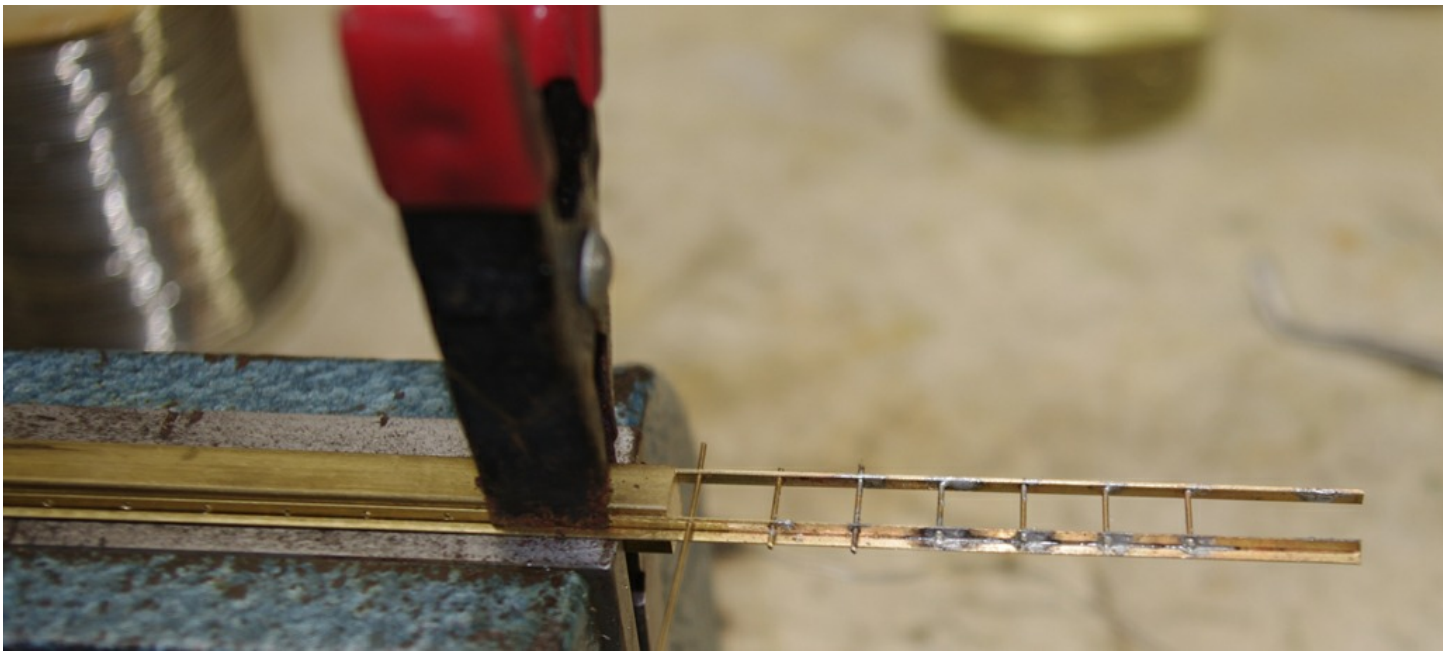
NEWS, REVIEWS, INFORMATION TO USE

HERE IS HOW TO CONTACT US:

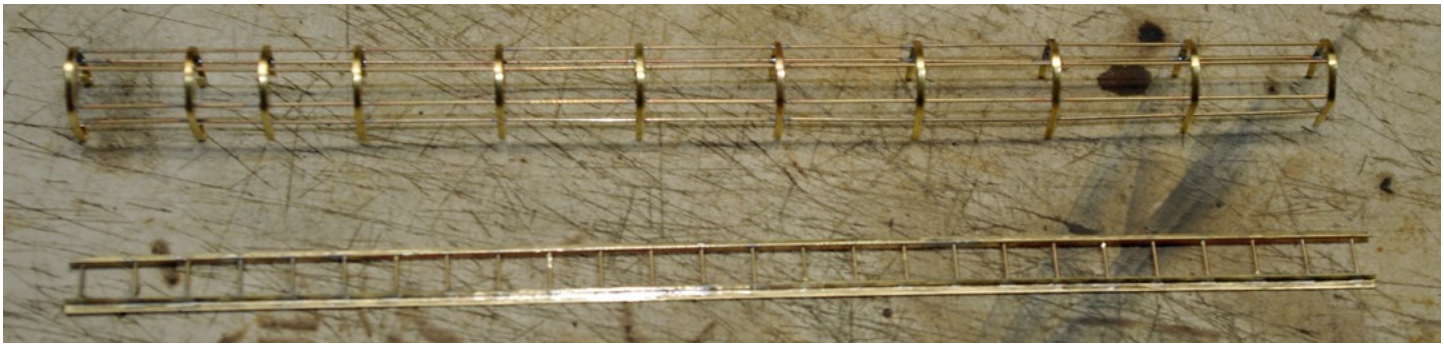
Phone: 815-584-1577
FAX: 800-783-0127
Email: amy@oscaleresource.com
daniel@oscaleresource.com
Mail: The Model Railroad Resource LLC
407 East Chippewa St.
Dwight, IL 60420

www.oscaleresource.com www.sscaleresource.com
www.indyoscaleshow.com www.sscalemidwest.com

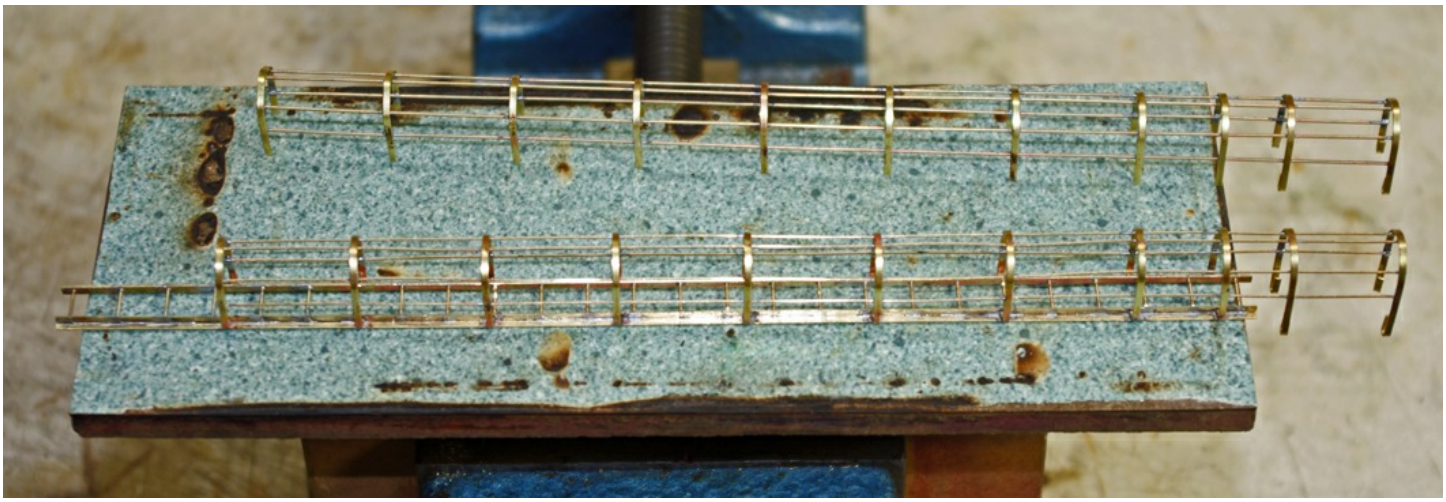




The next step is to solder the rungs in place, and this is how I did it. I wanted the ladder sides 5/16" apart, so using a piece of 5/16" square brass, I made sure the end was square first and then clamped it in the vise so a small part of it was above the jaws of the vise. Cut some short pieces of the .020" wire and insert them in the rung holes as shown. Leave them long – they will be cut off later. By drawing one of the rungs tight to the 5/16" brass, you will square the rungs and ladder sides. By pushing the ladder sides tight down to the vise jaws, you will make sure the ladder sides are parallel. I knew that I would need to solder the cage to this assembly later so I used some higher melting temperature solder for this operation. I used 96% Tin 4% Silver which is common in hardware stores as lead free solder for plumbing. The hardware store variety comes in 1/32" diameter, and that is the smallest I have seen. I bought my .020" diameter roll from a jewelry supply, Stan Rubinstein and Associates. This solder melts at around 450 degrees F and is stronger than the Tin Lead solder. When soldering the rungs in place, pick up a small drop on the tip of your iron like before. Touch the outside first and then move to the inside to draw the solder through the rung. Keep sliding the assembly down, doing two rungs at a time.

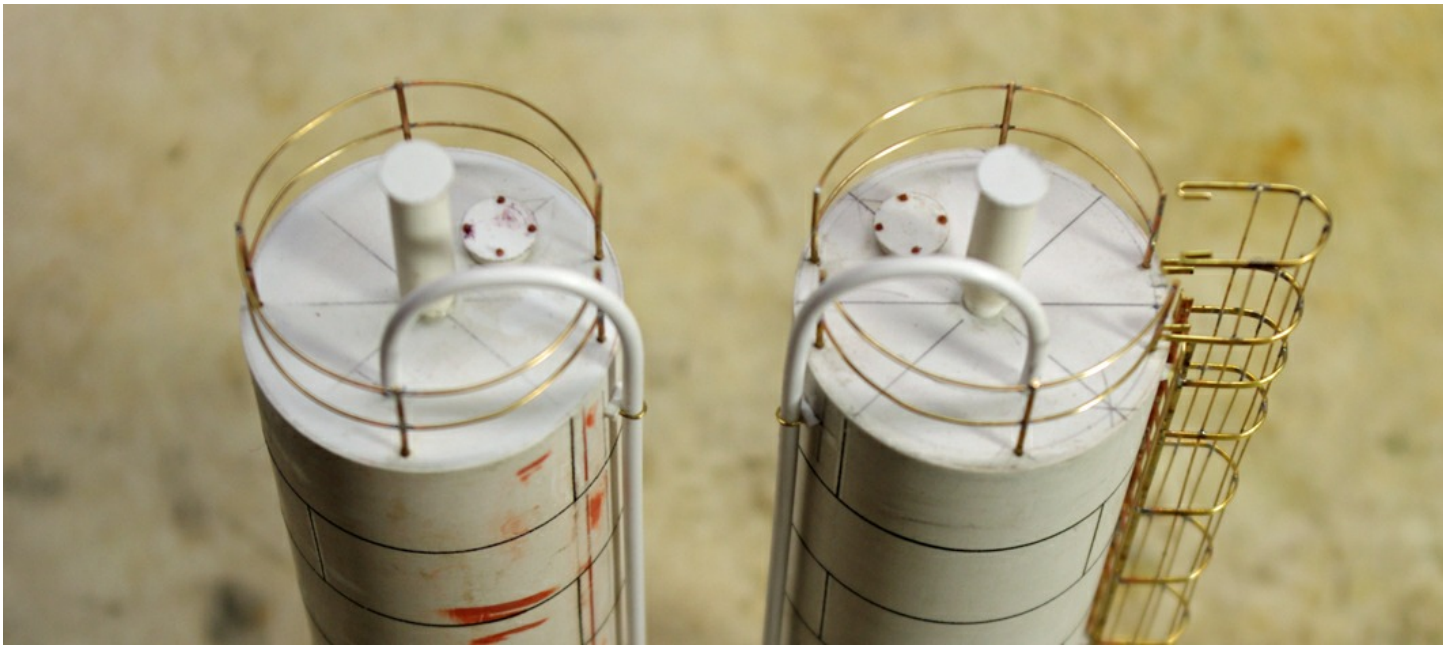


Here is my finished ladder with my first cage. It was at this point I realized I was in trouble and should have bent the "feet" on the cage bands first. These are teachable moments, and remind me of what Louis Bartag told me once. Everyone should remember this. To quote Louis, "This is just a hobby, if you don't like the way it came out make it again".

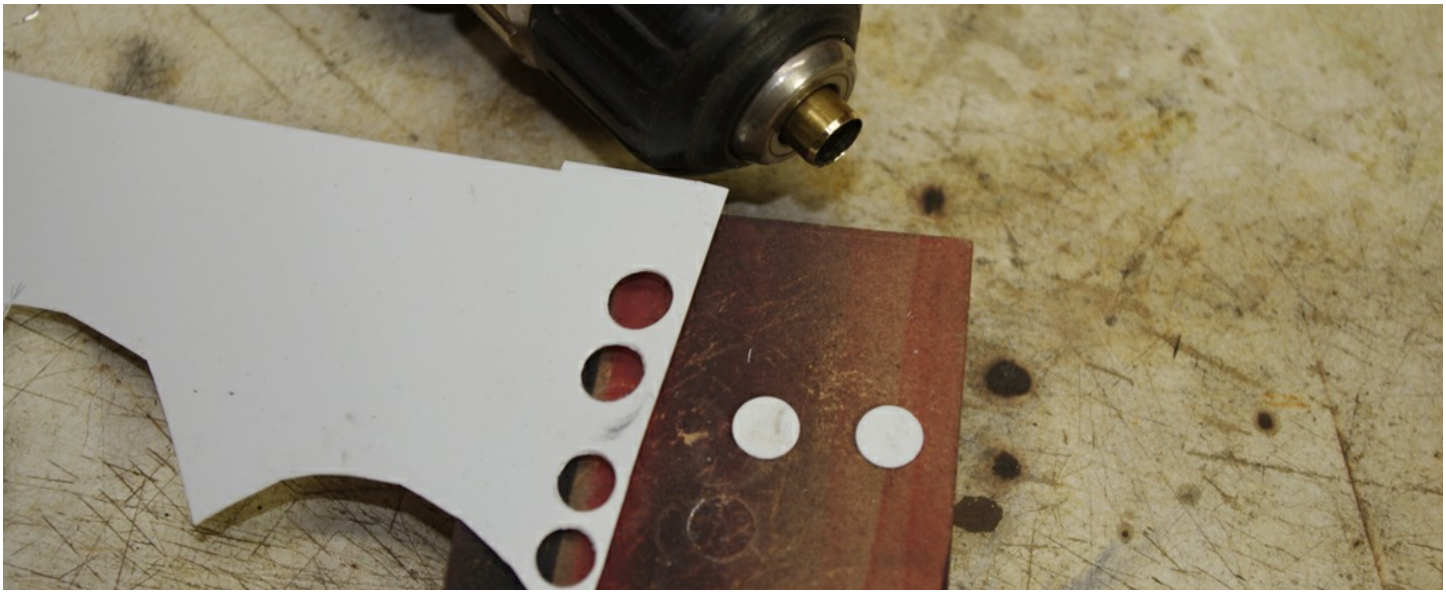


Here are my two cages with the second one soldered to the ladder. I forgot to take a photo for you, but here is how I soldered the cage to the ladder. When you solder, you are putting heat into a joint. As you are putting the heat in, it is also dissipating through the part. One thing that can happen is your whole part will get hot and fall apart about the time the joint gets hot. One way to counter this is get the heat in really fast, make your joint and withdraw the heat before the rest falls apart. I countered part of this problem by using a higher temperature solder for the ladder, but I still have low temperature solder on the cage. Another thing I did was switch to a larger heat source. You could use a large iron, but I switched to my resistance soldering unit which is 100 watts. This gets the heat in much faster than my 40 watt iron. I also tinned the "feet" with a drop of solder first. To do this, use your iron and put a small drop of solder on each of the "feet". Then, clamp the ladder down and ground it to the resistance soldering unit. Flux the joint and hold the cage where you want it with your hand. Touch one of the joints with the carbon rod of the resistance soldering unit, and step on the pedal for an instant. As soon as you see or feel the cage settle, release the foot pedal and the heat will stop. Do them all this way. Next, I came back with a probe that I could stick through the wires of the cage. I pressed each joint tight and gave them one more shot with the resistance unit. This made sure all the joints were well seated and tight. The 100 watt resistance unit will heat the joint so fast you can hold the cage with your bare hand and not get burned. If you do not have a resistance soldering unit, I would recommend saving up for one and get the bigger one. I have worked with a 100 watt unit for years, and that works fine on things like this. When I got to soldering car bodies and things together, I found I needed even more heat and the 250 watt units worked better. You can always turn the big unit down for delicate work, and most times you will need to do this or you will melt your work.

I wanted to use some of the 3D weld line decals for some added interest on the tanks. To do this, I needed some reference lines. By wrapping a piece of paper around the tank like this, I would get a line around the tank that was parallel to the top edge. I made some reference marks down the side of the tanks, and then moved my paper sleeve up or down to the mark. Then, I drew a line around the tank. I used the vertical lines I had made for the legs for a vertical reference. I had never used these 3D decals before, and I have to say, I like them. The instructions that come with them say you don't need decal set. However, from my experience, I was not getting a good bond so I used decal set and that worked much better. I sanded these tanks, and part of my adhesion problem may have been poor surface quality. If you have a similar problem, use the decal set, it worked well for me.

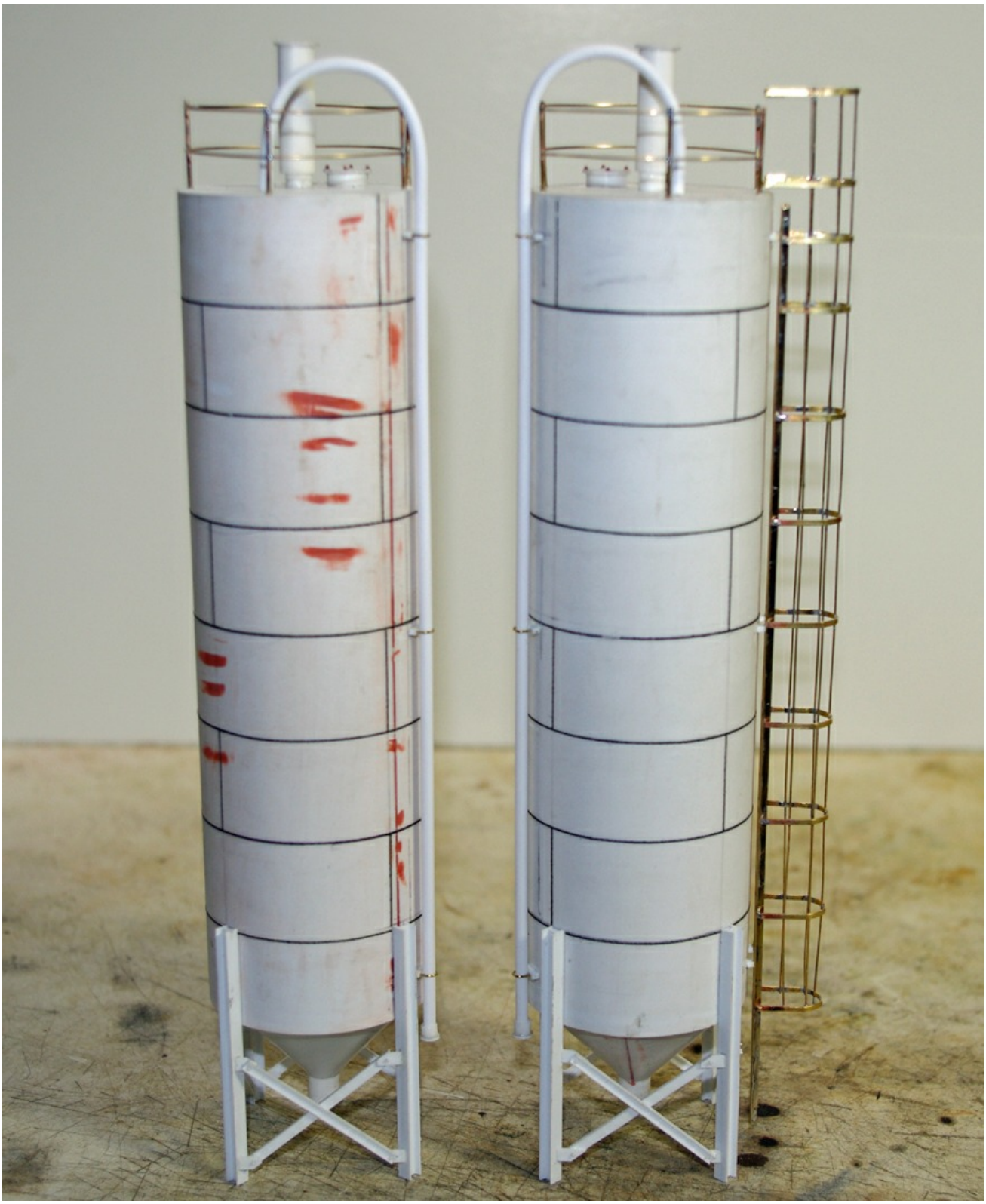


The tops of the tanks had some equipment on them and I made that with bits of styrene tubing. The curved line was made with styrene tube. I heated the end under hot water and bent it around the marking pen case. Make the water as hot as you can stand it and it will soften the styrene so you can bend it. I had a little spring back, but was able to overcome it when I installed them. I glued small blocks of styrene to the tank side and glued the supply line to them. Then I bent some "U" shaped .015" brass wire. I drilled some holes through my mounting blocks and glued the wire in place with ACC.



I needed some styrene discs of different sizes for hatch covers. I found that I could cut up to .020" thick styrene with a sharpened brass tube. This was the largest disc I needed. I sharpened the brass tube in the drill and used a file. When it was sharp, I took it out and hit it with a small hammer to punch out a disc. The brass, as you may expect, will not stay sharp for very long, and you may need to sharpen it between cuts. That's not a problem since we only need a few or each size. I found that on the smaller sizes I was able to twist the tube with my finger and cut through the styrene. I tried doing that with the drill, but that did not work as I could not control the drill. However, that may work in the drill press since it would keep the brass tube from wandering.

The delivery tubes have a fitting on the end. The styrene tubing will telescope like the brass tubing does, but it was a little too heavy of a wall thickness. I thinned the wall on the tube like this. I turned it in the electric drill and used a file. This was the result. The next step was to glue one of my small discs to the end while it was still in the drill like this. I dressed it all with some small files and cut it off with the back side of the #11 knife blade while the drill was turning. I slid it over the end of my delivery tube and glued it in place. It worked well.



This is what I have so far. You can see the 3D weld lines on the tanks. I glued the brass ladder to the styrene blocks on the tank with Pliobond. Walthers GOO would also work. I have not had much luck gluing brass to styrene or wood with ACC. For grab irons and things, ACC works fine, but for an application like this, I revert back to the rubber based cements. I need to do some additional work to the bottoms of these tanks before painting them. I want to see how the weld lines look. There are more things to come in the next part. See you then!

Craig Wright's

Cumbres & Toltec Western

I've enjoyed building models all my life. I've had a train set since I was four years old. Growing up I built a couple of HO layouts. While I was growing up, John Allen, Malcom Furlow, John Olsen, and Allen McClellan became the modelers that inspired me and helped define my vision of what could be done. A key aspect of their modeling that caught my eye was their realistic and sometimes dramatic scenery.

A family trip to Colorado when I was in high school was my introduction to Rio Grande Narrow Gauge. The beautiful scenery of the Colorado mountains, combined with the classic look of the narrow gauge locos and rolling stock, was so appealing. The scenery was the real life version of the Gorre and Daphetid. The rugged K-class narrow gauge Mikados, with their outside counterweights on the drivers, enhanced the appeal. The rolling stock had such classic lines. The narrow gauge seed was planted.

My move from HO (Athearn Blue box kits, MDC, etc), to HOn3, and ultimately to Sn3 was driven primarily by prototype fidelity and craftsmanship, and the desire to model the D&RGW. I began modeling narrow gauge in HOn3 when MDC produced an inexpensive 2-8-0 kit and E&B Valley began production of some rolling stock. I continued to build HOn3 kits, and then a small HOn3 apartment layout until I moved into my current home. At the time of the move, I began to contemplating and planning a future layout. I began weighing the pros and cons of HOn3, Sn3, and On3. After seeing some beautiful, PFM sound equipped Sn3 locomotives and rolling stock in operation at a local train show, I decided to sell my HOn3 equipment, and move to Sn3. The Sn3 equipment's size, the high level of prototypically correct detail, smooth operating characteristics, and PFM sound were exactly what I was after – fidelity and realism. My decision to switch to Sn3 was finalized when I realized I could build a layout with my design requirements in Sn3.

My layout is heavily influenced by the scenes, equipment, and operations of the Denver and Rio Grande Western (Rio Grande) 3-foot narrow gauge "mainline" between Chama, New Mexico and Alamosa, Colorado. I wanted a mainline feel, including single commodity trains such as the Gramps tank car trains with helpers, and daily scheduled passenger trains. The San Juan, the Rio Grande's first class passenger train, also ran daily in both directions between Alamosa and Durango.

The timeframe I chose to model is the fall (colors) of 1950. This timeframe allows for frequent Rio Grande freight trains, and the Daily San Juan passenger operations. While the layout primarily focuses on the line between Chama and Antonito, I've used my modeler's license to incorporate a few scenes and equipment from Rio Grande Southern's (RGS) narrow gauge. The RGS interchanged with the Rio Grande at Durango and Ridgeway to form "the narrow gauge circle". In 1950, the Rio Grande Southern was just hanging on, and nearing abandonment.

The Prototype

Chama New Mexico was the division point on the Rio Grande's "mainline" narrow gauge, and the major terminal on my layout. Chama is situated at the base of the tough 4% Climb over Cumbres Pass. Helper assisted "hill" turns was the type of operations that I was interested in modeling. In addition to servicing trains passing through in each direction, helper engines and crews were also stationed at Chama. East bound freight trains arriving in Chama would split their train into sections, add helpers, and climb the hill. Once a hill turn arrived at Cumbres, the freight cars were set out, and the locos and caboose would return light to Chama. These

hill turns were repeated until the entire train was at Cumbres. The train was then reassembled to continue the eastbound journey to Alamosa with one loco. Alamosa was the interchange/transfer point with the Rio Grande's standard gauge operations. Westbound freight trains out of Alamosa normally ran as one section because the ruling grade was a more reasonable 1.5%, the distance was greater between Antonito and Cumbres, and westbound trains consisted of more empty cars.

An oil train prepares to leave Chama, its destination is the Alamosa Oil refinery.

In addition to its important status as a division point for helper operations for through freight; Chama generated considerable freight traffic including shipments of bulk crude oil, lumber, livestock, and raw wool. Autumn in the high country meant livestock shipments out of the high rangeland to market. This resulted in a peak of traffic all over the narrow gauge. Due to confinement time-in-transit restrictions, stock trains were often run with as many helpers as needed to move the entire train over the line in one section. Snow fighting equipment consisting of rotary plows and flangers were needed to keep the line open during the winter.

Layout Design Considerations

My goal is to build a diorama quality layout, by emphasizing prototypical realism of scenes and equipment. I wanted to recreate the entire visual of what I saw in the many prototype pictures that I studied. Scenery had to dominate the layout and highlight the lonely, remote, and rugged nature of the areas that the narrow gauge served. Following John Allen's example in Giant Canyon, I also wanted scenery to rise above the viewer, and drop down to near floor level. Scenic breaks were planned that emphasized individual scenes, and to block a viewer from seeing entire layout all at once.

The signature locations I wanted on the layout were Chama, Cascade Trestle, Toltec Tunnel and Gorge, Cumbres, the High Bridge at Tacoma on the Silverton Branch, and the RGS Ophir Highline trestles. The town of Placerville on the RGS is a relatively recent addition to the layout. The layout design had to incorporate the

Chama's Freight House above / Cumbres Pass below

signature narrow gauge locations without compromising the minimum 36" radius and # 6 turnouts. This was to ensure that Rio Grande's largest narrow gauge power, the K-37 and K-36 class mikes, would function flawlessly on the layout.

The layout had to faithfully represent the key locations – the scenic attributes and structures of each location. I spent many enjoyable hours researching each location available via the many books and publications devoted to D&RGW and RGS Narrow Gauge. I accumulated binders of reference materials – plans and pictures of structures and the scenery at each location. Fortunately, there are many books and other resources (video and web) covering Colorado Narrow Gauge.

Continuous running for train was also a design requirement. I often just run trains without regard to any true operating schedule or session, and visitors always want to watch the trains run. Operationally, the layout was designed for point to point operations, with hill turns out of Chama (staging) to Cumbres as the primary focus of operations. Trains are broken into sections and depart Chama with helpers for the climb up to Cumbres Pass. A hidden staging/reverse loop allows Eastbound trains to return – steaming back into Chama.

Approaching Windy Point

With my list of design requirements, I spent nearly a year drawing different track plans. During this track planning period, I spent the year finishing the layout room, building kits, and doing ongoing prototype research. Once I selected the layout's design, I then developed additional plan folios and sketches to visualize the scenery at each location and then located room lighting for each scene. Scenery planning helped me validate that I could build the layout I desired, and solidify in my mind's-eye what it would end up looking like. The lighting plan was a critical step that provided lighting in key areas that would be scenically finished years later. The physical presence of the layout would preclude lighting do-overs.

Like any significant endeavor, breaking the whole thing down into manageable pieces helps avoid feeling overwhelmed, and provides good focus and checkpoints to manage progress and celebrate success. Major pieces of the layout build out included finishing the room, finalizing the track and related plans, installing room lighting, building the bench work, laying track, wiring the layout, building and installing bridges, and then scenery.

Slow Order above / Toltec Tunnel and the Garfield Monument below

In The Hole above / Drifting Downgrade, look out for cattle!

The Scenery

Scenery is a basic hard-shell of nylon screen covered with Gypsolite® plaster. Rock molds were applied wet (Dental Plaster) to the hard shell, and carefully carved and blended together. (I made the latex rock molds during the summer using the rocks in my backyard retaining wall.) When I was satisfied that a rock face was complete and accurately portrayed the location's features, I applied thin washes of grey and tan latex paint. Spray bottles of other (sienna/black) wash colors were used to accent the rock. Real dirt and gravel were used as the base ground cover. I also like to add many weeds and other vegetation to each scene to give the scenery depth, color and texture. It's quick and easy to do, and especially fun while enjoying an adult beverage. Foreground trees are scratch built and background trees tend to commercial. It's remarkable how many trees a layout requires – a whole lot!!

Prepping for winter, the rotary is sent to Chama after a shopping at Alamosa.

I enjoy building models. The mental challenge of scratch building and kit bashing - determining the required materials and the assembly process - are especially rewarding. Many of the signature layout structures are scratch built including the sand house, engine house, and warehouses at Chama. The snow shed, section house, and out buildings at Cumbres are scratch built while the Depot is a kit. The Cascade steel trestle, the Ophir High line wood trestle and concrete foundations are scratch built, and Tacoma Bridge is a heavily modified Central Valley Kit. The Raggs to Riches Placerville depot was too hard to resist, and its prototype location along the San Miguel river was a fantastic modeling opportunity. Placerville has become a small switching branch on my layout. Laser cut craftsman kits are amazing.

Locomotives & Rolling Stock

Most of the locomotives and rolling stock are the excellent products of P-B-L, the gold standard of quality and craftsmanship. All locos are currently DC, sound equipped with lights. Most cars have been built from P-B-L kits, but other manufacturer kits and some scratch-built cars are also in operation.

Thoughts & Reflections

Modeling is constantly coming to terms with hard constraints: limited space, time, and money. Scenes are condensed, or sometimes mirror image of the prototype, or not in the correct sequence. Given my druthers, I wish I had more space. For example, a larger yard at Chama to improve its staging capability and overall car capacity would have helped, but space was limited. Given my tendency for rail fan type operations, I now see the value of the operational staging of entire trains. Given my time constraints due to family life, I tend to be a lone wolf modeler. The "Narrow Gauge Circle" is a group of excellent modelers that has provided me with many great mentors.

Layouts are never finished and maintenance is ongoing. I have found that taking shortcuts now usually means a lot more work later. For example, I now need to wire the isolated frogs on switches because the contacts of the points have proved electrically unreliable. This will coincide with my plan to rewire the layout to make it DCC friendly. My locos will also be converted to DCC. I've also rebuilt areas of the scenery to upgrade areas that I felt needed improvement.

The great thing about modeling the D&RGW narrow gauge is that it still operates today. The Cumbres and Toltec Scenic Railroad (http://cumbrestoltec.com), and The Durango and Silverton Railroad (https://www.durangotrain.com) are both great train rides. A trip to Chama is a must do. The railroad is authentically preserved and the vibe is that it's still 1950. The opportunity to walk the yard in Chama and examine the equipment up close is a special treat. Both railroads operate railfan specials that turn back the clock with authentically lettered equipment and consists.

Summary

- **Prototype:** 3 foot Narrow Gauge of the Denver & Rio Grande Western and Rio Grande Southern
- **Location**: Chama New Mexico to Antonito, Colorado via Cumbres Pass (New Mexico)
- **Layout size**: 18' x 30', walk around design
- **Track:**
  - ✓ Sn3 commercial code 70 & hand-laid code 70 and code 55
  - ✓ #6 Sn3 Turnouts, with slow motion switch machines.
  - ✓ 36" min. radius and 4% max ruling grade.
- **Bench work**: L-Girder and open grid bench work, with ½" homasote roadbed glued to ¾" plywood.
- **Electrical:** DC, 2 cabs with SoundTraxx throttles, eventually planning to convert to DCC
- **Scenery**: Screen and gypsum plaster hard-shell covered with dental plaster rock castings. Rock castings were applied while wet.

Sound Decoder Install in a Brass Locomotive

By Daniel Dawdy

First, let me state that I don't do custom installs for people. I have completed many of my own installs in my own O Scale equipment, both older steam and diesels, as well as newer models. Each one is a learning experience and I can take my time. If I screw up, I can put the project on hold until I figure out another approach. I don't like the responsibly for other people's equipment. Having said all that, John Albee bought his "dream" locomotive a few months ago. Since the gentleman he bought it from was in Joliet, Illinois and John lives in Bloomington, Illinois, my place in Dwight was smack dab in the middle so that's where the exchange took place.

River Raisin Models NKP S-2 Berkshire sitting in Avalon yards on my Richmond, Danville & Southern Railroad. Note the black piece of code 125 rail I used to stage the picture so the locomotive would sit straight on my O Scale track.

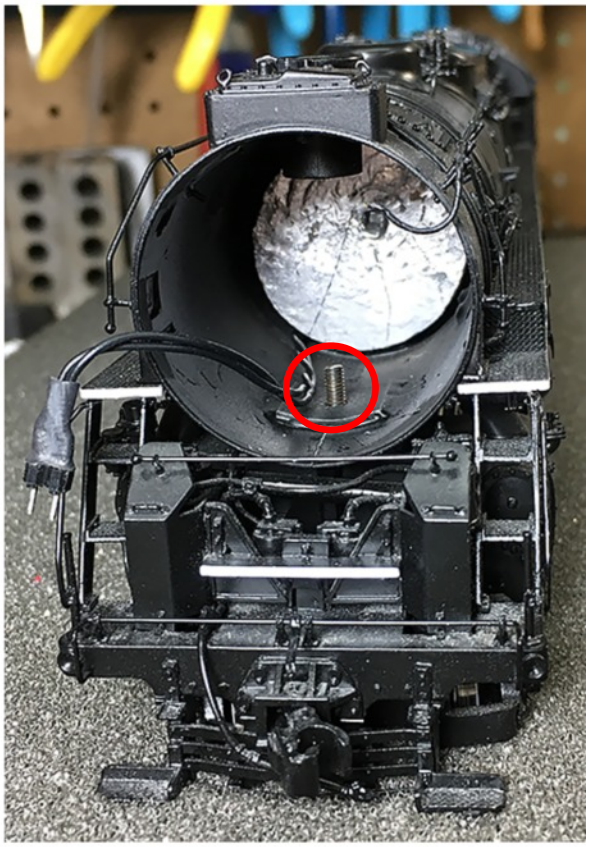
I got to work after breaking out my precision tools!

What John bought was a beautiful River Raisin Models NKP S-2 Berkshire; however, he now wanted it to have DCC with keep alive (CurrentKeeper), warm white LED's in place the of the incandescent bulbs and two speakers. How to do this was up to me. To accomplish the DCC, I ended up using a SoundTraxx Tsunami2 TSU-2200 (2 amp rating) decoder with a CurrentKeeper add on. Knowing what I know now, a TSU-1100 would have been fine with its 1 amp rating. We talked about the TCS WOW, but his local train shop (McLean Depot) did not have the version 4, so SoundTraxx it was. I have many Tsunami's and WOW's installed in my own equipment, this would be my first time working a Tsunami2.

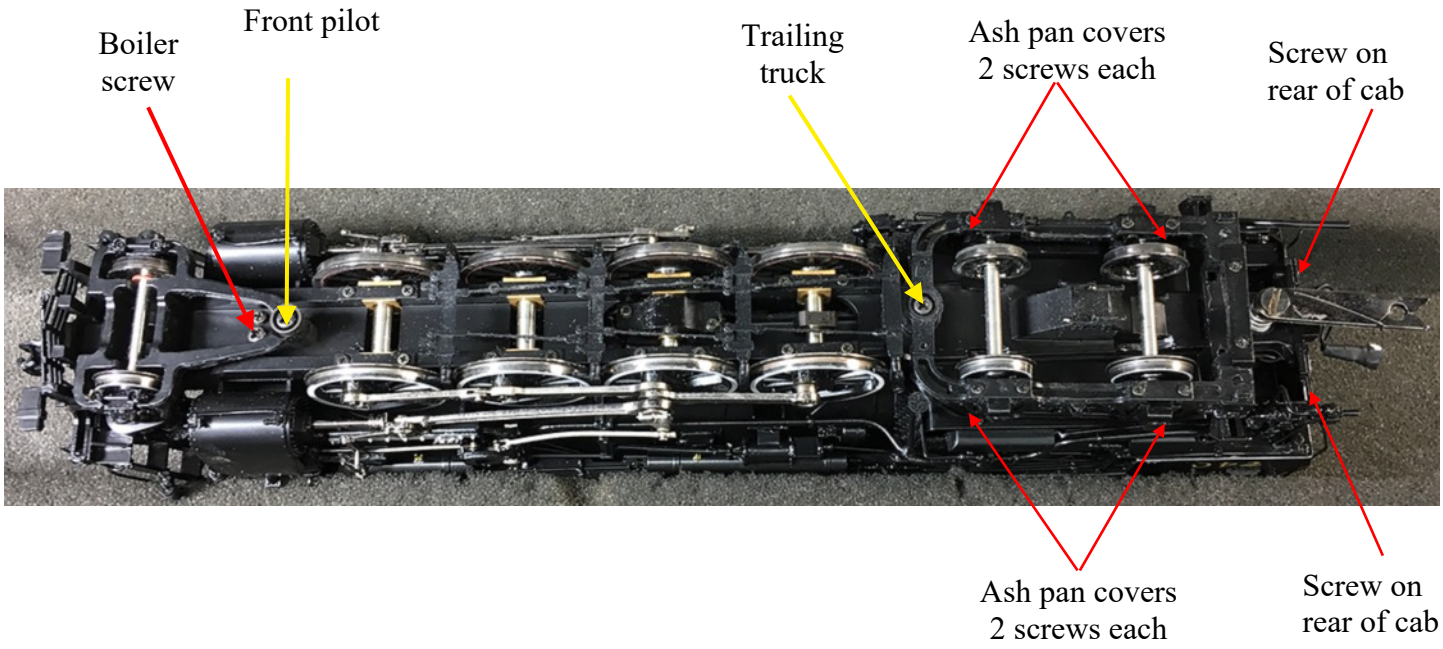
First, let's start with the disassembly of the locomotive.

LEFT: To begin disassembly of the locomotive, I started with the smoke box door. In most cases, this is a press fit where you can very carefully pull it out of the smoke box. (I have an O Scale locomotive that used two extremely small screws to hold the door to the smoke box so check that on your models before trying to remove.) Go slow and watch for any other piping that may have to be removed first. This locomotive had a press fit that was relatively easy to remove.

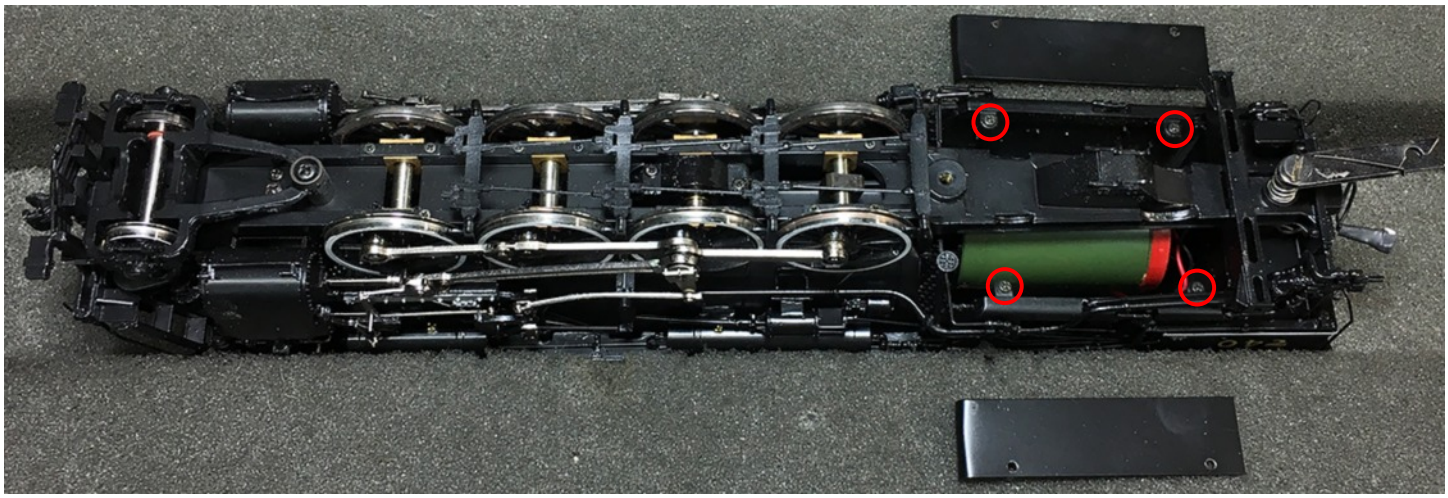
ABOVE: Smoke box door removed. Note the wiring and plug for the front headlight. In this case, the piping did not need to be removed as we could work around it.



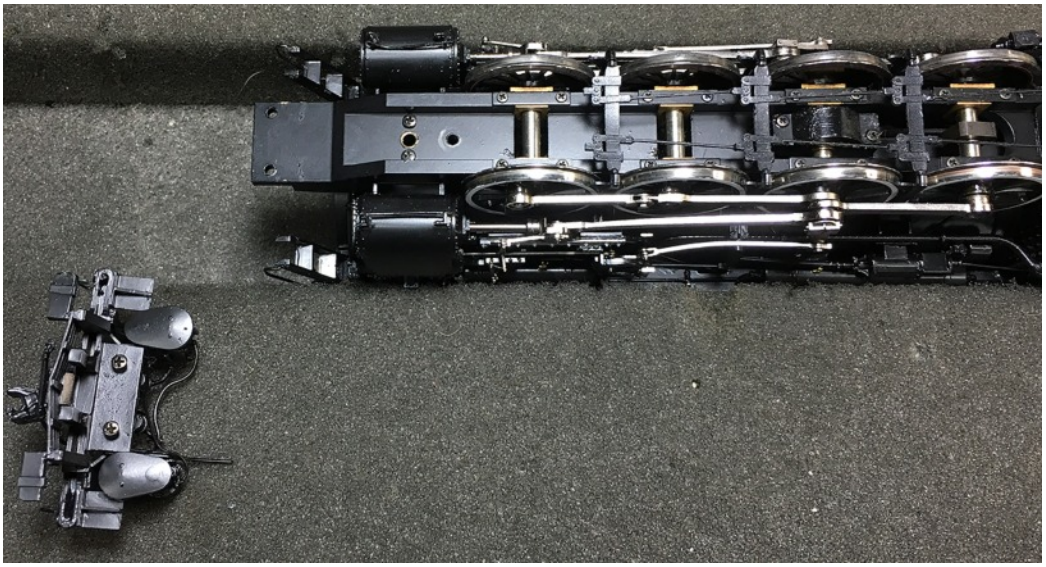
ABOVE RIGHT: The boiler screw is circled in red. More on that on the next page. After seeing the size and placement of the weight, I determined that using the boiler for the decoder would not work. There was, however, plenty of room for a round high bass speaker.



The red arrows show the screws that must be removed. The yellow arrows show what I also removed to make things easier to get to. After removing the screws, if possible, screw them back where they came from. If you can't do this, bag and mark them so you remember where they go.

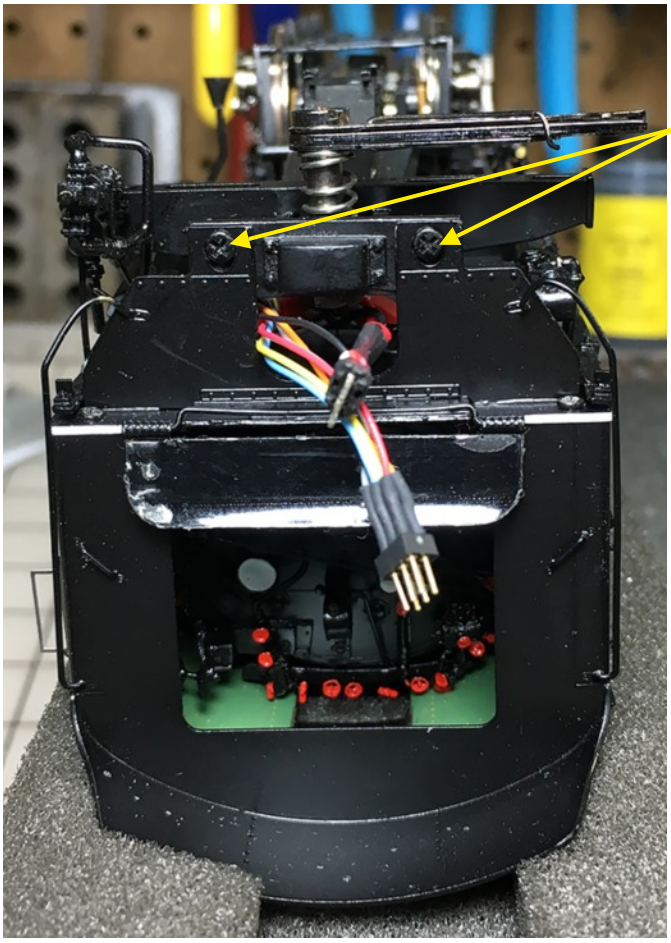


Ash pan covers removed. Note that I replaced the screws back into their holes so I didn't lose them.



The long boiler screw can't be screwed back in, so that was bagged as were the front pilot screws.

I also removed the pilot itself just so I did not damage it while working on the chassis.

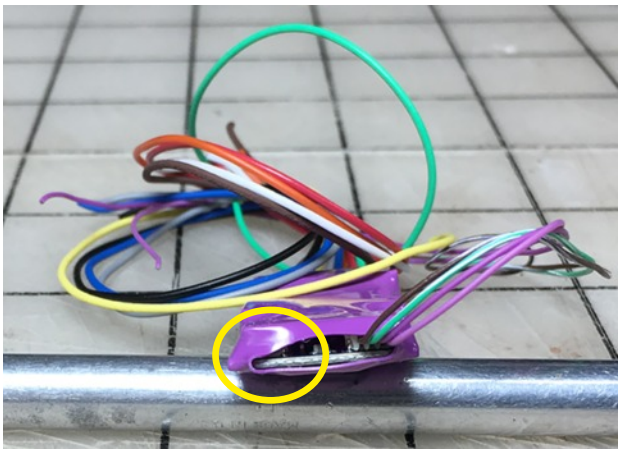


LEFT: I had forgotten to take a picture of the rear cab screws that needed removing, so this was shot after the install.

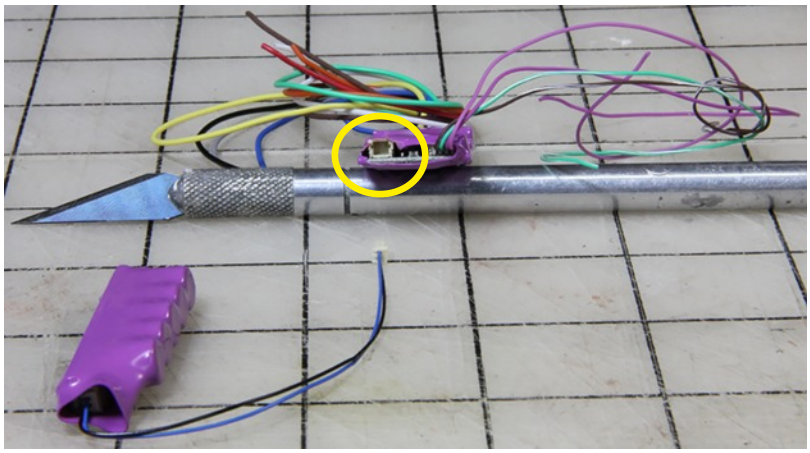
BELOW: With the locomotive apart, we can see the headlight wiring and plug. All this wiring will be removed as John wanted warm white LED's installed. I was hoping to mount the decoder and CurrentKeeper in the back of the boiler, but it was going to be cramped and an "ugly" install, so that idea was scrapped and I decided on a tender install. The only real downside to that was the amount of wires needing to go back to the locomotive.

IMPORTANT: This is a newer locomotive with a can motor is isolated from the frame. Older models with an open frame motor may not be. You will need an ohmmeter to be sure. To check, place one of the probes on one of the motor terminals and the other probe on the chassis or right rail pickup wire, then move to the left rail pickup wire. If the motor is isolated, you will read an open circuit on the ohmmeter. Do the same for the other motor terminal. It is very rare for models using a can motor to not be isolated.

Putting the locomotive aside, I looked at the decoder and bench tested it. First, I had to remove the shrink wrap covering the plug in of the CurrentKeeper (see yellow circle below). An X-ACTO took care of that.

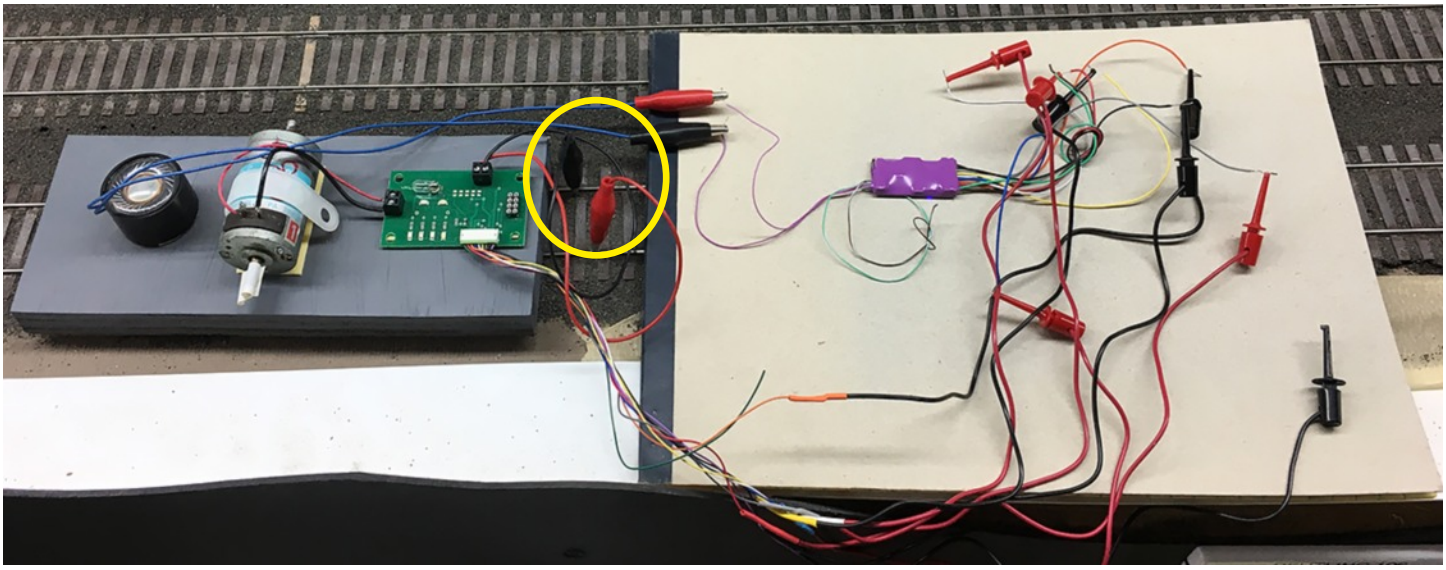


CurrentKeeper plug was covered on the left side of the decoder.



Using an X-Acto, knife simply trim away the wrap which will allow the CurrentKeeper to be plugged in.

I always bench test a new decoder. I have had a few defective ones in the past, and really don't want to wait until after the install to find that out. Below is my homemade decoder tester using an NCE Decoder test board.



The test board was mounted to a piece of wood to which an old can motor and speaker were added. I added all the clips to the end of the NMRA colored wiring harness. This basic set up allows for testing all outputs of the decoder. Notice the two clips in the yellow circle attached to my track. This is the programming section of the yard track connected to a SoundTraxx PTB-100 Programming Track Booster which allows for read back of the decoder configuration variables or CV's. Not all DCC systems need this extra booster, but my NCE PH10-R Power Pro does. The main reason I want the programming track is so that when using Java Model Railroad Interface (JMRI) I can now do a complete decoder read of all the CV's, which, in turn, gives me a known base line for programming. The default decoder files within JMRI should be correct, but sometimes they are not; so this step assures me what I have, and allows me to go back to a known default if I really mess up the decoder settings.

My test track is part of the yards protected with a 4 pole, double throw switch. An older laptop has plenty of horse power to run JMRI, as well as surf the Web. Many people prefer to have a stand alone programming track, but I have run out of room for that. For people who don't have a computer close to the layout, you can use a SPROG II or SPROG3.

THE MODEL RAILROAD RESOURCE

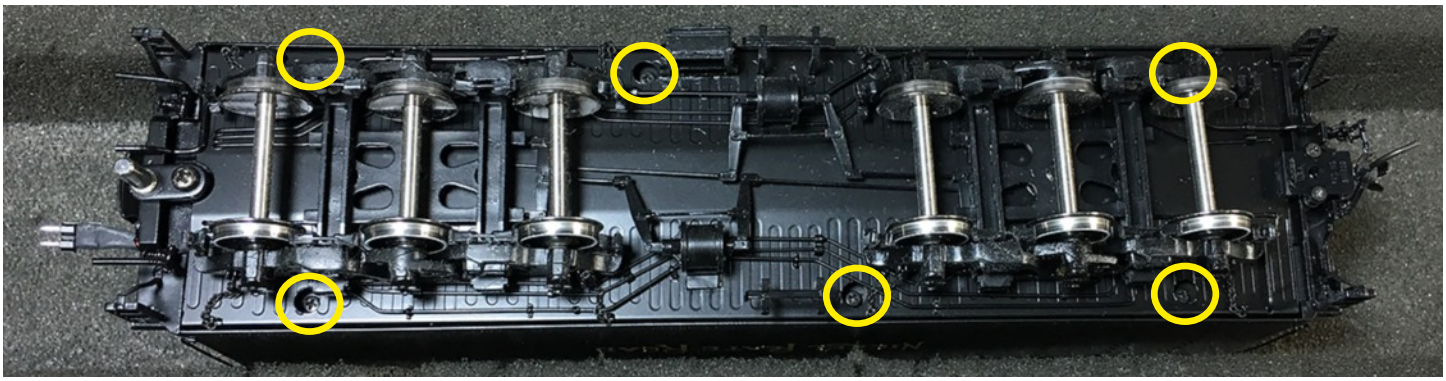
PUBLISHERS OF Video Extra

The O RESOURCE
NEWS, REVIEWS, INFORMATION TO USE
SCALE
www.oscaleresource.com

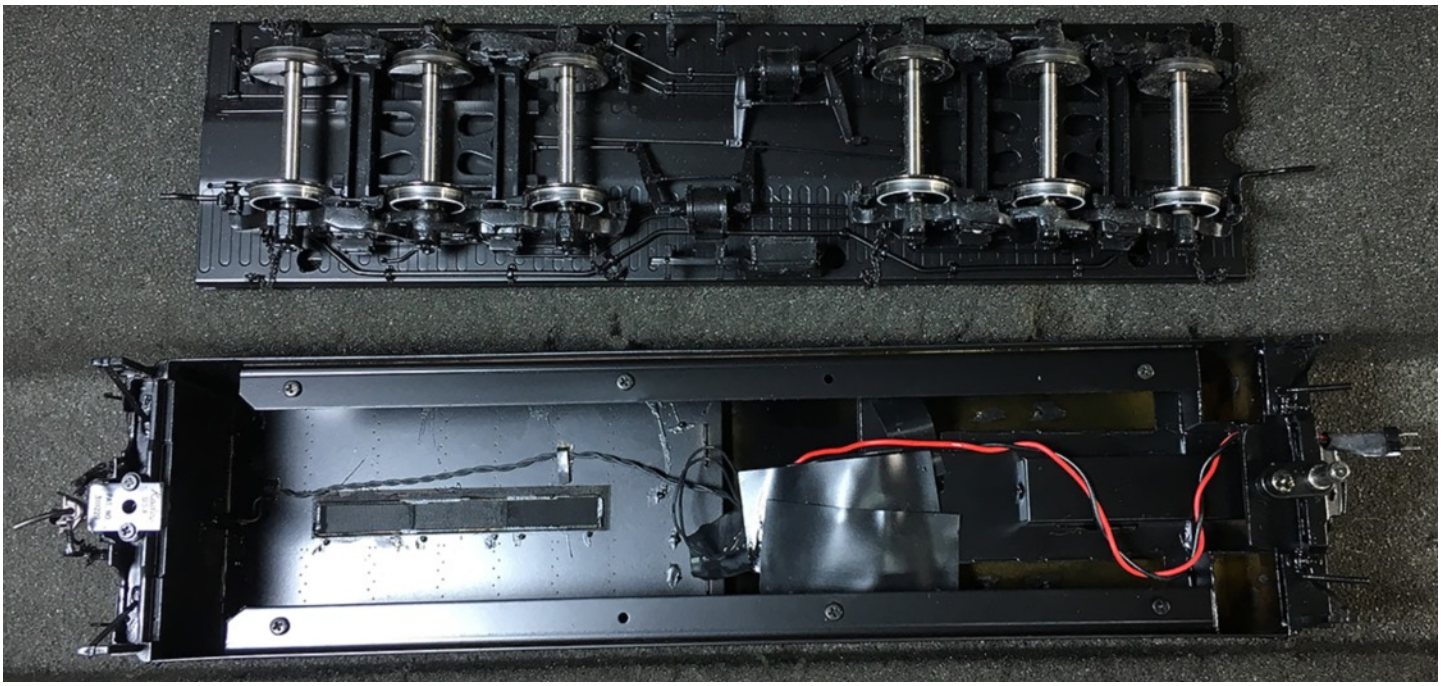
The S RESOURCE
NEWS, REVIEWS, INFORMATION TO USE
SCALE
www.sscaleresource.com

At this point, I want to refer you to a video we shot during this install. First, it shows the decoder testing with a run through of some of the sounds. Next, it shows the decoder installed in the tender and the locomotive on my makeshift test stand while we watch the AMP meter; and, finally a shot of the completed locomotive on a test track. Click here or the Video Extra image and watch that at anytime.

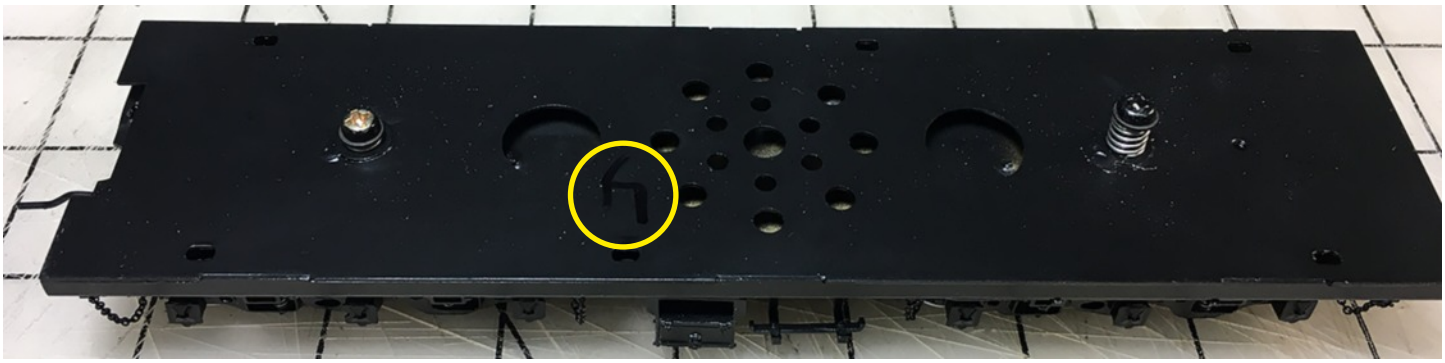
Let's first look at the tender, as that's where we will place everything.



Six screws hold the tender shell to the bottom. Remove those, and then with the shell off, replace the screws back so you don't loose them.



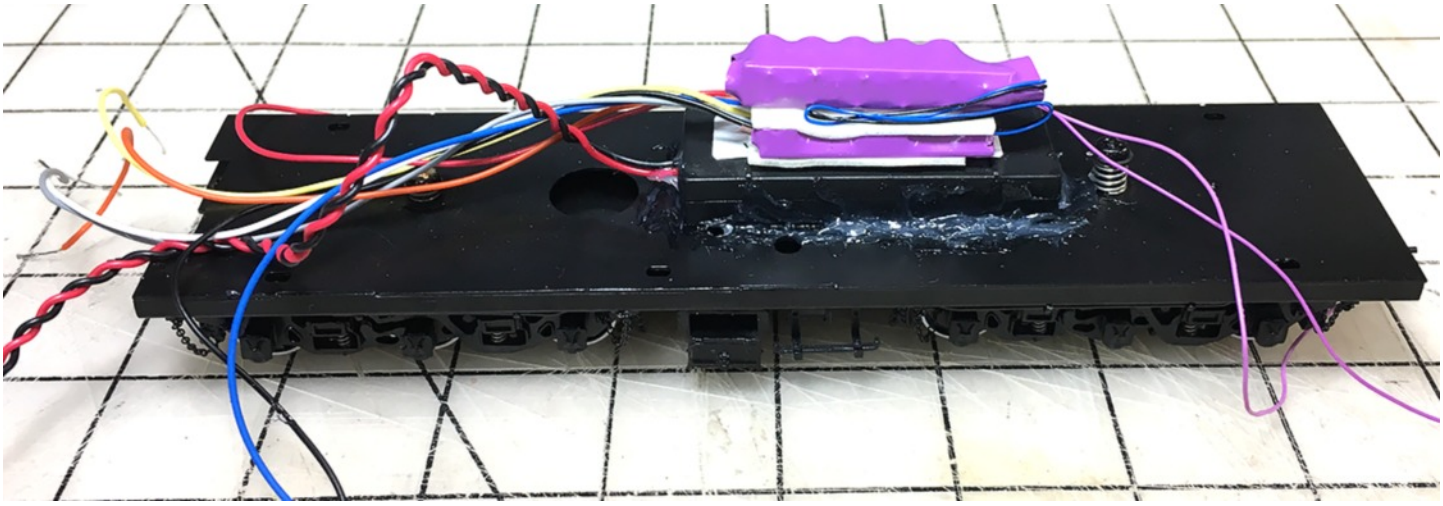
With the screws safely back where they belong, we can see the plug that went to the locomotive for the rear light. This will be removed as John wants an LED in the rear.



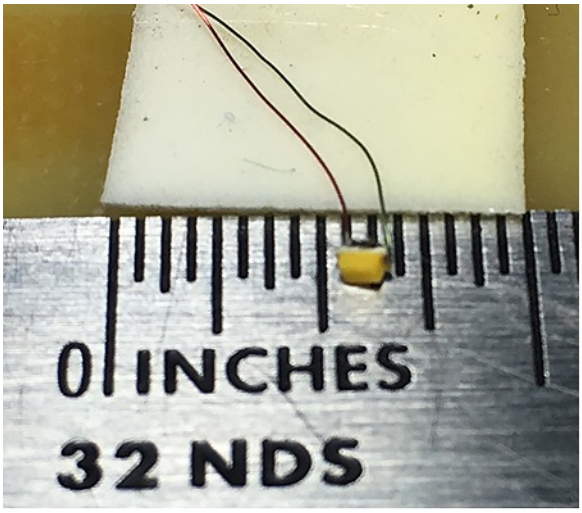
We got lucky here. Normally, in older tenders you have to drill holes for the speaker. This has a subfloor and the ends of the tender are open, thus allowing the sound to go through the holes and out the ends. The small arrow I drew (see yellow circle) shows me how far back I need to stay with the install for height.

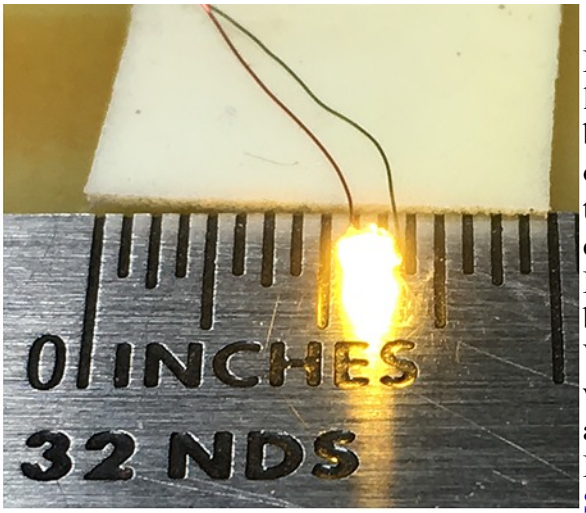
Because of the height restriction of the shell, I went with a low profile bass reflex speaker. I have used these in many of my installs.

Using pure silicone, spread some on the ends of the speaker enclosure and place the speaker on the deck of the tender. Next, put silicone around the speaker to seal it to the deck. While not very pretty, it will stop any movement of the enclosure (vibration). In addition, it will allow this to be removed someday, if need be, without causing any damage to the deck.



Using double sided thick carpet tape, I added the decoder and then the CurrentKeeper. I am not worried about any heat built up as it's a 2 amp decoder, and this locomotive will not pull anything over 1 amp. Plus, there is plenty of air around the install.

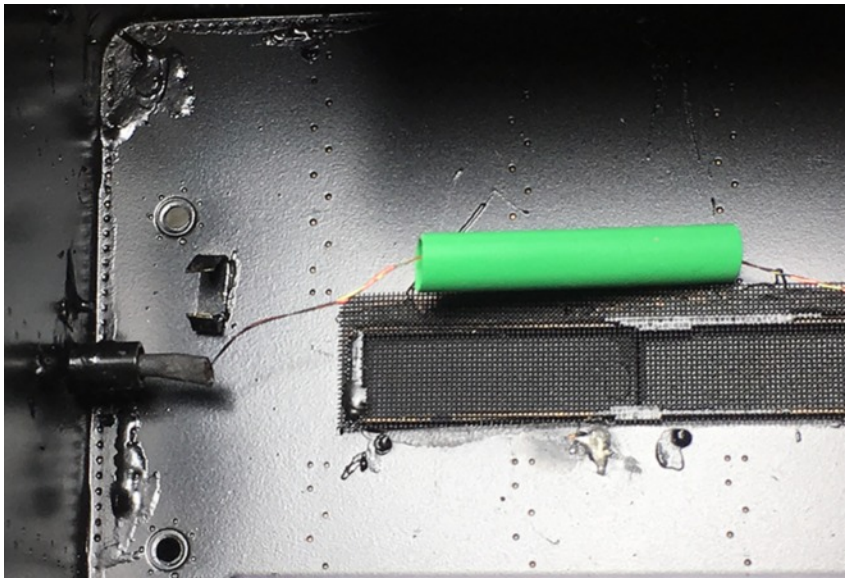


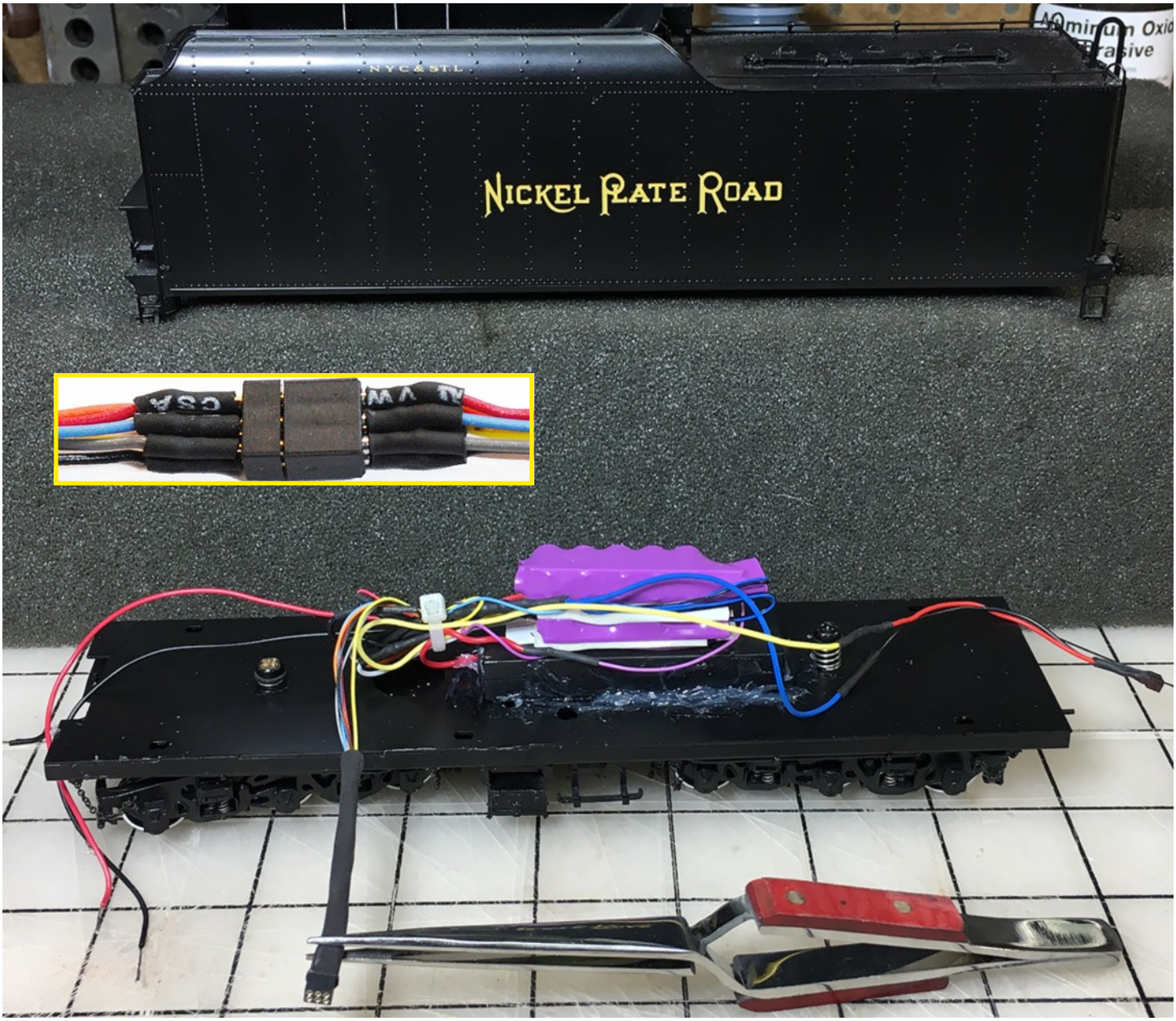


Here we used a warm white 0603 LED. We could have used the smaller 0402, but had plenty of room for the larger one.

Now we need an LED for the rear light. I buy these in bulk from suppliers on ebay and wire them myself. You can buy pre wired LED's if you prefer, but it gets expensive. We did a video on wiring both the 0603 and the smaller 0402 LED's in: The O Scale Resource – Working with SMD LEDs. Click here to watch that.

With the LED secured in shrink tube (above), we can glue it into the casting with Canopy Glue Formula 560. It dries clear and stays flexible. On the right, I have a larger piece of shrink tube that will go over the rear light casting and hold everything in place.



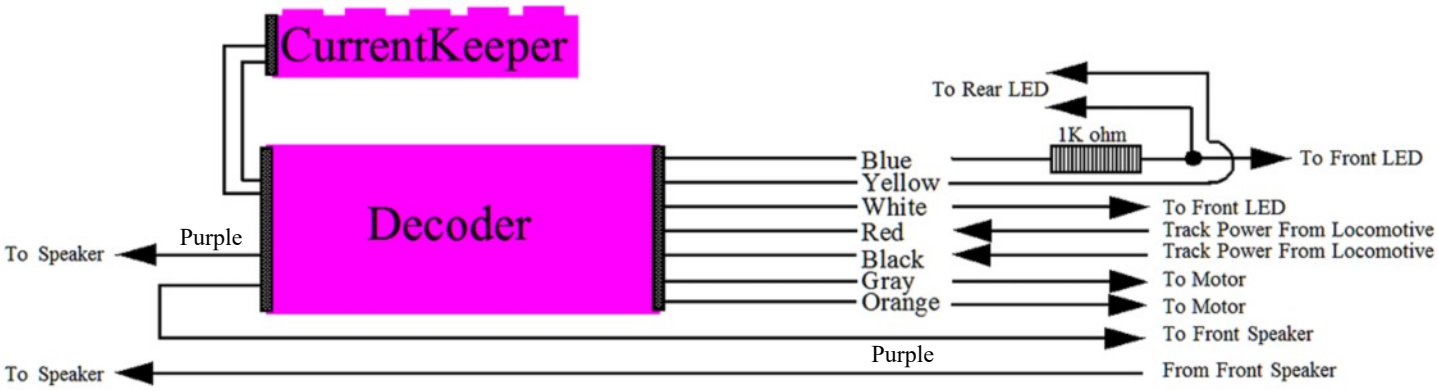


Two plugs to the locomotive. The red and black wires above will carry track power from locomotive, while the other wires from the decoder will use the 2x3 mini connector. There are other ways of doing this, but not being my engine, I did not want to drill, tap or otherwise do anything to alter the locomotive. I could have taken track power from the tender, but it would have still needed the plug for the locomotive track power.

Now we begin sorting out our wires. I used two plugs for the connections between the tender and the locomotive. I used a 2x3 mini connector (see inset above) for the decoder wires, and a 2 prong plug to bring the track power back to the decoder. I could not quickly find a small enough 2x4 mini connector to carry all eight wires, but these are so small you will not notice them when finished.

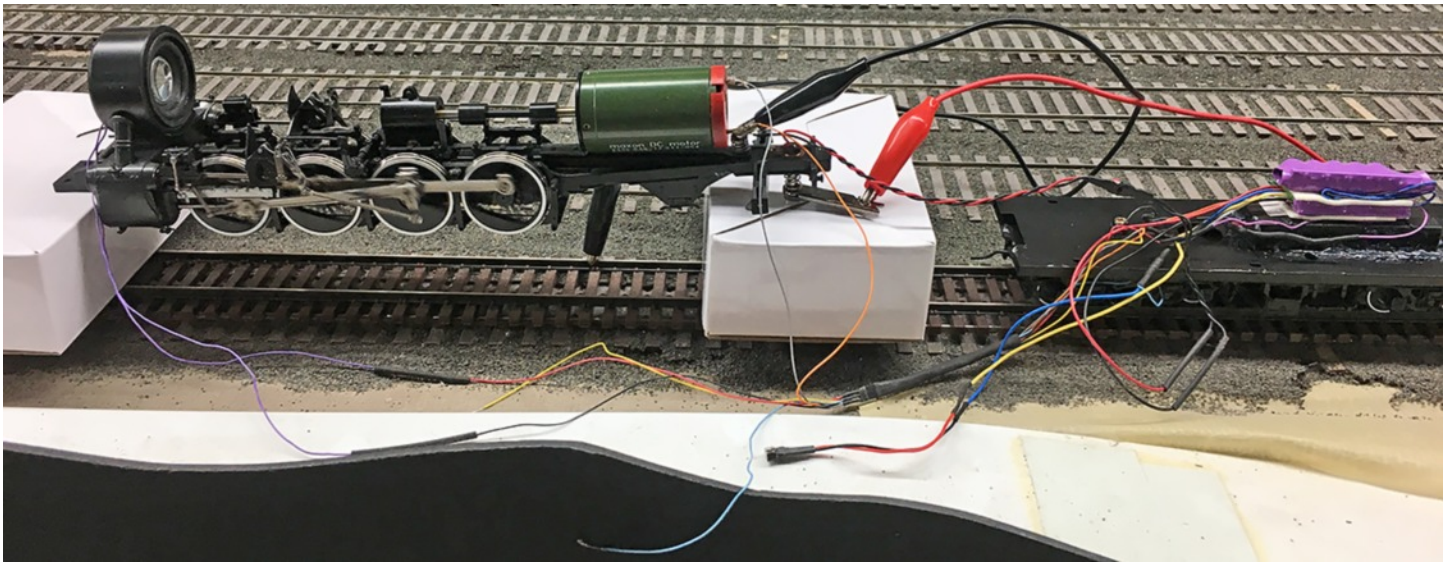
The blue wire from the decoder is common for lighting. Since we need this in the rear LED and the front LED's, I spliced in a 1000K ohm resister on the decoder side and then used two blue wires on the other side of the resistor. One wire was used for the tender light and the other wire will run up through the 2x3 mini connector to be used for the front LED's. I added a plug on the tender LED just for convenience. Also, remember that LED's have a polarity. If hooked up backwards, it will not light. So if you do hard wire them, be sure you do a test under power to make certain your wires are correct.

The drawing on the next page will show better where and how how the other wires will be run.



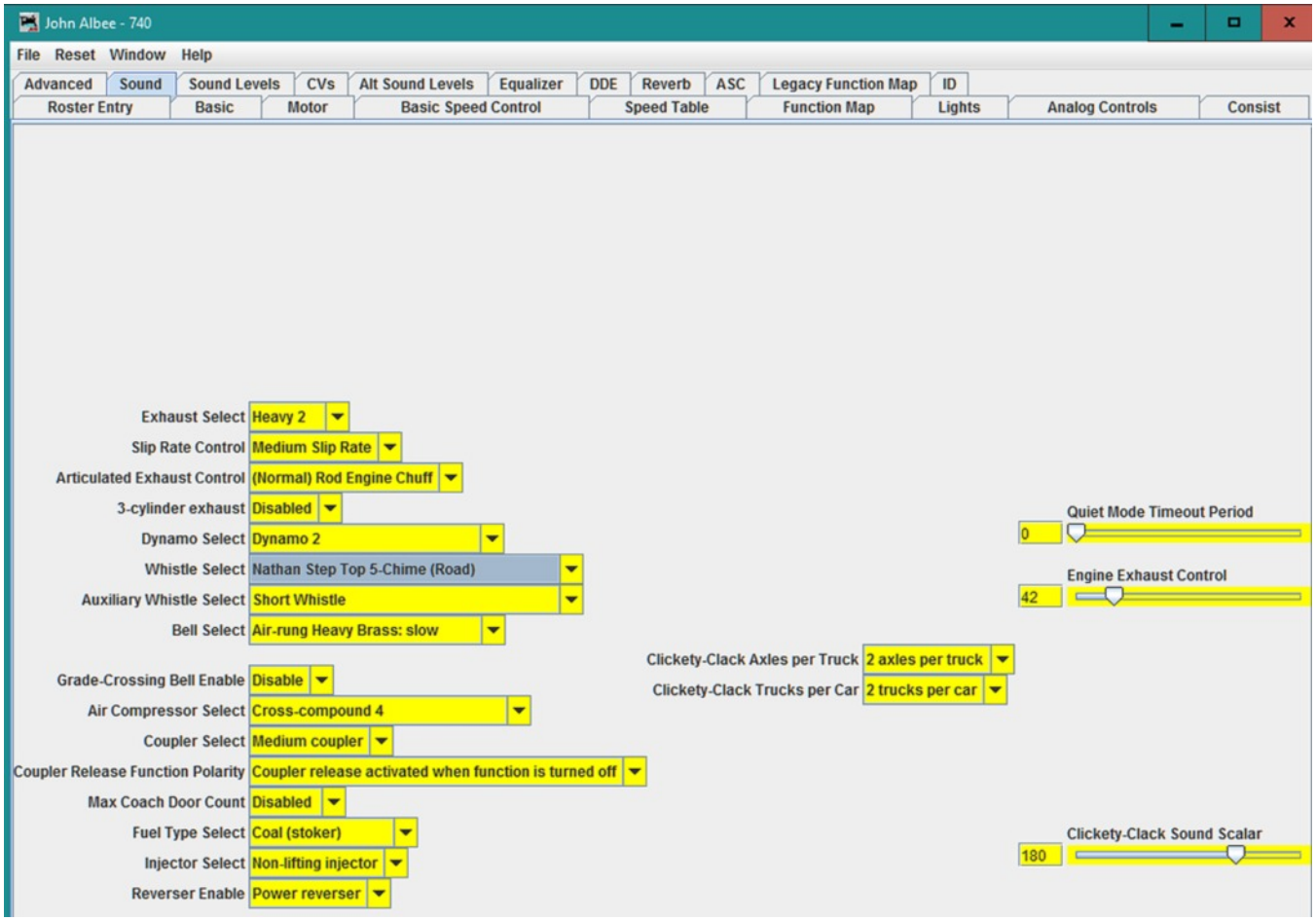
- Blue wire: A 1K ohm resister is attached to the decoder side and then two blue wires to the other end of the resistor. One going to the rear (tender) LED and the other going to the 2x3 mini connector and used for the front LED's. I normally use a 1K resistor, but if you want a brighter light, a 750 ohm will work well. If we were doing the classification lights, a 2K ohm would be better as these were much smaller than the headlight. A good read on this is in the March-April 2014 issue of *The O Scale Resource* magazine. If you are new to LED's, I would strongly suggest reading that article and watching the video that goes with it.
- Yellow wire: Going to the rear LED.
- White wire: Going to the 2x3 mini connector and used for the front LED's.
- RED wire: Going to the two pin connector coming from the locomotive drawbar. We are using the same locomotive pick ups from the stock install and just putting them on their own plug.
- Black wire: Going to the two pin connector coming from the locomotive frame. We are using the same locomotive pick ups from the stock install and just putting them on their own plug.
- Gray wire: Going to the 2x3 mini connector and to the motor inside the locomotive.
- Orange wire: Going to the 2x3 mini connector and to the motor inside the locomotive.
- Purple wires: One comes out of the decoder and goes straight to the tender speaker. The other wire from the decoder goes to the 2x3 mini connector and to one side of the speaker in the locomotive. The other side of that speaker comes back to the plug and to the speaker in the tender. Basically, we are wiring the speakers in series. The decoder requires an 8 ohm speaker. If we wired in parallel, the decoder would see a 4 ohm load and that would work the amplifier too hard. Wiring in series gives us a 16 ohm load that the the amplifier has no problem with. The how and why of speakers and ohm loads are beyond the scope of this article, but if you want to learn more, including how to use 4 speakers, go here to our friends at Streamlined Backshop.
- Our decoder had other wires for lighting effects that we did not use. I cut those back, but left enough wire so we could tap into them in the future if needed.

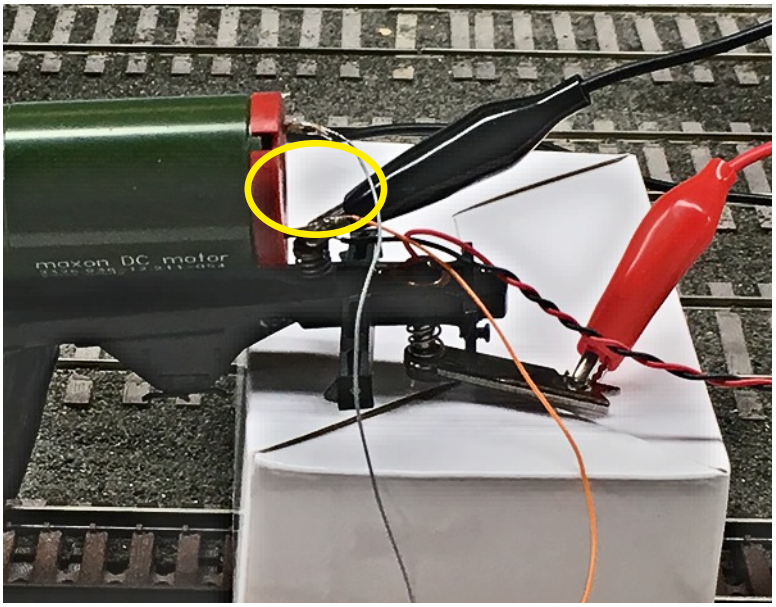
Before final hardwiring the 2x3 mini connector on the locomotive side and properly running the wires, we want to test again to make sure everything works and our locomotive runs smoothly. I don't have a fancy test stand, so a couple of small boxes works fine. (See next page, as well as the video.)



For this test, the 2x3 mini connector on the locomotive side is used, but the wiring is just temporary on the locomotive. Notice that the red and black clips from the track power to the model frame and drawbar are being used because we are not sitting on the track.

If you have a programming track, use it for this test first. Once the wiring is connected (in the video we have the LED's connected), use the programing track power to do a read on any CV. Or, if using JMRI, read back the full Basic tab. If you can read back, the wiring is OK and you can switch to full track power. If you used full track power at first and there was a wiring problem, you may see smoke and maybe not even in a steam locomotive. That's not good! If it's a new locomotive, or one that has not been used for awhile, let it run. This is also a great time to just play with all the sounds including bells, whistles, air pumps, etc. that you can select from. See the JMRI Sound tab below.





At one point in testing set up, both LED's started blinking and the locomotive stopped running. That's not good. What had happened was the black clip going from the track to the locomotive frame accidentally touched the motor lead, causing the motor to no longer be isolated, and the decoder went into an error. No damage was done, but it's worth noting, and knowing what specific decoder error codes mean.

I let the locomotive run for a while, and programing on the main, was able to select different sounds of bells and air pumps and such. Because you don't have to chase the locomotive all over the layout, this is a good time to really play to see what sounds and estimated volumes you prefer. You can even get close to your chuff rate as this decoder no longer supports a cam for chuff synchronization.

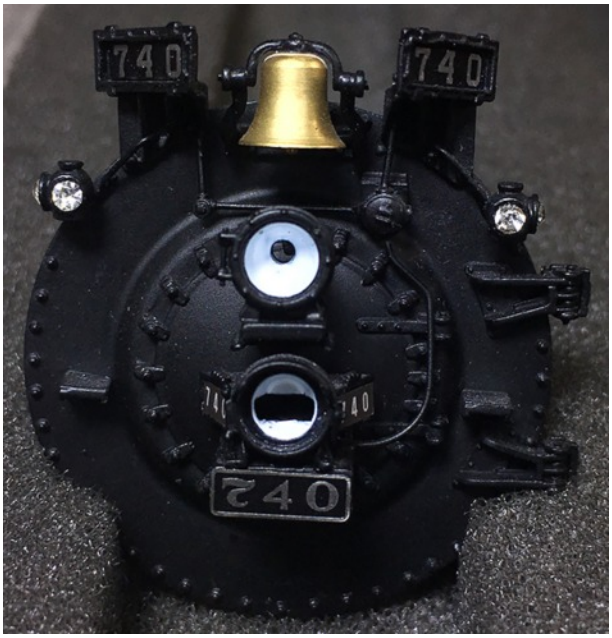
I actually spent a few hours playing with this since it was my first time using this decoder. JMRI makes this so easy; however, you can do all of this from your controller. Download the manuals from the decoder

manufacturer (much more detailed than the very basic manuals that com

This is not even the tip of the iceberg of options available with most new sound decoders.

OK, with playtime over, let's finish off this install. First off, I need to install the LED's in the smoke box door.

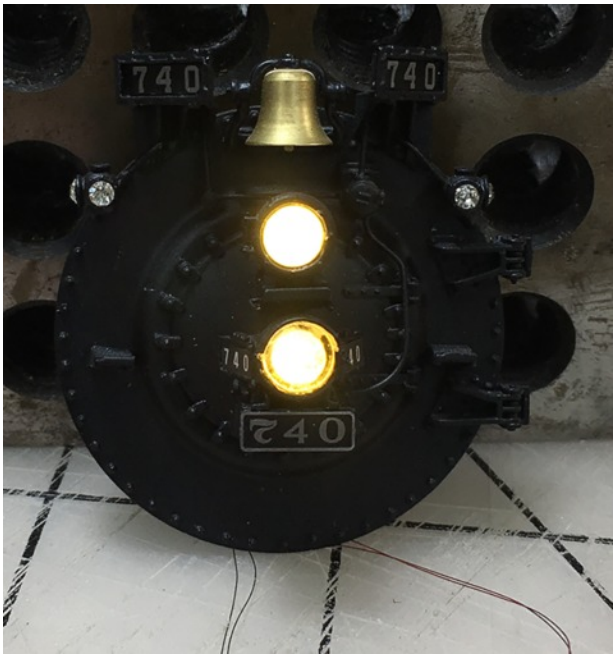
Original wiring on left. Two bulbs wired into one plug. Note the bent over tabs for holding the wires.

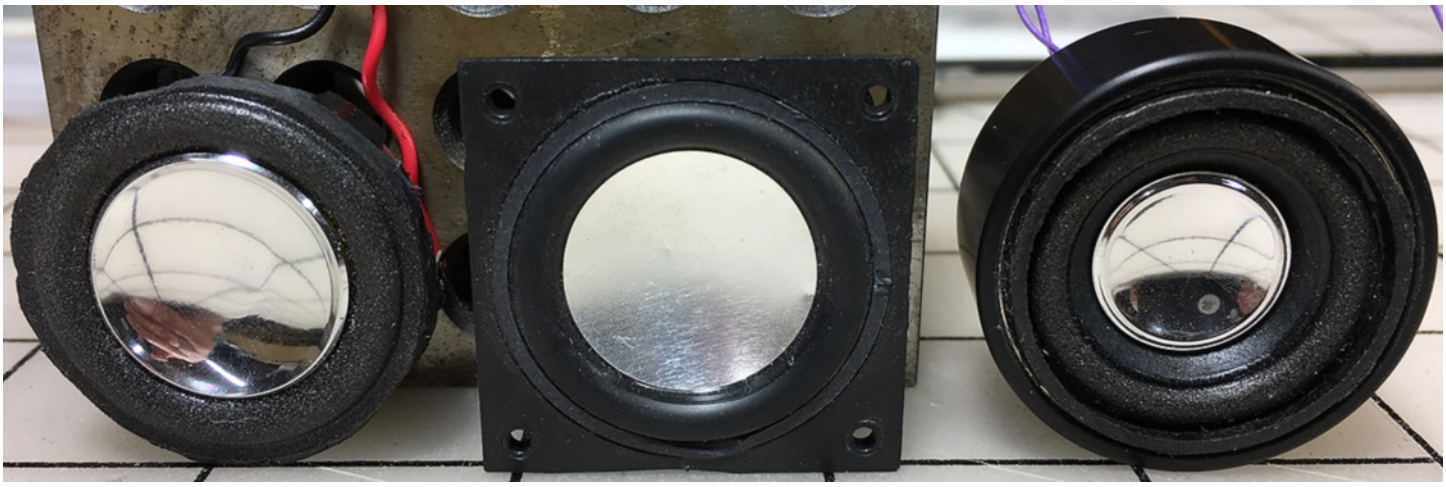


LEFT: This image shows another problem. The hole through the smokebox door and the hole for the top casting are offset and too small even for this LED. I could have drilled out the hole in the door, but even then, fishing the LED on it's magnet wire through the holes would be a pain. So I popped off the plastic lenses on both light castings. The bottom casting had a wide slot where the bulb was. I have no idea why and it really detracts from the light. Normally I would have used MV lenses in this type of install, but I did not have any the right size.

BOTTOM LEFT: Shows the first LED installed. Using a small piece of .010" styrene I ended up cutting a small circle and running the wire through the center, placing that in the lower light to cover the gap.

LOWER RIGHT: Both LED's installed. I cut new glass lenses for these instead of reusing the original plastic ones.

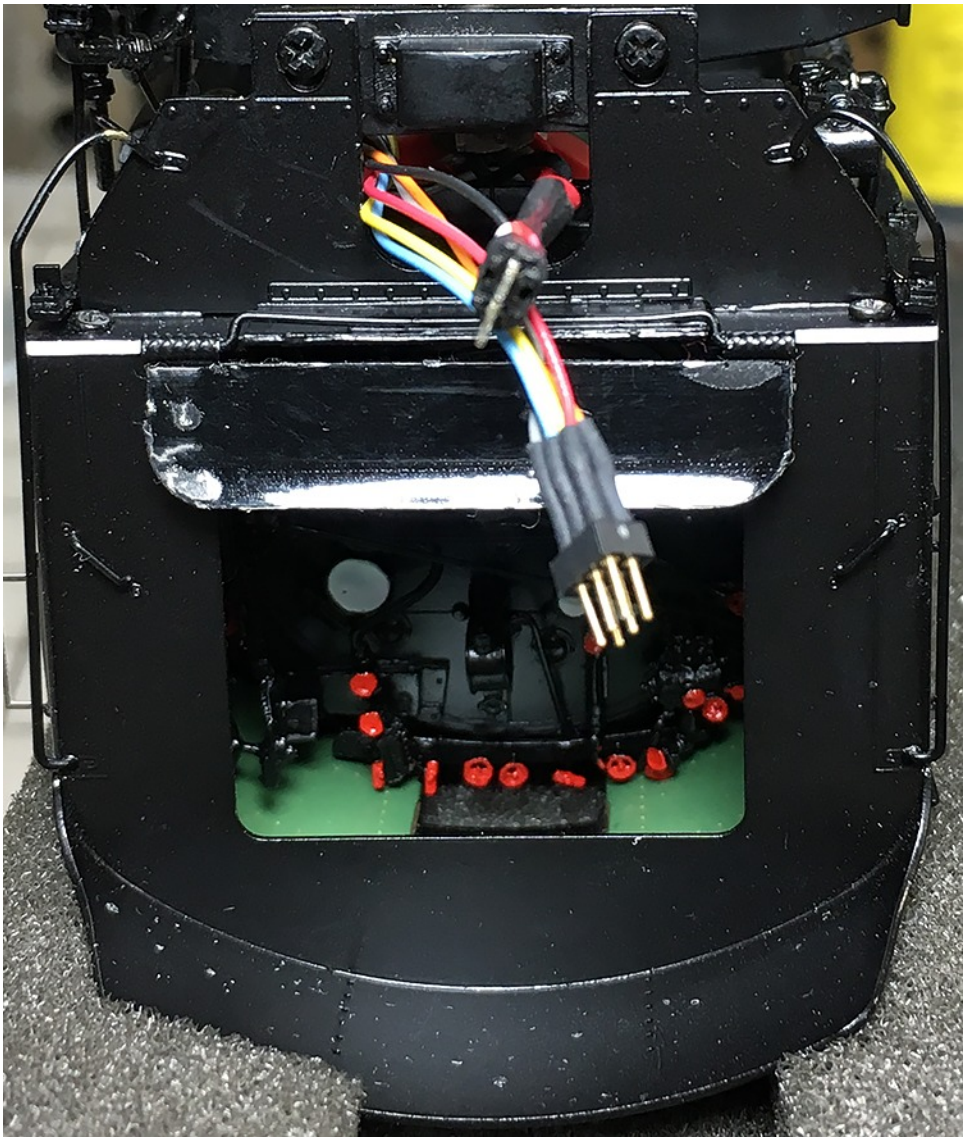




Just when you think you're on the home stretch, something else comes back to bite you. I had fit the speaker in the smokebox when I first received the locomotive to make sure it fit. What I did not measure was the enclosure of that speaker. You can guess the rest. The speaker on the far right was supposed to go in this install, but with the enclosure, it no longer fit. I have a bunch of high quality two watt speakers on hand like the one in the middle.

Cutting down the corners, and then making my own enclosure, saved time and the cost of ordering a new one. I cut and wrapped a 0.010" styrene band around the speaker, gluing and clamping as I want along. Then I came back with electrical tape to further secure it. The rear was filled with silicone and left to set up.

Almost there. The wires from the locomotive side of the 2x3 mini connector were cut to length for the headlights (blue and white) and the speaker wires. The gray and orange wires were soldered to the motor terminals.



Here you can see the plugs coming out of the locomotive. The 2x3 mini connector will get heat shrunk before being delivered to make things neater and hide the colored wires. The smaller two pin connector carries the track power back to the decoder in the tender.

Take note of the dot marking on the 2x3 mini connector. It is the same on the other end. We don't want to plug this in backwards!

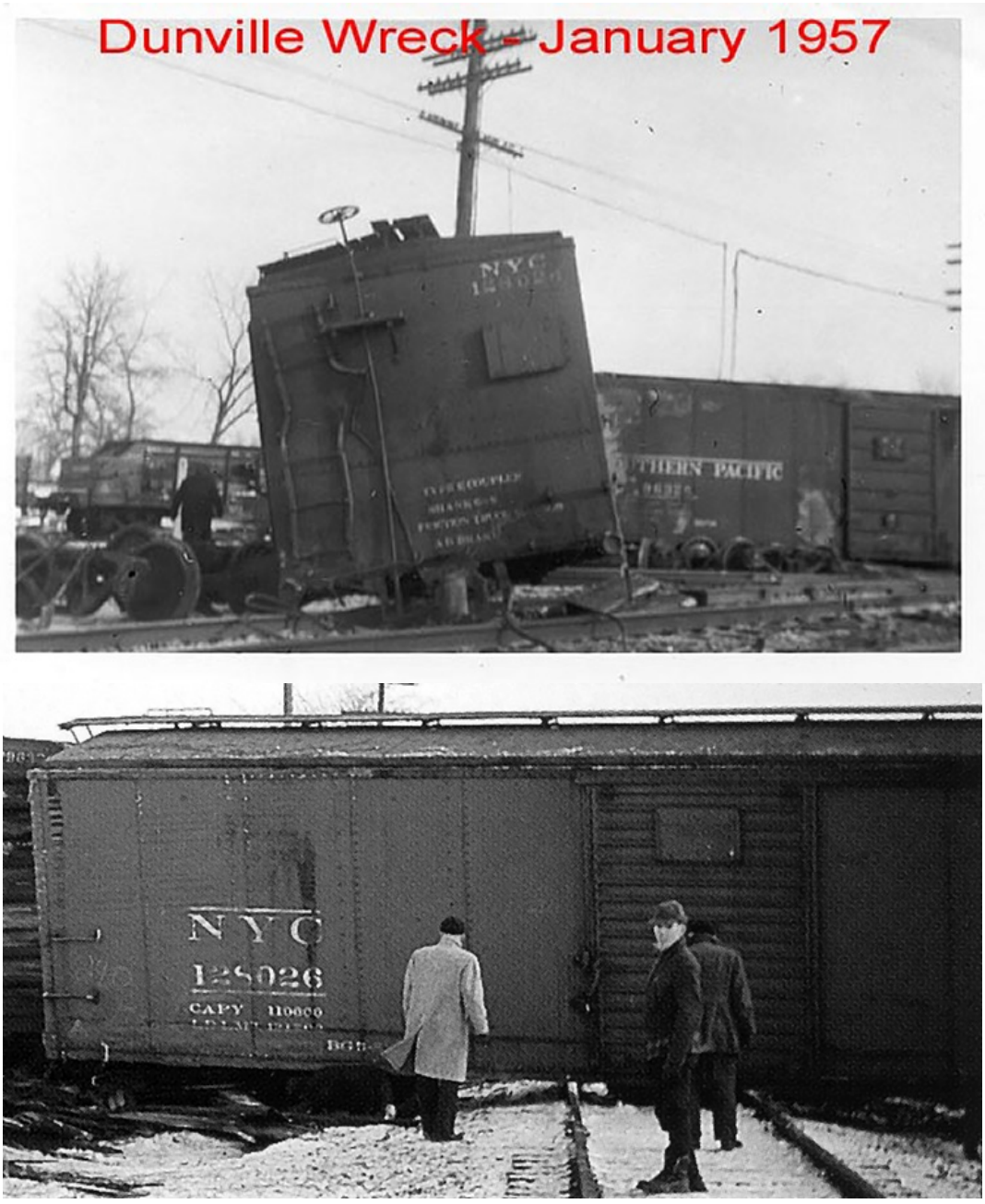
The plug carrying the track power makes no difference as to which way it's plugged in.

You will see in the video that the wires and plugs are really not noticeable. Carefully reassemble the locomotive. You are now ready for further refinements of the decoder on your layout.

So that is it! I did not think it would take 18 pages to cover this, but I really wanted to be thorough and use enough pictures to show what I was doing. There are many ways to install decoders, and each install is going to be different. The way I did this may not be the way you would have done it. That's OK. If this were my engine, I would have done some things differently, but the last thing I was going to do with John's new baby was to start drilling and filing on the frame. Didn't I say I don't like working on other people equipment!?!

Oh What you can Learn from a Photo! New York Central X 29 Box Car

By Jim Kindraka

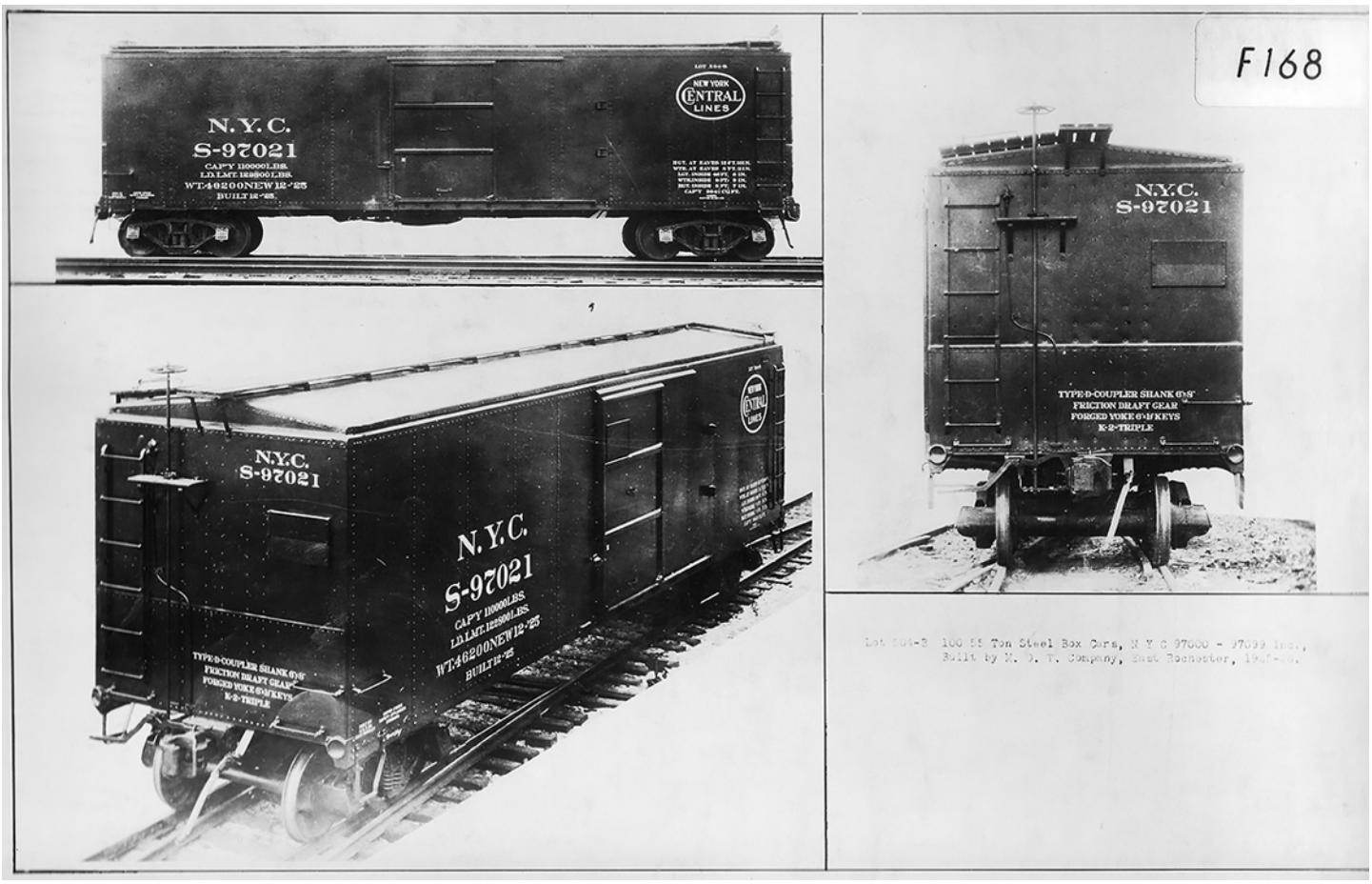


Photos of the Dunnville, Ontario wreck in 1957. NYC 128026 is from Lot 504-B, a box car built in 1925 to essentially the same design as the Pennsy X-29. Photographer unknown, photos via Jeff English.

I have always enjoyed the historical aspect of prototype railroading. Railroad history drives a lot of my interest in modeling, and being trackside to experience and record on film (well, OK, record "digitally") today's rail transportation excitement. Many times, trips to trackside involve side trips in the weeds to search for remnants of bygone structures or road bed or track plans. Those searches are many times driven by old photos, so I'm always interested in "stories" photos from the past may tell.

That is what happened with a couple of Internet photos showing a train wreck that S Scale modeler Jeff English shared with me a while ago; both are reproduced here. One photo indicates the wreck happened in "Dunville" in January 1957. What caught my eye in the photos was not the wreck or its aftermath, but the box car that was the focus of both photos. It is clearly a New York Central 40' box car, but the size, shape and flat ends looked different. What was this car?

Luckily, mini-historians like me benefit from the hard-working people who maintained the volumes of data associated with railroad companies; plus, the equally hard-working volunteers who have saved, organized, archived and made available a large amount of that information; much of it done after the original railroad businesses folded or were merged out of existence. For those of us who follow the history of the New York



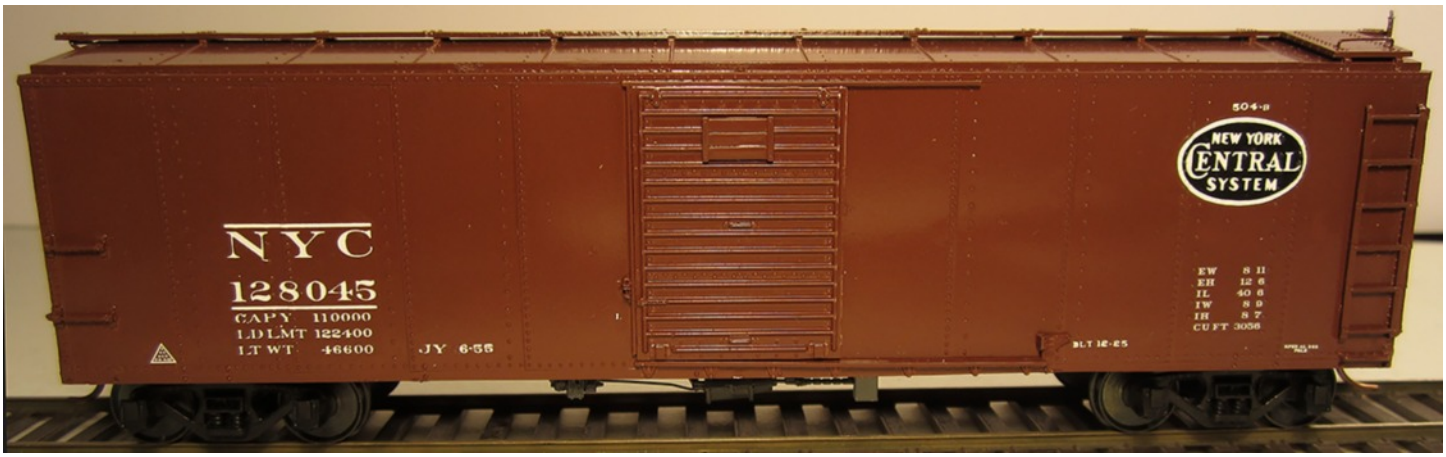
New York Central East Rochester, New York shops builder's photos of the Lot 504-B box car. There are no visual differences between this car and the early PRR X-29 box cars. Note how the slightly longer wheel base in the design is evident in the side view. Photo courtesy of the New York Central System Historical Society.

Central, there is a historical and technical society that has done just that. Using their published Freight Classification Book, I tracked the car number back to a production lot of 100 freight cars built in 1925 and originally numbered 97000 – 97099. However, there were still some questions; those cars had a wheel base of 32' 3" and there was that flat end. Those design features were not common on the NYC, but both were incorporated in the Pennsy X-29. Did the NYC actually own Pennsy X-29's? Time for more digging, and this time the answer came from Volume 18 of the Railway Prototype Cyclopedia.

Without getting too deep into box car history, in 1923 the American Railway Association sought designs for an improved 40' steel box car, an upgrade of the USRA box car design of World War I. The A.R.A. was one of the predecessor organizations that would, in 1934, form the Association of American Railroads, the A.A.R. The 1923 design was never adopted as a standard, all the A.R.A members couldn't agree. Principally the NYC was against the 1923 design preferring to build their own design, an improved all-steel USRA design. The PRR was already committed to the design with their program to build the X-29, and other railroads were left to choose their own course of action. Several mainly eastern railroads chose to use the 1923 A.R.A "proposed-standard design" even though it was not a nationally recognized standard. Among those railroad users were the: B&O, C&O, CGW, CNJ, Erie, L&NE, MEC, NKP, PM, W&LE and, of course, the PRR.

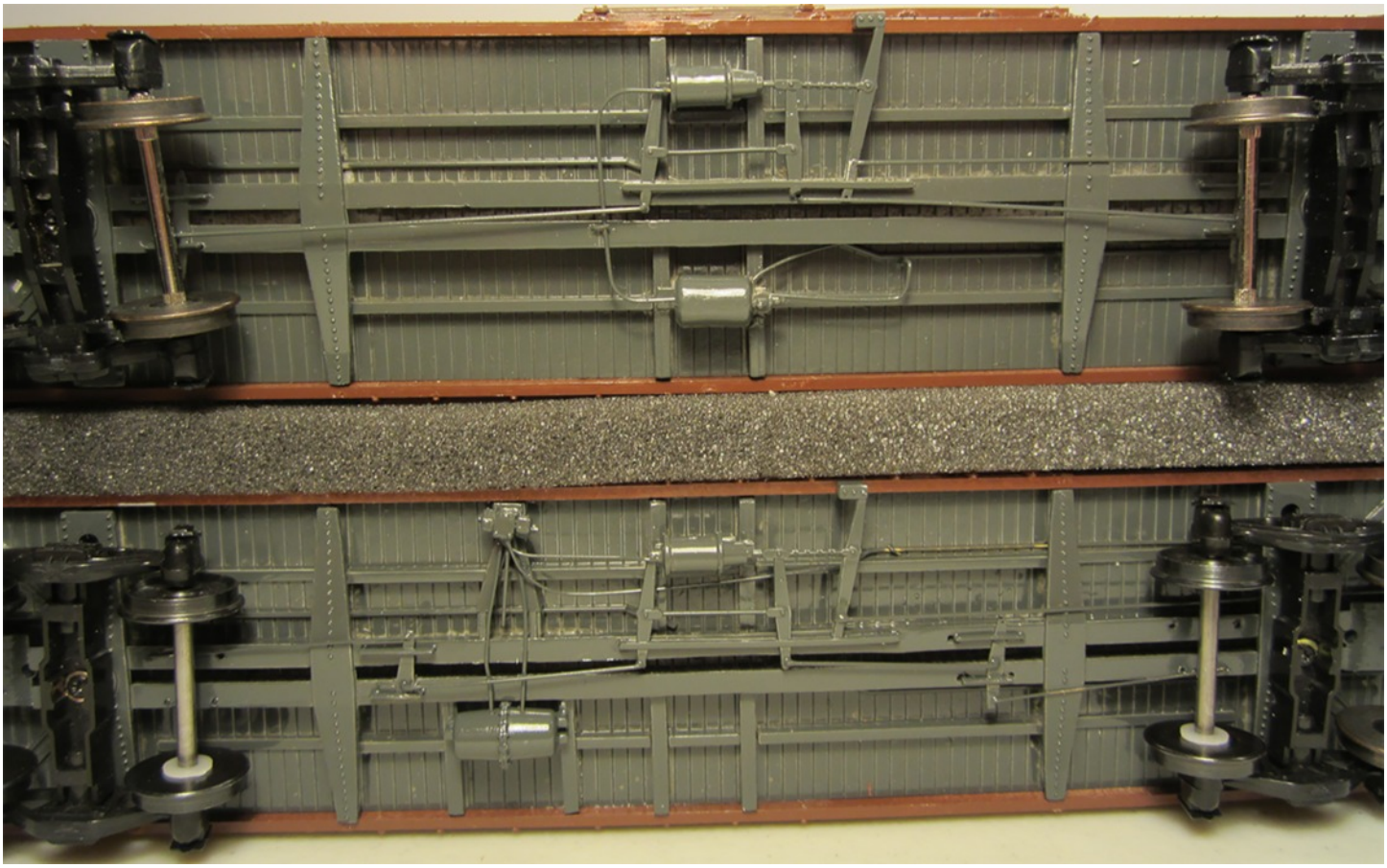
The PRR and NYC both built over 30,000 of their own designed all-steel box cars. However, and here is where the wreck photo intersects with history, in 1925 for some reason the NYC ordered their Merchants Despatch shops in East Rochester to build 100 cars to the 1923 A.R.A "proposed-standard design" and assign them to NYC Lot 504-B. The cars were built with flat plate steel ends, a 32' 3" wheel base and deviated from the 1923 A.R.A proposed standard in a way that left them with a rivet pattern identical to the early PRR X-29 box cars. So, among the tens of thousands of box cars the NYC owned, there was a group of 100 "X-29 clones". That makes them a rare breed, and a car that begs to be modeled! After all, it would be hard to even think about having more than one…

The SSA X-29 box car built from the kit exactly as supplied, and lettered using SSA's PRR-16 decal set.



The same SSA X-29 kit, but now substituting a Youngstown door and lettered for New York Central Lot 504-B. NYC changed the number series on these cars from the original 97000 – 97099 to 128000 – 128099 right after the Second World War. I decided against using the number on the wrecked car, but still chose one within the prototype range. The model has decals with the correct built date of December, 1925 and reweighing in Detroit in June, 1955.

Luckily for S Scale modelers, there is a very good model kit of the PRR X-29 introduced a few years ago by Des Plaines Hobbies through their S Scale America product line. I recently built one and lettered it for PRR so it was fairly simple to get another and build the finished model. Then the challenge was finding decals to turn the model into an NYC Lot 504-B box car. I ended up finding most of what I needed from one CDS dry transfer set, S-459. Additionally, I used the dimensional data from the SSA's X-29 decal set, PRR-16, and some miscellaneous 2" numbers and letters from other scrap sets for the building date, 12-25, and the lot number, 504-B. You can still purchase CDS dry transfers by contacting Ozark Miniatures.



One other differentiation I made between the PRR X-29 and the NYC Lot 504-B models was in their brake systems. The X-29 is on the top in this photo and has the KD brake system that was supplied with the kit. On the bottom is the NYC car set up with an AB brake system.

Because of its rarity, I imagine it would be hard to find a prototype in-service photo of the NYC version of the X-29 design coupled to a Pennsy X-29, but here they are coupled in a train together on the Des Plaines Valley layout.

There are indications the Tichy decal line will eventually include at least one standard NYC box car set.

For dry transfer application, transfer to decal film and, after burnishing the transfer on the decal sheet, spray with Krylon "Workable Fixatif", item #1306. This is a product I learned about from another excellent S Scale modeler. The product is available at big box stores and art supply houses. It goes on easily and provides a clear finish that seals the transfer but does not cloud the decal film. Dry the decal sheets sprayed with fixative overnight and apply the "decal transfers" as you would any other wet decal.

The NYC "X-29" is a rare, but great car, to add to your freight car roster. Keep looking at those old photographs for inspiration! And, by the way, the Internet photo misspelled the site of the actual wreck. The wreck occurred in Dunnville, Ontario at a diamond where the Michigan Central, former TH&B, and Canadian National crossed. That is really all I know about the incident; perhaps one of our Canadian readers with knowledge of the history of the area can fill in more background.

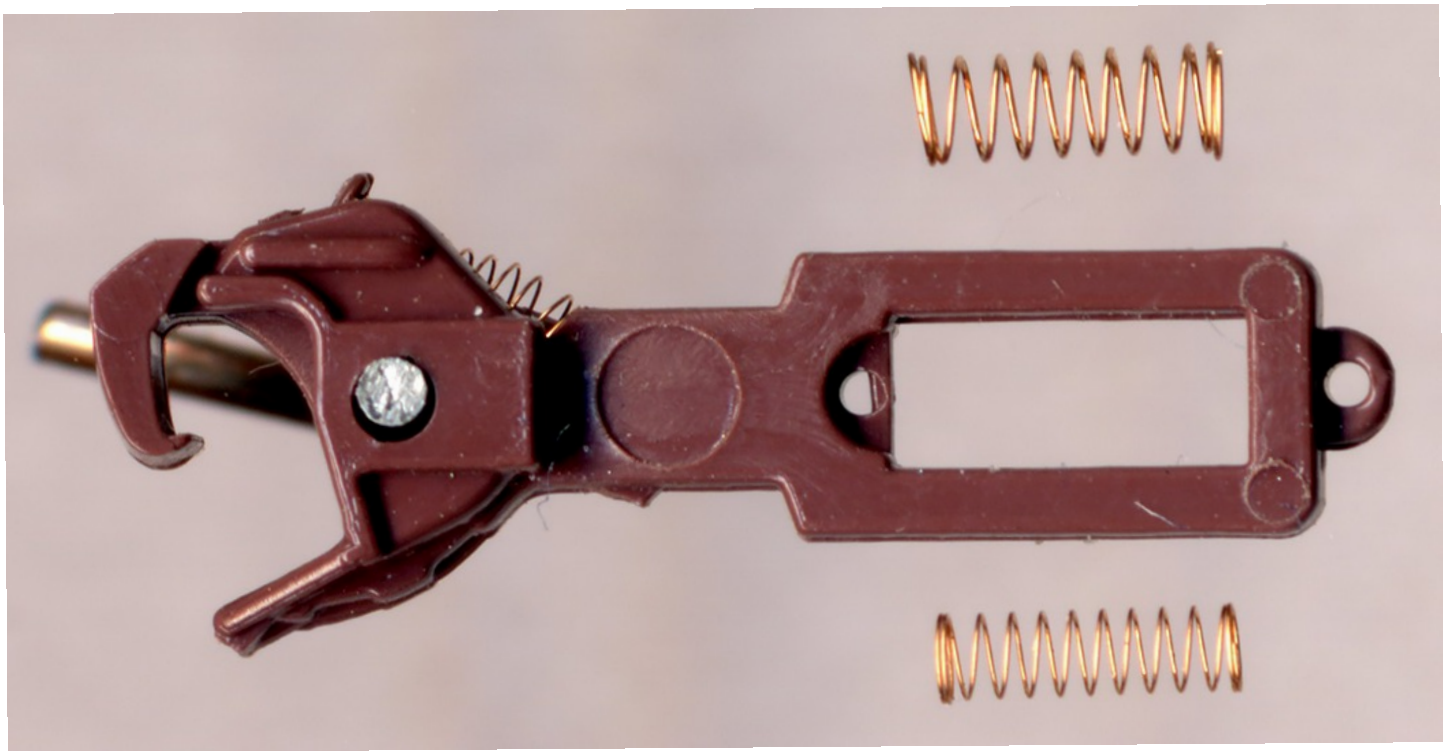
A Different Approach to solving the "Pogo Stick Couplers" Problem

by Dick Karnes

Michael Fox's December/January article on reducing the Kadee "pogo stick" effect caught my interest. Having noticed this effect myself when I finished my first layout, I took an engineering approach and found that doing the opposite of what Michael proposed was a better way to go.

Michael's use of a stiffer centering spring with or without a rigid insert can cause some unpleasant side effects:

- Little or no slack action between cars.
- Increased force required to move the coupler laterally, essentially disabling Kadee's signature "delayed action" uncoupling.
- Increased likelihood of derailments as cars travel through tight reverse curves, where car ends are laterally offset from each other by a significant extent.



A Kadee No. 808 poses between the standard centering spring (top) and a No. 817 knuckle spring (bottom). Both springs are the same length, but the knuckle spring has more coils and a smaller wire diameter. The knuckle spring's smaller wire diameter makes it 80 percent softer than the centering spring. The fact that it has ten coils, as opposed to the centering spring's eight, reduces its stiffness by another 20 percent. The total reduction amounts to about 84 percent. Author's photo.

A lot of guys cut the Kadee centering spring in half. This does two things: it makes the spring TWICE as stiff; AND it creates open space in the coupler shank's slot, making for a sloppy coupler that no longer centers properly. Putting a rod inside the spring reduces the pogo-stick effect, but does not eliminate it.

The solution is to use a softer spring, not a stiffer one. Even Kadee, with whom I have corresponded on this issue, agrees. There are just not enough S sales to justify altering the instructions and packaging.

The solution is simple: Use a knuckle spring instead of Kadee's standard centering spring. The spring capsules that come with Kadee 802/808 couplers include extra knuckle springs. They are also available separately (Kadee Part No. 817, a dozen per package). The reason these work is because the drag friction of each car is sufficient to keep the springs compressed when the train is actually rolling.

When my trains start from a dead stop, the slack is taken out car by car. When the train is moving, there is no pogo-stick effect. When the train stops, the compression gradually slackens. What could be more prototypical? I have hosted monthly operating sessions for five years and never had any "pogo-sticking." Not seen by me, not seen by any operator. All my freight cars are equipped with Kadee 802 or 808 couplers with knuckle springs as their centering springs.

The physics of the situation are misunderstood by nearly everyone. All springs are elastic; that is, they return to their initial length once force is removed. The force required to compress a spring by a specific measurement (the so-called “spring constant”) decreases as either more coils are added, or as the diameter of the wire of which the spring is composed is reduced. Double the length of a spring and it is half as stiff. Of course, there is no space in the Kadee shank for a double-length spring. If you compress such a spring so that it fits, you will have already built in a force large enough to preclude significant lateral travel, as is necessary through reverse curves. The right solution is to reduce the wire diameter. The knuckle spring, whose wire diameter is about two-thirds that of the centering spring, is very soft indeed; and its length is nearly the same as the centering spring supplied by Kadee. Reducing the wire diameter by a third reduces the spring stiffness by 80 percent!*

When the knuckle spring is inserted into the shank slot, it may look a bit crooked. No matter, it still works. Its longitudinal action is very soft, yet its stiffness is sufficient to provide reliable coupler centering, AND it makes so-called "delayed action" uncoupling much more reliable.

Try these springs. When you do, you’ll never go back to alternative approaches.

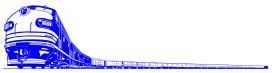
** Spring stiffness varies by the fourth power of its wire diameter. Example: Reducing the spring’s wire diameter by half without altering the number of coils, the length of the spring, or the spring diameter, reduces its stiffness by a factor of 16*

.

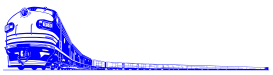
S Scale Shows & Meets

The S Scale Resource Magazine will now be providing a free listing of upcoming events. This small, text only listing will include the Event, Date, Location, Type of Event, and Contact Information. Click here to go to the sign up form. This form will take your information, and we will publish it in our next issue. If it is an annual event, you will need to submit your information every year.

Greater Houston Train Show
February 18th, 2017
Stafford Centre, Stafford Texas (Houston), 10505 Cash Road, Stafford, Tx 77
All scales model train show, 20.000 square ft. layouts, vendors, contests education clinics
http://sanjacmodeltrains.org



The Hoosier S Gaugers will be displaying their T-Trak-S layout at the LAFAYETTE FARM TOY SHOW of Indianapolis. In addition to displaying the club members will be presenting clinics on static grass application, weathering techniques and an introduction to 1:64 / T-Trak Modeling.
March 10, 11 & 12, 2017
Friday, Saturday & Sunday
Crowne Plaza Indinapolis-Airport
Address: 2501 South High School Road, Indianapolis, IN 46241
Phone: (317) 244-6861
Just off of I-465 at exit 11on the West side of Indianapolis
For Information Contact: Alan and Leesa Chesnut (217) 247-2644 Lafayettefarmtoyshow.com



32nd Sn3 Symposium
April 6-8th, 2017
St. Louis Airport Marriott, 10700 Pear Tree Lane, St. Louis, MO Tel: 1.314.423.9700
The Symposium is an annual event that includes layout visits, a model contest, clinics and manufacturer and vendor booths. The cost is $45 before February 15, 2017.
Email: smithpb@sbcglobal.net
Web: 2017sn3symposium.com

Spring S Spree
May 4-6th , 2017
Veteran's Memorial Coliseum
Marion County Fairgrounds
220 E Fairground Street
Marion, OH 43302
Over 37,600 Square feet of Exhibit Space, Over 135 Dealer Tables, Several Operating Layouts, Free Parking, Door Grand Prize, How-to Clinics, Pizza Party Friday Night Flying Pancake Breakfast Saturday Morning
Join the tour of the unique Age of Steam Roundhouse in Sugarcreek Ohio
For futher information, please contact COSG Member John Myers at email JohnFMyers@cs.com or call (614) 766-9033.

2017 O Scale West / S West 12
May 25-27, 2017
The Hyatt Regency Santa Clara (San Francisco area).
Family registration for the entire meet is $35.
This includes you, your spouse/SO, and all children under 18, related or not. |n-registered attendees can walk up on Saturday and get in for $25.
http://www.oscalewest.com/
meldridge2000@gmail.com

2017 NASG Convention
August 8-12th, 2017
Co-hosted by The Baltimore Area American Flyer Club and the Washington and Old Dominion Club
North Baltimore Radisson Hotel, 2004 Greenspring Drive, Timonium, Maryland 410/252-7373
(Be sure to use the "NASG17" code to get a reduced room rate).
Click here to visit the website, which includes the registration and car-order forms, and the tours.

Indianapolis O Scale Show / S Scale Midwest Show
September 21-23
Wyndham Indianapolis West
The Indianapolis O Scale Show has been in place for over 48 years. For the past 15 years, it has been chaired by James Canter, and he has decided it is time to "pass the torch" We, at The Model Railroad Resource LLC, publishers of The O Scale Resource and The S Scale Resource, are proud to have been selected to carry on the tradition for the 49th year, and include S Scale.
Website: indyoscaleshow.com
Email: info@indyoscaleshow.com

The S Resource — Classified Listings

News, Reviews, Information to Use

Manufacturers Dealers Pre Owned

East West Rail Service

Car Kits
Structure Kits
Detail Kits

4778 Habits Glen Ct. Cincinnati, Ohio 45244
www.eastwestrailservice.com al@eastwestrailservice.com

S Scale Model Railroading Kits

Des Plaines Hobbies

1524 Lee Street
Des Plaines, IL 60018
Phone: 847-297-2118

Email: dphobbies@earthlink.net
Web: www.desplaineshobbies.com

Pre-Size Model Specialties

Free Shipping
See our web site for details

Cast resin items for your S & Sn layout.
Tunnel portals, bridge piers, abutments, culverts, and retaining walls.
Trackside details and sage brush tree armatures.

To advertise in The S Scale Resource classified listings contact us for our rates. Your classified ad will appear in the section you want for 6 issues. If you do not see a section that you think would fit your products or services, let us know. We can add a category that better suits you. Your ad is hot linked to your website which puts your customers one click away from you.

Your ad could be here for only $56.00 an issue! Linked directly to your Website and seen by over 1600 viewers an issue. All back issues also stay on-line and continue to be read and links clicked!

Contact Dan or Amy today

Advertiser Index

Like us on facebook

Yes, we now have a Facebook page to help keep you up to date on new products and ideas. And, even in an on-line magazine, we sometimes have more pictures than we can use so we'll post them on Facebook.


D&RGW
D&RGW
D&RGW