

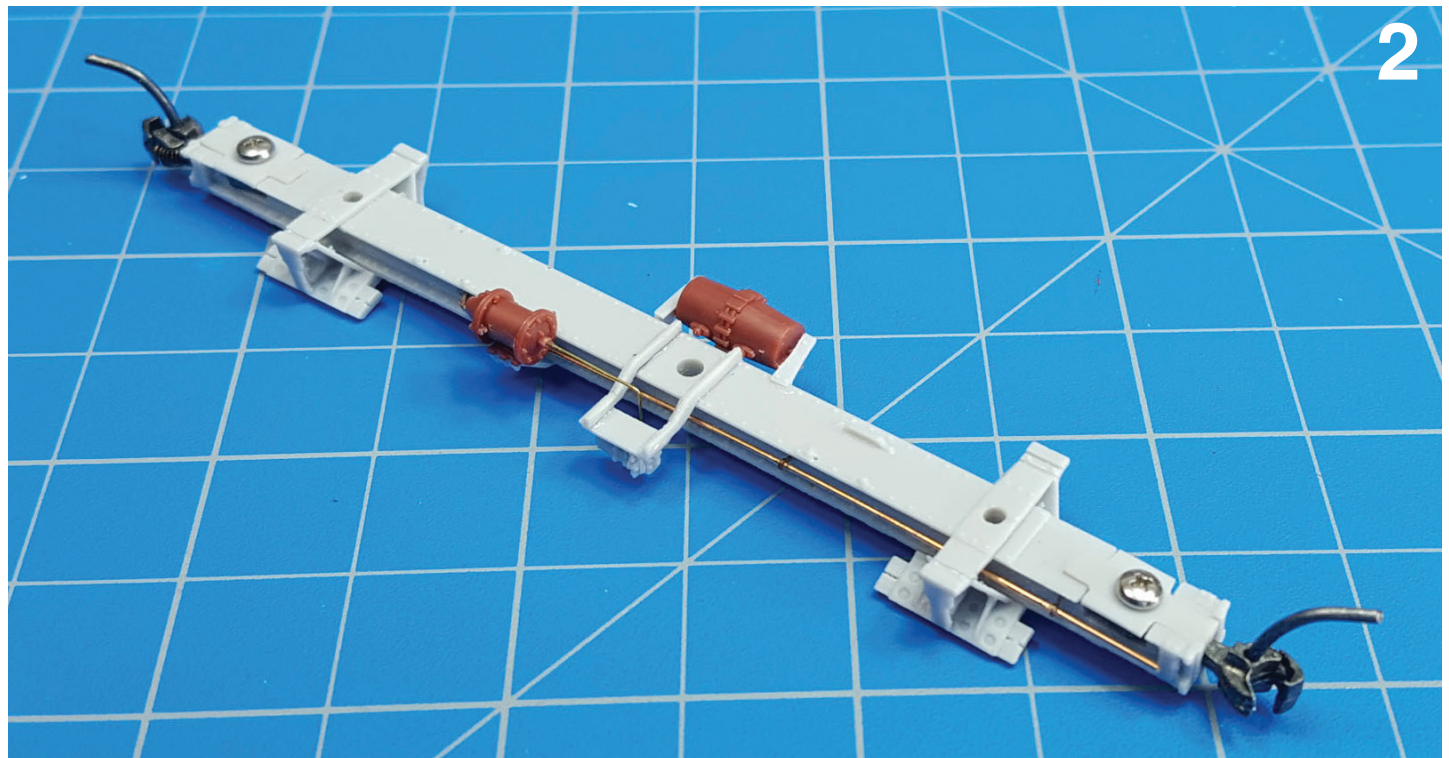
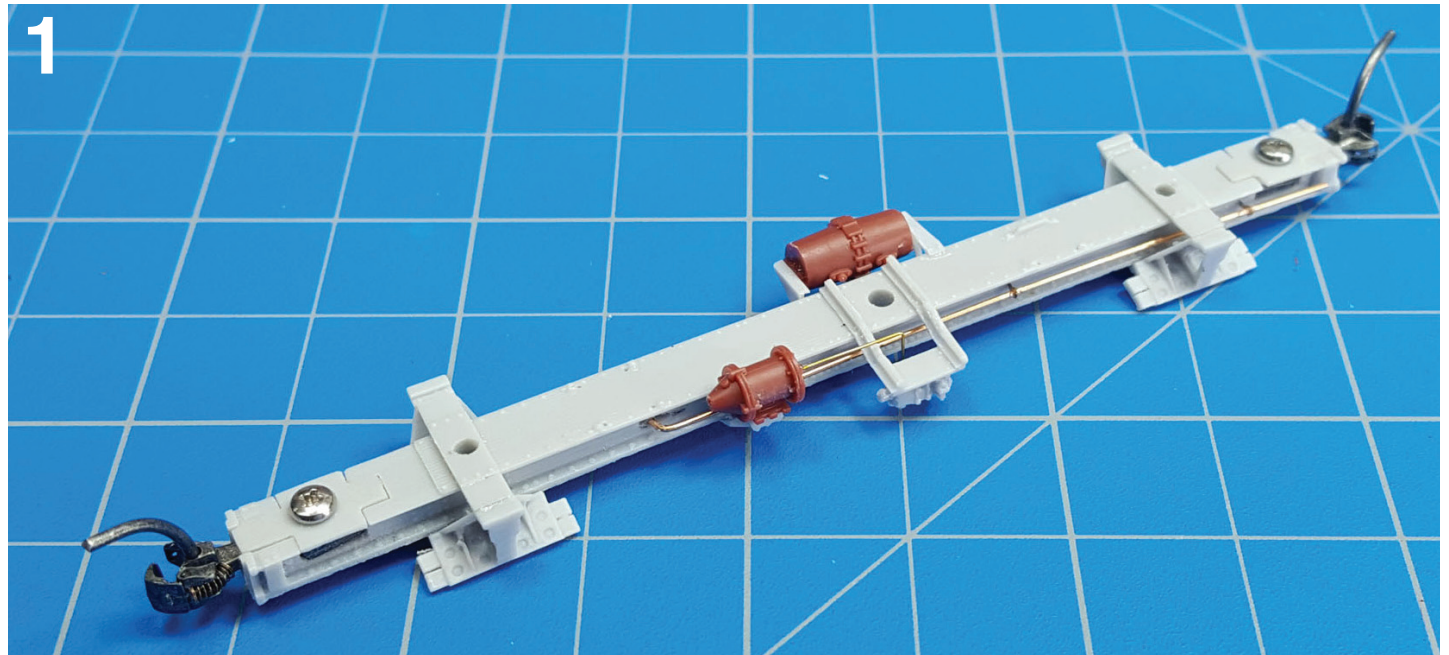
## 1. Underframe/Tank Bottom

The construction process for the Class X tank cars is a little different as there is no true underframe. Instead we will use the tank bottom as part of the underframe, attaching the bottom to the tank top towards the end of construction. Note that there is a “B” or brake end to the centersill. The “B” end is the longer section from the hole in the frame for the tank drain (*Photo 1*). Before starting construction please consult the drawings and photos on the website to help with the location of various underframe and tank details.

**a.** First fit the coupler pocket covers to the centersill. Sand the back surface of the covers down until the cover is flush with the bottom of the centersill. Drill and tap couplers pockets for 1-72 screws. The pockets are made to hold a Kadee #58 semi-scale coupler (not supplied in kit) without the centering spring. Install the couplers securing with 1-72 screws (not supplied in kit) (*Photos 1, 2*).

**b.** Clean the interior cavities of the top and bottom tank sections to insure a good fit.

**c.** Add the desired weight. I like using thin lead sheet from McMaster-Carr [www.mcmaster.com](http://www.mcmaster.com) as it's easy to cut and form. I also

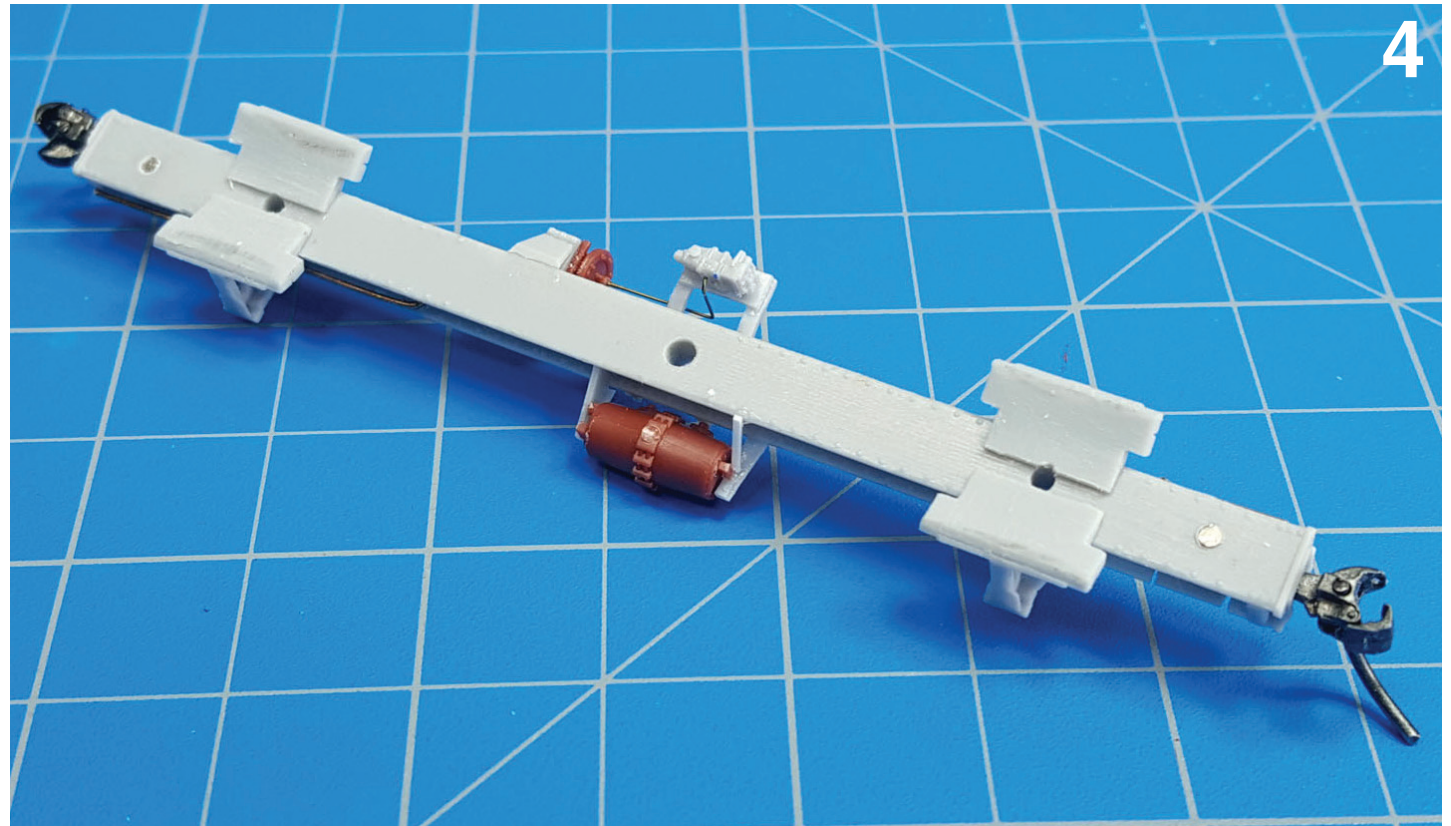
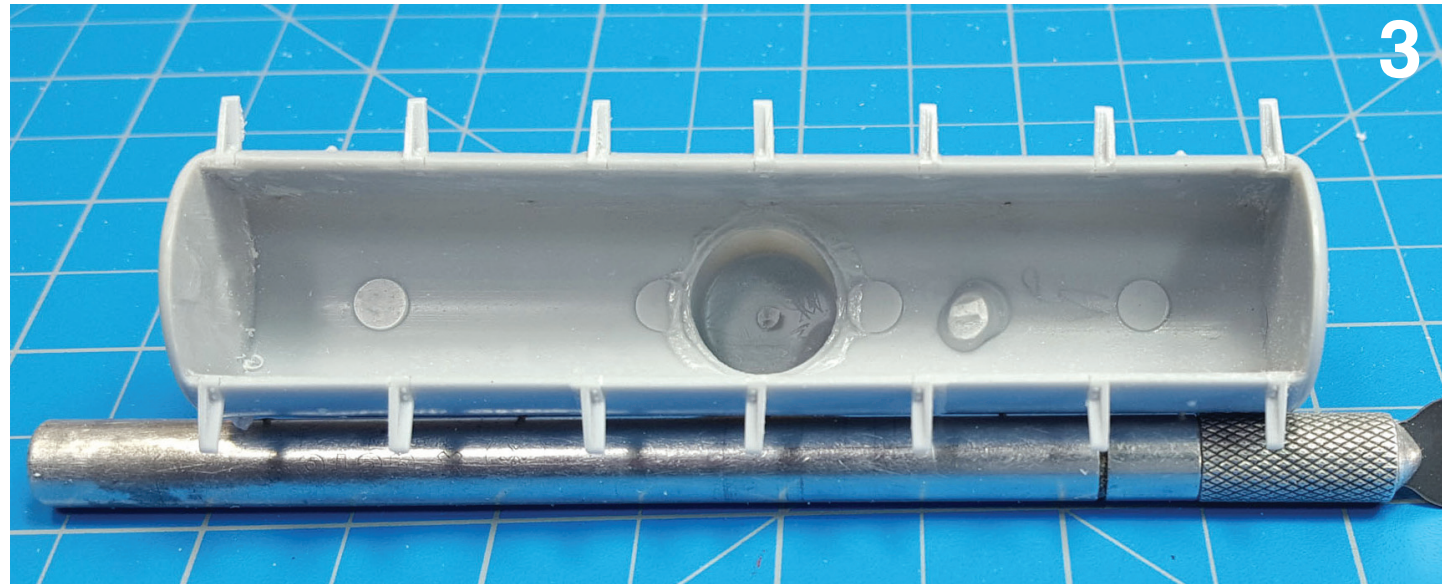




don't trust the glue joint between the weight material and resin so a styrene frame is built around the weight to ensure it doesn't rattle if it becomes loose. Keep the weight away from the truck screws so that the frame can be connected later to the tank.

**d.** Remove the webs in the bolster castings to open up this area and remove the file spot and gates from the top of the centersill. Attach the bottom bolster plate to the bottom of the centersill. There are notches that these plates fit into in the centersill. There is a top and bottom to the plates. The top has notches at the ends for the bolster castings to fit into (see prototype plans) (*Photos 1, 2*). Attach the bolster castings to the centersill and the bolster plates (*Photos 1-7*). When dry, use a dowel rod or tube the same diameter as the tank being installed with sandpaper attached to curve the top of the bolster castings to fit the tank. Cover the top of the frame with masking tape to save the rivets. Note that there wasn't much clearance between the bottom of the tank and the top of the frame, only 2".

**e.** Some cars we noted had the trainline going up and over the centersill. Most though had the trainline going through the centersill. Check prototype photos for the car you're modeling. For those cars

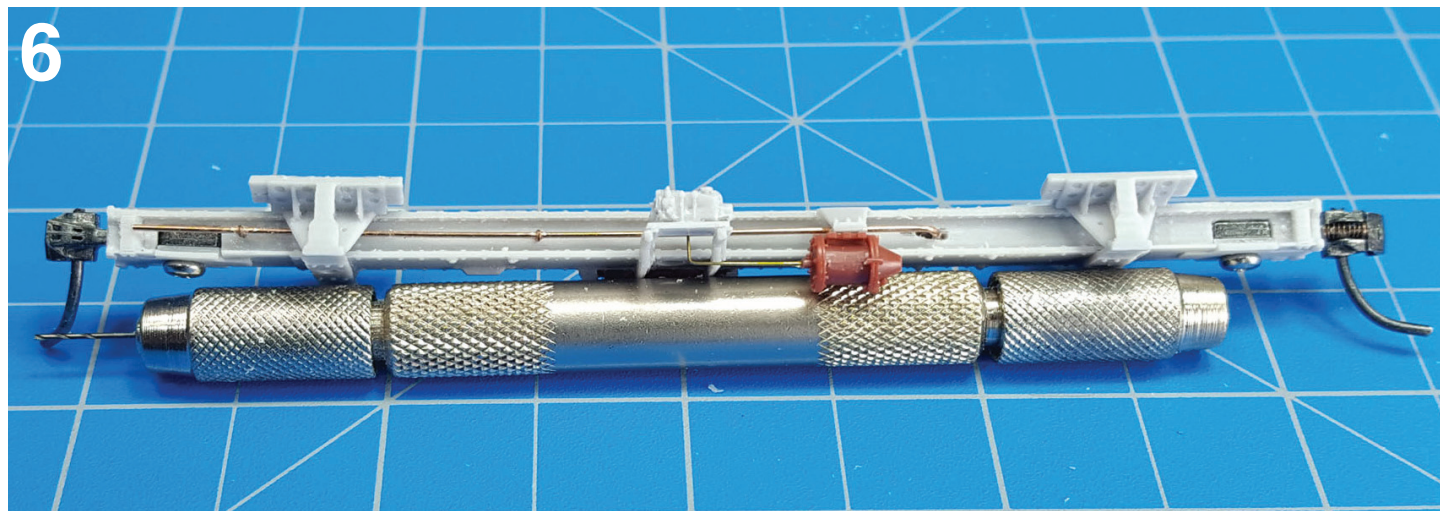
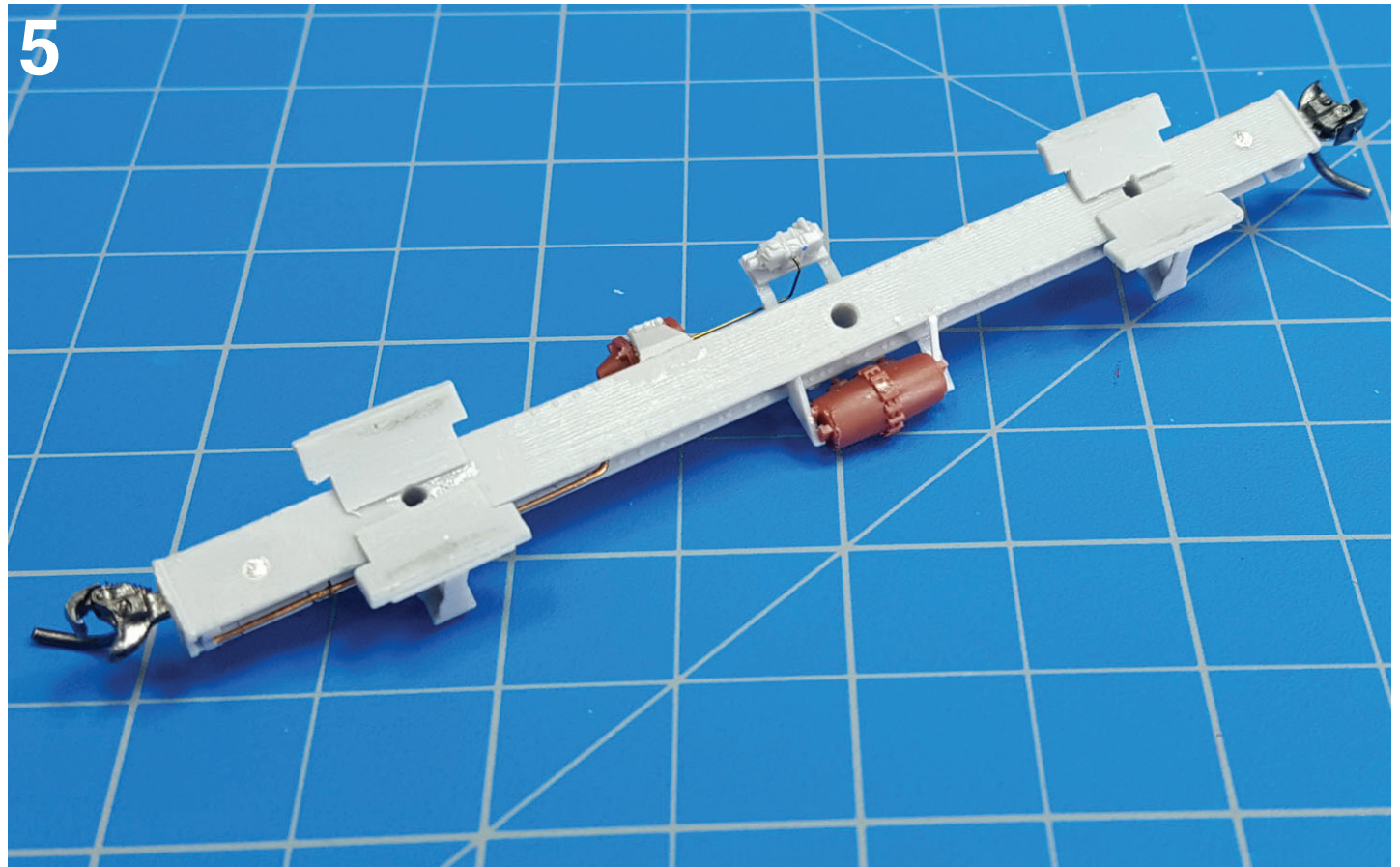




that had the line going through the frame, drill a #74 hole just ahead of the brake cylinder, centered in the frame on either side of the frame. Again check the prototype photos for the trainline location (*Photos 1, 5, 6*). When new, these cars were equipped with a “K” brake system which was later changed to an “AB” style. If you’re installing a “K” brake system, slip the pipe “T” on the trainline on the side of the brake cylinder before attaching the trainline to the frame. Attach the trainline to the centersill using brackets made with scraps of 0.0125” wire or eyebolts (not supplied in kit) (*Photos 6, 8, 11*). The pipe “T” can be left off with the “AB” brake installation as it won’t be seen. Leave enough of the trainline exposed at the ends to connect the air hoses. Also note that some cars had springs which stuck out at the couplers, which were sort of a shock absorber. If you choose to install these, the airline will need to be bent around them.

**f.** Attach the brake cylinder bracket to the center sill. There’s a small piece of the bracket cast as part of the frame to locate the bracket (*Photos 5, 6*).

**g.** Check the fit of the tank bottom with the centersill. If needed, sand the verticals at the tank connection until the frame is parallel with the tank bottom. When you’re

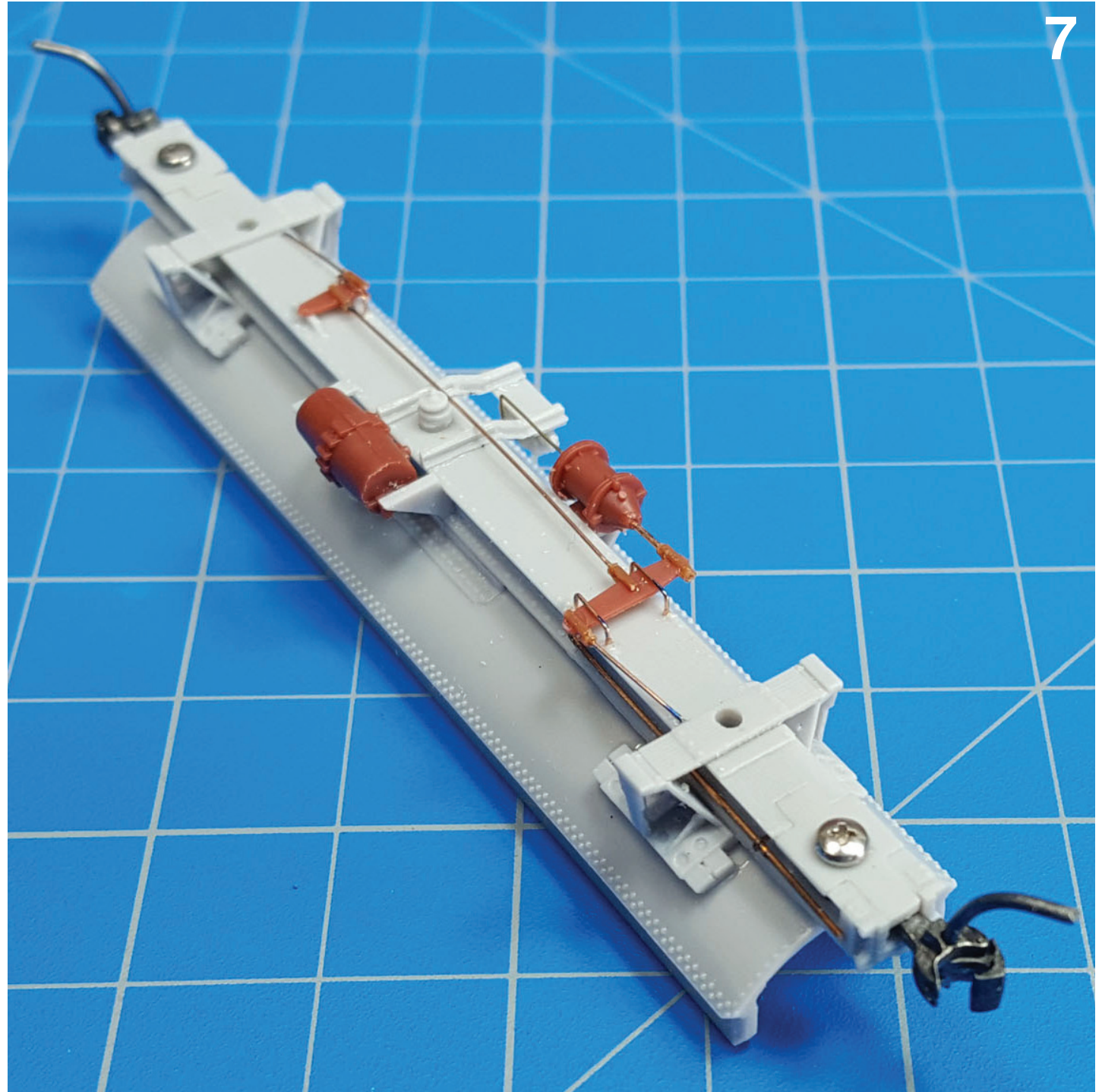




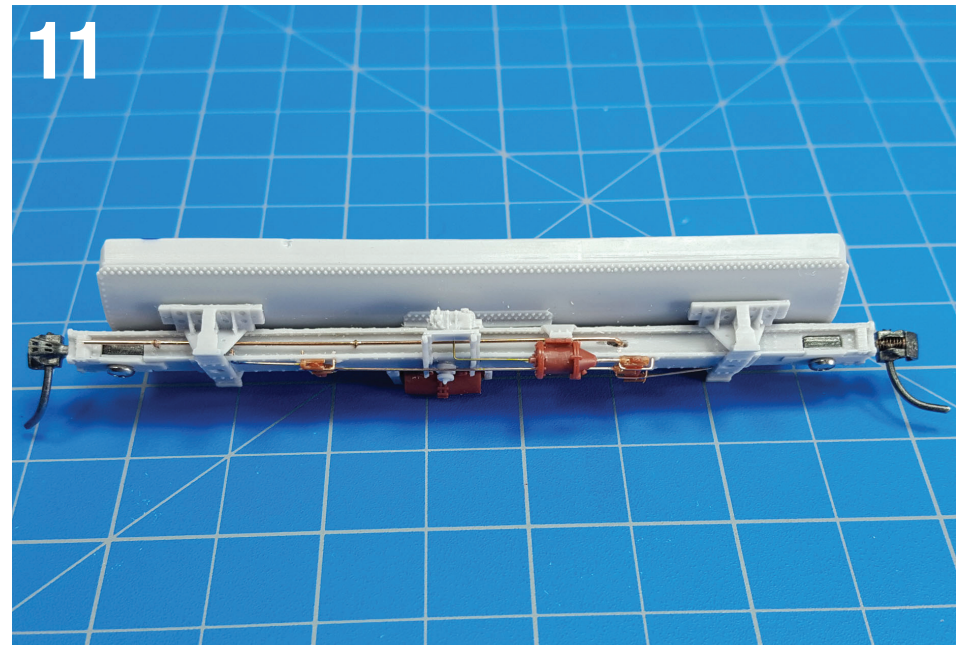
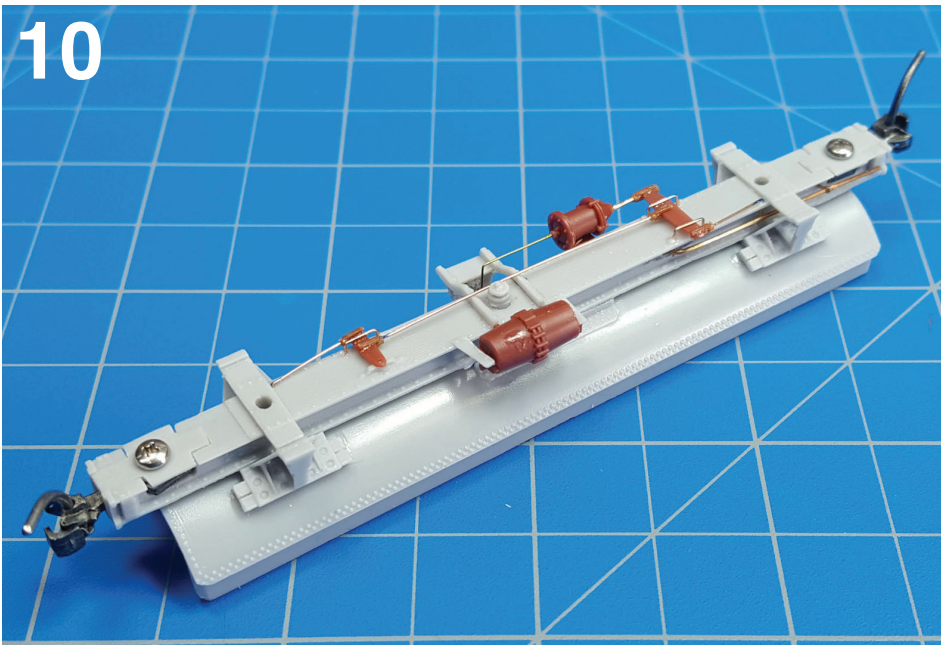
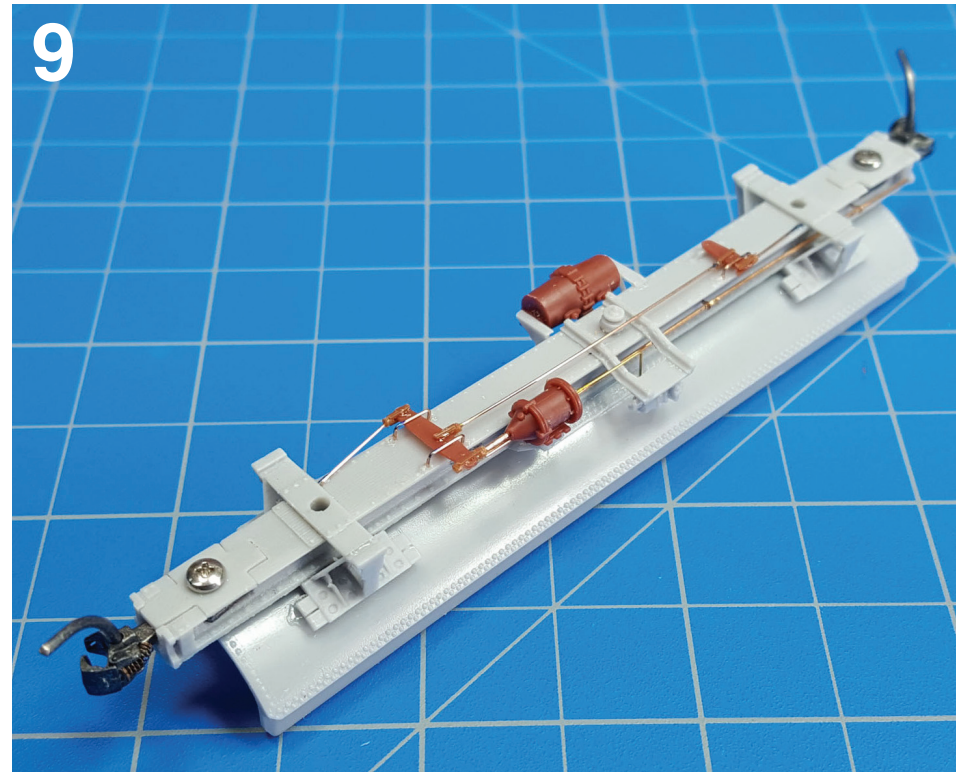
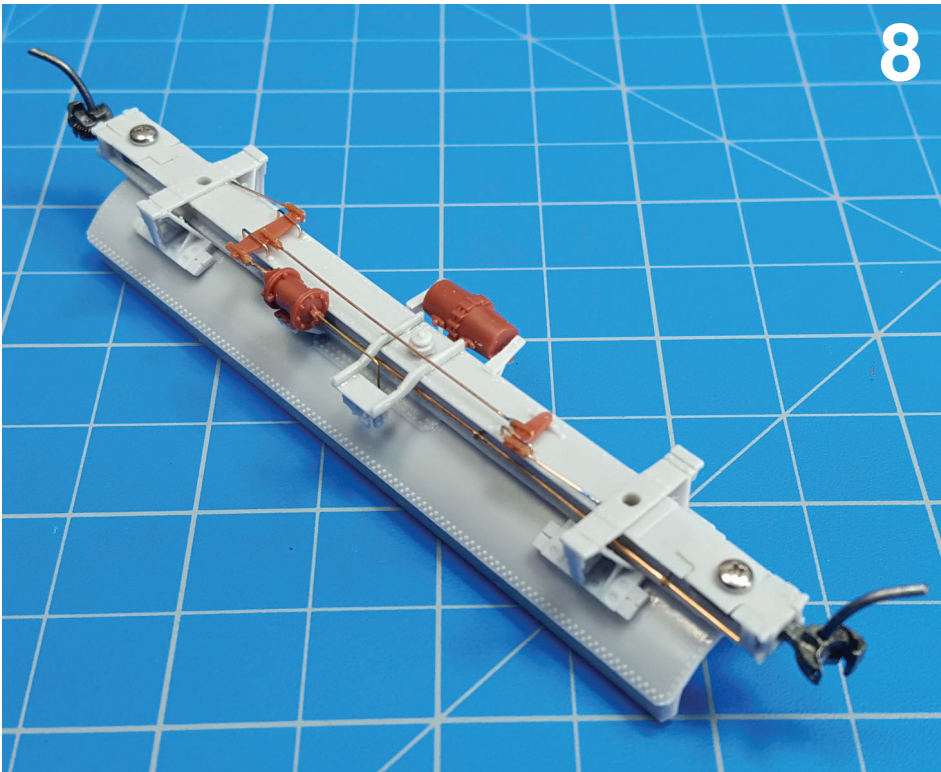
satisfied with the fit, attach the tank bottom to the center sill, ensuring that the bolster castings are equal distance from the edges of the tank bottom. Remember that the tank drain is towards to “A” end of the car. Drill and tap the bolsters for 2-56 truck screws going through the centersill and into the tank (*Photos 7-11*).

**h.** Resin parts are supplied for the “AB” brake and a Tichy part for the “K” system. Install the one of your choice following the prototype photo for placement. From the photos it appears that the plumbing between the reservoir and the valve of the “AB” system went through the frame so there’s no need to model this (unless you want to), as it can’t be seen (*Photos 7-11*).

**i.** Finish up tank bottom/centersill detailing by adding the clevis hangers, clevis and brake rods using the Tichy turnbuckles and 0.0125” wire. Note that there is no chain from the brake cylinder to the rod. The rod from the cylinder is connected to the chain, which extends down from the brake wheel. This connect will be done after the tank halves are assembled (*Photos 7-11*).









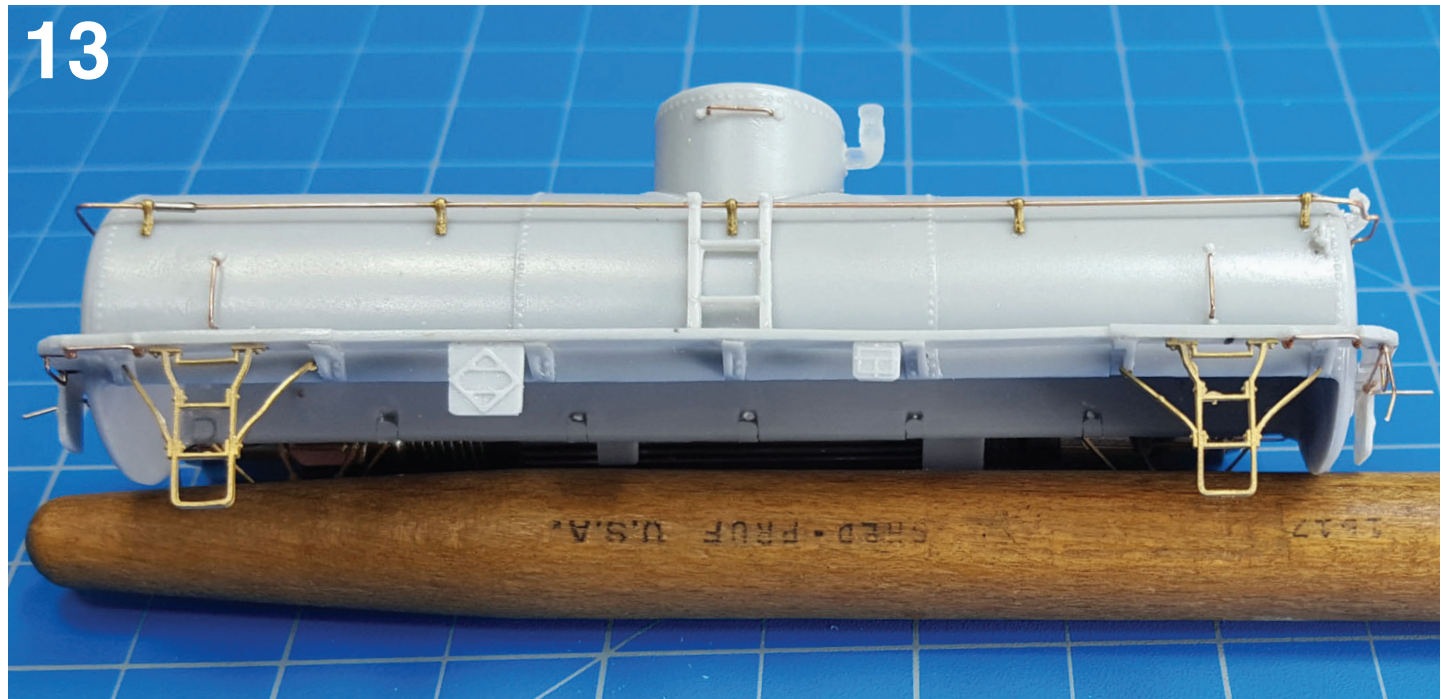
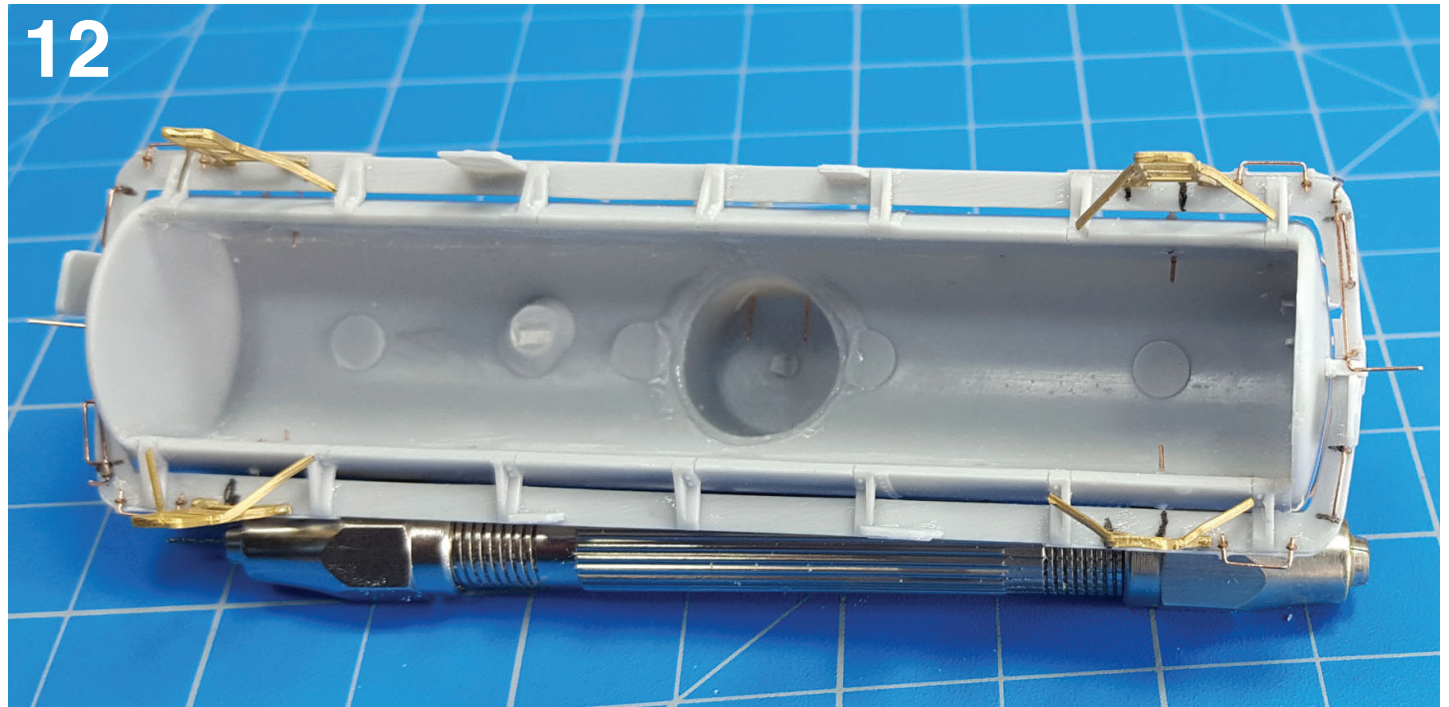
## 2. Tank top

Before beginning the construction of the tank top, determine which manway cover and vents the car is to have. Over time these two items were replaced on many cars.

a. If you choose to change the manway cover, remove the older screw on the cover on top of the dome and replace it with the new cover from the parts sheet. There are also new vents located on the parts sheet if you wish to construct a car with this feature.

b. Drill for 0.0125" wire and form and install four grabs at the tank sides at the nut and bolt locations. Originally the cars did not have ladders from the running board up to the dome or a grab on the dome. These items seem to have been added when the cars were equipped with "AB" brakes, only being installed on the side with the brake cylinder. If you're installing a "K" brake system, remove the nut and bolt castings from the side of the dome. With "AB" brakes, install a grab here (*Photos 13, 14*).

c. Dimples on the upper sides and ends of the tank are located at the handrail stanchions. Drill these out with a #76 drill. Precision Scale handrail stanchions are provided for the handrail (*Photos 13-16*). Drill out the castings with a #77 drill to

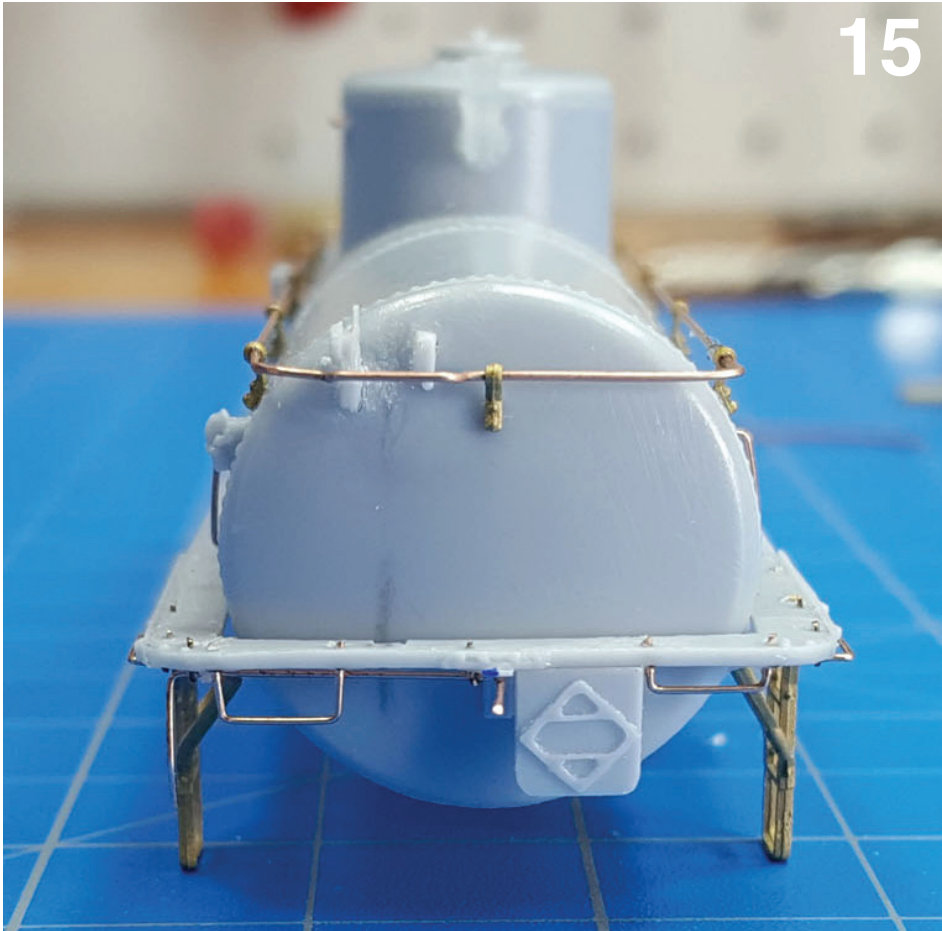




ensure that a .015" handrail wire will fit. (A note on prototype pipe sizes and model wire size: The handrails on these cars were constructed with 1 ¼" pipe. That's the inside diameter. In HO, a pipe of this size has an outside diameter of 0.019", slightly larger than what's provided in the kit. Wire of 0.019" in size is available from such companies as Precision Scale. If you choose to use the larger size, care needs to be taken drilling out the stanchions so as not to bend them. Work progressing up in drill sizes, one number at a time, until the 0.019" wire slips through.) Precision Scale provides in each set two castings with cylinders that are wider than the others. Place one of these on each side of the tank. One on opposite corners is suggested. Place the remaining stanchions on each side. Form the handrail by bending .015 wire using the jig provided or by eye while consulting the prototype drawings. Note that there is a notch in the handrail on the "B" end of the car to fit around the hand brake gear (*Photos 14-16*). There will be two pieces of handrail with each running down one side of the tank to the wide stanchions and including one curved end. Trim the ends of the pieces so that the ends of each meet within the wide stanchions. When satisfied, slide the two remaining stanchions around

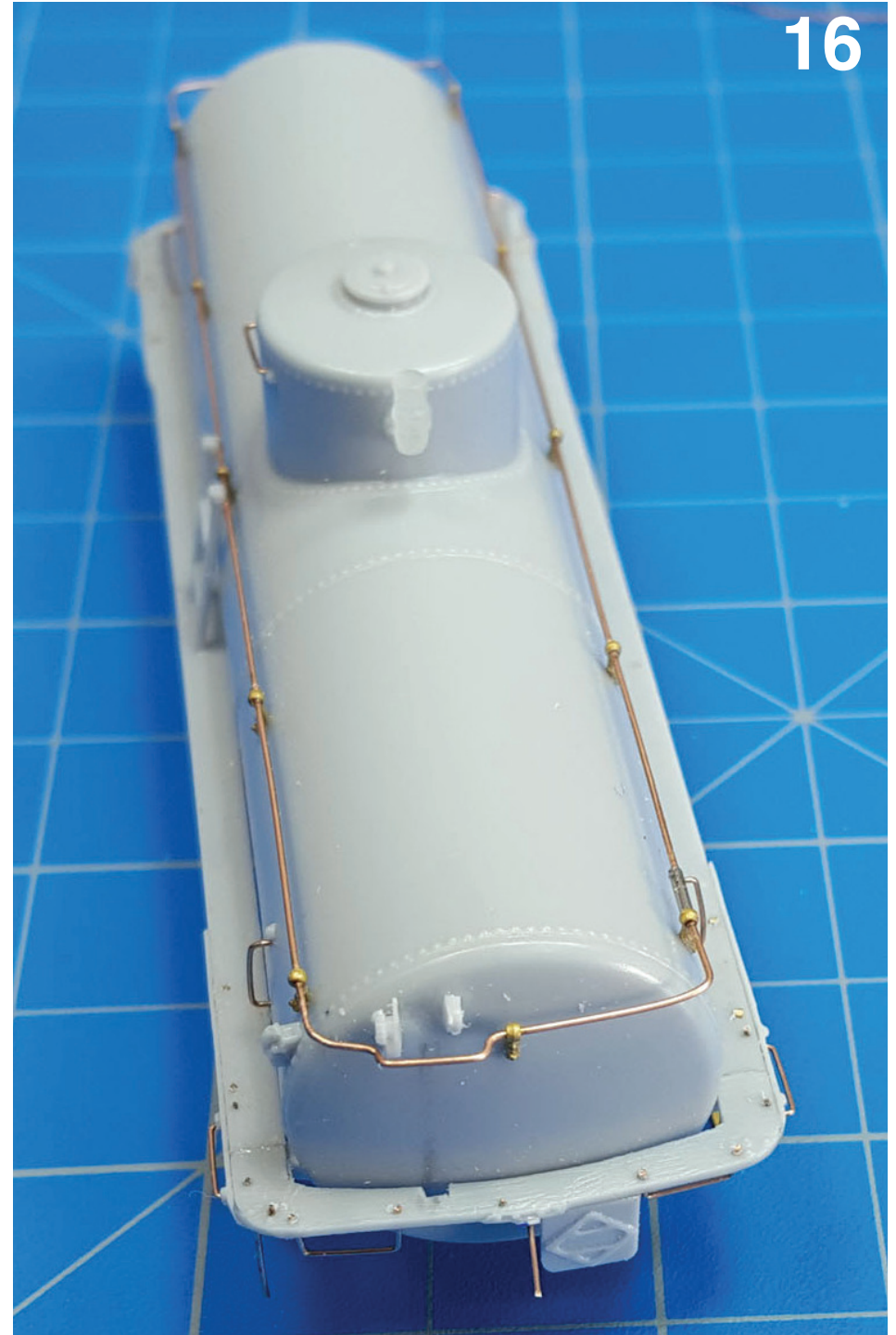






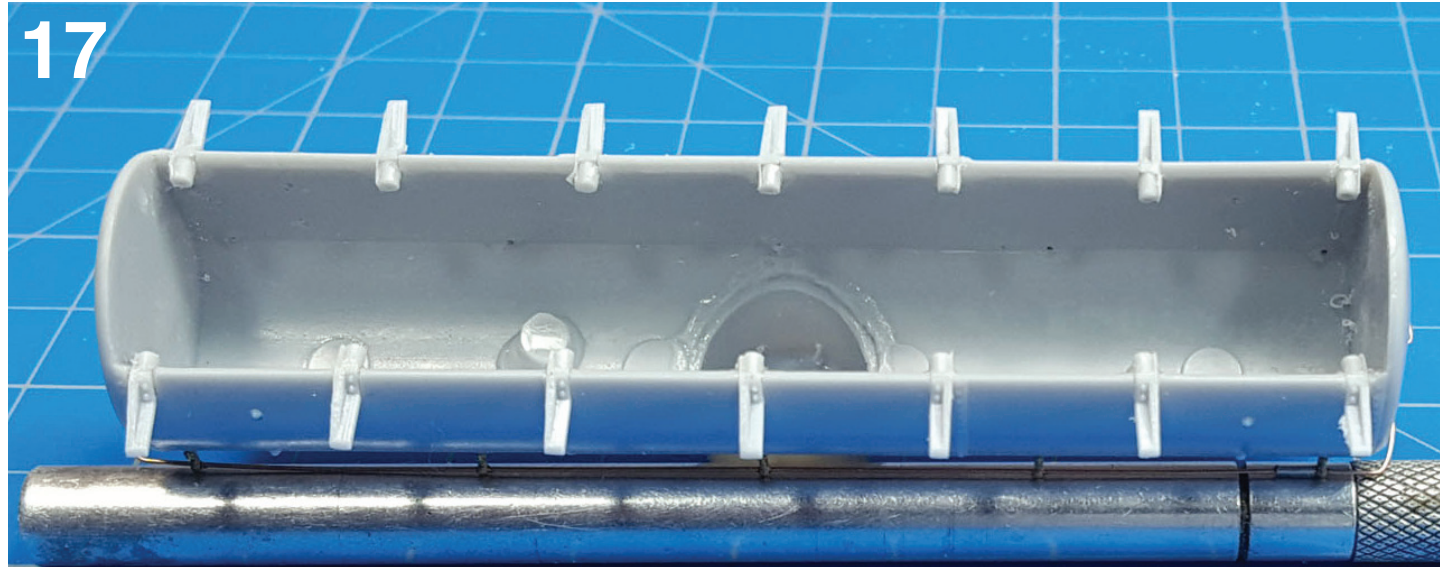
each end and attach them in the end of tank holes. Fix the wire ends inside the wide stanchion castings with glue. Soldering with a low wattage iron also works. Straighten the handrails as necessary by adjusting the angle of the stanchions (*Photos 13-16*).

**d.** Drill out the holes for the running board supports along the bottom of the upper tank side with a #53 drill (*Photo 17*). Clean up the running board supports from the parts sheet and attach to the tank making sure each support is horizontal. A handy way to glue these is from the back side of the tank. When dry, trim the pins inside the tank, making sure that the upper tank fits on the lower tank. Consult the prototype plans as to the direction of the open portion of the supports, as they do change (*Photos 12, 17*).





e. Trim the running board ends to fit almost against the tank end and attach to the corner running board support, leaving about half of the end supports open for the side running boards. Notch the “B” end running board to clear the chain from the hand brake (*Photos 12-16*). Attach the long running boards to each side of the tank between the end boards. Make sure that there is a wide enough gap between the tank and running boards for the future installation of the tank bands. Notch the angles with the nut and bolt castings to fit around the running board supports and attach to the front corners of the running boards. The end of this angle is even with the second running board support from the end. Shape the end of the angle to match the running board end. Attach etched eyebolts under the nut and bolt locations on the angles and then install grabs into the eyebolts. Install the grabs on the running boards ends. Using the prototype plans as a guide make two coupler lift bars from 0.0125” wire and mount under the running board using the etched eyebolts. Attach the brass corner ladders to the underside of the running boards. These are centered between the corner running board supports. Carefully bend the ladder supports back at a 45° angle and attach to the running board supports on either side (*Photos 12-15*).



### 3. Complete the Detailing

We're now ready to join the tank halves. Before attaching the two tank sections together, remember that the tank drain goes towards the “A” end of the car.

- a. Attach the tank top to the tank bottom.
- b. You'll need to create the tank bands using the etched bar stock material and 0.0125” wire. There are two bands holding the tank at the bolsters at each end of the car. The bands are 16' long for the 6.5K car. Solder about 5' long pieces of the 0.0125” wire to the ends of the bands. Consult the prototype photos and drill #76 holes on each side of the bolster casting. Apply the bands over the tank between the handrails and running boards and into the holes drilled through the bolsters. Cement with ACC (*Photos 18, 19*).
- c. The dome ladder is only installed on the side of the car with the brake cylinder and only on cars equipped with “AB” brakes. For the ladder, drill two holes through the running board where the ladder is located. Fit the ladder between the handrail and running board with the ladder's legs going through the holes in the running board. Cement and when dry remove any protruding parts of the ladder from below the running board (*Photos 13, 14, 18, 19*).
- d. Carefully drill the brake wheel brackets with a #76 drill so that the brake wheel staff (0.015” wire) will slide through and remove the parts from the parts sheet. Drill the holes on the upper left section of the “B” tank end through and install the brake wheel brackets. The smaller bracket is nearer the



center of the car. Attach the brake wheel staff to one of the brass brake wheels and then slide it through the holes in the brackets. The brake wheel staff should not extend past the bracket nearest the center. Wrap chain once around the staff and touch with a drop of ACC. Let the other end slip through the notch in the walkway. Attach the chain roller guide to the centersill side under the brackets. Run the chain through the roller. Make an eyelet on the end of a piece of the 0.0125" wire and attach to the chain to create a rod and attach to the turnbuckle on the brake cylinder, leaving enough slack in the chain so that it hangs some (*Photos 18, 19*).

e. Consulting the prototype photos, mount placards and route boards under the running boards in locations of your preference per the photos. Final mount the side vent on the dome if this is the option chosen. The model is now ready to paint.





#### 4. Painting and Lettering

Wash the model again with Dawn and allow it to thoroughly dry before painting. The entire model, including the trucks, is black. I like Scalecoat 1 No. 10 black as it provides a glossy surface for decals. Once decals are applied and all the air bubbles have been removed, spray with flat glaze. Two types of trucks from Tahoe Model Works are recommended for these cars: the Buckeye ARA 50-ton #TMW-006 and the ACF Arch Bar #TMW-003. Before attaching the trucks, remove the roller/pads on top of the truck bolster, as these interfere with the cast tank car bolsters. Finish with the amount of desired weathering. Create a waybill for the car and place it on the layout.

