

Scratchbuilding a Class S-5 Poling Car in HO Scale

David J. Vinci



(Figure 1)

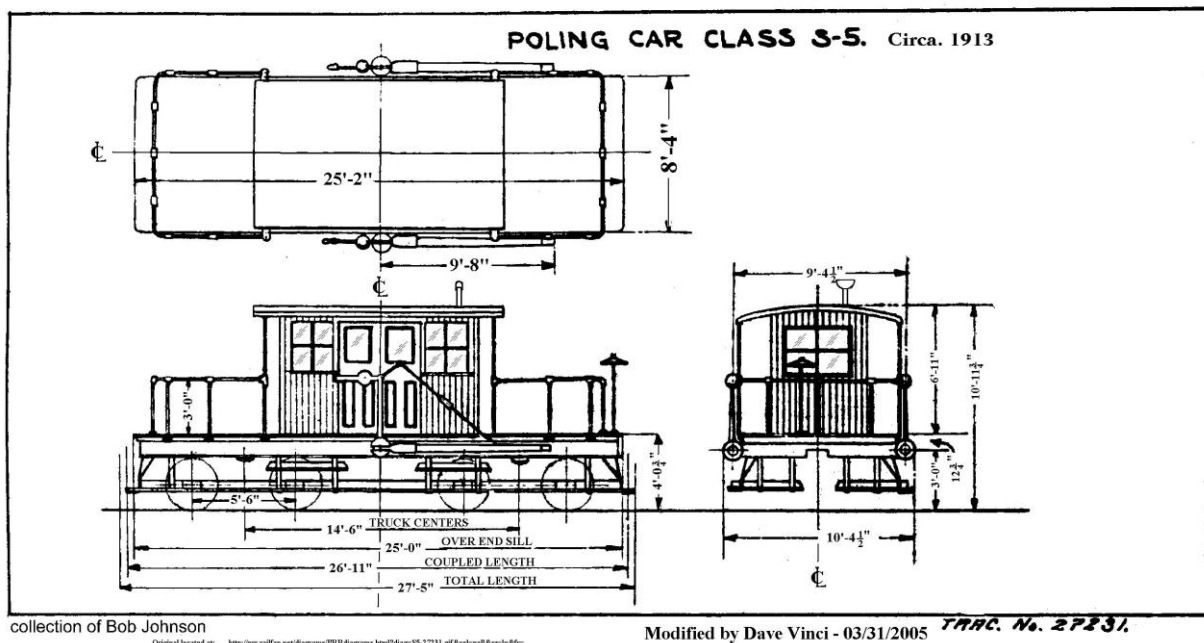
The S-5 poling car is an interesting piece of early equipment that can liven up your yard activities. According to the PRR Classification of Cars No. 146-D, the S-5 steel poling car design was adopted in 1913. The first poling car, class SA was adopted in 1898. The 25 ft. long S-5, had a total weight of 51,000 lbs. which is a lot, compared to a 40 ft. Class X25 Steel Box Car's 49,100 lbs. Kind of makes one wonder if the space between the sills was filled with concrete doesn't it?

At right is a photo of an S-5 Poling Car at work behind a switcher with a brakeman leaning on the poling arm's counterweight. Note that the doors leading into the body seem to be some kind of sliding door and the trucks look like they are Crown trucks. Also of note is that the S-5 car's narrow width of only 8' 4" is apparent compared with the almost 9' width of the hopper behind it.

Look at all those rivets on the side frame!

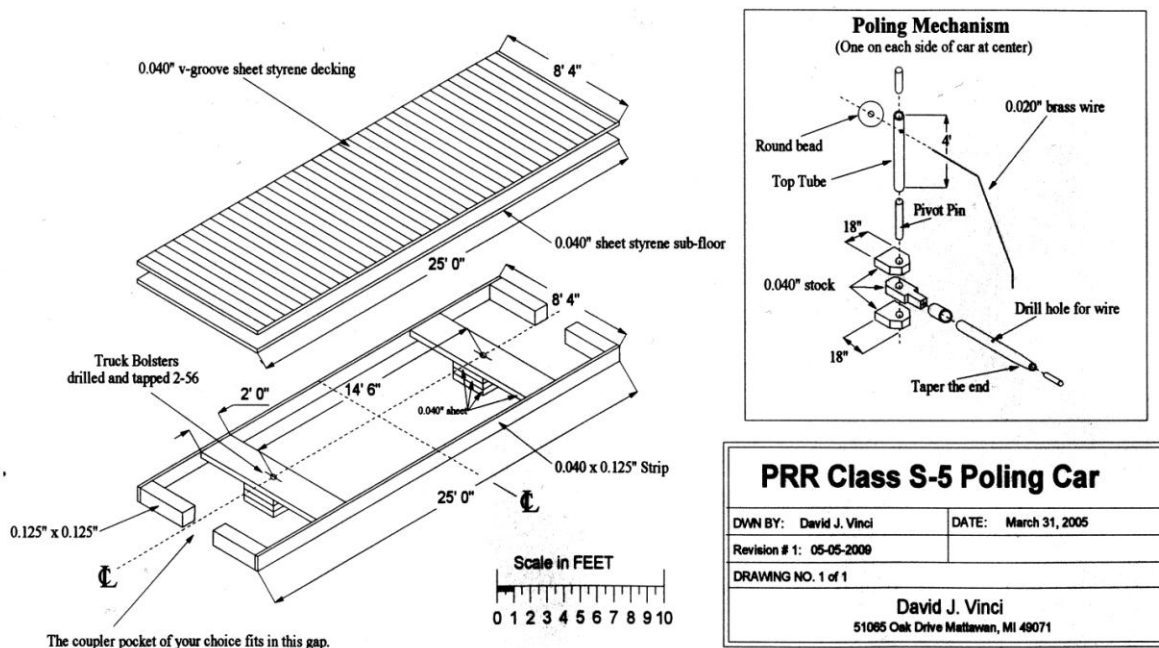


(Figure 2)*



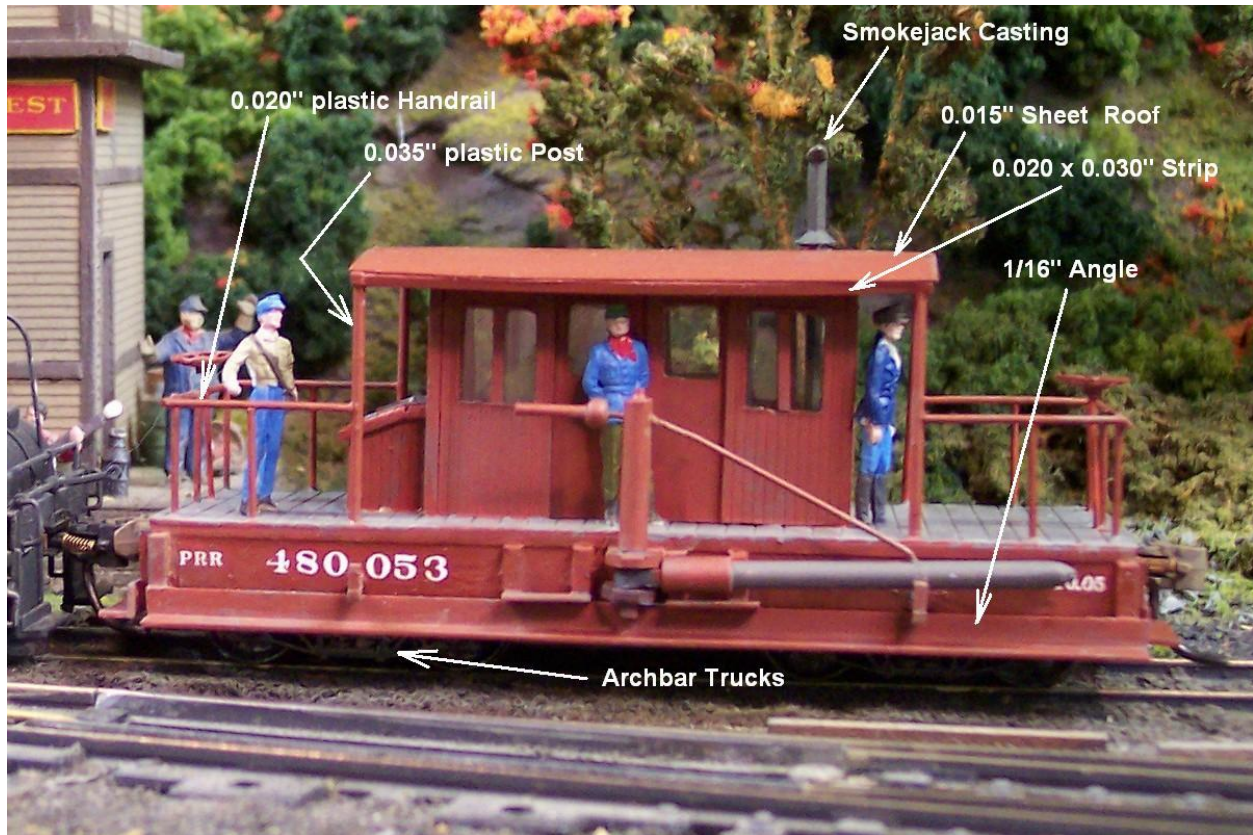
(Figure 3)

Here is the PRR car diagram for the S-5 Steel Poling car that I cleaned up a bit to make the measurements a little easier to read. It's really an easy car to build as it's only a box sitting on a flat car.



(Figure 4)

Above is the drawing I made to show the basic construction of the model.



(Figure 5)

In the photo above you can see the positioning of the car body, the handrails and the poling mechanism. I used Evergreen 0.040" thick car siding for the walls with 0.040 x 0.040" square strip for the corner posts. Cut out the window openings while the walls are still flat. Also, since the end walls have a curved top, made one end wall, and then place the untrimmed other end wall against the first, inside to inside. Then, sand the tops of the 2 end walls so the curvature matches. You can use double sided tape to hold the 2 walls together to prevent slippage. Once your satisfied, just pull the walls apart and cut out the windows. I made the carbody in 2 sub-assemblies consisting of an end wall and 2 short side walls. Looking down from the top it would form a U shape. Cement the sub-assemblies to the car floors which will leave the door openings open. The carbody doors are composed of a pair of doors on each side where each door slides towards the car end. These were made of 0.030" plastic and cemented in place from the inside. I used some plastic strip to make the window mutins. At this point, I painted the car body inside (tan) and out (Freight car red) and then cemented some clear plastic for window "glass" from the inside.

This car has to have some heft to it so that it will stay on the rails while poling a car on an adjacent track, so I filled the space inside the carbody and below the windows with square lead weights painted black to hide them. There is also room on the underside between the trucks to add more weights if you feel you need it.

Cut the roof from a sheet of 0.020" plastic sheet and give it a slight curve by rolling it around a piece of 1/2" tube. The idea is to have the sheet plastic hold a curve which will make it much easier to cement in place. Paint the underside of the roof interior color (I used tan) and cement it in place when dry. I used some 0.020 x 0.020" strip to the outer perimeter of the roof. The pieces under the roof ends have to have a curve, so just cut them to length and pull them

between your finger and thumbnail to make a curve in the strip. Sounds strange, but try it, it's easy, just start with only light pressure and repeat until you get the curve you need. Then glue the strip in place under the edge of the roof. Cut the poles that support the roof from plastic rod and glue them in place. I had a nice white metal smokejack casting in my parts inventory that I used. It was installed by drilling a hole in the roof and cementing the painted part in place. I have no idea where that part came from but you could make one from small brass or plastic tube. I also made a small toolbox to place at one end of the carbody (see Figure 5). This is a good time to touch up the roof with Freight car red paint.

I made the handrails of plastic rod instead of wire on this model and so far, they seem to be holding up all right. I used a couple of brake wheels from my scrapbox and as the underbody is fairly well hidden, I didn't bother to add other brake detail.

At right is a photo of the end of the car. I should have made the end footboards closer to the railhead. The long side step should be at the same height as the end footboards, so that should have been lower too. You could make the footboards of several pieces of strip, but I used the 1/16" plastic angle as I had some.



(Figure 6)

Attach the footboards and the long side step to short strips of 0.020 x 0.030" strip and then cement them to the carbody. A better way to do this than what I did would be to temporarily attach the car's trucks and set the model on some track to get the height of the footboards correct. Then make the height of the long step match. There is a short step mounted on either side of the poling mechanism just at the bottom of the side sill. I made these from a small piece of 0.020" thick strip. (See Figure 5)

The poling mechanism isn't too hard to make as you can see in Figure 4 above and the photo below.



(Figure 7)

When the pieces are all glued together, the poling arm is pretty sturdy but may not take much abuse. Just make sure you only glue the pivot pin to the top tube and to pole assembly and not to the 2 support pieces below the top tube and below the pole assembly. The best way to do this is to glue the pivot pin into the top tube and let it dry completely. Slide the top support onto the pivot pin and put a drop plastic compatible grease in the hole where the support touches the top tube. Slide the pole assembly onto the pivot pin and apply a tiny bit of glue to the pivot pin pole assembly from the bottom and let it dry. Then put a drop of grease on the bottom of the pivot pin and slide on the lower support. Glue the bent wire to the pole and the top tube with ACC. Do the same with the bead and the handle wire. Now you can paint the poling mechanism assembly. Glue the flat ends of the supports to the side sill in the center of the car. Fast setting glue for styrene works really well for this. The grease should allow the pole, the top tube and the support wire to move as one unit. When I built the car I placed a brakeman near the doors so he interferes with the handle of the pole mechanism. But, as you can see in Figure 1, the mechanism can be moved far enough to actually use the car for it's intended purpose.

For trucks, I used some Kaydee No. 501 Archbar trucks mostly because I was going for the "as built" look, but you could also use some Bowser Crown trucks with the metal wheelsets of your choice.

Painting and Lettering

I brush painted this model as it was easier. The car was painted with my standard Freight Car Red, which is Poly S Oxide Red with a bit of Reefer Orange added. The interior was painted

with some tan paint I had mixed for another project. The decking I figured would get pretty weather worn and dirty so, I gave it a base coat of Poly S Reefer grey with some streaking with Rail Brown. I also used Rail Brown for the pole base coat since it was mainly wood. The model was then dry brushed with grey and Rail brown and a little bit of chalk just to add a bit of dirt. For lettering, I raided my supply of used PRR decals and found 7" numbers and a 4" PRR. I'm not really sure what the exact lettering scheme was for this car but thanks to Al Buchan, we got the car number right.

Since I initially built the car, I added air hoses and if you were at the Annual Meeting in Merrillville, you could have seen it in the Model Room.



(Figure 8)



(Figure 9)

Here are a couple of photos of the S-5 at work in Oak Ridge Yard in my basement.

* Note: This photo is used with permission from Rob Schoenberg. Image resides at the following web address:

<http://pr.railfan.net/diagrams/PRRdiagrams.html?diag=S5-E442994A.gif&sel=poll&sz=sm&fr=>