

# THE **O** RESOURCE

NEWS, REVIEWS, INFORMATION TO USE

## SCALE

Vol 3 No. 1  
September /October  
2015

**Jeff and Darcie Lang's Layout**  
**Powering and Lighting a St. Petersburg Tram PCC Car**  
**South Shore Wood Interurban Cars**  
**Adding MU Connections**  
**A Visit With Mike Hill**



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## Published Bi Monthly

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The Model Railroad Resource LLC  
Dwight, Illinois

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[Dan Dawdy](#)      [Glenn Guerra](#)

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## September-October 2015

### Vol 3 No. 1

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Welcome to the online *O 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

Jeff and Darcie Lang are working on a big city area of their layout. We are looking down one of the city streets toward the railroad underpass.

#### Rear Cover Photo

An industrial scene under construction on Jeff and Darcie Lang's layout.

# Bill Of Lading

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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.

# Editorial Comment

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With this issue of *[THE O SCALE RESOURCE](#)*, we start our third year. The response has been very good, and we thank all of you for reading the magazine. We continue to receive good comments on the content and layout of the magazine. If you are new to the magazine, be sure to go back and look at the past issues. They are all still live online.

For this issue, we have some traction related articles. In the mid 1990's a group of people started producing traction and bus line models in St. Petersburg, Russia. The models had great detail with exceptional quality resin casting work. They produced models from all over the world, quickly becoming the standard for traction models. These are all display models without power. Many modelers are reluctant to try to power them for fear of compromising their delicate detail. In this issue, Charlie Pitts shows us how he powered a PCC car model and installed lights in his article *Powering And Lighting A St. Petersburg Tram PCC Car Model*. He was able to retain all the details along with the factory paint job. There is some good information here on thinking a project through and installing interior lighting that will apply to all models. Since we had some traction stuff going on, I decided it would be a good time to have some prototype traction plans. The Chicago South Shore and South Bend railroad is known to many people as one of the longest continuous running interurban lines in the United States. The line is always associated with the orange and maroon steel cars, but the railroad started in 1908 with wood cars and a completely different paint job. I was hired to do some work on one of the last of the wood cars still remaining. I made plans of the cars and you can see them in this issue, as well as, some of the work that has been done to the car. See it all in *Chicago Lake Shore and South Bend Wood Interurban Cars*. We have some other how-to articles also. Bob Morris won first place in the diesel category at the Chicago O Scale Meet with a three unit lash up. One feature of Bob's models was the MU connections between the units. Bob tells us how he made them, and also how they can be unplugged so you can change the lash up or add other locomotives. Take a look at how he did it in *Adding MU Connections*. Then, we get into some personal interest articles. Larry Sokol told us about his pal Leo Vilstrup in the July/August 2015 issue, and in this issue, he tells us about Mike Hill. Mike Hill not only owns many pieces of older O Scale equipment, he is part of the history of O Scale. Take a look at *A Visit With Mike Hill*. Lastly, we have a layout. This layout has a lot of significance for this issue, as well as, the people who own it, Jeff and Darcie Lang. This September 11<sup>th</sup>, the O Scale National show is in Indianapolis, Indiana and the layout will be open for the show. This article is a "teaser" to show you what you can see when you come to the show. On the personal side, this layout has provided many years of enjoyment for Jeff and Darcie. They have met many friends through the hobby. Take a look at *Jeff and Darcie Lang's Layout*. In October, there is an O Scale Show in Ft. Worth, Texas. We have an article by Mike Ross about Frank Schmidt's layout. Frank and Mike Hill were partners in the Chicago O Scale Show when Frank lived in the Chicago area. He now lives in Texas, and his layout will be open for the Ft. Worth show. So, we have another reason for you to entice you to attend the Texas show. That wraps it up for this issue. Dan, Amy, and I will be at the O Scale National in Indianapolis, and look forward to seeing you there.

Glenn Guerra

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# 2015 National

## "O" Scale Annual Convention

2 Rail 3 Rail Proto 48 On3 On30

[www.indyoscalenational.com](http://www.indyoscalenational.com) Indianapolis, Indiana

**September 11-12, 2015 Friday and Saturday**

### Thursday, Sept. 10

5:00 PM Dealer set up  
9:00 PM Trading hall closes

### Friday, Sept. 11

9:00 AM Trading hall opens  
6:00 PM Trading hall closes

### Saturday, Sept. 12

9:00 AM Trading hall opens  
11:00 AM Awards  
3:00 PM Trading hall closes

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you want to sell? Call for a table**

Indianapolis Annual Show watch for 2015 & 2016

## C&O Section Car Houses

These new laser-cut kits includes internal wall framing, floor, and positionable doors. Drum castings are included. Footprint of each is a scale 12' x 20'. More C&O kits are in stock, and several more will be available soon including three more for Quinimont, WV. More photos and details are on our web site at [www.btsrr.com](http://www.btsrr.com)!!



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# News AND Reviews



A last minute reminder to come to the O Scale National in Indianapolis September 11-12. We will see you there.



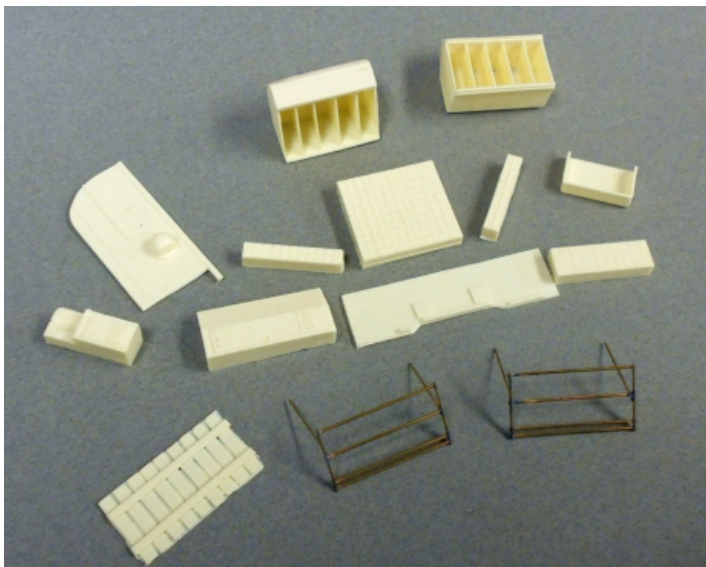
Rich Yoder forwarded some photos he received from George Podas. George is a modeler in the Chicago area that does a lot of scratch building. He uses old silverware made from Nickel Silver for his connecting rods on the steam locomotive models. George said the next time you are at a garage sale, take a look at the old silverware. The pure nickel silver sets will be marked. A good tip, George. Thanks, and thanks to Rich for sending it to us.



Norm Buckhart from [Protocraft](http://www.protocraft.com) sent us some news. He has an extensive line of prototype decals available. Some samples are shown above. The background color in the photos is to show how the lettering will look on the color of the car. The decals are printed on the standard blue decal paper. Lettering is a match for the cars it goes on. With the highly detailed accurate prototype cars available, these decals will be a perfect match. See the [website](http://www.protocraft.com) for a complete listing.

Mullet River Model Works is closing and all the remaining stock will be sold through [Des Plaines Hobby](http://www.desplains.com) or [P&D Hobby](http://www.pandhobby.com). Contact one of them for availability.





Bill Basden at [Delta Models](#) continues to add to his line of passenger car interior details. Many of these parts are cast resin and will not add a lot of weight to your models. Shown are some parts for kit #DM 507 which is the 15' new postal car interiors. Bill will assemble the brass racks for you, but you need to order them from him. See his [website](#) for more details.

# COAL

Make your own Coal Loads!

<p># 8708 Small Grade Coal Texture (1 sheet) \$12.99</p> <p># 8708-2 Small Grade Texture (2 sheets) \$19.99</p> <p># 8710 Medium Grade Texture (1 sheet) \$12.99</p> <p># 8710-2 Medium Grade (2 sheets) \$19.99</p> <p># 8712 Large Grade Coal Texture (1 sheet) \$12.99</p> <p># 8712-2 Large Grade Texture (2 sheets) \$19.99</p> <p>Sheet size: 3.75 "x 12"</p>	<p><b>4 Easy Steps</b> Make in Minutes</p> <p><b>1</b> Make a Styrene insert as a base.</p> <p><b>2</b> Hot Glue steel shapes for mounds. (Use magnets to remove it from car)</p> <p><b>3</b> Hot Glue Coal texture at edges Press down glue with fingers</p> <p><b>4</b> Trim excess vinyl with Scissors</p>
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Mike O'Connell at [Chooch](#) has come up with an interesting new product. He has developed a thin vinyl sheet with a coal texture. The sheet is very flexible and will fit a contour. You make a styrene insert for where you want the coal and then glue some steel heap forms to the styrene. The steel is so you can use a magnet to remove the load. Then, drape the vinyl sheet over the forms and you have a coal load. These can be made to fit any car or locomotive tender. This looks like an interesting new product. See their [website](#) for details.



Bill Wade at [BTS](#) has a new section house kit. The prototype is a C&O standard house. The kit features interior framing so it can be modeled with the doors open. These types of details add a lot to a scene on your layout. Take a look at their [website](#) for complete details on the kit.

In this issue, we have an article about powering a St. Petersburg Tram PCC car model. Ed Skuchas from the Berkshire Car Shop wanted us to remind you he carries the St. Petersburg models and the Q Car Company parts you will need. Drop him an [email](#) to see what else he has.



# David Anthony Nadeau

September 18, 1946 - July 28, 2015

It is with deep sadness that I tell you about the death of David Anthony Nadeau of Guelph, Ontario. Dan and I had the pleasure of spending time with David and his lovely wife, Gwyn, last November on a trip to Canada. He and his wife were gracious hosts; and David shared not only his wealth of knowledge and relationships in the model railroad hobby with us, but also his thoughts on life. That trip allowed us to show our readers some of the spectacular model railroading being done in the greater Toronto area. He was an extraordinary modeler that traveled around the world with his wife interacting with others who shared his love of model railroading. He will be missed greatly, and I will always cherish the fact that I was able to experience his sense of humor and the hospitality that he and his wife extended to us.



At his request, there was a private funeral service for immediate family only. Donations can be made in his name to the Grand River Cancer Centre in Kitchener, Ontario <http://www.grhosp.on.ca/CANCERPROGRAM>

~Amy Dawdy

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# Powering and Lighting A St. Petersburg Tram PCC Car Model



**By Charlie Pitts**

In the 1990's, a group of modelers in St. Petersburg, Russia started producing very highly detailed models of traction and bus equipment. Those of us who are interested in traction took to the models right away because of their exceptional detail. St. Petersburg Tram Collection, as the business is called, models are made of urethane and come painted and ready to display. I use the word display because none of the models are powered. For those of you who are not traction modelers, you should take a look at what they offer for your city scenes. They produce very accurate bus models from around the world that would make very good models for your city and highway scenes.

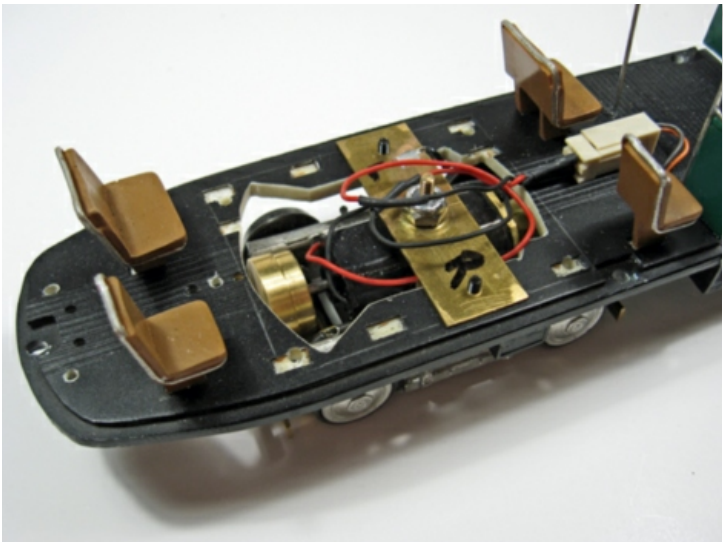
Because the models are made to be display models, they take some work to power them; and many people are reluctant to try. The models are delicate because they are cast in very thin sections, but this is what gives them the exceptional detail. In this article, I will provide some details and photos showing various stages of the installation of power, lighting and DCC control that I installed in a Saint Petersburg Tram Collection Boston Air Car # 3060. This article is intended as a guide. Feel free to substitute or revise details to suit your available material or experience. The model is of an Arborway car painted in the early tangerine scheme with a blue MTA egg. This article is divided into five parts that cover 1) the power and trail trucks; 2) the couplers; 3) the trolley pole; 4) the lighting, wiring and DCC; and 5) the finishing details. The photos are referenced in the text for the reader's convenience. If you look closely, you will notice I have put off the detail painting until I took the photos. Hopefully, I will get to it next week.



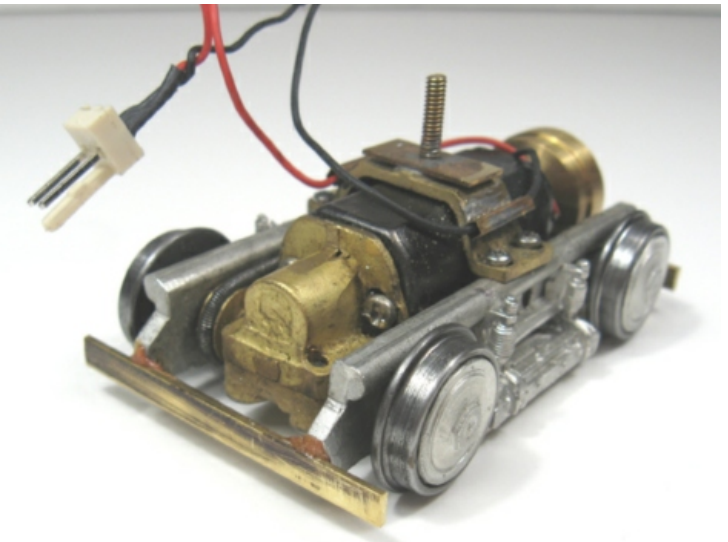
## Installing the power and trail truck

The installation of a Q Car PCC power and trail truck is well detailed on the [Q Car website](#), and will not be repeated here. I like to place my power truck in the rear of the car keeping the forward area over the trail truck free of obstructions to allow for placement of passengers. The SPTC interior partitions and stanchions are fragile so caution should be used in handling the detailed car floor. Some general steps are given below.

1. Remove the car floor from the body. Be careful as it may be necessary rock the floor slightly so the seats fastened to the floor clear the screw tabs on the side of the car.
2. Remove the seats over the rear truck location to allow access to the floor when making the cut-out and installing the power truck.
3. I used an alternate space saving bolster which uses a 3" long piece of 0.020" x 3/8" brass strip with 2 mm tapped holes at the ends. The bolster is fastened to the floor with 2 mm screws (**See Photo 1**).
4. As a last step on the power truck, drill a 3/32" hole in a 1/2" length of 1/4" x 0.010" brass strip and solder it to the top of the brass bolster on the power truck to act as a stabilizer for the car body (**See Photo 2**). Mount the power truck.

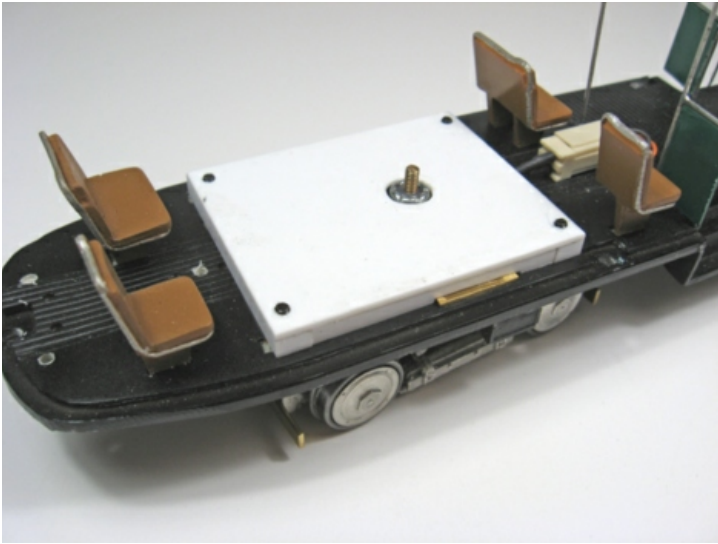


**Photo 1** Charlie made a simple brass strip bolster for the power truck to mount to.



**Photo 2** Note the brass strip soldered at the truck mounting screw. This prevents some rocking of the car body by making a larger bearing surface.

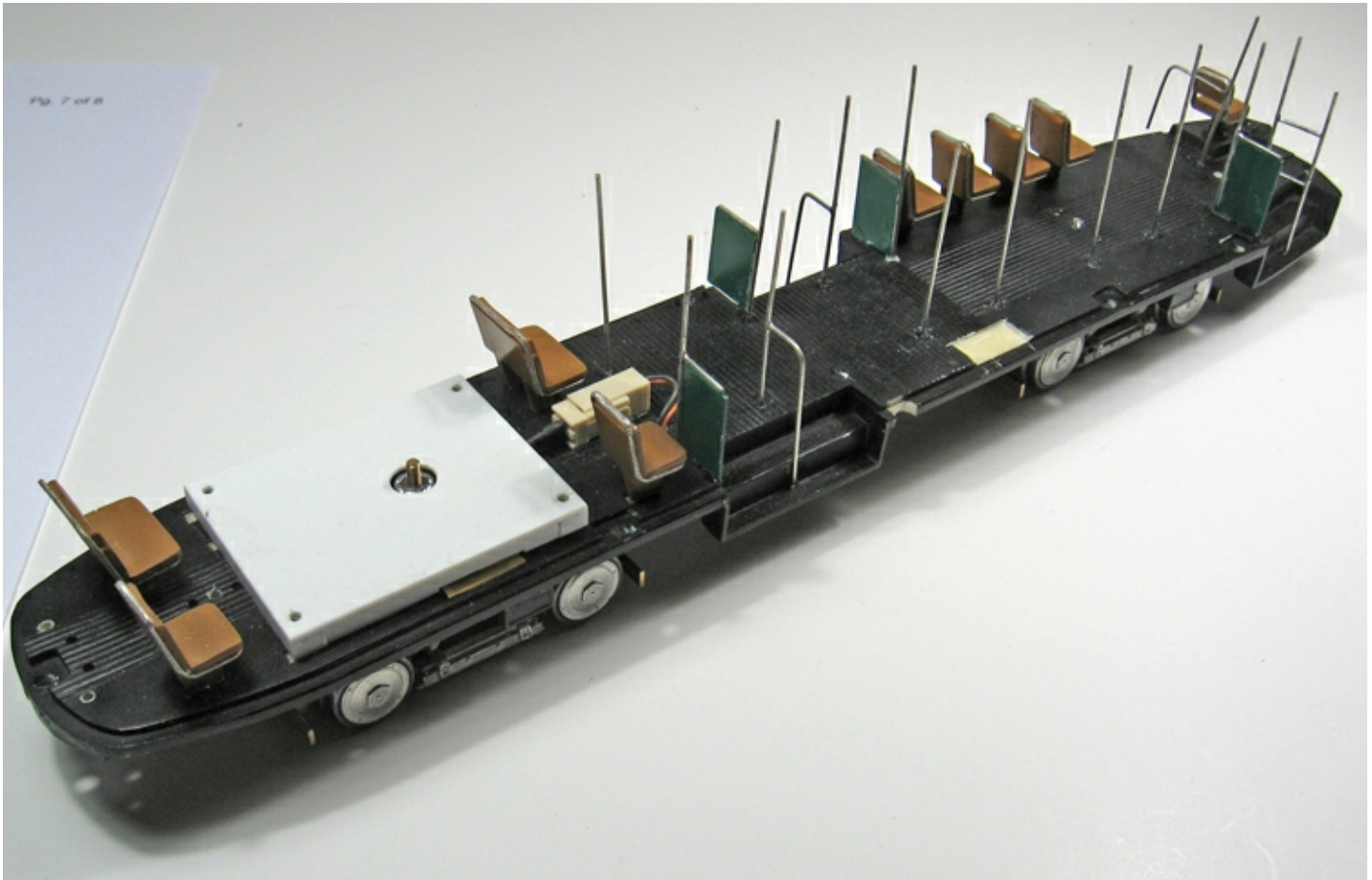
5. Fabricate a shallow styrene box and fasten it to the area with 2 mm screws to close the opening and strengthen the local area of the floor. The box is 1 1/2" W x 1 7/8" L with a 0.040" top sitting on 1/8" x 3/16" front and rear formers and 0.040" x 1/8" side formers. The 2 mm screws are installed from the bottom of the floor through a clearance hole into four tapped holes located near the ends of the 1/8" x 3/16" front and rear box formers. **See Photos 3 and 4.**
6. Drill and tap the factory front truck bolster 3-48 for the truck mounting screw and mount the trail truck. Alternately, the Q Car bolster may be used.
7. See **Photos 5 and 6** for a picture of the top and bottom of the floor with the trucks mounted.
8. Shim the car body bolsters as required to get the car body to sit level. A dimension of 2'-0" from the top of the rail to the bottom of the anti-climber is typical.
9. Paint the styrene box black to match the interior floor. Trim the seat legs so the seats will match the other seat heights and install them. See **Photos 6 and 7.**
10. The DCC control board is mounted under the floor between the trucks. **See Photo 8.**



**Photo 3** This photo shows how Charlie made a floor section to cover the hole in the floor for the power truck installation.

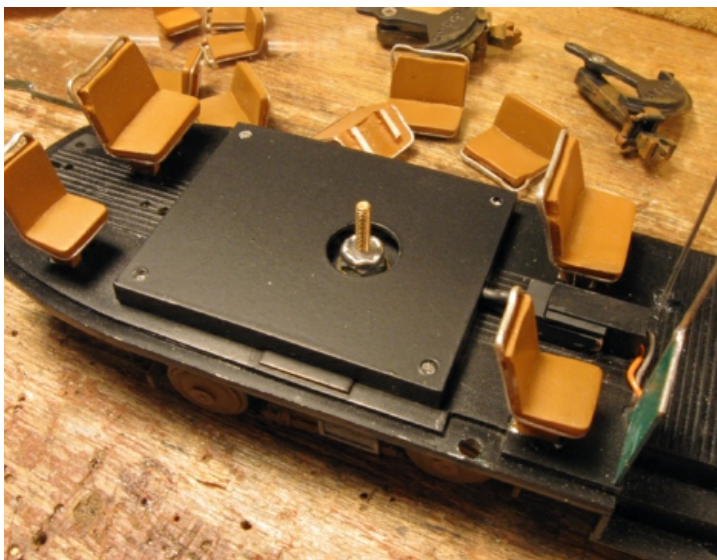


**Photo 4** This simple styrene box allowed Charlie to cover the power truck and still have some interior detail on his model.



**Photo 5** Showing the interior with the power truck installed. You can see the detail that St. Petersburg Tram puts into their models.

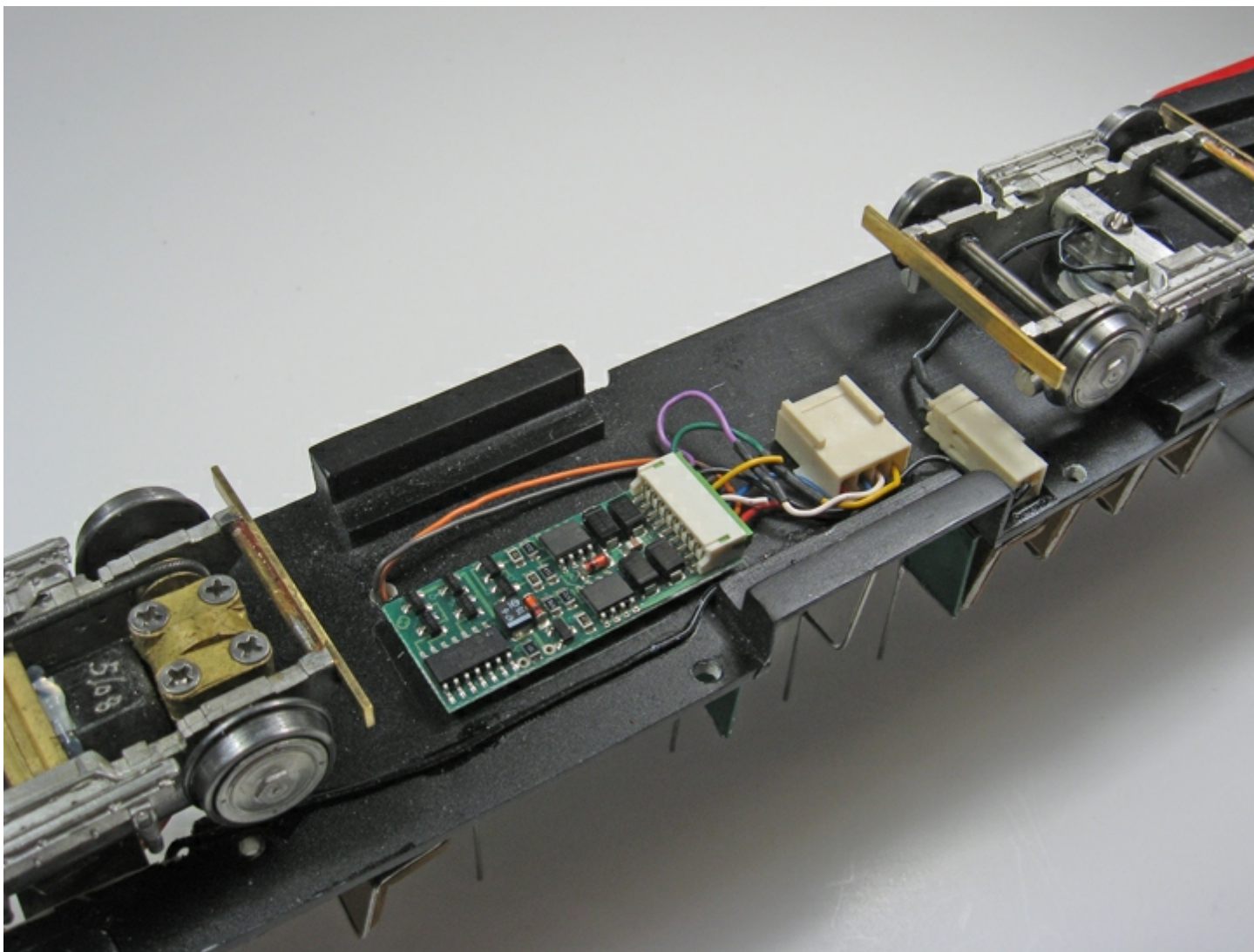




**Photo 6** After Charlie finished the white styrene cover for the motor, he painted it black to match the interior floor of the car.



**Photo 7** When the motor cover was painted and installed, Charlie trimmed the legs on the seats and installed them. The seats are visible on the finished car and you cannot see the motor cover.



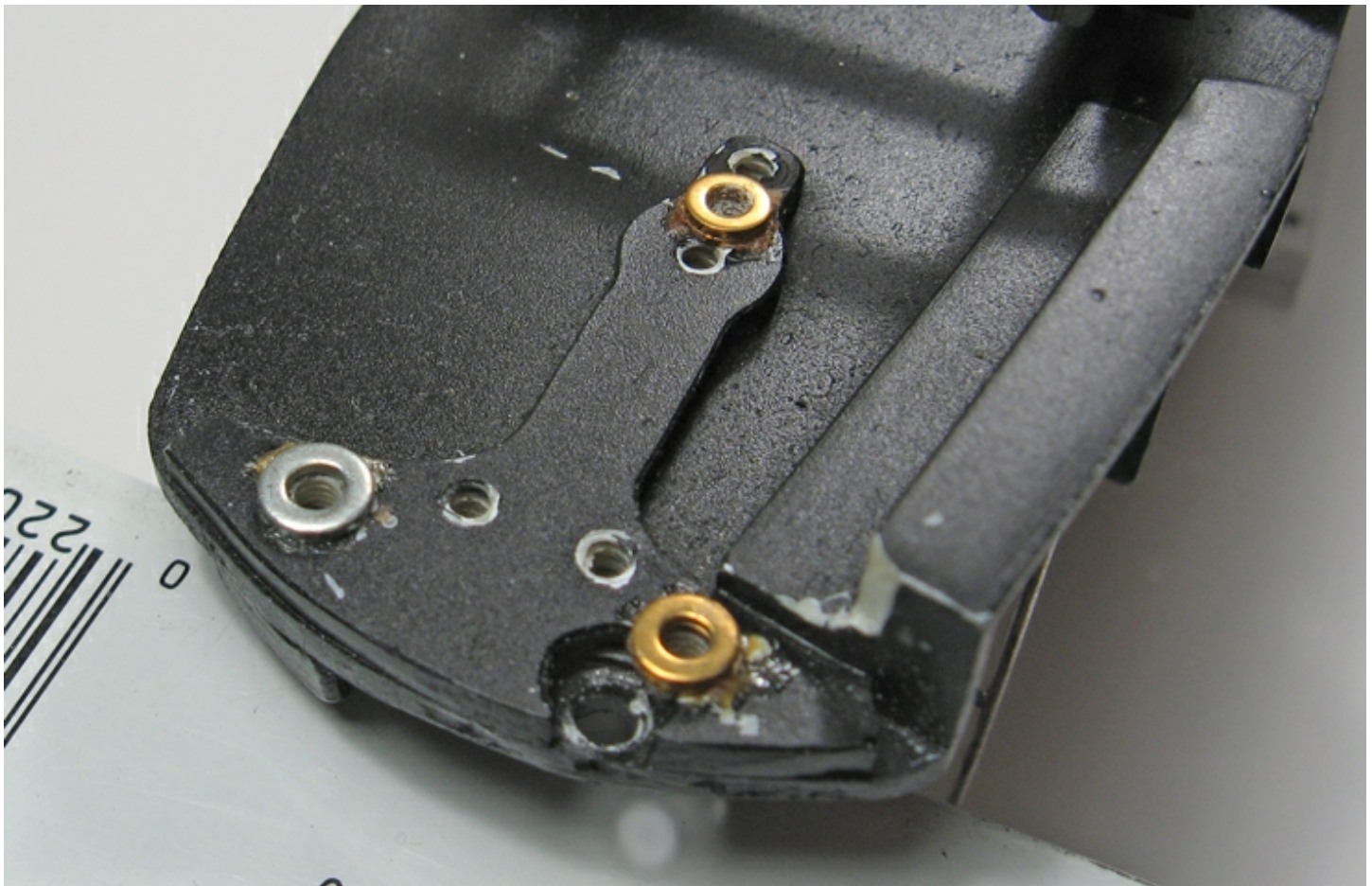
**Photo 8** This photo shows the underside of the car with the DCC decoder installed. This is a nice, neat installation.



## Installing the front and rear radius bar couplers

This section covers the installation of the Q Car CB011F working Tomlinson couplers that I use in multiple car operation. The supplied couplers may be used if multi-car operation is not required. They work well as supplied, and only require a little adjustment and shimming to achieve a good installation. Refer to the pictures for additional information.

1. Drill new holes in the radius bars along the line of the existing holes which are spaced 5/8" apart and centered about the center line of the radius bar casting. The new holes move the fasteners away from the existing holes in the car floor. **See Photo 9.** The new holes in the radius bar and the existing hole at the back of the casting are the mounting holes to use. **See Photos 10 and 11.**
2. Place the back mounting hole of the radius bar approximately 1/8" to 5/32" toward the anti-climber from the SPTC back radius bar mounting hole in the car floor. The object is to locate the outside edge of the radius bar approximately 1/16" to 3/32" from the outside edge of the anti-climber on the respective end of the car. This will avoid the tab on the coupler hanger from rubbing against the back of the anti-climber. It will also be necessary to trim the radius bar ends on the front coupler at the stairwell.
3. Align the radius bar and transfer the mounting hole locations to the car floor.
4. Drill 1/16" dia. holes in the car floor at the mounting screw locations for the radius bars and tap the floor for 2.0 mm threads. **See Photo 9.**
5. Mount the radius bars with 2 mm screws. Shim the coupler down to a level plane at the proper height with washers. It may be necessary to adjust the coupler radius bar height after the car body is shimmed to the proper height on the trucks.



**Photo 9** This shows the front radius bar mounting. The mountings needed to be moved to accommodate the Q Car Company Tomlinson coupler and radius bar.





***Photo 10** showing the new front radius bar and coupler mounting.*



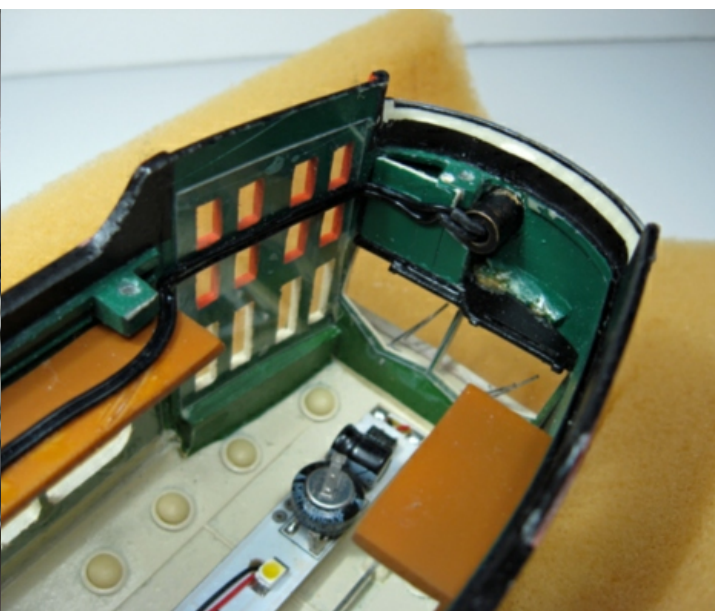
***Photo 11** showing the rear radius bar and coupler mounting.*

## Mounting the trolley pole

1. Drill the roof from the top with a 1/8" dia. drill to accept the barrel of a 2-56 blind nut.
2. Drill 1/32" dia. holes in the roof boards to accept the blind nut prongs.
3. With the head and a washer on the inside, pass the 2-56 screw up through the hole and thread the blind nut on. Tighten the screw until the blind nut is pulled down to the top of the roof boards. If the blind nut is not pulling down, it may be necessary to open up the holes drilled for the blind nut prongs.
4. Install a ring connector with 6" of #26 wire placed between the washer and the head of the 2-56 screw. See **Photo 12**. This is the overhead feed. Screw the trolley pole on.
5. Back off the pole two turns from the tight position, and mark the screw for cut off. Take the trolley pole off and cut the screw off with a 70 tooth per inch Exacto saw. Touch up with a file as required. Reinstall the pole.



***Photo 12** showing the mounting stud for the working trolley pole on Charlie's model.*



***Photo 13** showing the inside of the car body. Power from the overhead wire will be collected by the trolley pole and then to the pole base.*

## Installing the lighting, wiring and DCC decoder

I equipped the car with a working LED headlight, LED lighted fiber optic rear marker lights and LED interior lights. LEDs were chosen to minimize the heat that the lights transfer to the resin car body and to reduce the current draw of the car. The headlight, rear marker lights and interior lights are controlled by DCC decoder functions and may be turned on or off independently of the car motion or direction. The interior light is provided by a Miniaturics #100-YCL-01 Incandescent light bar.

1. **CAUTION – LEDs ARE A 3 OR 4 VOLT COMPONENT. IF YOU TEST THEM AT 12 VOLTS YOU WILL BLOW THEM UP. I DID. WIRE IN THE RESISTORS BEFORE YOU TEST ANY LEDs.**

### Headlight

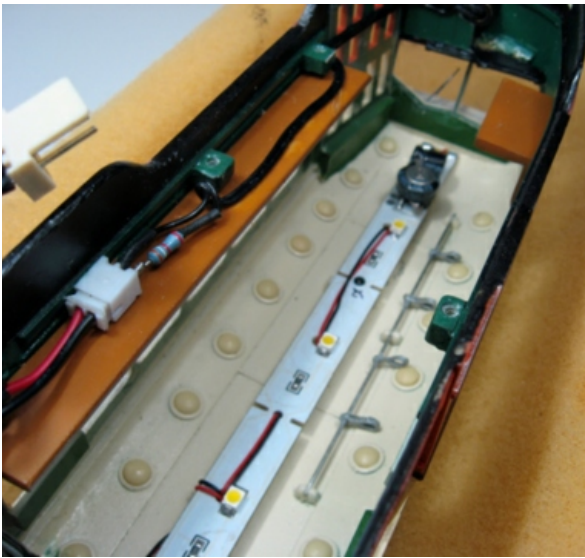
1. Remove the existing front headlight and mark the centerline of the hole. Choose a replacement headlight suitable for PCC cars that will accept a 3mm LED, noting the OD of the barrel that must go through the dasher.
2. Drill a 1/16" pilot hole on the centerline of the headlight through the dasher being careful not to drill through the light switch cabinet inside the dasher. At this stage, it may be necessary to remove the front dashboard and the attached light switch cabinet under the dashboard to avoid damage to the assembly while drilling and reaming the hole for the headlight.
3. Enlarge the dasher hole using a 3/32" then a 1/8" drill.
4. Use a tapered reamer to increase the hole to the size required for the headlight chosen. A fine round file will also have to be used to get a constant diameter hole through the dasher. **BE CAREFUL TO OPEN UP THE HOLE A LITTLE AT A TIME SO THE HOLE DOES NOT BECOME OVERSIZE.** The dashboard and light switch cabinet will be reinstalled after the headlight is installed and the light switch cabinet is trimmed to clear the headlight as required. **See photo 13.**
5. Paint the headlight barrel and rim the appropriate colors and set aside to dry. Insert the headlight in the dasher of the car. From the inside of the car, insert an 1/8" diameter by 3" long piece of tubing in the back of the headlight turning and use it as a tool to align the headlight. Use pieces of scotch tape run between the car sides to hold the free end of the tubing, thus keeping the headlight in proper alignment. With the scotch tape in place, inspect the headlight from the front and sides to see if it is projecting a proper amount and is properly aligned. Then, and only then, use ACC on the inside of the dasher to fix the headlight when it is properly aligned.
6. Attach the wire and a 3.9K OHM 1/4 watt resistor to a 3 mm Yelogle LED and insulate the connections with heat shrink tubing.
7. Install the wired LED in the headlight. **See photo 13.**

### Interior Light Bar

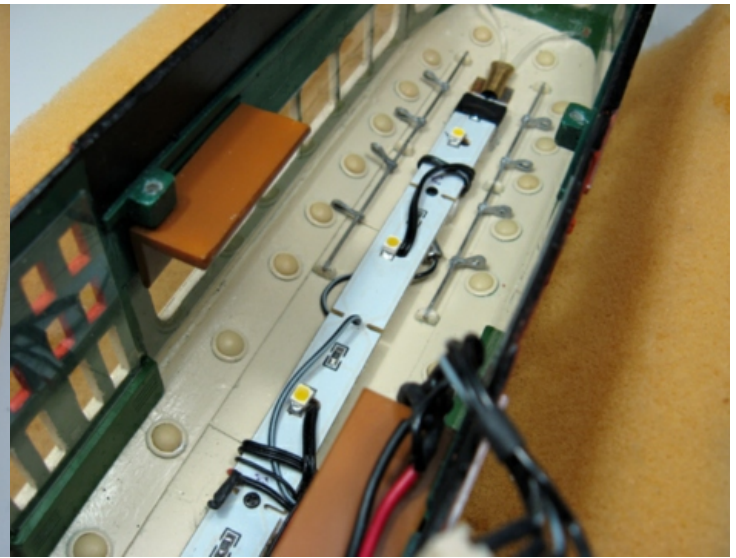
The Miniaturics light bar is installed with the voltage regulator end toward the front of the car and the end of the light bar approximately 1/16" from the front of the ceiling of the car. This location is required to leave enough space on the ceiling for the rear marker LED holder at the rear of the car. The light bar will operate on AC, DC or DCC power.

1. With the floor out of the model, remove the fans from the ceiling of the car so the light bar will fit closely to the ceiling.
2. Cut three styrene blocks 3/8" long from a piece of 1/8" x 3/16" styrene. Drill a 1/6" hole in the 3/16" face at the center of their length and tap the hole for 2.0 mm thread. These blocks are mounts for the light bar.
3. Snap off the last section of the light bar at the end opposite from the voltage regulator so the light bar will fit in the car.





**Photo 14** showing the light bar installed. The view is towards the front of the car.



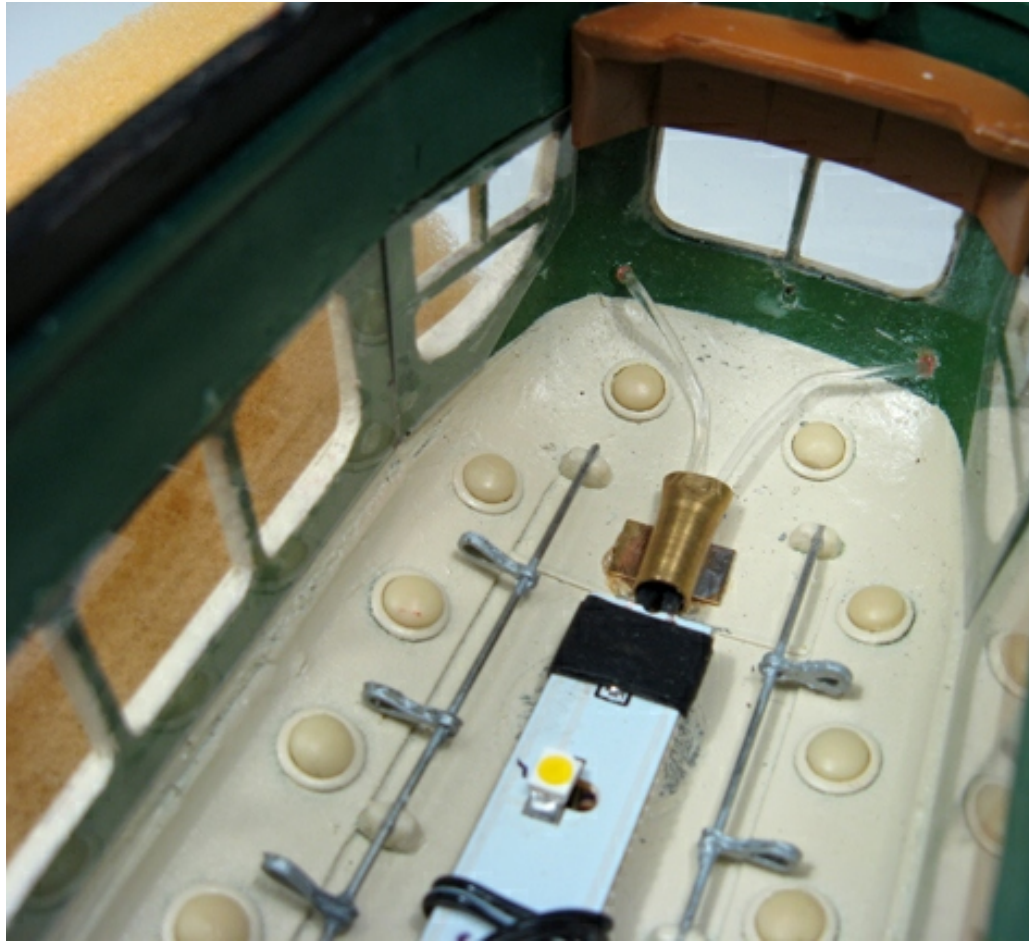
**Photo 15** showing the light bar installed. The view is towards the rear of the car.

4. Attach the styrene blocks to the light bar at the 2<sup>nd</sup>, 6<sup>th</sup>, and 10<sup>th</sup> holes from the voltage regulator with 2 mm x 6 mm long screws.
5. Trial fit the assembly to the ceiling. **See Photo 14 and 15.** Adjust fit up as required. When the fit up is acceptable, place the light bar in position on the ceiling with the styrene blocks attached. Carefully tack the ends of each styrene block to the ceiling with a pin point of ACC glue. Remove the three mounting screws and remove the light bar. With the styrene blocks fully accessible, re-glue the blocks to the ceiling with ACC.
6. Feed the light bar wires back through open holes on the centerline of the light bar and install the light bar.
7. Trial fit the floor to the body with the light bar installed. It may be necessary to trim the top of some stanchions to clear the voltage end of the light bar.

## Rear Marker Lights

1. Gather the following material for the LED rear markers. (See Photo 14)
  - 1 piece of 5/32" OD brass tubing x 1/4" long
  - 1 piece of 3/16" OD brass tubing x 1/2" long
  - 1 piece of 0.010" or 0.015" thick x 1/4" wide brass strip x 3/8" long
  - 12" of 0.75 mm fiber optic element.
  - Red magic marker to mark the lens end of the fiber optic element so it will show red when not lit.
  - Red 3 mm LED to light the marker elements.
  - 1 470 OHM 1/4 watt resistor and heat shrink tubing
2. Trim off the face of the lens of the rear markers with a sharp blade. Make a dimple at the center of the lens. Drill a rearward facing 0.020" hole through the lens. Open up the hole to 1/32" or slightly larger which is sufficient to pass the fiber optic element through the lens from inside the car body.
3. Read up on fiber optics at <http://thefiberopticstore.com>. You will have to cut the element off smooth with a fresh razor blade and then flare the end with heat to create the "lens". The element will be bent with mild heat to route it from the LED holder to the marker light. **See photo 16.** Experiment with heat bending some scrap pieces.
4. Flare the outside surface of the hole through the lens to accept a heat flared lens end of a fiber optic element. The hole can be flared by gently twisting a 1/16" drill bit between the thumb and forefinger. Touchup can be done with a sharp Exacto #11 knife blade in the same manner that one trims the eye out of a potato.

*Photo 16 showing the fiber optic set up for illuminating the rear marker lights. This is a good way to illuminate a small marker light, and it adds a lot to the model when it is running.*



5. BE CAREFUL TO FLARE THE HOLE A LITTLE AT A TIME SO THE HOLE DOES NOT BECOME TOO LARGE.
6. Fabricate the LED holder per Photo 14. Center the 5/32" tubing inside the 3/16" tubing. Test fit the LED and crimp the other end.
7. ACC the LED holder to the inside of the roof of the car adjacent to the end of the interior light bar as shown in Photo 14. Attach the resistor and the wire leads to the LED and fasten the LED to the end of the interior light bar with wraps of electrical tape (see Photo 13 and 14).
8. Heat bend the 0.75 mm fiber optic elements to run from the LED holder out through the holes in the rear marker lights. Keep the bends gentle so the elements can be passed through hole in the rear markers. Keep at this until a suitable element routing is obtained for each marker light.
9. From the outside of the body, pass the heat bent elements through the rear markers and insert the lit end of the elements the full depth (approximately 1/8") into the body of the LED holder. Pull the formed elements back out of the LED holder and through the marker light 1/16" and mark the end of the element 1/16" outside the surface of the rear marker.
10. Remove the two fitted fiber optic elements. Do a test fit of a scrap heat flared element end in the holes. Cut the formed elements off at the marks made in the previous step. Heat flare the marker light ends of the prepared elements with the elements out of the body. Test fit the flared element end in each rear marker, making any necessary adjustments in the markers so that the flared element end will fit properly in the hole. Mark the lens with a red marker so it shows red when not lit. Test light a red LED to see how the markers light up.
11. Insert the finished elements through the holes in the marker lights and into the LED holder.
12. One at a time, pull the installed element toward the inside of the car body and check that the flared element is fitting properly in the rear marker. When all is aligned, apply a drop of ACC from the point of a pin to the element at the inside of the car body. Apply a second drop if necessary. DO NOT TRY TO APPLY ACC FROM AN APPLICATOR BECAUSE IT IS VERY LIKELY YOU WILL FLOW ACC OVER THE AREA MAKING A MESS.

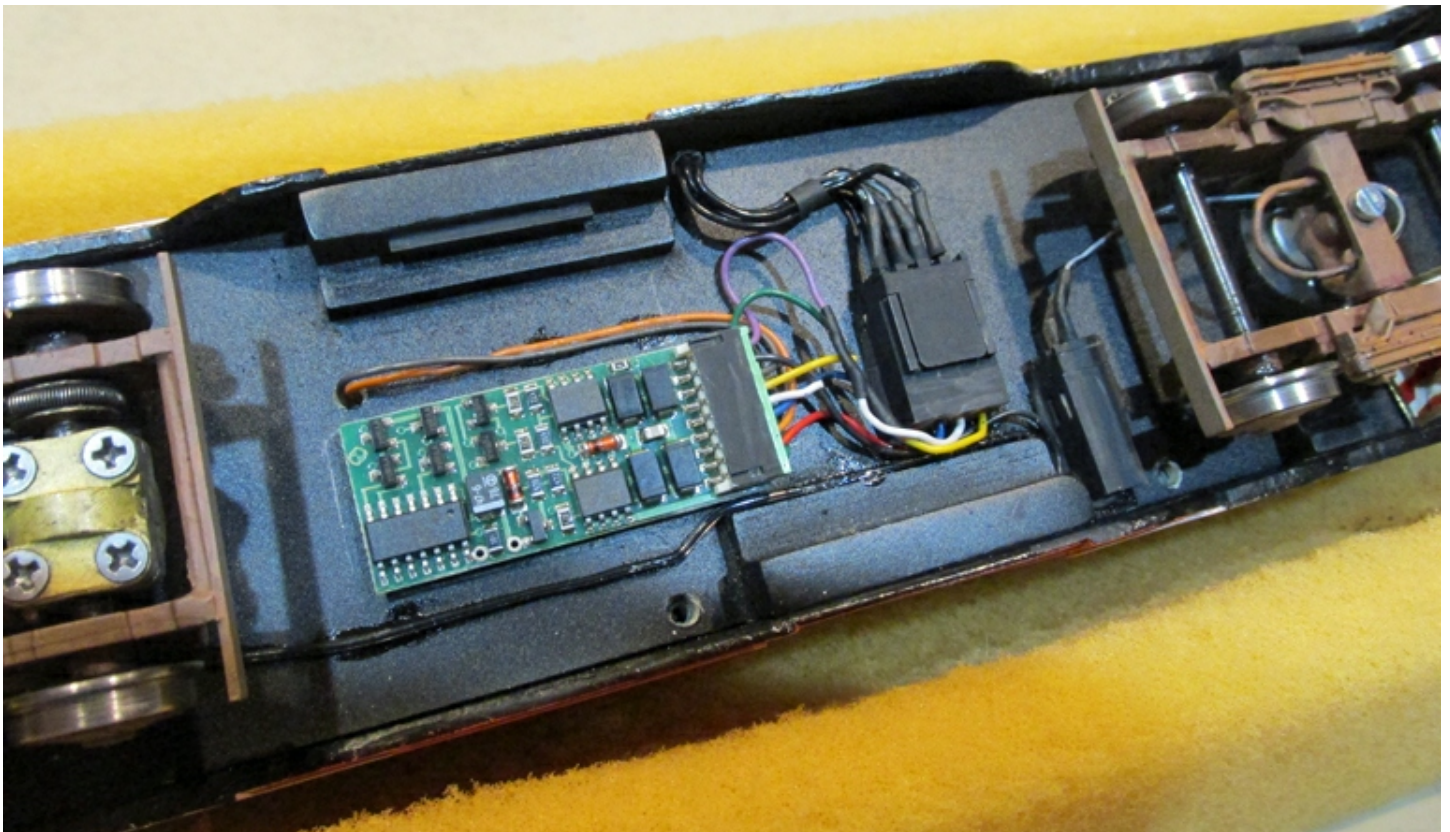


13. The fiber optic elements are now installed in the car body and secured at the marker lights. The other end of the element should enter the LED holder loosely.
14. Test light the LED to check the marker lights.

## Power, Lighting and DCC for a SPTC 'Boston' PCC Car

Wiring and DCC Decoder - The wiring diagram provides the connections to be made and a suggested wiring arrangement to provide for disassembly and maintenance of the car including easy removal of the floor from the car body. This wiring should be done with a 25 watt iron. Protect LED leads with a heat sink before soldering. The use of 26 gauge wire at the smallest is suggested. Solder connections and insulate the connections with heat shrink tubing to avoid shorts when you are done. Refer to the pictures for suggestions on running the wires and attaching same to the car body and floor. If you plan ahead, and work neatly, you should be fine. If you flub up a wire, it can easily be rerun. I use Philmore 0.1" modular connectors because they are relatively inexpensive and because you can attach the wire of your choice. Miniatronics 2 and 4 wire connectors may be substituted.

1. Start with the wiring in the car body. There will be a run of four wires that pass from the body to a plug on the bottom of the car floor. I installed these wires to drop down to the floor along the wide window post in front of the right side center door. **See Photo 13.** Do the car body wiring per the Wiring Diagram and leave 2" of extra wire beyond the bottom of the car side. This will be trimmed later when the plug is installed. Put heat shrink tubing over the resistors if they will contact the urethane car body. The wires from the rear marker LED, the trolley pole (overhead) and the light bar may be supported from the light bar **See Photos 14 and 15.** Now proceed to wiring the car floor.
2. Install the decoder with a piece of double sided foam tape on the bottom of the car floor in the location shown in **Photo 8 and 17.**



*Photo 17 showing the underside of the car. A nice, neat, tidy job of installation.*

3. Run the track power wire between the trucks including connector C1 and the decoder connection. Note that the wire is soldered to the rear bolster. **See Photo 1 and 2.** With the male portion of the connector removed, glue the female portion of C1 to the bottom of the car floor with a drop of ACC.
4. Run the motor M+ and M – wires including connector C2 and the decoder connection, **See Photos 1, 5 & 6.** With the male portion of the connector removed, glue the female portion of C2 to the top of the car floor with a drop of ACC.
5. Wire the female portion of the 4 wire connector C3. With the male portion of the connector removed, glue the female portion of the connector to the bottom of the car floor with a drop of ACC.
6. Install the floor in the car and determine the proper length of the wires from the body. Notch the car floor to allow the four wires to pass through. Note how these wires fold over and attach to the four wire male plug which plugs into the female portion glued to the floor. **See Photo 17.**

## Finishing details including painting and assembly

If you are careful, any painting will be limited to touching up the floor where the hole for the power truck was made, and to painting new items such as the styrene box over the power truck, the trucks and couplers and maybe some wiring and connectors.



*The next three photos show the finished model that Charlie powered. The paint job is the factory paint and Charlie was able to make the conversion without damaging the factory paint. This is where planning your work pays off.*







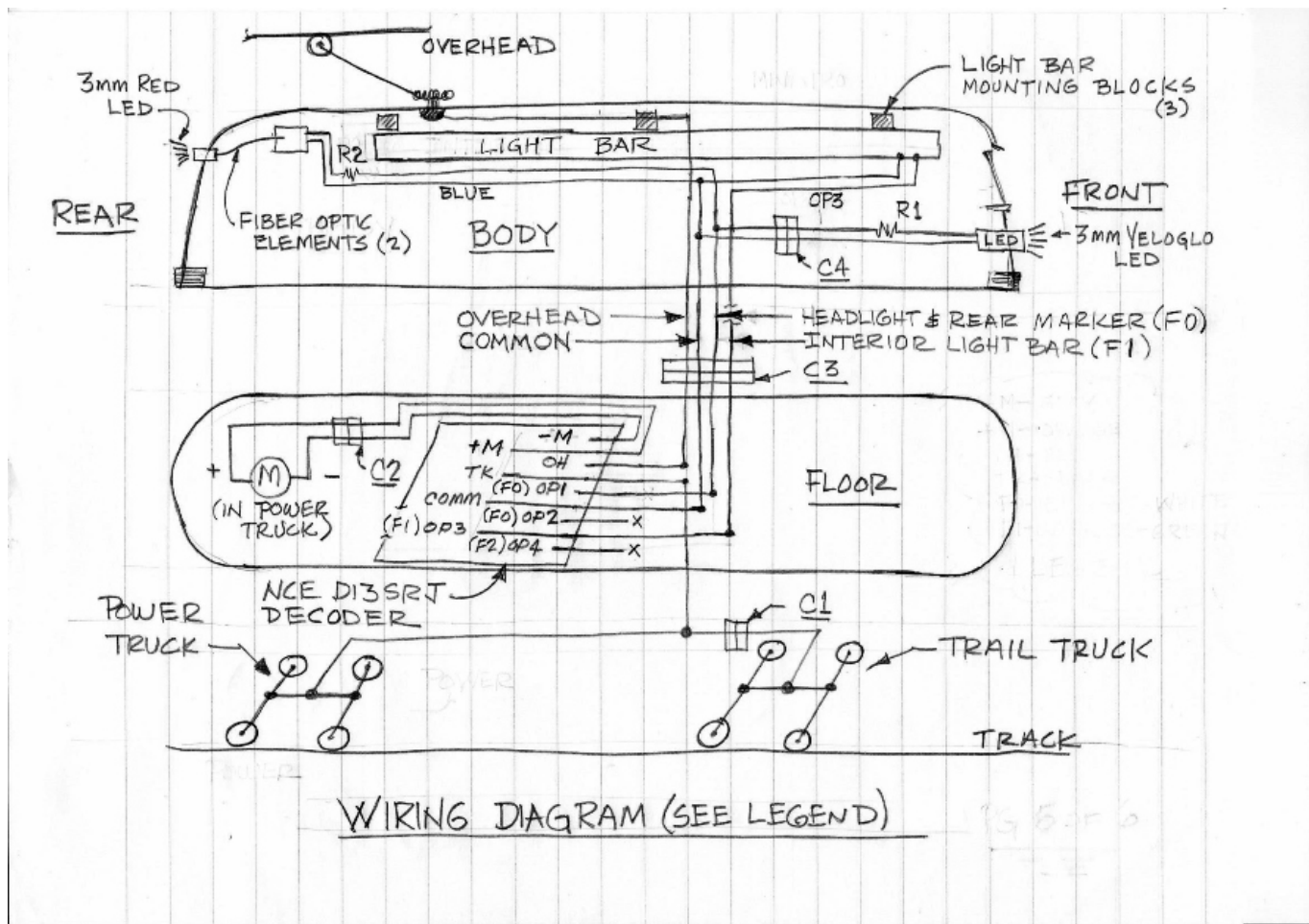
1. With the floor removed, touch up the top and bottom of the floor with matching black paint.
2. Paint the styrene box with matching black.
3. Paint the visible portions of the power trucks a rusty red color. You should consider weathering the trucks to your taste.
4. Paint the couplers and radius bars a grimy black color, or alternately blacken them with a magic marker. You should consider weathering the couplers to your taste.
5. Install the painted trucks in the floor and secure the painted box over the power truck.
6. Glue the removed and trimmed seats to the top of the box over the power truck.
7. Plug in the electrical connectors.
8. Install the assembled floor in the body and install the painted radius bar couplers.
9. Test the wiring by checking the car on a programming track and do any remaining programming such as assigning the car number as the loco number.
10. Adjust CV120 to a value of 44 to cause the headlight to be on bright in forward and dim in reverse. OP1 will still turn the headlight off and on.
11. After a successful trip to the programming track test, test run the car on DCC and test the lights.
12. Lubricate the trucks and you are done.

The St. Petersburg Tram collection models are very nice models that can be made to run. Take your time and think the job through. You will be able to make your model run without ruining the detail or paint job on your model. With today's LED lighting and many miniature components, these types of conversions are possible.



*The rear view of Charlie's PCC car shows the interior lighting and marker lights.*





This is the wiring diagram Charlie made. These types of sketches are invaluable when planning and working on your model. This will not only help you understand what you need to do, but will allow you to sort out how you will do the project.

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# St. Petersburg PCC Car Conversion

## MATERIAL LIST

Manufacturer	Qty	Item	Description/Use
<b><u>Electrical</u></b>			
Miniatronics	1	3 mm Yelogle LED	Front headlight
Miniatronics	1	#100-YCL-01 Incandescent light bar	Interior lights
Various	1	3 mm red LED	Rear markers
"	-	26 ga.wire	wiring
"	1	3.9K ohm resistor ¼ watt	R1
"	1	470 ohm resistor ¼ watt	R2
Philmore	2	0.1" Modular 2 wire connector	C1 and C2
Philmore	1	0.1" Modular 4 wire connector	C3
Miniatronics	1	50-001-02, 2 Pin micro-mini connector	C4 (small size req'd under seat)
<b><u>DCC</u></b>			
North Coast Engineering	1	D13SRJ Silent Running Decoder	Control power and lights on DCC
<b><u>Fiber Optics</u></b>			
Fiber Optics Store		0.75 mm Fiber optic element, about 12" req'd allowing 6" for experiments	Rear markers
<b><u>Trolley Parts</u></b>			
Q Car	1	2 Spring Vertical Pole w/ wheel or shoe	PCC Trolley pole
Q Car	1	1628 flat can Clark B2 Trucks	PCC Trucks
Q Car	1	CB011F – Radial Tomlinson Knuckle Coupler, Pair, Lost Wax - White Metal Combo	Couplers
<b><u>Hardware</u></b>			
Du-Bro	1	2-56 blind nut, screw and washer	Trolley pole screw
Philmore	1	Ring terminal, 22-16AWG-#4 Stud	Trolley pole wiring
NWSL	19	2 mm x 8 mm pan head screws	Floor and Coupler fastening
NWSL	3	2 mm x 6 mm pan head screws	Light bar mounting
<b><u>Brass Shapes</u></b>			
Various	-	5/32" OD Tubing x ¼" long	Rear marker LED holder
"	-	3/16" OD Tubing x ½" long	"
"	-	0.010" or 0.015" thk. x ¼" brass strip	"
"	-	0.020" thk. x 3/8" brass strip	Power truck bolster
"	-	0.010" thk. x ¼" brass strip	Power truck stabilizer
<b><u>Miscellaneous</u></b>			
Various	-	ACC	As required



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			MRM403001	O SOO LINE CABOOSE SINGLE	1	MRM403027	O B&O/BR&P Caboose Kit	1
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MRM404002	O C&NW 5ft Arch Bar Trucks	1	MRM403002	O SOO LINE CABOOSE	1	MRM403030	O C-30-1 Caboose T&NO	1
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MRM408016	O Carmer Cut Lever	2						
MRM408017	O Box Car Ladder	5						
MRM408023	O CABOOSE SINK	2						

DES PLAINES

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HOBBIES**

# A Visit With Mike Hill

By Larry Sokol

We all go about our love of trains in as many different ways as there are model railroaders. Almost all cherish the friendships. Some pursue collecting, others building, swapping, or designing and building the O scale pike that has bounced around in our hopes and dreams since, forever. Mike and his loving life partner, Judy, have been able to create and serve to all of us a "seven course meal" of O scale trains. Their contributions to each of us have been breathtaking if you just think about it a moment. This article hopefully will put you in touch with the moment and to the clear tracks ahead.

## Mike's Sage Suggestion

Oddly enough, it was at a March Meet in Chicago that I was given some of the best advice ever. The thoughts kindly shared were equally applicable to life in general, although they were intended to provide some direction about O scale layouts. Mike Hill had invited a few of us over to see his magnificent collection of four decades, which for several hours, we thoroughly enjoyed. At some point, one of the "wheel men" thought it might be time to head back to the convention hotel, so we could get up at dawn with enough energy to race into the meet hall and keep moving at older guy warp speed for seven or eight hours so we wouldn't miss any hidden bargains or rare items. As my pals lumbered out the door, Mike pulled me back, asked if I would stay for a moment, and we went downstairs. He looked more thoughtful than usual, which is saying something, as he always seemed to me to be thinking some deep train thought or another. Anyway, Mike and I went into his layout room and he advised: "Larry, don't do what I did and put off getting your layout headed towards completion." At the time, it seemed a little like I was hearing a tall Yoda sharing some deep truth from the universe. Well, the train universe anyway. I knew that Mike's good friend, Bill Leider, had recently devoted himself – and that's the right verb – to seeing that Mike's layout raced down the track. I knew this was a heartfelt suggestion from someone who is one of the most respected and liked fellows in our hobby. Mike continued by explaining that, like almost everyone else, his layout had stalled and had not progressed for some years. (Progression could well include getting started.) He wanted to alert me to try and avoid this common circumstance, and explained how happy he was that the light at the end of his layout tunnel was starting to shine through like one of our "newly discovered" planets to astronomers high up on Mauna Kea or some other amazing observatory.



*Mike passenger station in 2012 on the left and 2015 on the right. Bill Leider has been helping Mike get more details installed on the layout.*



## Starting About Age Four

Mike's love of trains traces back to a childhood Christmas in Evanston when he was four. The trains were a good size for dinky hands – they were Lionel and American Flyer O gauge. We're in about 1944, so there were fewer choices. He recalls now, seventy years later, that there was a freight train and a swell steamer. Mike mentioned that the last train his parents bought him was a Santa Fe diesel gliding five extruded passenger cars. They knew what he knew – this was going to be a lifelong friend and passion for their young son.

## Hill's Hobby



*When Mike and Judy purchased Bill's Hobby, it was primarily a collector's shop and old time Lionel service station type of store. Mike would go there because he collected Lionel trains. It was through Bill Sanchez that that Mike became more interested in O Scale trains and the people who built them. When Mike had the store, he kept it as much a collector store as a "what's new" store. He also kept up the repair business. Marty Brown, on the left with Mike, was one of the repair people. Here, they are showing us an old Iken cast bronze locomotive that Marty reworked for Mike. The model came in as an outside pickup AC current model. Marty reworked the motor to run on DC and insulated the wheels for two rail operation. In the interest of history, Mike keeps the models painted as he found them, keeping notes on where they came from.*

If you had to pick a single O scale enterprise over the last 40 years, the one which had the most diverse and positive influence, it would be Hill's Hobby. The store and its owners were a focused searchlight, if you will, guiding everyone in the right direction. Hill's Hobby in Park Ridge had a long history. Mike and Judy found, and bought it from, a friendly fellow named Bill Sanchez. That was about 1977, and Judy likes to joke that the reason they bought the business was because it had been called Bill's Hobby, so it would only be necessary to change the first letter. And that's what happened. Ten years passed and they purchased a building that just looked perfect for a better outlet. For twenty-eight years, from 1977 to 2005, people brought their train treasures to sell, trade or have valued, or they came in to add to their own collections. People from all over the country sought out Hill's as the train place to go. Mike, then as now, made every person who came in feel welcome. No distance between the customer and the owner – Mike is a hands on guy. If you went in twice, your name was called out with a friendly welcome. Mike had the chance to see and buy the rare and the top drawer items as they passed through the doorway. Maybe the funniest story came from an anonymous pal of Mike's from Oconomowoc, Wisconsin. He met Mike when this secret admirer was 26. He explained to me that he learned how to conduct himself by watching and dealing with the man who was his mentor – Mike. He saw how Mike would always stand behind what he said, making sure that no one who left Hill's was disappointed.

He liked that Mike was old fashioned and would sit and talk to his customers, spending whatever time was necessary to get it right. No Amazon, texting, email stuff here, just person to person integrity; sort of like a blanket pulled behind a small child, it was sure to be there. Hill's didn't need a complaint department. They had a one man, no complaint, department and it worked just fine. Oh, the funny stuff? The guy from Wisconsin would on occasion park himself just outside the store and watch for some huge collection to arrive and he would then waltz in, just in time to maybe pick up something Mike didn't want. Mike, long onto the game, took it well, and often would reward his competitor by just passing some things along right to him to sell in his own business. As he puts it: "Mike always had time for guys like me – he didn't keep information to himself. He loved sharing it, and it made my joy of trains more genuine because I was able to see the fun in doing things the right way."

### Hill's Friends And Custom Builders

As you might easily imagine, Mike and Judy have attracted a huge following of friends. If they look back, it reminds one of walking on a tour through some museum of the history of O scale. Mike's home has models all around, going back many years. Bright creations abound from the men who built them, many whose names and faces have been erased by the years that have passed since they were amongst us. Wow, there's some hand built locomotive which knocks your socks off. Who did that? How did someone actually construct that amazing piece of motive power? Must have taken years to make such a one of a kind replica of the larger ancestor. The answer could well be Tom Harley or Jerry White or Bill Lenoir or Frank Miller or Marty Brown or several others whose names are today just part of the ether of Mike's memory. Their fine work, though, lives on and is easily seen on the shelves in Mike's house. Mike has locomotives built by each and a warm recollection of the many hours spent leading to the steamers. The most well known aspect of Mike's locomotive collection is the vast congregation of Hudsons. Pretty much every mainline railroad had quite a few, and Mike's mainline collection has representatives of most of them.



*Mike and some of the guys ready for a big outing. Left to right, Dan Pantera, Bill Leider, Burt Maul, Mike Hill, and Chuck Hinshaw.*



*Mike acquired this C&NW class H from Frank Dietrich. In the 1960's, Frank produced a line of brass freight car kits. They were not etchings, but rather engraved brass sheets. Mike is not sure if Frank built this locomotive or not, but that is who he acquired it from.*



## Mike And Joe

Thinking about Mike, we should talk a bit about Joe Fischer. He is near and dear to Mike's heart, and probably the most prolific and important model train builder of the last seventy years. Joe built what are known as Fischer Cars – passenger cars constructed out of strathmore cardboard put together incredibly perfectly by



*Rosemarie Quintero, Joe Fischer's oldest daughter, on a visit to see Mike in 2013.*

this gentleman with one eye in his basement on Long Island. Joe's work is just the best. When you put a Fischer car side by side with the best brass model, most would say that it is Joe's creation that really looks like the actual Pullman. His paint work is reputed to be so fine, that you could float one of his cars in a tub for a day and it would be just fine. JUST KIDDING. DON'T TRY THIS AT HOME! If you could shrink yourself down to one forty-eighth size and walk through a Fischer car, you'd be seeing the same things as if you were actually in a 1946 Pullman. From the late thirties until his death more than three decades ago, Joe carefully researched the inside and outside of each car and then built a precise duplicate in O scale for his customers. John Clemmens recalled that in the fifties and sixties, Joe would board a train and head to Ohio or Michigan with as many shopping bags full of cars he had built that he could lug. Guys who had placed

orders met him at the station and received their trains. What fun for train guys; trains arriving on trains. What could be better? Mike recalls that he and Joe met in 1979 in a downtown hotel in Philadelphia. Mike had gotten a glimpse of some Fischer cars and was anxious to meet Joe. So, his good friend, Dr. Bill Truscott, who was also Joe's close companion and actually the physician who cared for Joe in his later years, set up a meeting. Bill introduced Mike to the quiet and modest Joe Fischer. They talked, and became close companions.



*Joe Fischer built a train for himself and called the railroad the Pacific Terminal. One of the last times Mike saw Joe, he was given the whole set of cars. Mike still has three of them, and regrets parting with a few of the others.*

A few years went by and Mike was at a TCA meeting. In those days, TCA meets could attract up to five thousand people. Yep, 5K. Stacked like cordwood were hundreds of Fischer cars, not well cared for, but for sale by a fellow from Ohio who had many of them wrapped in newspaper. Mike remembers he bought about six, and that was the first step down an almost forty year path which Mike chose. Along the way, Mike ended up with about 500 of the highly prized cars in his collection. Many have now been sold and traded, but not to worry, as a lot of the most unique ones are on display in his train room. Visitors can see the strings of Fischer cars lined up on tracks leading from the station. Dozens of these cars in lines with locomotives up front are sitting at perfect attention just like they would have about seventy years ago – they're perched and straining to take off for locations all around the country. Each is full of passengers full of anticipation heading onto their destinations. Some of these consists are of Mike's favorite railroad, the New York Central.



*Mike showed us a Joe Fischer set of cars for the 1908 New York Central 20<sup>th</sup> Century Limited. These cars are over 50 years old and have not been restored. Joe hand scribed all the siding on this six car set. Mike has two Bill Lenoir Lake Shore and Michigan Southern ten wheelers to pull the train.*

Strings from the Baltimore and Ohio and the Chesapeake and Ohio are perched ready to roll. So, here's the last wonderful chapter in this friendship which for many years included frequent long phone calls, a lot of shared research and information, and most of all, the kind closeness that only a shared love – from a distance can bring. Joe had gotten to a point when he did not like to travel. The guys had experienced a falling out of sorts. Some miscommunication left them apart and wondering how things would go. Phil Moore, a close customer and kindred spirit of Joe's, kindly arranged a meeting on Long Island, and the three friends got together for four hours in Joe's living room. Mike had years earlier mentioned some cars he would like Joe to build on commission, but due to the separation, had decided they were not to be in his future. As Mike and Phil got up to leave, Joe asked them to wait and went back into the kitchen. He came out with four cars, sparkling as only his could shine. He carefully placed them on a worn, but polished stand up radio, and Mike was stunned! He had to sit down. Waves of emotion hit him, and he describes it as a moment he won't forget. It was shortly after this meeting that Joe passed away. One of the cars was a unique car of the Pennsy built in their own shops – the Keystone Banks. It has the most special place in Mike's collection.



## The March Meet

Thanks to the considerable efforts of a few families, O scale has had the good fortune to have several annual train meets available through the years. There are probably a dozen if you were to include some of the smaller gatherings that are held mostly for locals to attend and enjoy. The Big Three - if you will - are O Scale West, the Indianapolis Meet and of course, what has become known as The March Meet. The amount of effort to put one of these together and manage not just the hotels, but the dealers and several hundred guys who aren't slaves to fashion, would be tough to quantify, but no one would dispute that it is a labor of love, first and foremost.

The Canter family gets the credit for the Indy Meet and Rod Miller has put on a wonderful show for decades in the Bay Area. The March Meet has been going on in Chicago now for over thirty years, and Judy and Mike Hill have run it for decades. Their son, Mike, and his wife, Melissa, have now taken the throttle and continued the tradition of giving guys the chance to walk out of the meet hall with the kind of smile on their faces that makes you wonder what it is that has given them such Cheshire Cat grins. If you're interested, the origins of the Meet go back to a guy named Larry

Kotula, who after taking over *O Scale News*, thought it would be a fine idea to have a Chicago meet and so began one. Since it started in March, he called it the March Meet. Larry hooked up with Frank and Darlene Schmidt and Mike Hill. Larry decided "enough" after a few years, so Mike and the Schmidts carried it on. The Meet has had many homes throughout the Chicago area. In the very late nineties, Frank and Darlene moved to Texas, and Mike and Judy kept it going. Judy remembers that about 1999 she brought the trains and the guys of the thirties, forties and fifties into the 21<sup>st</sup> century and computerized everything, which made communications a lot easier. If you attend this year you, should not only expect to have a choo choo blast, but also to be warmly greeted by the next generation of Hills who have taken over the responsibilities. (Mike Jr. and Melissa.) Mike and Judy will be there and happy to make the weekend memorable for everyone.



*Mike and Judy Hill*

*Melissa and Mike Hill, Jr.*

*Mike and Judy took over the Chicago O Scale Show, and it has grown in size and now is known as the Chicago O Scale Meet. Mike Hill, Jr. and his wife, Melissa, now do most of the work running the show.*

## Mike's Venture Into Importing Brass

Mike had a longtime pal, Larry Muir, from Texas. Larry was a successful businessman, complete with a private plane. Mike and Larry decided to take a shot at importing some high quality brass cars, and so that is what they did. Haven't heard of the Hobby Hill Cars? (See photos) Well, not surprising, as they were brought in around twenty years ago, and sold out in less than a year. The cars are harder to find than an honest Chicago politician or Illinois governor who isn't in jail. Mike and Larry chose the URTX reefer which would lend itself to many paint schemes and roads. They made a superb billboard reefer, and decals were made available for dozens of different roads. The details on the cars are about as good as it gets and, once painted, you really have something swell to look at riding the rails. To keep the URTX company the guys had some tank cars built in three or four variations. Once again, hard work up front paid off, and the finished products jump out at you as they fly by on anyone's layout. The tank cars come in a blue box and have a letter on the end identifying which version is inside.

### A Trainload of Longtime Companions

Lastly, now it's time for a few paragraphs about Mike's pals. He has a pretty diverse assortment, but there are some who go back many years. In the early years of Hill's Hobby, some of the fellows met after work at Hill's Hobby and went out to talk about trains interrupted only by eating and maybe a beer or two. One of the guys present at the creation was Mike's pal, Chuck Hinshaw, a successful stockbroker who says he has traveled to train meets with Mike now for forty years. They have had a life long train friendship which has been memorable for them both. Each has found "one ofs" for the other, and they are still today the best of friends, still meeting, but now on Tuesday nights. Want to meet Chuck? He'll be the tallest guy in the March Meet room. Burt Mall is also found on many Tuesday nights with the crew, usually visiting one of the guy's houses or another. Burt has O scale trains, but also he has a one to one scale Soo Line locomotive for the Wisconsin Central. Burt hasn't yet figured out a way to bring it to meets to show the other guys, but he does have some pictures. You have to go visit this steamer at its home in Wisconsin if you want a hands-on experience.



*When Mike Hill and Larry Muir imported brass models, they were sold under the Hill's Hobby name.*



*One of the URTX refrigerator cars Mike Hill and Larry Muir imported. This model was custom painted by Bob Anson.*



*One of the tank cars that Mike Hill and Larry Muir imported.*





*Mike and Marty looking at some of the brass URTX refrigerator cars Mike imported with Larry Muir. These cars were custom painted and lettered for Mike.*

Dan Pantera has been close to Mike for many years. Dan is retired, and for many many years, has devoted his retirement to building the best O scale passenger cars on the planet. Danny is one of the few who has been able to completely follow his passion after his working life. Anyone who has seen his cars or his painting can identify them even from a distance. He has restored more Fischer cars, built more passenger cars, painted more locomotives and repaired more trains than anyone you could name. Dan is what happens when someone with immense talent is let loose to create using that ability. You don't see his Calumet Shop trains on sale often as they go from person to person once the word is out one may be available. Dan thinks of his trains as sugar plums dancing in his head, and there is a whole orchard of plums out there yet to be modeled. He and Mike have had the kind of friendship you are lucky to have once or twice in your life. Bill Leider is next. If you are lucky enough to have seen his magnificent layout, you know you will never see a better one. He is a true artist and it shows. There is no medium beyond his reach. He took metal smithing classes for years so he could learn how to hand build a CNW locomotive – which is a centerpiece of his layout. It really looks better than the full size one, if you can imagine that. Bill's buildings are as realistic as you have ever envisioned, even including a hobby shop in the background that has model trains running in the window (z scale I think). So, the thing about Mr. Leider is that he is a giver. Bill has gone for years to Mike's house about eight hours before the Tuesday night assembly arrives to get Mike's layout completed. And, he has had complete success. The electronics, track and buildings have, under the years of Bill's guidance, come together and are impressive and uplifting to see. This gift has been offered out of friendship and accepted with lifelong gratitude. Well, there you have it. There are a lot of reasons why O scale guys LIKE MIKE, (same name, same city, different guy). Truth is, there is no aspect of the hobby he and his wife Judy have not touched and improved. Mike is a beacon of sorts, showing all of us in this hobby that it is really possible to give and share with others, and enjoy doing it. His friendships, collection, layout, knowledge and friendliness are unparalleled. The old saying that knowledge is best when shared, seems to have been thought of with someone like Mike in mind. Give him a big hello at this year's [March Meet](#) – which happens to be in April this year.

# FRANK SCHMIDT

Photos and Story By Michael Ross



Not all of Texas is flat prairie or cattle ranch. The steep, mesquite covered hills west of Austin and San Antonio, in the central part of the state, were avoided by the real railroads. They either circled the Texas “Hill Country” to the north (think Texas Pacific going west from Ft. Worth or the Santa Fe through Amarillo and Cajon) or to the south (SP via El Paso). But, one Chicago based O Scale railroad now calls the Hill country its home. For many years, Frank and Darlene Schmidt welcomed O Scalers into the basement of their Chicago home during the “March Meet.” Winding around and through the basement was Frank’s collection of Santa Fe engines pulling named passenger trains and long mixed freights. Many readers will remember that Frank’s layout was one of the highlights of each year’s March Meet.





In 1998, Frank and Darlene retired and moved south to be near both their children. Their custom designed hillside home allows an easy “walk-in” back entrance into the 2100 sq ft “basement” train room. The front of their home is at street level. South facing windows fill the room with plenty of natural light. Starting construction in January, 1999, Frank had the benchwork and mainline trackage finished in 18 months. With trains operating, Frank proceeded to add additional yard and industrial trackage, buildings and scenery. Small portions of the Chicago layout have been incorporated into the current pike.



The layout plan is basically an around the wall design with trains climbing to three levels before circling back down. Nine foot ceilings allow plenty of room for the trains to climb up and around the room. One trip around the main is about 450 feet, but there is total of roughly 3000 feet of trackage including the two large yards and industrial trackage. The freight staging yard on the lowest level has ten tracks that can hold trains up to 55 feet long! Sitting in the yard is a train of seventy (yes, 70) brass hoppers loaded with real coal and their engines. The passenger yard consists of ten tracks and is located on the upper level. Most of the trackage is Micro-Engineering flex track with some hand laid turnouts.



Frank need only walk out the back “basement” door to gather scenery material. No rock castings for Frank – the “cliffs” are natural limestone harvested from his own backyard cemented in place with concrete. Then came ground cover and many hundreds of trees. Some were recovered from Lorell Joiner’s Great Southern RR layout.



The layout room also incorporates a “social area” with a couch, comfortable chairs, TV and audio system and a small refrigerator. There is also a bathroom and utility sink. A fully equipped workshop is also available in the basement for Frank to build and repair equipment. If Darlene banishes Frank to the basement, he has everything needed to live comfortably and continue working on the trains. After watching trains, it is an education to sit with



Frank and listen to him reminisce of an earlier time in O Scale. While formally working as a purchasing manager for a major corporation, Frank helped in Bill Pope's shop painting boxcar sides for Bill's "All Nation" line. Floquil paint was purchased direct from Floquil *by the gallon!* Part of the deal was that Frank could keep one set of each boxcar produced.

On the back wall of the layout room is a floor to ceiling wall of shelves with, according to Frank, one of every boxcar produced by All Nation. Frank also helped John and Martha Kiel package castings, and helped Mike Hill when he ran the March Meet.

Other O scale history on display includes a Santa Fe 4-8-4, number 3772, built by Minton Cronkite in the 1930's. At first glance, the detail level is not that far removed from equipment produced 70 years later. Photos lining the wall also tell an O Scale history lesson, and include one of Frank with other guests in front of Larry Muir's chartered business jet that brought guests to the earliest Southwest O meets. Another shows Frank literally "chained" to the workbench in John Kiel's shop.

The Texas "Hill Country" is a bit isolated, but Frank and Darlene heartily welcome visiting O Scalers – just contact Frank to set up a time. The Hill Country is drawing more and more technology businesses, retirees and vacationers, and there is plenty for the rest of the family to do and see in Central Texas. The Austin Steam Train Association operates the Hill Country Flyer out of Austin, Texas, west into the hill country (see <http://www.austinsteamtrain.org/>). It is currently diesel powered, but before too much longer, the association will have their Southern Pacific 2-8-2 #786 fully rebuilt and back in steam. And, you can always make a visit to Frank as a side trip after attending the [October Southwest O Meet!](#)

Call Frank at 512-261-3035 or email him at [fschmidt1@austin.rr.com](mailto:fschmidt1@austin.rr.com) if you'd like to schedule a visit.

Editors Note: I remember seeing Frank at all the Chicago shows. It was during the 1989 or 1990 show that Amy and I went to Frank's house for the layout tour. Now mind you, I had been in O scale two rail since 1978, but never saw a finished layout. I had spent my time in modules. Walking into Frank's basement was a culture shock to both Amy and myself. To see all those beautiful brass locomotives on a layout and in display cases was something I had not seen before. Frank always hosted an open house during the show and was very cordial and friendly. I miss seeing that layout, but hope to get to the Texas show and see the new layout soon.

~Dan Dawdy

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# Jeff & Darcie Lang's Layout



*Jeff likes the main line, and you can see this in one of the original parts of the layout. Jim Canter had the job of planting all the trees on the mountain. It looks like big time main line railroading.*

## By Glenn Guerra

Dan and I recently went to visit Jeff and Darcie Lang in Carmel, Indiana to see their layout. We wanted to show you the layout in this issue since they will be open during the upcoming [O Scale National in Indianapolis](#) September 11<sup>th</sup>. When you come to the show, make sure you set some time aside to stop and see what Jeff and Darcie are doing here. We can all relate to Jeff, his story, and his layout.

Like many of us, Jeff started in model railroading as a youngster. As he got older, he got married and started working and, yep, you guessed it, all of the other things in life started to push model railroading out of the way. It was time for family, work, keeping house, and all the other things we do as we become established adults. Things started to change in his life, he started to have some spare time, and model railroading started to once again have appeal. Jeff was young and in the National Guard at this time, and Fort Benjamin Harris in Indianapolis had a model train club. Jeff started to hang around the model train club and became interested in model trains again. They had an N Scale, HO Scale, and O Scale layout. Jeff looked at the N and HO Scale layouts for a short time, but was not really interested. It was then that he met Doc Blackburn and Vane Jones at the layout one night. At this point in the story, I had to ask what they were doing on the Army base. Well, it turns out that civilians could be members of the club and many were. Doc Blackburn and Vane Jones were both O Scale modelers and primarily traction. Doc Blackburn was one of the original members of the Central Electric Railfans Association (CERA as it is more commonly known today) and Vane Jones was the publisher of *Traction and Models* magazine. Vane Jones also started the Indianapolis O Scale Show. They convinced Jeff to model in O Scale. This was all around 1980. Another O Scale modeler Jeff met at the time was Bob Reynolds. You may remember the name as Reynolds Models. Bob purchased the old Athearn metal O Scale car kits and reissued them under the name of Reynolds Models. As Jeff was telling me this story, he said that these older modelers mentored him back into modeling and also helped him get through some troubled times in his





*A main line freight blasts out of the tunnel while the local comes off the other main line.*



*The day we were there, the grand kids were visiting. Jeff said they help with the layout when they come to visit. The area that is now open will someday have the reverse loop for the extension.*





*This view looks down the new extension towards downtown. Jeff, Darcie, and the group are developing this area and trying out some building locations.*



*This view looks down the new section. Note how the cinder track dips down. This will look good when the scenery is installed, and will add some interest. This is one advantage to setting the buildings out so you can see how the scene is developing. It's easy to change now.*





*This scene represents the outskirts of the main town. The hopper cars are sitting on what will be the branch line which goes in a loop on the next section to be built. Jeff is experimenting with buildings here as well. When he sees an interesting building come out or for sale at a show, he may buy it and see where it will fit. Things will be moved if need be. All of this gives you time to test the track also. Working all the bugs out before putting in the scenery will make your modeling much more pleasurable.*



*Jeff used Atlas bridges to make this scene. The combination of girder and truss bridges looks good going over a gorge.*





*This scene is looking at the main part of town where the branch line to the new section takes off.*



*In this scene, look at the siding for the large building. Notice how it dips down to the building. This is a nice touch that will add a lot to the finished scene.*





*We are out on the main line again as a passenger train rounds the curve.*



*This is one of my favorite scenes on the layout. Jeff bought this building at a train show, but when he got home decided he didn't really like it. So, he made it decrepit and abandoned before putting it on the layout. He even modeled the abandoned siding that served it at one time, making this a very unique scene.*





*Jeff has this big city passenger station on the outskirts of town. Look how the 96" radius curves make the long passenger cars look right at home. They fit the station well and are convincing.*

life. As time went on, Jeff was able to get back in the swing of things; and by 2000, he was ready to buy a new house and start his layout. Jeff and his wife, Darcie, both work on this new layout.

Jeff likes all railroading, but Doc and Vane talked him into focusing on one particular railroad. Since Jeff had no particular favorite, he chose the Pennsylvania Railroad because he had an uncle that worked on the Pennsylvania Railroad. He likes to see long trains running on the main line so he built the first part of his railroad for that. Some of the main line curves are 96". His new house has a large basement so he built around the walls with large radius curves and started running trains. He has almost all the big Pennsylvania locomotives on his layout. As I was looking, I asked where the decapods were. Jeff said they were not used much around Indiana, so he didn't have any.

The next group of people Jeff started to hang around with consisted of Jim Canter, John Pautz, Andy Baker, Warner Clark, Jeff Kehler, Mike Crosby, Paul Hanson, Steve Kessel, and Bob Sewell to mention a few. Operation and switching started to look interesting, and Jeff started an addition to the layout. As you can see, much of the layout is being built as I write this article, and that's where all these people come in. Most of them live in the area and they started a round robin group that goes to someone's house every Monday evening to work on a layout. This provides some needed help, and gets you off of your behind and building. Jeff was telling me that not all of these people are O Scale modelers, but they all have fun together. Jeff is modeling in regular O Scale. Jim Canter, Warner Clark, John Pautz, Paul Hanson, and Bob Sewell all model in Proto 48. Jeff Kehler, Mike Crosby, and Paul Hanson all model in HO Scale. Andy Baker models in 3 rail with scale equipment and scenery, and is also the president of the Indiana Transportation Museum in Noblesville, Indiana.



*As well as the trains, model railroading holds a lot of memories for Jeff. He has a whole train of convention cars, show cars, and cars people have made for him. Each one has a story, and he knows them all. Look for Jeff at the show in Indianapolis and be sure to stop by and see his layout.*

All they have in common is model trains. Jeff said this round robin group is great. Everyone in the group has some unique talents that help the group as a whole.

As you can see from the photos, the new extension will be an urban scene. Some of the buildings Jeff built and others he purchased at shows. Some of the very large factory buildings were purchased and Jeff added details to them. A few buildings are just mock ups right now so Jeff can see how they look. A good example is the freight house. Notice how it is not all on the layout and the tracks are not parallel to the edge of the layout. The main focus will be the track side of the building, and not the whole building. It is a large building that will take four cars. If you have the space, take advantage of it. Jeff is experimenting with locations so most of the buildings are in temporary locations. You can see some of the scenes developing though. The main downtown section will have tracks in the street that will switch some of the large factories. The siding to one factory is on the back side of the factory and dips down to the factory. These slight elevation changes in the track add a lot to the scene. If you are planning or working on your layout, take some time to consider how the finished scene will look. At the end of the new section there will be another addition that will bring the track around in a loop. This is on hold for now until more of the scenery gets completed since it is easy to reach these areas for installing the scenery.

So, say hi to Jeff when you see him at the show and thank him for having his layout open. This is truly what the comradery of the hobby has to offer – lifelong friends, enjoyment, and memories.



# Adding MU Connections



**Figure 1** This detail photo of two contest winning Red Caboose GP-9 models that Bob built shows the multiple unit connections that are installed.

**By Bob L. Morris**

The reason I decided to model in P48 was because O scale models can really make you feel like you're standing trackside. Being able to see the fine details that were so painstakingly modeled from a reasonable distance is very satisfying. I never get tired of watching as these representations of man's ability to control the elements roll by while imagining that the earth is shaking beneath me.



*Bob won first place in the diesel locomotive category with these models at the 2015 Chicago O Scale Meet. The MU connections can be taken apart, and the units reassembled in any order. They add a lot of visual appeal to a multiple unit lash up like this.*

One of the features that helped usher in the diesel age was the ability to run multiple units with one engineer through the MU interconnections. These are prominent features seen on the front end of locomotives in many model photos with very realistic sets of MU hoses hanging from the pilots. These are usually photos of an individual locomotive or the front end of the lead unit in a consist. However, when the consist rolls by, the MU connections between the units are seen unconnected and hanging down from the pilot, which detracts from the whole illusion of being trackside.

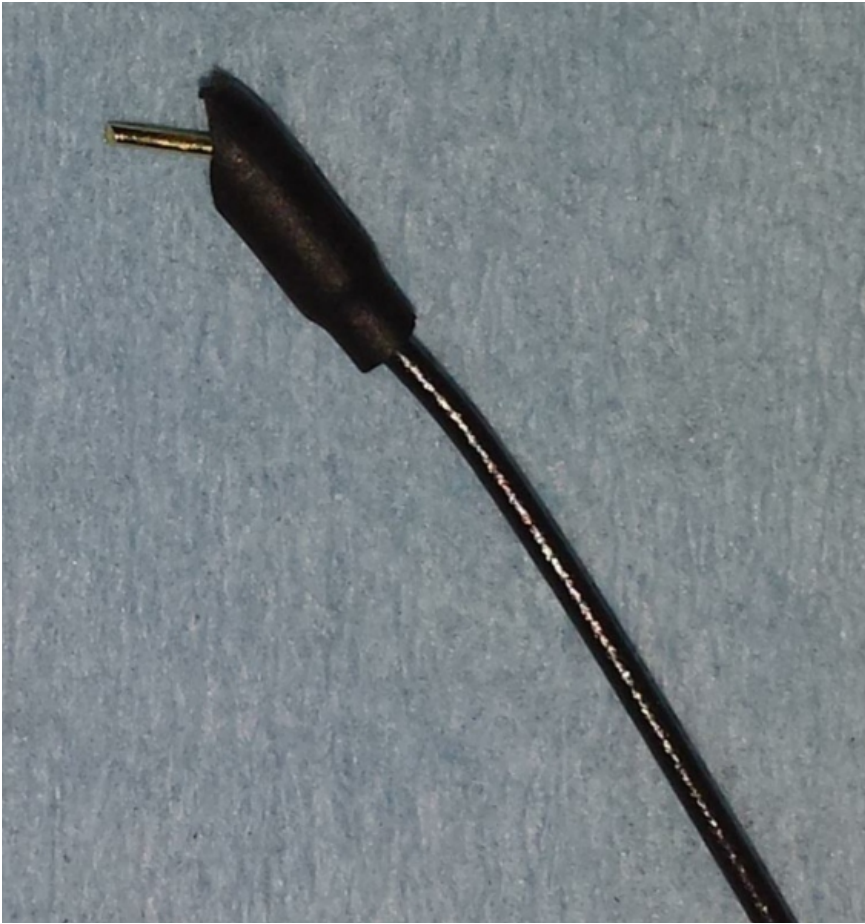
I tried to make my model consists look more realistic by modeling the air and electrical connections between the units. You can buy the components needed for making the air connections from Precision Scale, but I had to fashion the electrical connections following prototype photos. I'll explain how I made both types of connection.

I am modeling Pennsy GP9s, so I started by trying to find an MU stand that replicated the ones used on the PRR GP units. I couldn't find anything available commercially, but luckily, they are pretty easy to make. I used 0.125 square styrene cut to a 0.6 inch length. The prototype stands are tapered on the back side so I filed a straight taper on one side until it was down to 0.1 inch on the top of the stand. Next are the MU receptacles. These castings are available from Details West, and they serve well for the front of the lead unit and the back of the trailing unit. However, the castings model the receptacles with the covers closed so there is no way to attach cables. To solve this problem, I used styrene to create the appearance of receptacles. The round receptacle is a piece of 0.125 round styrene cut 0.060 inches long, while the square receptacle is a piece of 0.10 square styrene cut 0.10 inches long. These are mounted to the stand with a drop of CA with the square one at the top and the round one just beneath it. Both receptacles are drilled in the center with a number 76 drill about 1/8 inch deep to allow the cables to plug in. To mount the stand, I drilled a number 72 hole and inserted a 1/2 inch length of 0.025 brass rod into the bottom of the stand. The finished MU stand is shown in Figure 2.



**Figure 2** *This is one of the finished styrene MU stands that Bob made for his GP-9 models. They are simple to make, and follow the look of the prototype MU stands.*





**Figure 3** This is a photo of one of the electrical connections Bob made for his models. Not only do they look good, they can be plugged in. This allows the unit lash up to be changed.

The electrical cables are next. They need to be able to hang by their own weight to look realistic. To achieve this appearance, the cables need to be as flexible as possible. I used 28 gauge Very Flexible wire available from NorthWest Short Line. All I wanted was the insulation from this wire, so after cutting a length about 1.85 inches long, I pulled the wire strands out of the insulation. To make the operating plugs on the ends of the cable, I first worked a 0.019 inch brass rod about 1/8 inch into the end of the insulation, then bent the rod to a 45 degree angle and cut it off about 1/8 inch from the bend. The plug bodies are then made from 1/16 inch heat shrink tubing. I cut a piece about 1/8 in. long with a 45 degree angle on one end and shrunk it over the bend. Next, I cut another

piece slightly longer and shrunk it over the first as shown in Figure 3. This gives the plug a molded look.

The cable can now be plugged into the receptacles on the MU stands, as shown in Figure 4, to connect the units in your consist. When it is desired to separate the units for maintenance, or to run them separately, it is a simple task to unplug the cables.

**Figure 4** This is how the finished MU stand looks. The black "cable" can be removed when the units are uncoupled. The white styrene stand now gets glued to the pilot of the locomotive.



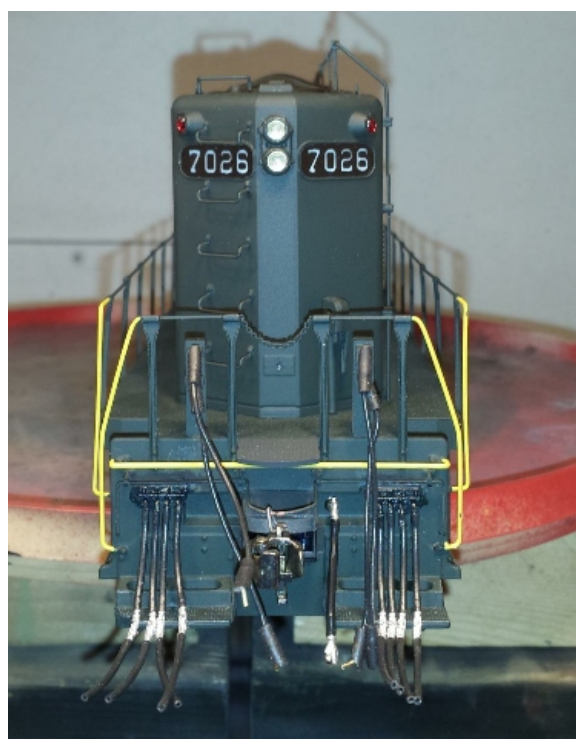


**Figure 5** *These are the finished MU Hoses that Bob uses. The glad hands are glued, and this whole unit is removed from the model when the units are changed.*

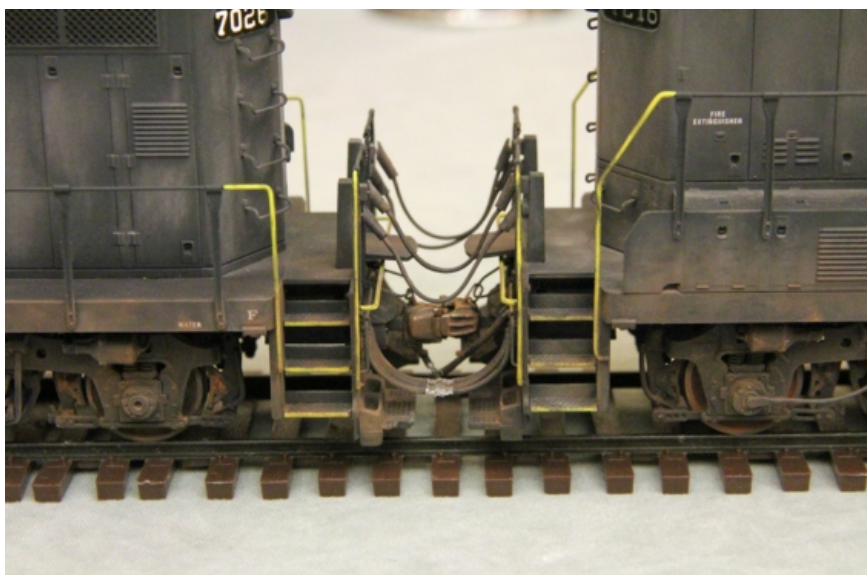
The procedure for making the MU hose connections is a much simpler one. Precision Scale sells the glad hands, the hoses and a 4 hose MU bracket to mount on the locomotive pilot. To make the connections between units the glad hands need to be joined. I filed off the flange at the top of the glad hands so they would mate properly and used a drop of CA to join them. Next, I added a 0.65 inch long Precision Scale MU hose to each side. Now, you have the connected air hoses shown in Figure 5.

Once you push the hoses onto the MU brackets on the pilot and plug the cables into the MU stands, you are ready to connect to the consist. Figure 6 and Figure 7 show PRR number 7026 with all of its MU hoses and cables prepared.

After coupling the units together and using tweezers to help make the connections to the mating unit, you have a realistic looking MU connection as in Figure 1. While this was a first attempt for me to model the electrical MU connections, I'm sure there are lots of ways to improve on the method. I hope that the procedure described here will inspire others to do just that.



**Figure 6** *This photo shows the finished MU connections installed on a locomotive before final painting.*



**Figure 7** *This photo shows the same locomotive as in Figure 6 after final painting coupled to another locomotive.*



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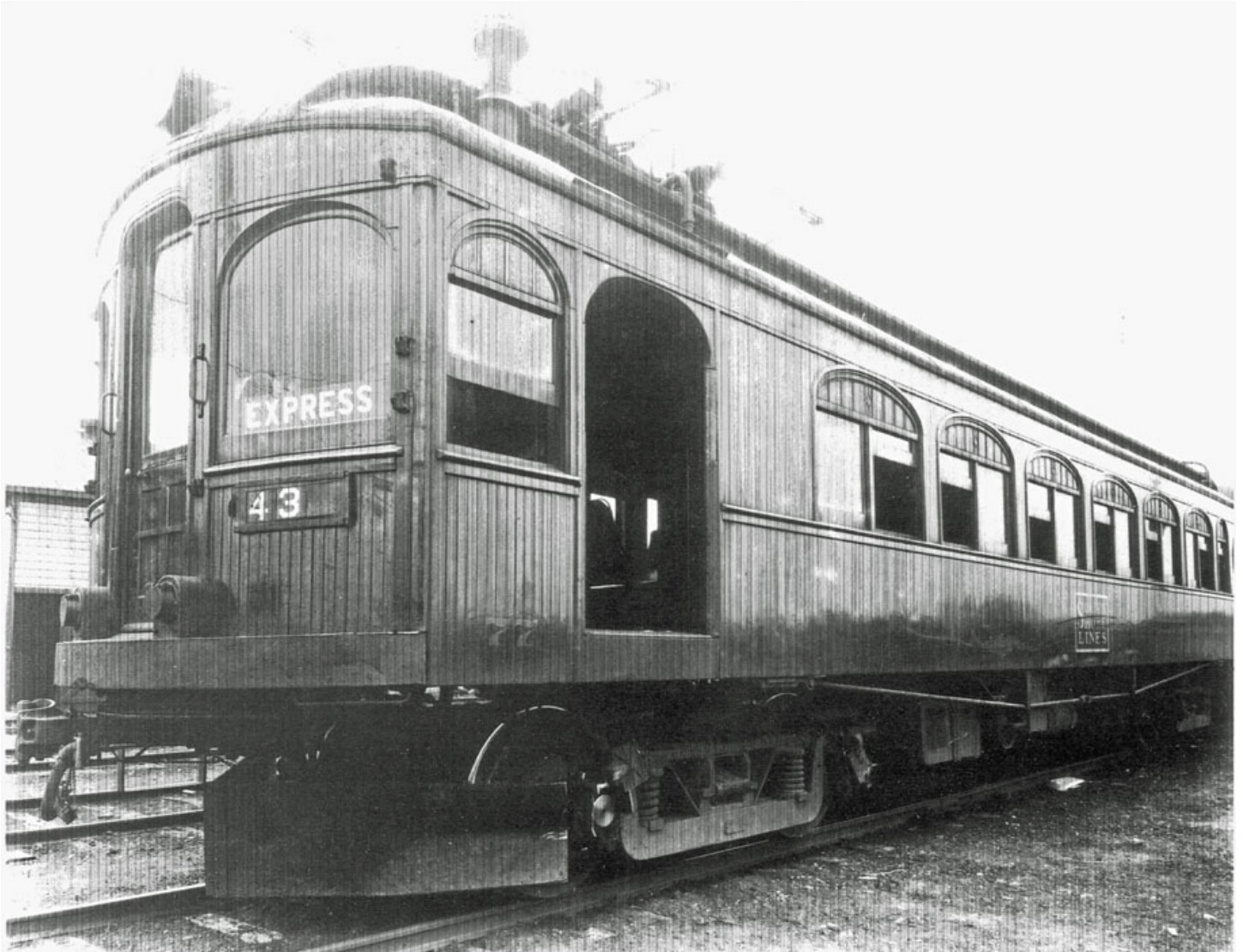


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# Chicago Lake Shore and South Bend Wood Interurban Cars



*Car #73 after many rebuilds as Chicago South Shore and South Bend #73. By this time, the car has been converted to 1500 volt DC operation from the 1500 volt AC operation it was before.*

**By Glenn Guerra**

The May 23, 1908 issue of Electric Railway Review had an announcement of a new electric railway being built from Chicago, Illinois to South Bend, Indiana. The article covered what was then known as the Chicago Lake Shore and South Bend Railroad. Today this is known as the Chicago South Shore and South Bend Railroad or South Shore Line for short. In the article was a photo of one of the new coaches and along with a brief description. The cars were a little over 57 ft long and were made by Niles Car company in Niles, Ohio. At that time, the line was unique in that it was powered by alternating current whereas most other lines in the area were 600 volt direct current lines. Another feature of the line was that the cars were built to steam railroad clearances and size. Most other electric cars of the era were lighter and narrower. The new Niles built cars were made to be able to run with steam railroads and had very stout frames.



# NEW CARS FOR THE CHICAGO LAKE SHORE & SOUTH BEND RAILWAY.

The Chicago Lake Shore & South Bend Railway Company is now receiving from the Niles Car & Manufacturing Com-

line requires that the electric cars conform to the rules of the Master Car Builders' Association as regards height of car, coupler, dimensions of wheel tread and flange, clearance, etc. As the suburban station platforms of the Illinois Central Railroad are elevated to the level of the steam coach floors



High-Speed Interurban Car for the Chicago Lake Shore & South Bend Railway.

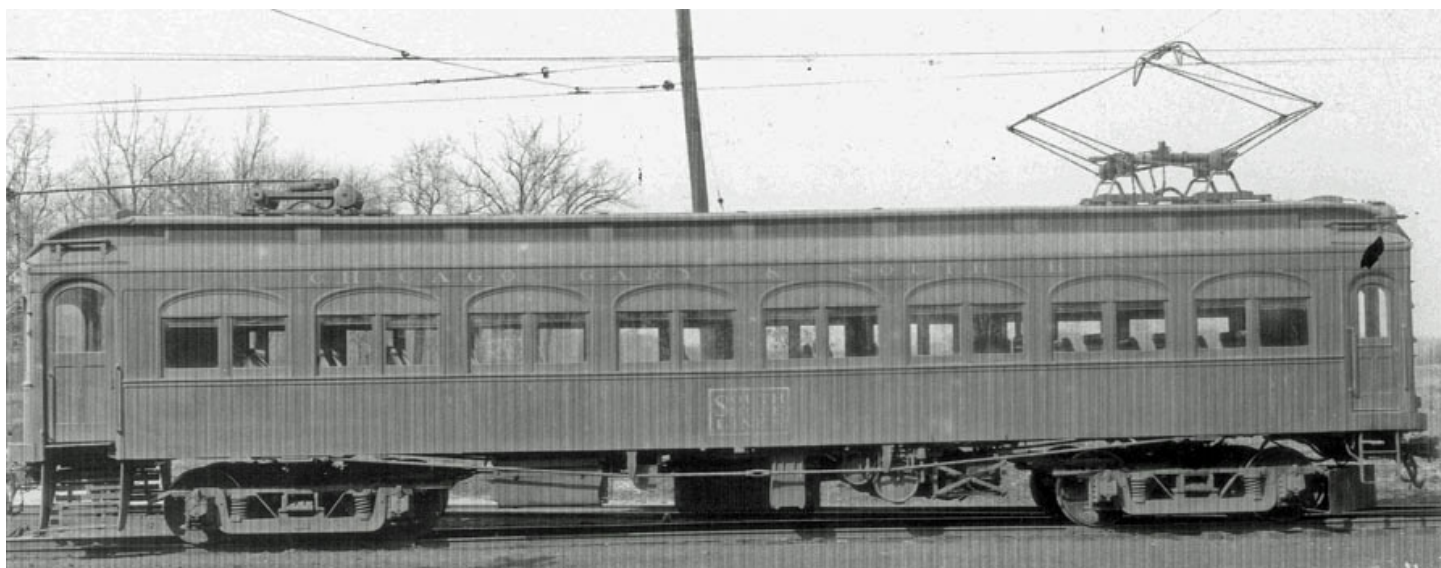
pany of Niles, O., 15 substantially built high-speed cars which are attractive in appearance.

The route of this new line was described and a map presented in the Electric Railway Review for May 2, 1908, page 542. The service which this new line will offer will be unique in character. An especially well-built roadbed, equipped for high-voltage single-phase operation, is nearly

it was necessary in building the electric cars to increase the height of the side vestibule doorways so that passengers may step from the station platform to the car platform.

The bottom frames of the new cars are of semi-steel construction with double outside sills that have 5/8 by 10 inch steel plates bolted between them. The four center and intermediate sills are built of 6-inch I-beams and extend the full

*This article from the May 23, 1908 Electric Railway Review describes the new railroad and cars. The letter board says Chicago~Hammond~Gary~Michigan City~South Bend. The car is one of the powered coaches.*



*This view of one of the coaches was probably taken as a valuation photo for a loan or purchase of the line.*

When the railroad first opened, it ended at Kensington, Illinois near the Pullman Car Company plant. From there, the trains were pulled into Chicago on the Illinois Central Railroad by steam engines. In later years, a parallel electric line was built and the cars ran into Chicago on their own tracks as they do today.

When the line opened, it had wood combination cars numbered 70 to 77, wood powered coaches numbered 1 to 15, and wood non-powered coaches numbered 101 to 114. A few months after the line opened, there was a head on collision with car number 73. The car that hit it went one third of the way into the number 73. The car was only a few months old and was rebuilt. After the rebuild, the number 73 car had a larger baggage section and lost one set of paired windows from the smoking section. In addition, the baggage door was made larger. The railroad never recovered from the construction costs and eventually failed. Sam Insull acquired control in 1925, and the the railroad prospered after that. New steel cars were eventually purchased and the railroad converted to 1500 volts direct current from the 6600 volts alternating current they had been using. The wood cars were retired, except for the number 73 which was converted in 1926. It hung on as a work car and passenger car during the morning and evening rush. At one time, it was used to haul steel heavyweight passenger cars on a fan trip. The railroad museum movement was not going at the time, and the number 73 did not end up in a museum. Instead, it was sold as a body and used as a home in Michigan City, Indiana. The car was then rescued by a local railfan and moved to storage where it sat for many more years. I first saw the car in the late 1990's when I was hired to do a survey on it. In 2004, the car was moved to a work location and Gary Stott started work on it.

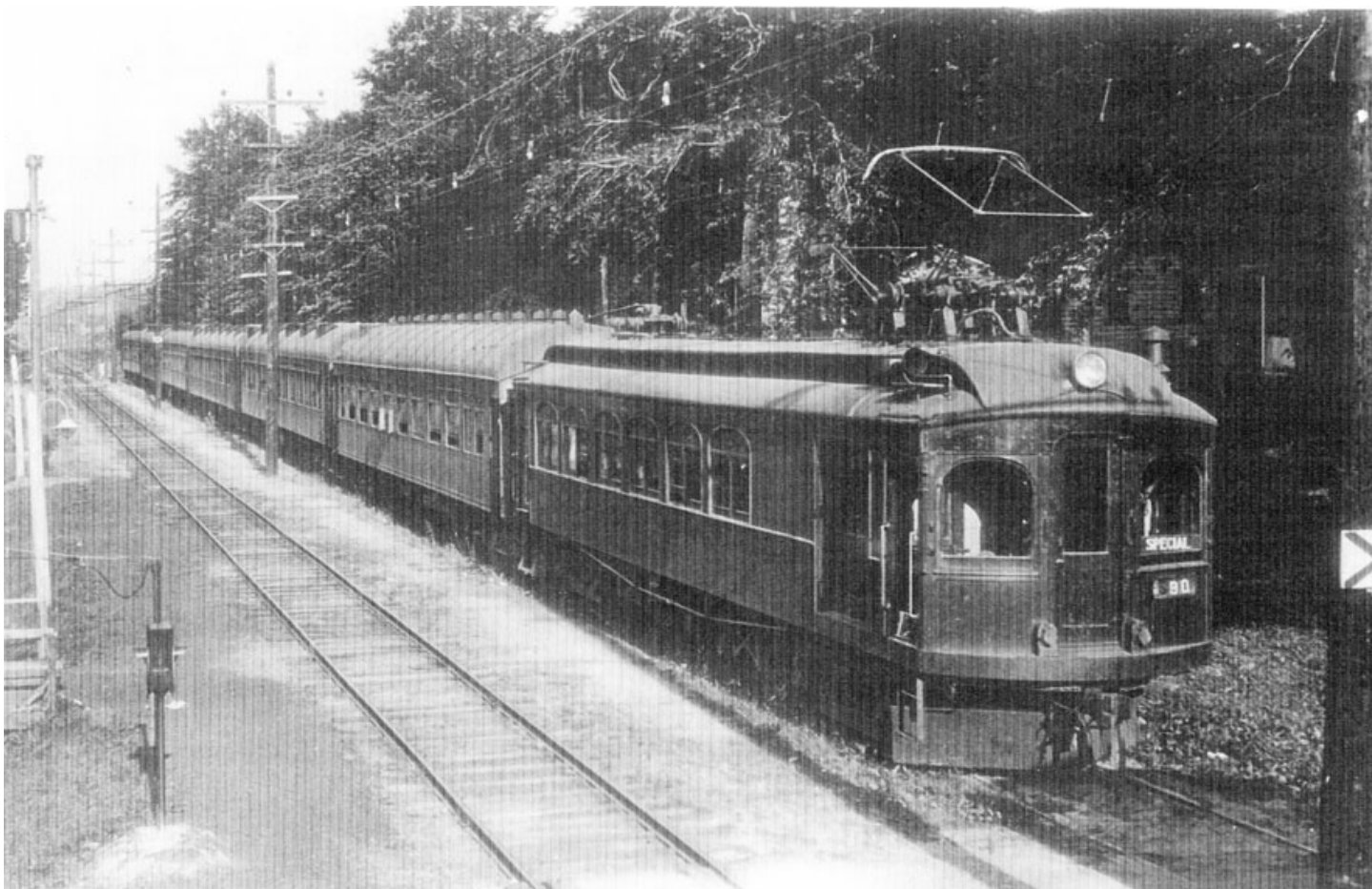


*These two photos are probably also valuation photos. Note the pilot on the front end view on the right. The wood pilot has been replaced by a steel wedge pilot.*



*This is the newspaper view of the wreck. The number 73 car is in the foreground. The guy with the lantern is standing by the front needle beam – about one third of the way back into the car.*





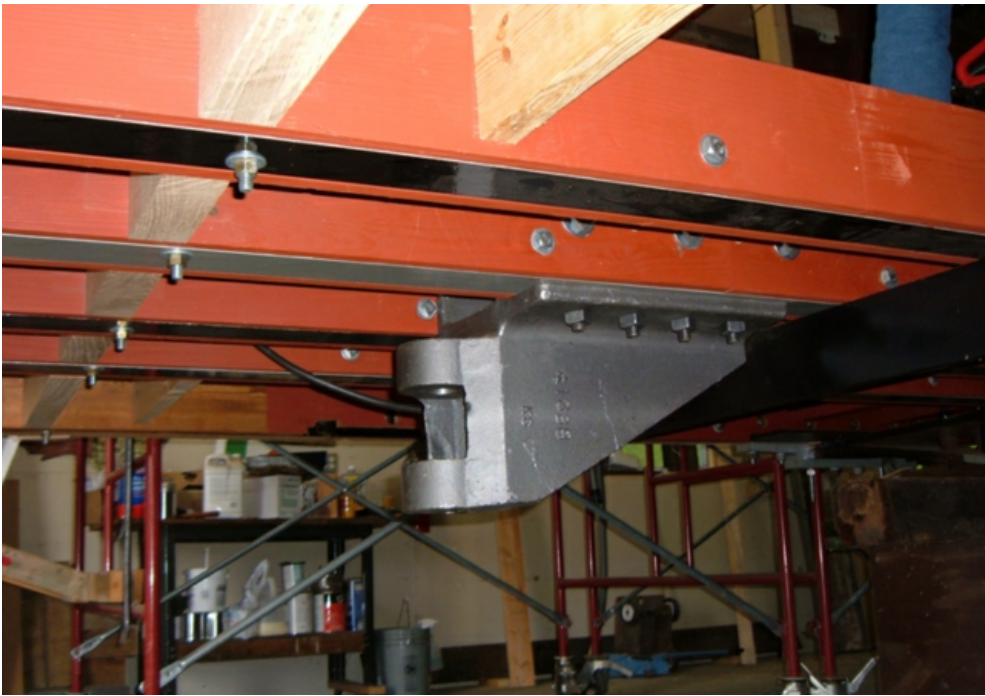
*The number 73 being used as a locomotive on a fan trip right near the end of its railroad use.*

I was hired to go one week a month and work at the location to help Gary. At my shop in Plymouth, Wisconsin, I made new seats and other items for use in the car.

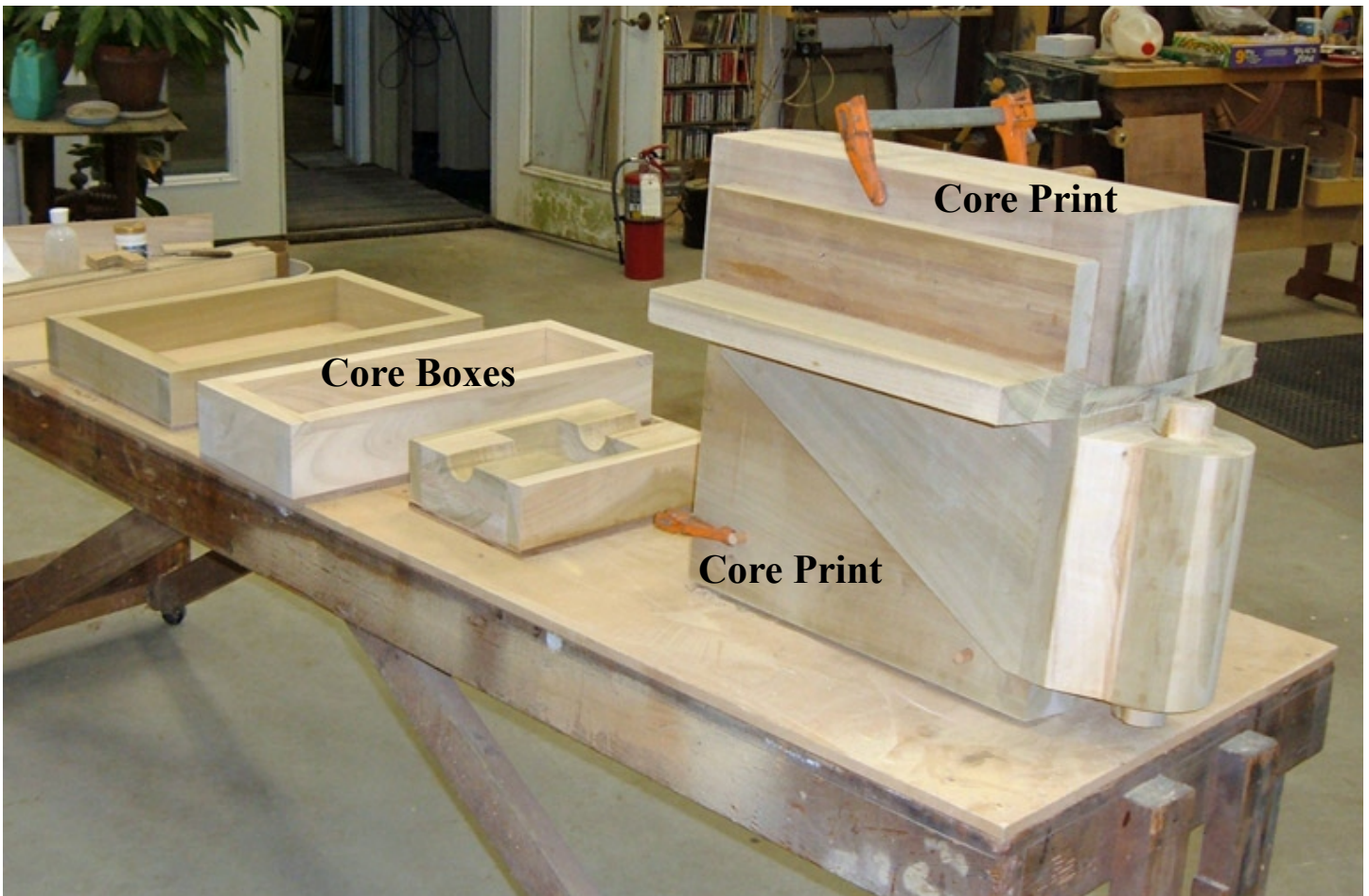


*This is how the car looked when I first saw it to do the survey. At first glance it looks grim, but there is actually a lot here. The car was still straight and that's good. Since the car is made of wood, it is easy to repair or replace parts. There is also enough of the car that dimensions can be obtained and parts replicated. Most of the framing in the car today is original. What we had to replace was everything on the exterior. The interior woodwork is still there, but we did need to make new partitions to replace the ones that the homeowners and railroad had removed.*





*One of the things we needed to do was to make two of these coupler anchors. Gary had to make new center sills and intermediate sills because of all the repair and damage to the existing ones. The object was to make the car functional again.*



*This is the sand cast pattern for the coupler anchor. I made drawings of this part and then designed the pattern to make the mold. This is referred to as a loose pattern since the parts are not mounted on a match plate. After the sand mold is made, the cores are laid in the mold part made by the core print. The core boxes make the sand cores that are placed in the mold. This allows hollow parts and under cuts to be cast. The next step is to seal the wood.*





*These are the parts of the pattern after I sealed them. They are now ready to go the foundry.*



*This is the set up I made to cut the large radius of the rear end beam of the car. These pieces are made of 3 inch thick white oak that is splined together for alignment and then through bolted with threaded rods. The router is mounted on a long stick that pivots at the center of the circle. You have to make a lot of little cuts but it works.*





*The end beam sits on the center and intermediate sills and is notched where the sills are. Here, Gary is cutting the notches with the router. When these cars were made, the shops had large gaining saws for doing this work. We had to bring the tools to the work.*



*Here, we are fitting the end beam to the rear of the car. You can see the step well being formed. Once we had everything lined up, we drilled the mounting holes and bolted it in. You can see how the end beam is notched at the sills.*





*Here is the rear end beam in place. Note how the steel “I” beam sills have wood wrapped around them. This was common in electric railway construction. The reason for the wood is to provide a mortise to locate the frame spreaders and a place to nail the floor to.*

The frame of the car had a lot of damage due to the wreck repair and other modifications done by the railroad. Gary had to replace the center sills and intermediate sills in the frame. He installed all new spreaders in the frame. I started showing up around that time and helped Gary install new draw rods through the frame to hold it together. The side sill on the left rear was bad so we spliced in a new section. The rest of the framing was in usable condition, and we proceeded to replace all the exterior. I had done this on quite a few other cars already and was able to help Gary quite a bit with this. One of my main tasks, as someone who had done this before, was to make drawings and determine how things were built originally. One of the things we needed to make were the coupler anchors since this was one of the things the railroad had changed. There was a drawing of a similar anchor in a magazine article and that, plus bolt hole locations on the car, allowed me to draw what we thought was originally there. From that, I made patterns and we had new anchors cast in steel. We also had to make some new interior ceiling panels. They are a three ply plywood held together with hide glue and almost never survive any damp conditions. In the past, I had made these with a male and female form. Gary had a vacuum veneer set up and we tried that. I made the male form and we stuck the form and veneers in the vacuum bag. It worked great. We were able to get the body finished and some of the interior. Next, I started working on the plumbing. All was well until the markets crashed, along with the money, so the project is on hold for now.

One of my tasks was to determine the original colors and subsequent paint jobs. When I do, this I like to designate areas of the car with a number. For example, I would usually call the outside front of the car area #1. The right side would be area #2, and so on, and each sample would be numbered 1,2, 3, etc. I would then sand through the paint and look at all the different colors. This would be recorded as a photo and as a written work sheet with the number of the sample. This way, the location is known and the work sheet can be correlated to the the photos.



*Here we are finishing out the rest of the framing at the rear of the car.*

Railroad cars in this era usually had some exterior striping or other decoration so you want to look in the usual locations for that. Another thing that was common on the wood cars was to remove all the paint from the exterior periodically and repaint the car. This was done with a torch and putty knife and is called burning off the car. As a general rule of thumb, this happened about every five years. I have done this to a whole car ,and can tell you that this is a pain in the behind around the clear story windows and the ends of the car. Well, guess what? It was for them also, and many times the clear story and the ends of the car have the best paint samples. In addition, these areas were protected from the weather, therefore, the paint held up better. To make a sample, the idea is to sand a narrow slot in the paint down to the wood, then polish the area with fine sand paper and you will see all the different layers of paint. According to the written record in the articles about the cars, they were painted similar to the Chicago and Alton Railroad. I found my best paint record at the rear of the car in the vestibule. I found that the car was painted a dark plumb purple below the belt rail. From the belt rail to the letter board, the car was painted red. The letter board and clear story were painted a darker red, almost maroon. This is a bit unusual. Many cars had one color on a panel and a different color to accent the trim. This car does not. The exterior of the car had none of the original paint as I expected, so I had to extrapolate the colors in the vestibule to the exterior of the car. Since the interior of the vestibule had the three colors, I assumed that carried to the exterior.





*Here is the left side of the car as we were working on it. You can see the wood truss built into the side of the car. This truss was mostly for sway bracing. The truss rods do most of the work supporting the car.*



*In this view of the interior you can see what is original framing and what we had to replace.*





*These views will give you some idea of the trim details on the car.*





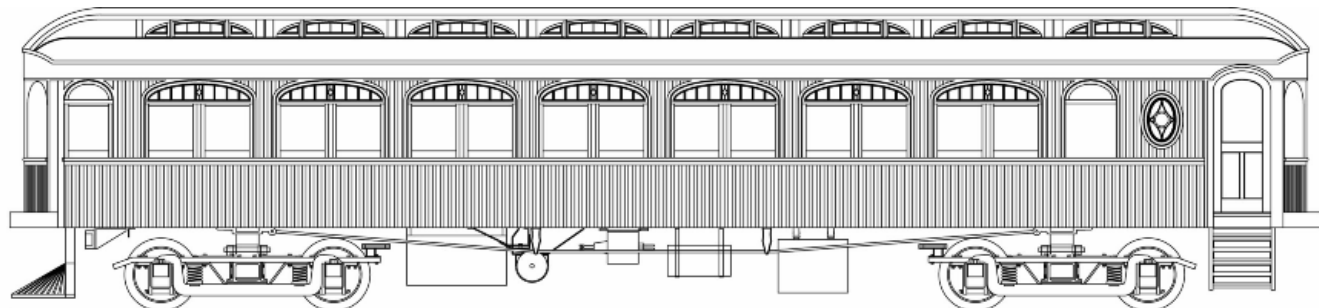
*The photo above shows how I like to mark my paint samples and how I do some of them. I identified the layers for you.*

This is how the Alton trains were painted. I am not sure about the exterior ends, but it seems that since the interior vestibule was three colors then that theme carried to the ends of the car. If the red stripe was only on the exterior side and the ends were a solid color, why would they not have painted the interior vestibule the same color as the ends? For what information we have now it seems like the stripe carried around the car. When you make your model it's up to you.

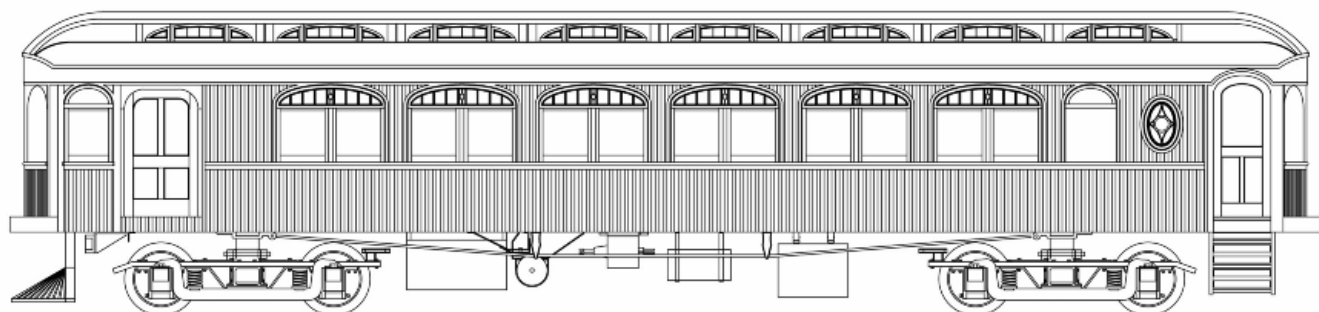
In 1915, the cars were repainted completely different. I also determined that the cars were painted with lacquer in 1915 and not oil paint like before. At about this time, lacquer was being tried, but it failed to hold up. In the late 1920's, lacquer paint was improved and it became standard on the railroads. The lacquer paint on the number 73 was a very dark green that the Pennsylvania Railroad fans call Brewster Green. In the 1920's after Insull took over, the the railroad the orange and maroon color scheme was adopted and the number 73 was painted orange and maroon.

When making a model, you can use standard Westinghouse equipment on the early alternating current versions of the car. The external appearance of the devices was the same. For later versions, just use the same equipment you would find on the steel South Shore cars. The trucks are standard Baldwin MCB trucks and those are available. The drawings are made to full size dimensions. To save the drawings, download the whole magazine, just this article, or only the pages with the drawings. You can print and enlarge them as you need.

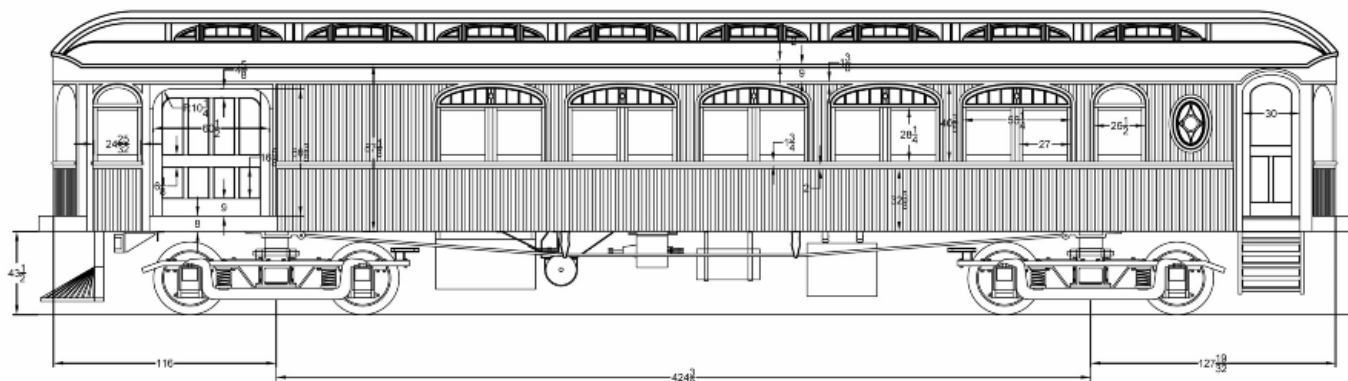
# Left Sides



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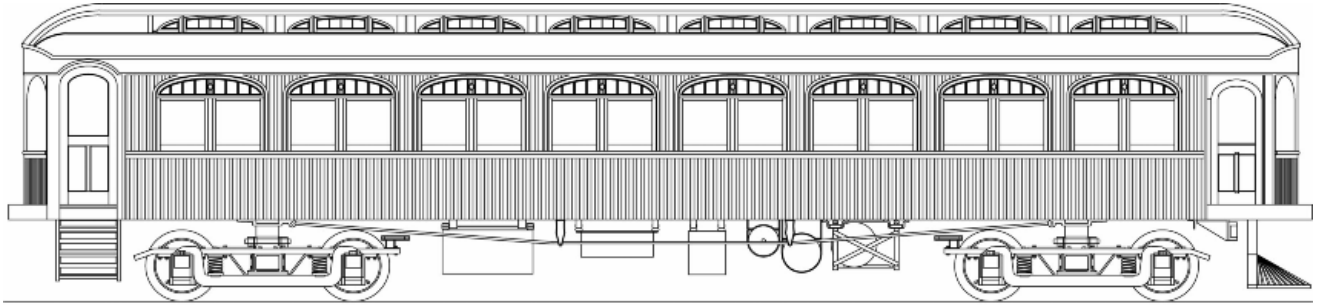
**Combines 70 through 77 As Built**



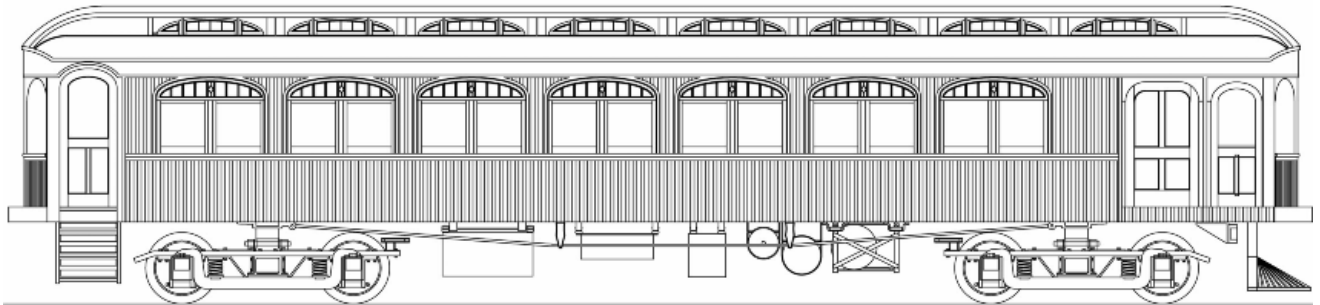
**Combine 73 After The Rebuild**



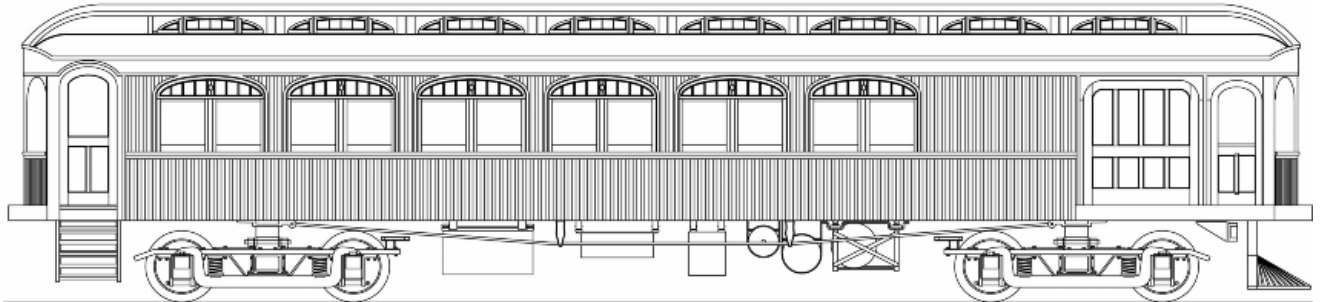
# Right Sides



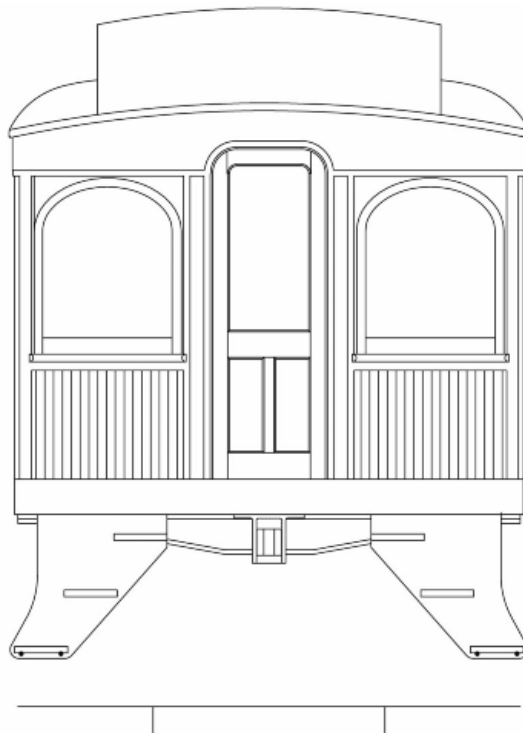
**Powered Coaches As Built**



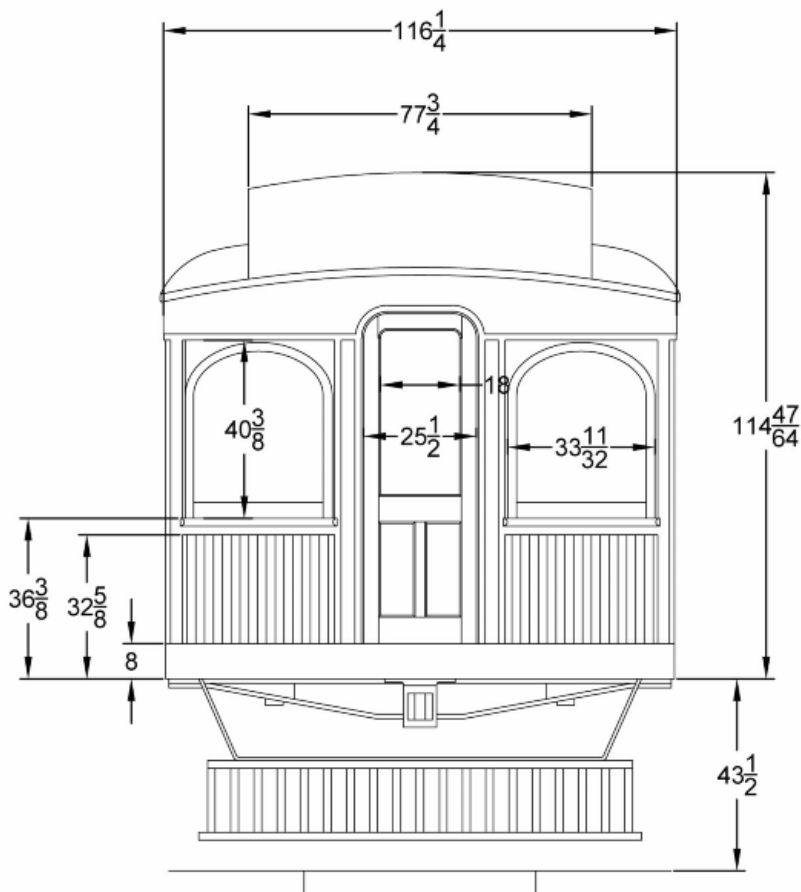
**Combines 70 through 77 As Built**



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Rear View



Front View





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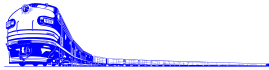
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