



Instructions: General American 1948/1952/1957 Design 8,000 Gallon Tank Car Kit

3/25/2020



Thank you for purchasing the Tangent Scale Models General American 1948/1952/1957 Design 8,000 Gallon Welded Tank Car Kit! These kits are all very similar to each other! Here are a few quick notes before starting:

- **Do not download or print these instructions until you actually are ready to build.** Why? We update the instructions frequently, so If you saved this file or printed it for later use, please understand that we may have updated the instructions since then. Please check our website to see if this document has been updated before starting your build. We date the document and only show the most current version on our website.
- **Instructions have many large images:** Because some model builders are visually oriented, while others prefer written instructions, we have included *both* text and diagrams within these instructions. As you can see, many of the images are rather large, to aid in your model building.
- **There are more images at the end:** If you want to see more views of a completed model as a reference for your building, scroll to the end of this document.
- **Modeling from computer screen is ideal:** If possible, we recommend modeling from your monitor. You can then enlarge the images as you see fit, and you save ink and paper at the same time.

- **There are several ways to complete your kit:** While there are multiple sequence steps possible to build this car, we believe the sequence included here yields the best results.
- **Prototype photos:** While you likely have your own sources of prototype photos, please recall that for each RTR scheme that Tangent releases, we include a prototype photo on our website. You can use these as references in addition to your own sources.
- **This kit is meant for adults:** While we applaud bringing younger modelers into our hobby, this model includes more than 100 small parts, many of which are sharp and/or delicate. Therefore, this kit is recommended for those 14 years of age and older.
- **We offer our trucks separately:** Our gorgeous ASF 50-ton spring plank trucks are available separately, with your choice of RP25 or Semi-Scale tread free-rolling all-metal wheels! Separate brake detail included!

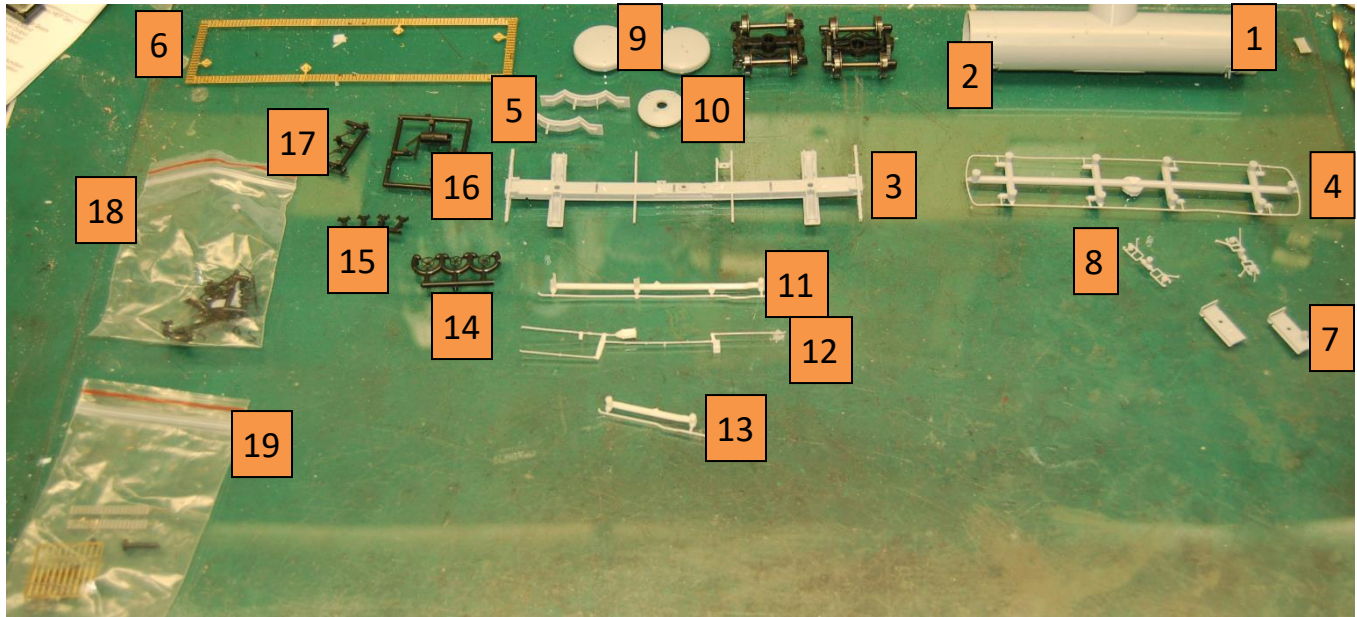


- **We offer semi-scale wheels separately:** We offer semi-scale wheels separately in 12 or 100 axle packs – in either 33" or 36" diameters - to fit all of our trucks – and those from other brands!



- **We want feedback:** If you find something missing from our text instructions, or you believe there is an error within these kit instructions, please let us know by submitting a comment to us on our website or sending an email to support@tangentscalemodels.com Thank you!

Overview of this kit's contents:



Standalone parts included:

- Part 1 - Bottom section of tank
- Part 2 - Top section of tank
- Part 3 - Frame bottom
- Part 4 – Tank railing
- Part 5 – Bolster tops (2)
- Part 6 – Brass walkway
- Part 7 – Coupler box covers (2)
- Part 8 – Stirrup steps (4)
- Part 9 – Tank end caps (2)
- Part 10 – Dome cap(s) (number depends on kit)
- Part 11 – Train air line
- Part 12 – Brake assembly
- Part 13 - Train air line
- Part 14 – Brakewheel parts (3 choices)
- Part 15 – Poling pockets (4 on sprue)
- Part 16 – Air reservoir
- Part 17 – Air hoses

Parts bags included:

- Item #18 contains the tank body weights (for inside tank body) and all screws for the kit
- Item #19 contains the tank body ends and dome parts

Parts needed/recommended:

- Couplers. Our draft sills are designed for Kadee “whisker” shank couplers - #158.

Tools needed/recommended:

- Liquid styrene cement
- CA-type cement or cyanpoxy – for wire to plastic joins
- Canopy cement – for running board to plastic joins (This is a white glue that dries clear, made by Pacer and other brands – found in the model airplane section of your local hobby shop) – CA also works for this application although a slow set is necessary for best results
- Hobby knives - #11 and #17 are ideal
- #78/#79 drill bit in a pin vise is useful, although a #11 blade can be used gingerly
- Small Phillips head screwdrivers
- A foam cradle to rest the model on as you work. The model has weight in the tank which makes it a bit “top heavy” where it can tip over easily, so a cradle makes support easy. An inexpensive offering is here: <https://www.micromark.com/Foam-Cradle>

PREAMBLE – THINGS YOU SHOULD KNOW

- **This kit is NOT recommended for children aged 14 and under.**
- **Small parts:** there are many very small parts included in this kit. The assembly sequence requires you to have several bags open at a time, so we recommend a clean and open work surface so that you can keep all of the parts in the open and accessible. Let's get started!
- **Screws in the kit:** there are 13 screws included in bag 4. Here is what they are used for:



Screws a – Truck screws

Screws b – Join the lower and upper tank bodies

Screws c – Tank weight to lower tank body

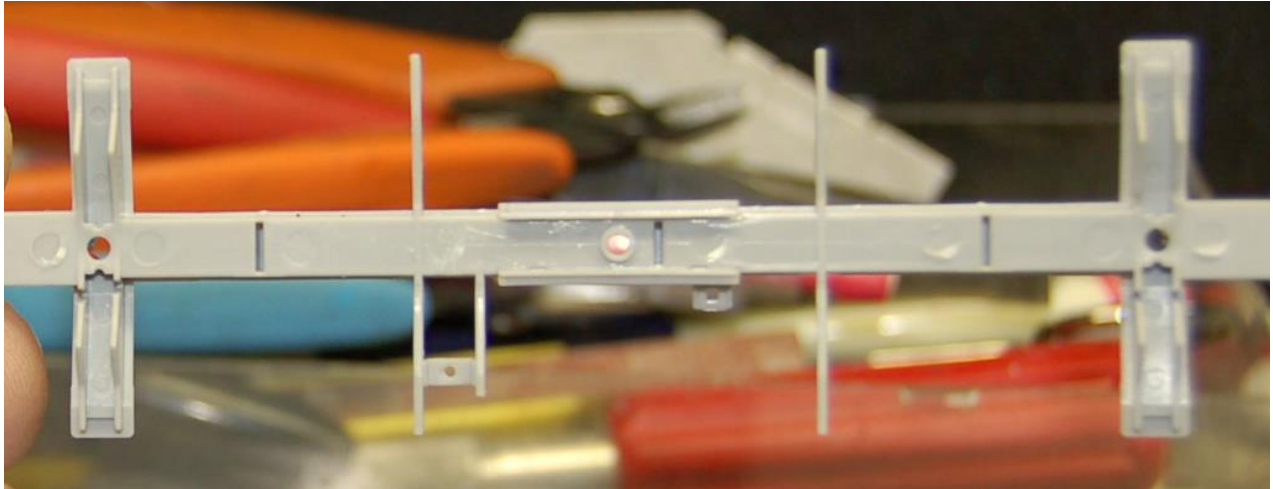
Screw d – Tank underframe to body

Screws e – Couplers box lids

- **Overview of the build:** If you are familiar with previous tank car kit releases, you will find that there are similarities and differences with the construction of this kit. Most notably, you will be alternating between the tank and underframe for the majority of the construction process. Previous releases were more segmented where you would assemble most of the individual subassemblies (underframe and tank body), and then join them together for final detailing. If you haven't built any of our previous kits, then ignore the above statement! Let's get started!
- **Era variations:** The instructions for this kit cover the 1948 version of the 8000 Gallon welded tank car build, specifically. Our 1952 and 1957 versions are very similar, with the differences being around the dome area because of the addition of the dome platform detail. We have a special section at the end of these instructions to cover the 1952/1957 tank car builds.

UNDERFRAME CONSTRUCTION:

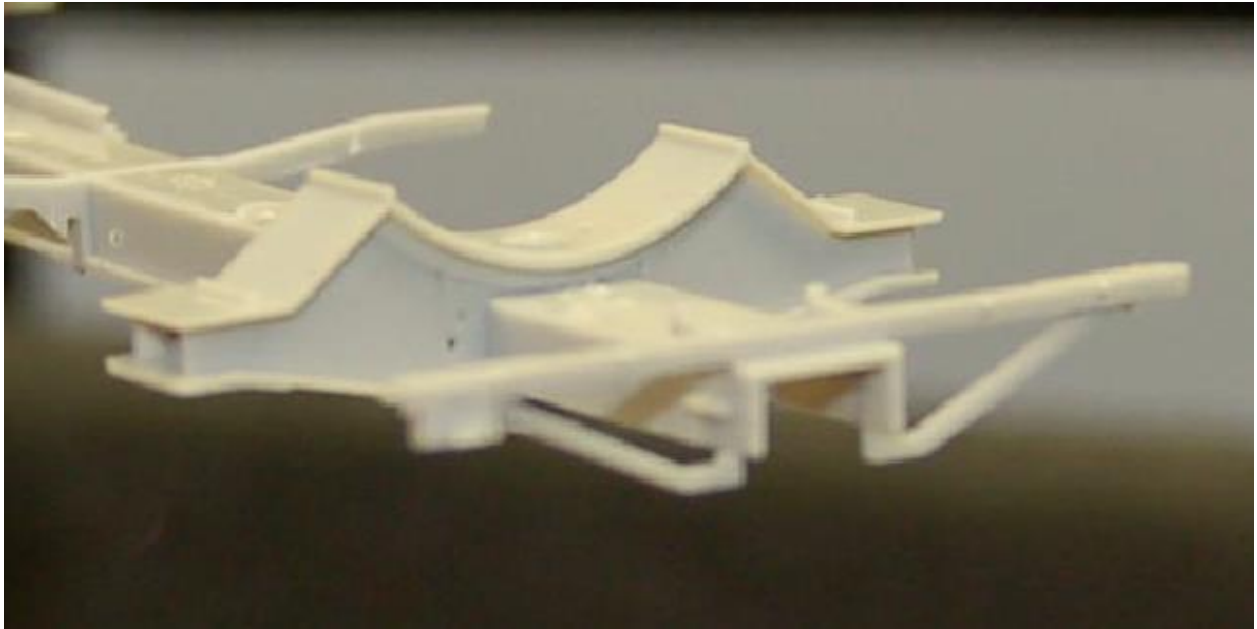
1. **Locate the underframe.** The underframe (part 3) is the starting point for this build. Note: it may be warped but it will straighten when attached to the tank body in future steps.



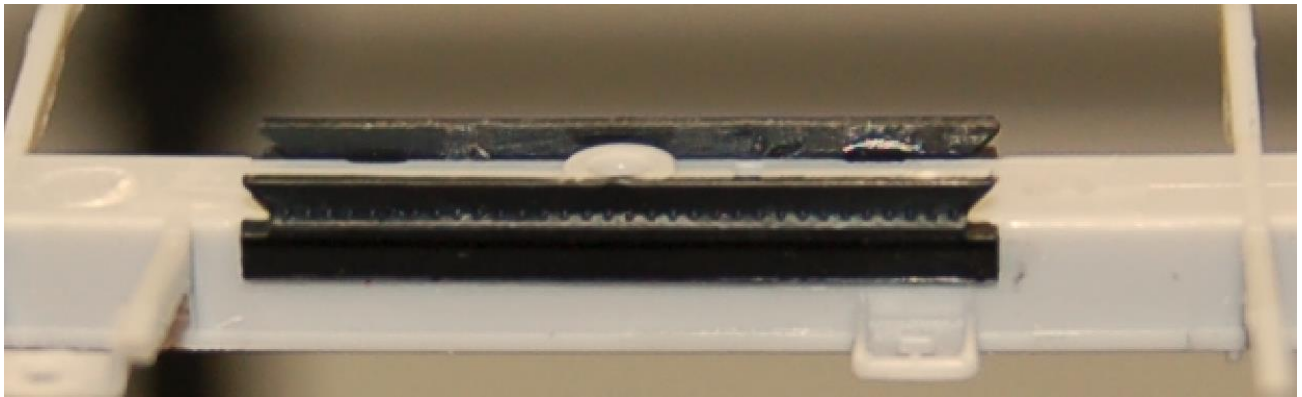
2. **Install the train air line into the center sill.** The train air line is two separate plastic pieces, a long (part 11) and a short (part 13). Remove all flash and turn the underframe upside down. You will see that toward one of the bolsters there is a diagonal casting in the center sill that simulates where the trainline crosses from one side of the sill to the other. This will be your reference point for where the two trainline pieces are attached. You will also notice that there are small notches in the cross members that the long section fit into, as well as notches in the bolsters and coupler pockets where the ends of the trainline are anchored. Position both halves of the trainline and tack in place at the coupler pockets making sure that the tab is seated so that it sits flush with the coupler pocket. This ensures the coupler box cover will also fit flush when installed. Note: As stated above, the underframe part may be warped when you take it out of the box. This is okay since it will be straightened when it is mated to the tank body. This is why you only tack one end of the trainline until the frame is straight.



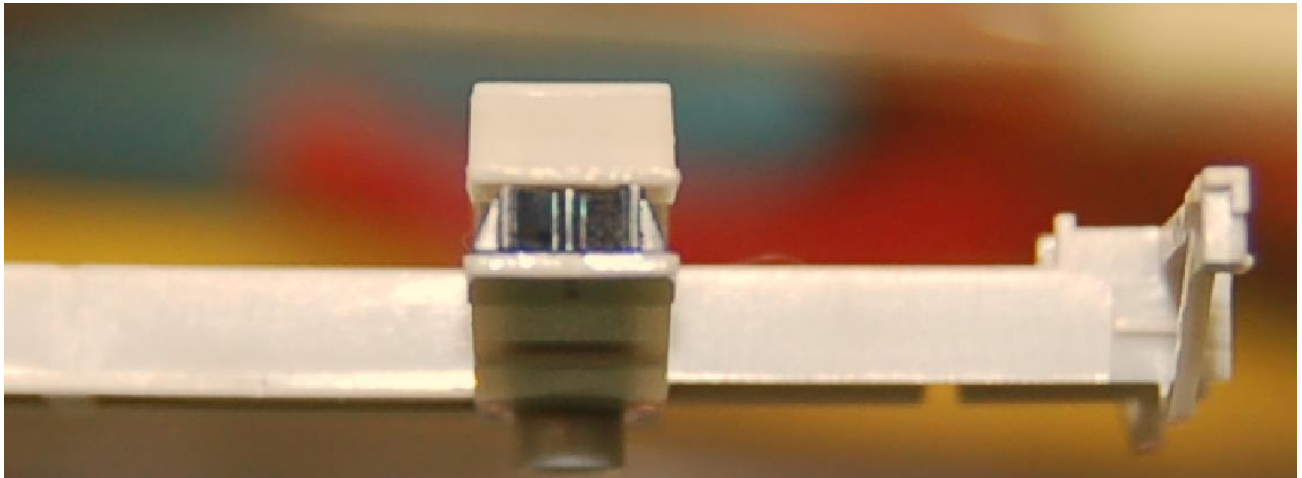
3. **Install the tank saddles.** Next come the tank saddles. These are the curved “W” shaped parts (part 5). These pieces are keyed to fit on a specific end of the frame; one has two tabs and the other has one. The saddle that has the two tabs can fit in only one way. Orient both saddles and glue in place.



4. **Install center tank supports.** Locate and install the center tank supports (In part bag 18). Looking at the parts you will see that there are slots in the center sill that the flat part of the support fit into. Position so that the angled side faces up (toward the tank) and glue in place on both sides of the sill.



5. **Install the poling pockets onto the bolster sides.** Locate the poling pocket parts (part 15).



Above is the pre-1951 style inserted into the body.

If your kit is a 1952 version, choose the correct poling pocket for your prototype. For cars assembled prior to 1951, use the one with the "wedges" inside (see image below). For cars assembled 1951 and later, use the "open rectangle" design. They are triangular in shape,

and the wider side goes on the bottom. Insert into the ends of the bolsters and glue in place.

TANK BODY CONSTRUCTION:

6. **Install weight into lower tank body.** Locate the weights and the lower half of the tank body. Make a sandwich with the weights and install them into the tank bottom. Using the two screws with the “collar” from bag 4, secure the weights in place.



7. **Join the two tank body pieces.** Place the top half of the tank on the lower half and secure with the 6 screws from bag 4. The screws fit in the 6 largest holes on the lower half of the tank. A very small Phillips or flat blade screwdriver is needed for this as the holes in the tank bottom are quite small and the screws are recessed.

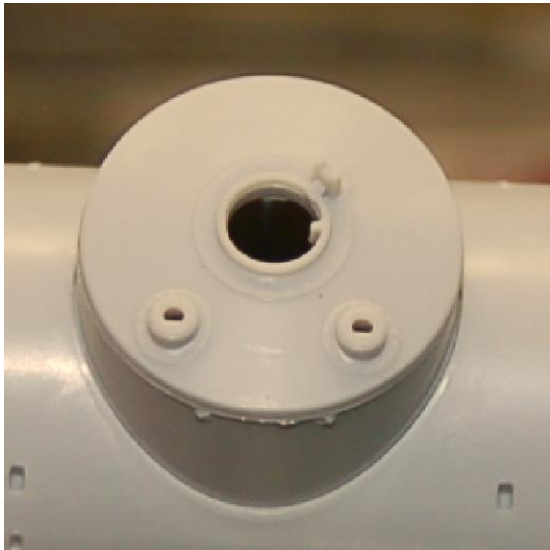


8. **Install the end caps into the body assembly.** Locate the end cap parts (part 9). The next step is to install the end caps on the tank body. Orient them so that the two vertical notches are toward the top and the grab iron holes are toward the bottom. Glue in place.



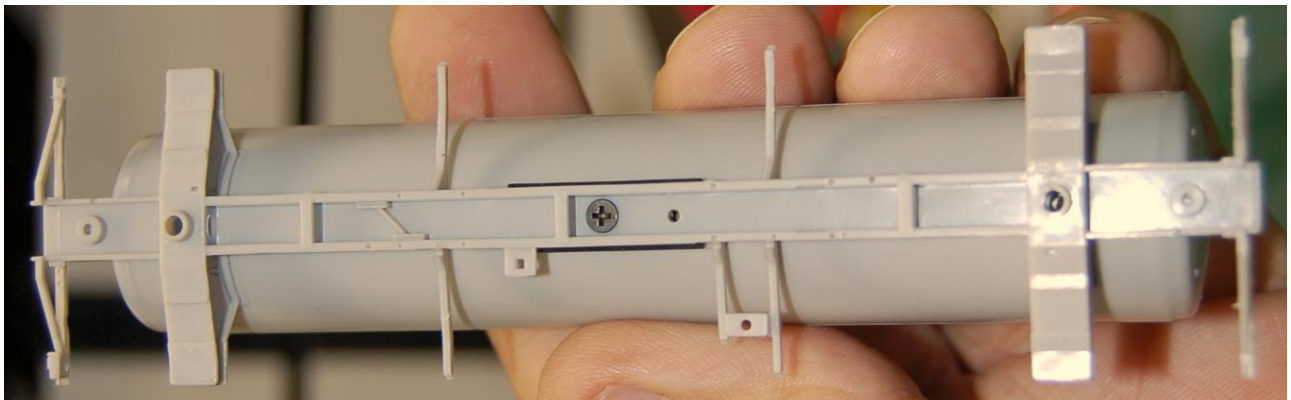
9. **Install the dome lid.** Locate the dome lid (part 10). Install the dome lid onto the body. Some kits include lid choices where applicable for the build of the car. This part is keyed

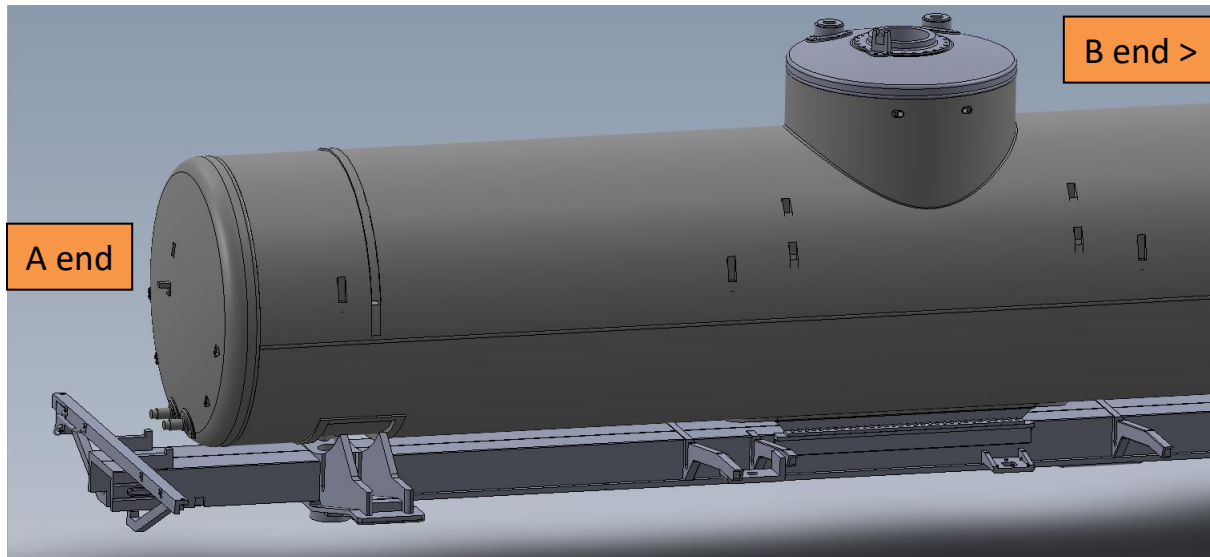
with a slot that fits a tab on the dome so it will only go on one way. Line up the cover and glue in place.



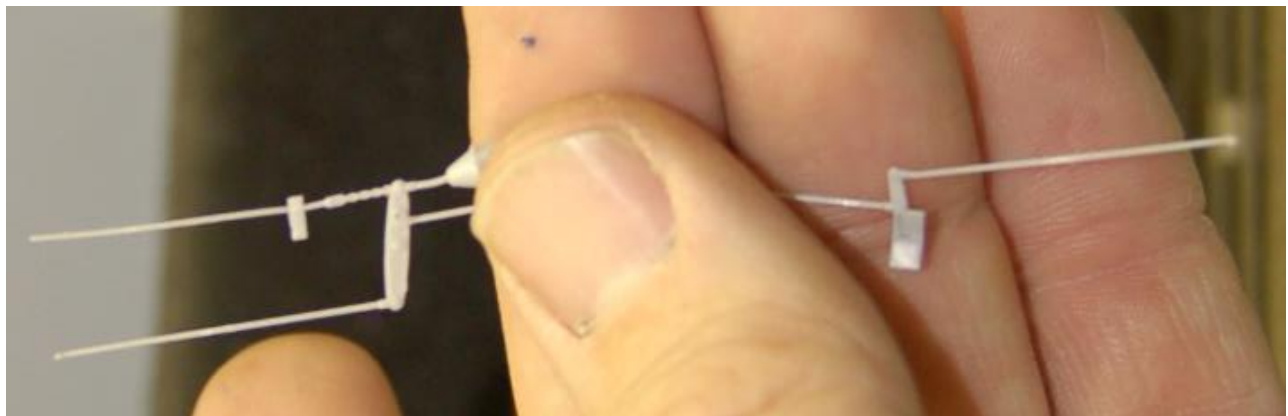
FULL ASSEMBLY CONSTRUCTION:

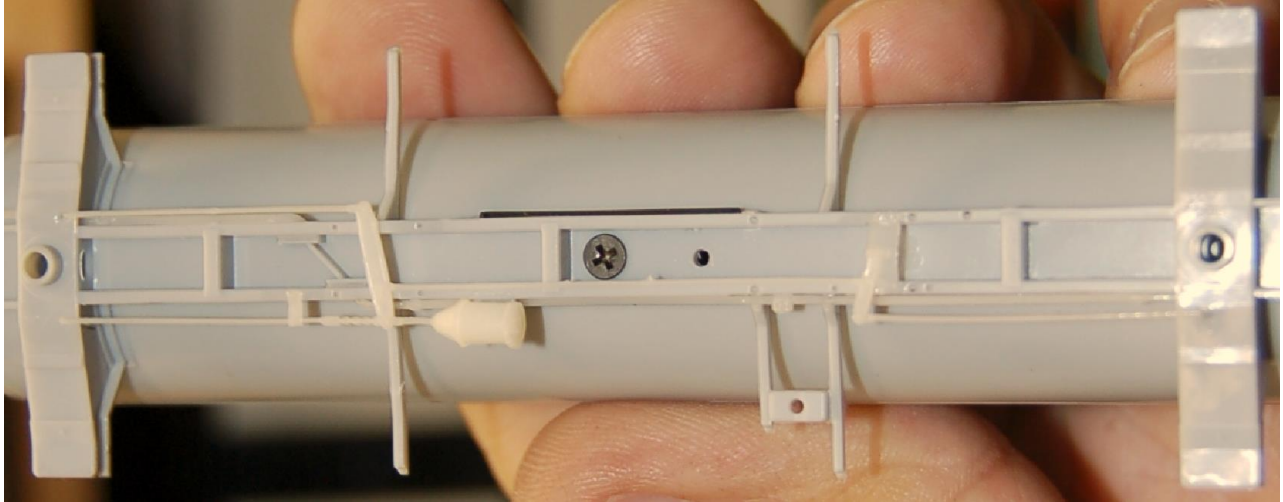
10. **Fit the underframe to the tank body.** Position the tank so the end with the two protruding heater pipes is positioned at the A end of the underframe – see the CAD image below for orientation (below the two photos). Note that when the frame is secured with the screw, the warp in the frame disappears. Be careful not to overtighten the screw as this will cause the frame to bow the other direction. Slowly tighten the screw while checking the orientation of the frame to the body. When the frame is parallel to the body, stop tightening the screw. You can glue the tank into the tank saddles.



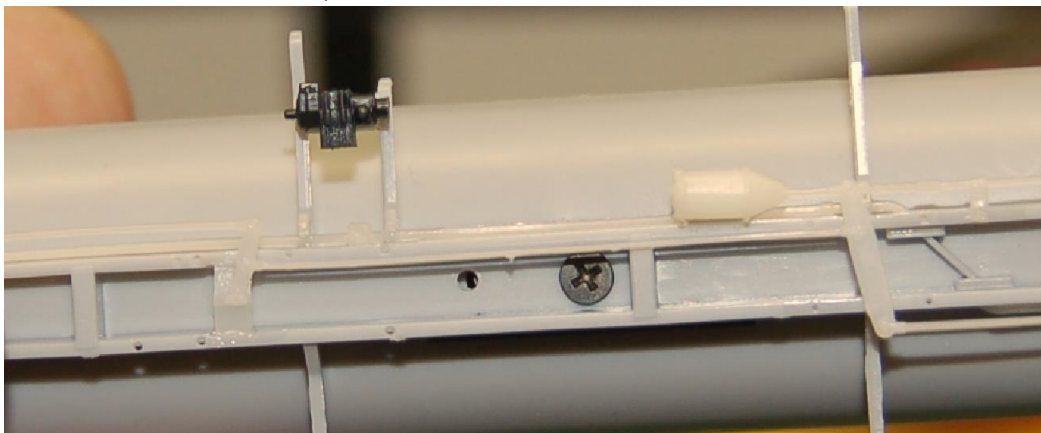


11. **Install brake rigging and brake lines.** The next step is to install the brake rigging. Locate the brake cylinder assembly (part 12). Be careful when handling this part as it is quite delicate and can break very easily. Orient it so that the brake cylinder is pointing toward the B end (brakewheel end) of the underframe (the side that has three mounting holes on the end sill). There is also a mounting pad for the cylinder so it can only be mounted one way. The piping will either be fed into holes in the bolster face or slots on the bolster itself. Refer to the photos if there is any confusion. When everything is positioned properly, glue in place.

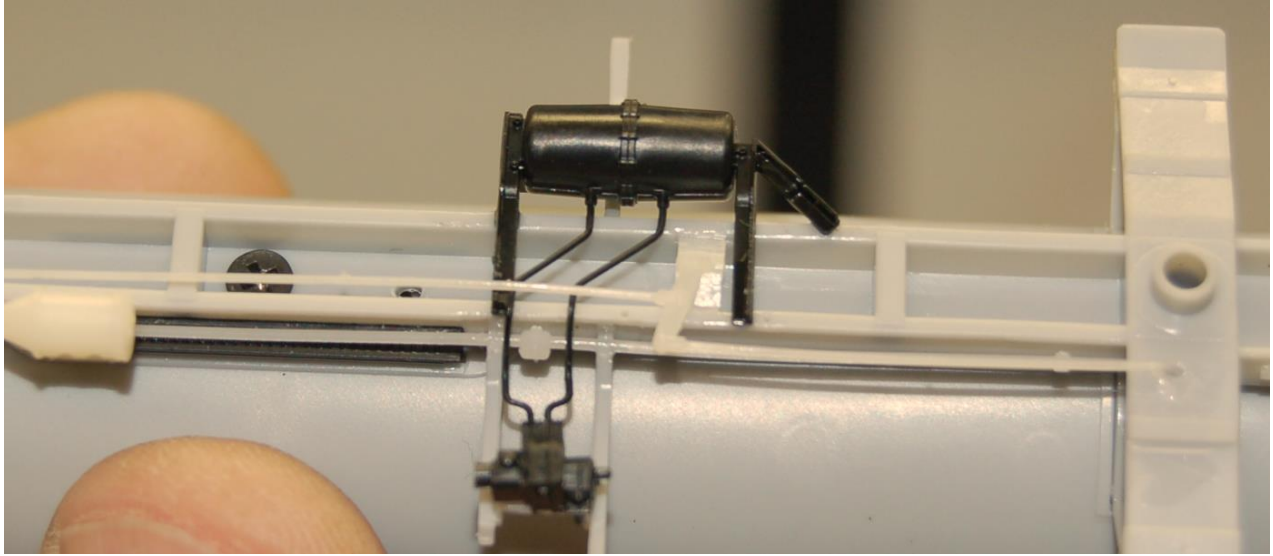




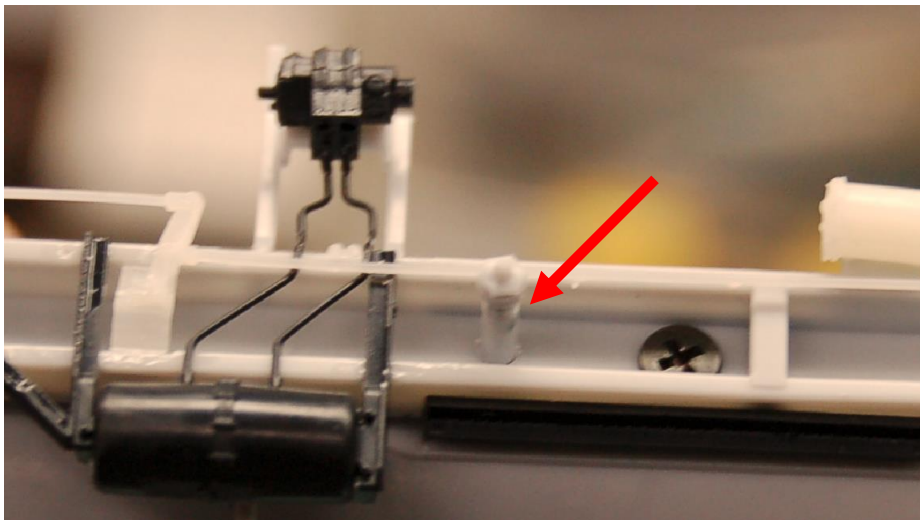
12. **Install the ab valve.** The ab valve (from bag 18) is mounted on the bracket that is on the same side of the center sill as the cylinder. Orient it so that the holes the triple valve face the center sill. Glue in place.



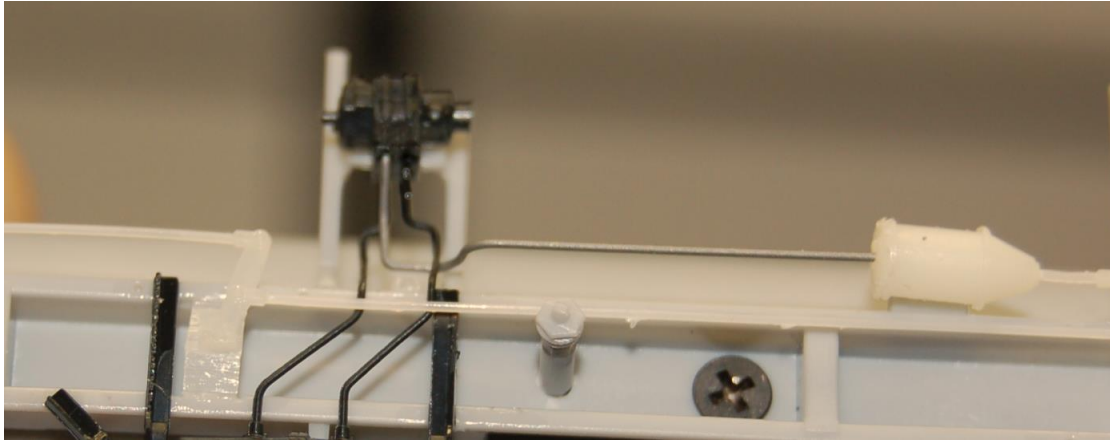
13. **Install the air reservoir.** The air reservoir (part 16) has three mounting legs that have tabs that fit into holes in the center sill. The two air lines coming out of it fit into the two bottom holes in the triple valve (the ones closest to the tank body). Glue assembly in place.



14. **Install the drain plug into the underframe.** Locate the drain plug from bag 18. Install into the underframe.



15. **Install the small wire parts for the brake system.** The next few steps will be to add wire parts to the underframe assembly. Open bag 19 and locate the pipe that goes from the brake cylinder to the triple valve. This part is easy to recognize because it is the one with all of the bends in it! The straight end goes into the back of the cylinder and the end with all of the bends in it goes into the top left hole in the triple valve. This end also needs to go underneath the line from the reservoir that is closest to the cylinder. When positioned, glue in place on both ends with CA being careful not to plug up last remaining hole in triple valve.



16. **Install the dust collector pipe.** To complete the underframe piping, locate the dust collector pipe. This is a small L-shaped plastic piece.

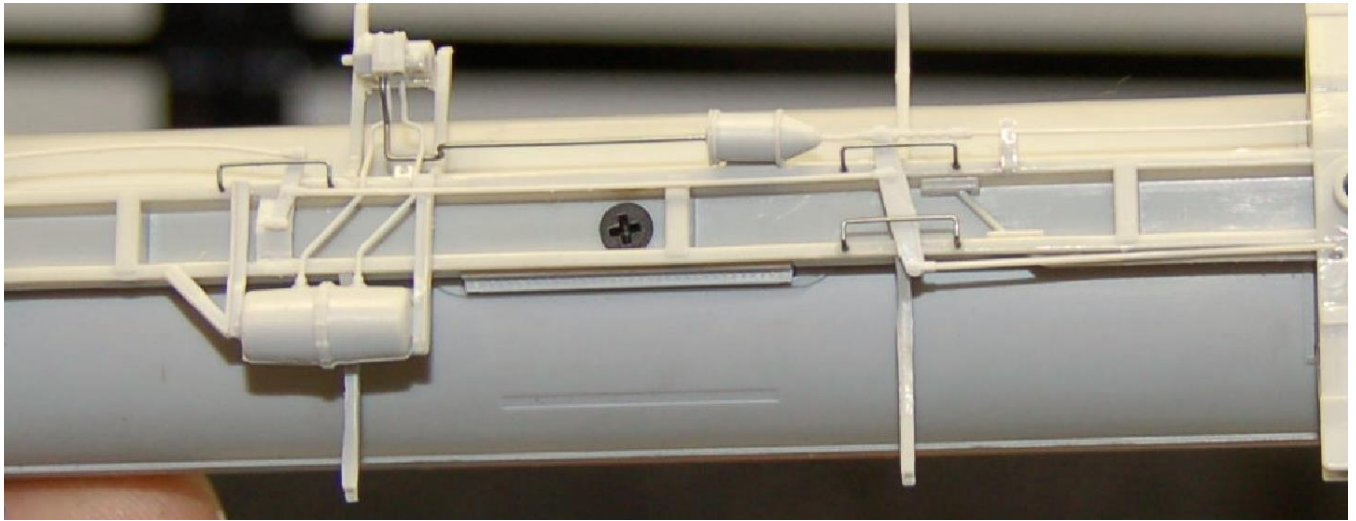


It fits into the remaining hole in the triple valve and a small locating tab in the train line. Glue in place.

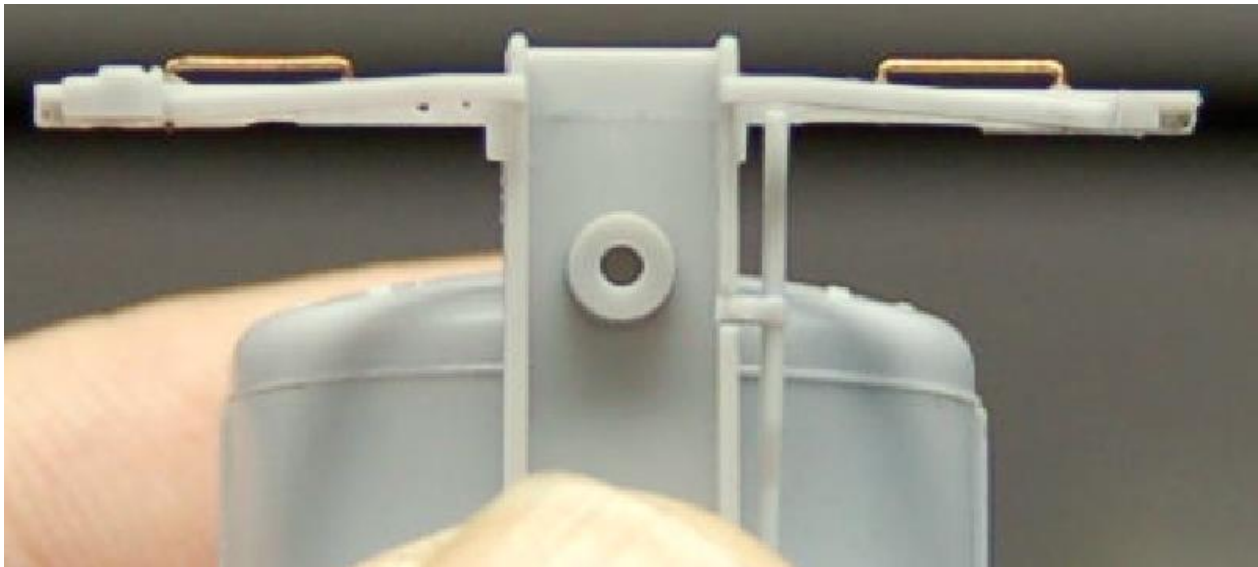


17. **Install the largest drop grab irons – the brake hangars.** Locate the three largest drop style grab irons from the wire parts bag. These will fit into holes in the center sill by the levers.

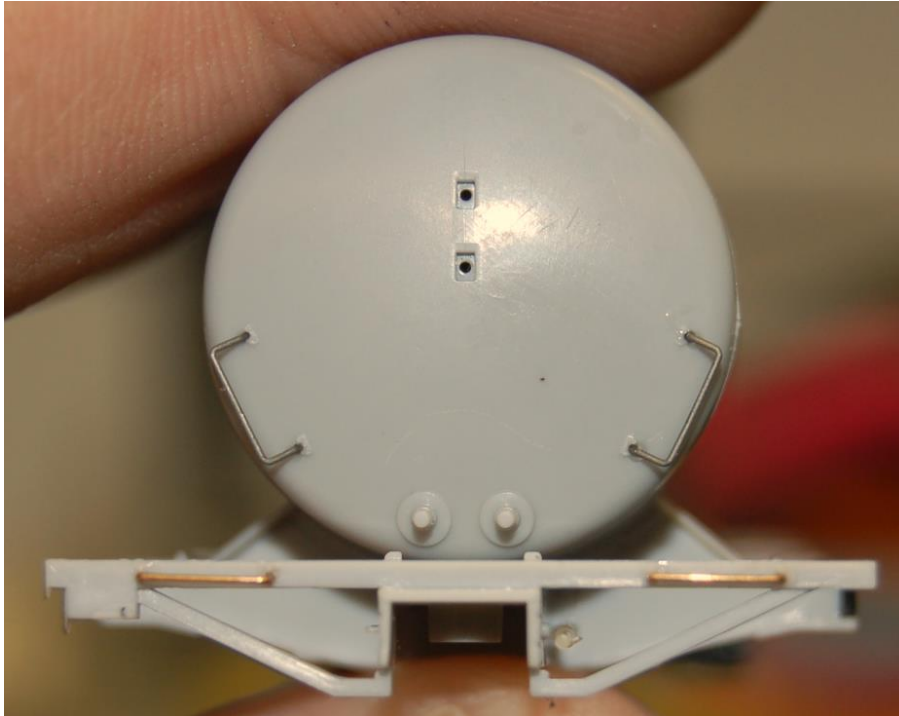
Orient them so that the “drop” is facing toward the triple valve side of the sill on all three. Glue in place with CA.



18. **Install the end grab irons.** Locate the four small copper colored (phosphor bronze) straight grab irons from the wire parts bag. These are for the four end grab irons. Test fit these parts as they may need to be squared off a bit to make them fit properly. Install in the end sills making sure that the ends of the wire do not protrude behind the sill. Secure with CA.



19. **Install the tank grab irons.** There are eight similarly shaped grab irons that are used for the tank ends and underside of the walkway. Insert into the tank ends with the grabs facing outward and secure with CA. Put the remaining four parts back in the bag or in a safe place for later installation.



20. **Install the grab irons for the dome.** There are two curved grab irons for the dome, one on each side. Insert and secure with CA.



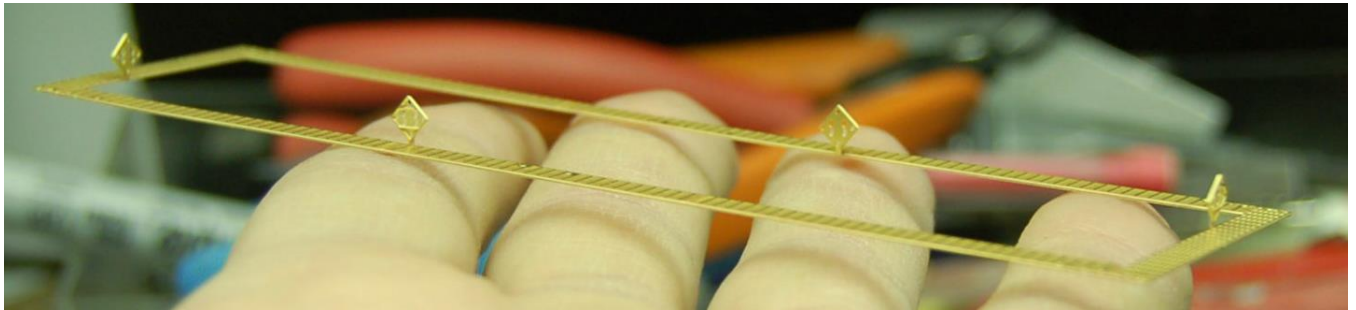
21. **Install the dome vents and cover.** All are keyed for placement, glue in place when installed.



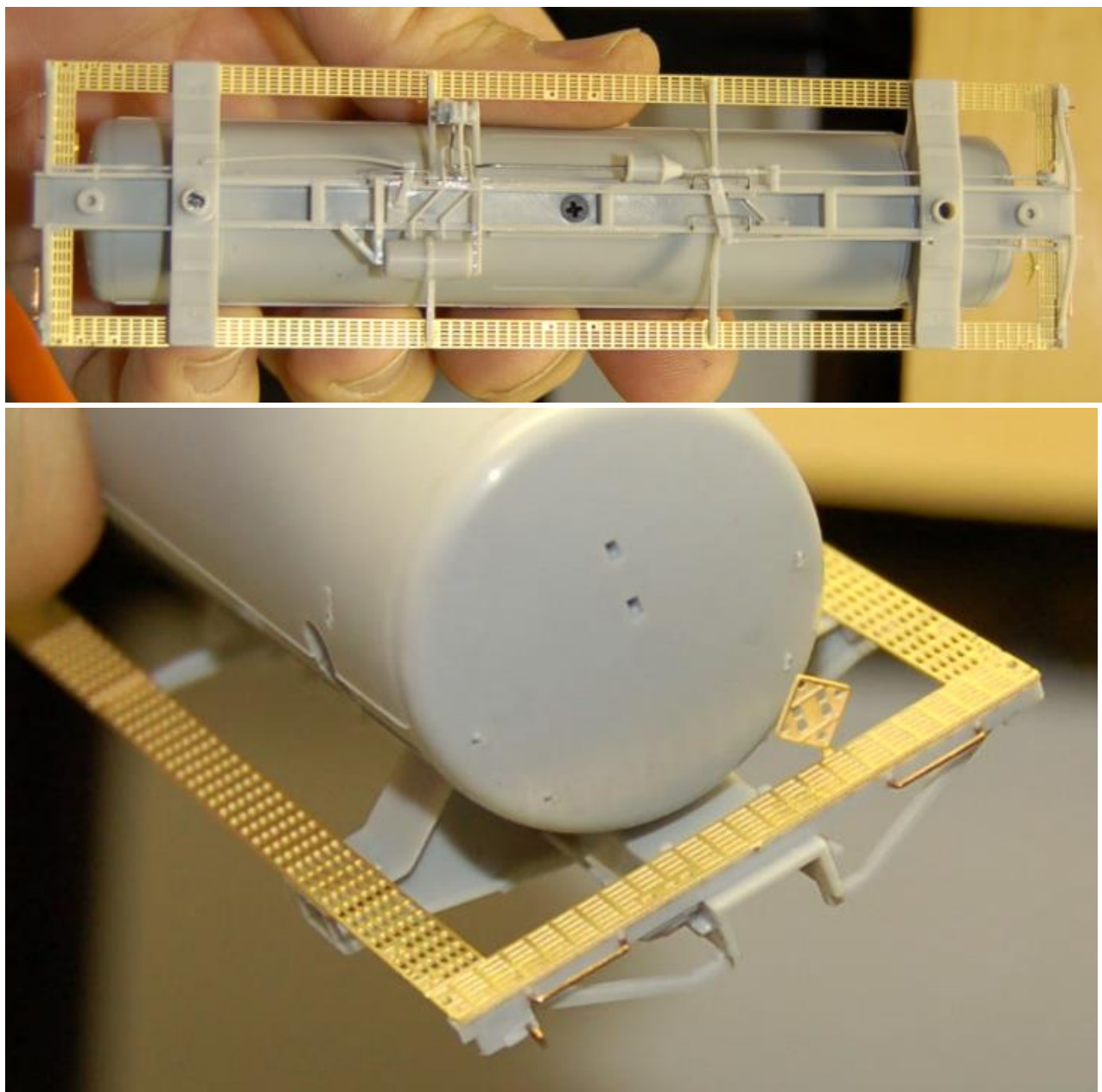
22. **Install the grab iron on the dome cover.** There is a small curved grab iron for the dome cover. Install and secure with CA.



23. **Prepare the running board to be mounted to the underframe.** Find the walkway (part 6). You will notice that the four placards are different on each side. The side that has the raised ribs will face outward when the walkway is mounted on the car. Bend the placards at a 90-degree angle to the walkway.



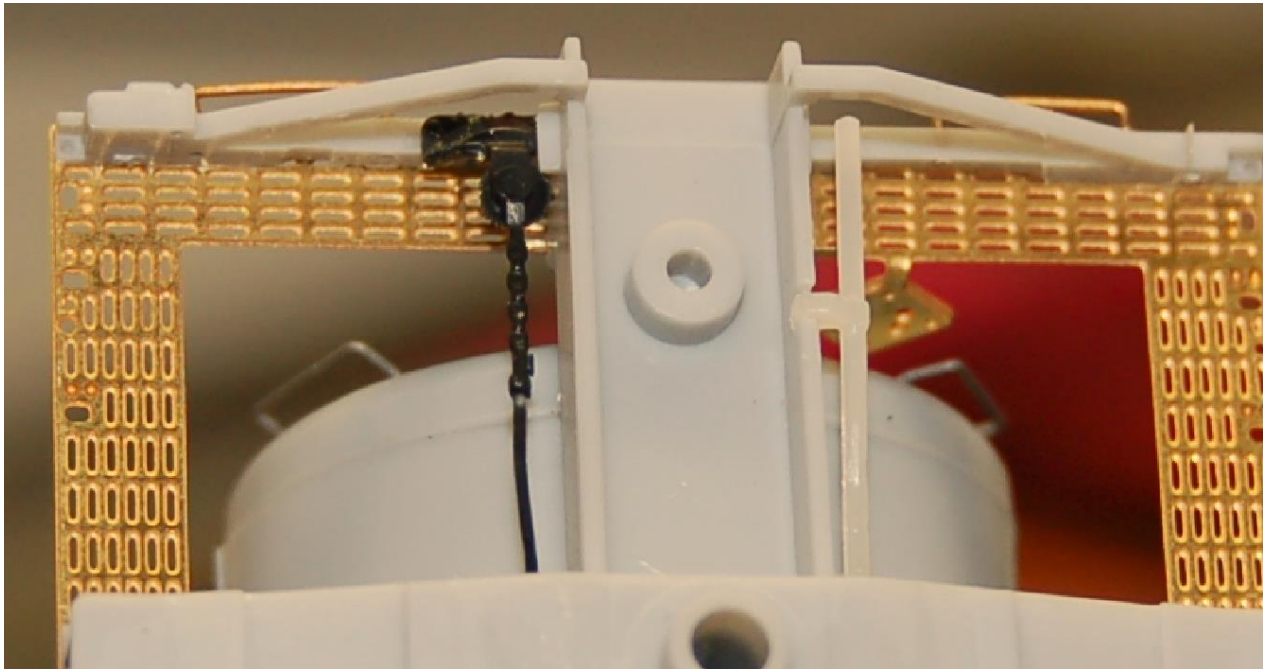
24. **Install the running boards to the underframe.** The walkway has an A end and a B end to match the underframe. The B end has the three holes just like the underframe. Place the walkway on the underframe. There are small ribs on the bolsters and two small tabs on each end of the frame above the coupler boxes that will ensure that the walkway is square and equally spaced on either side. To secure the walkway to the frame, start at one end of the car and glue the walkway to the bolsters and end sill with canopy glue, being careful on the B end to not fill the holes with glue. Work your way toward the other end of the car securing the walkway to the mounting points with canopy glue. CA could also be used, but we recommend a slow setting CA in order to allow enough time for the part to adhere. Finally, do not pick the car up by the walkway, always use the tank body or the bolsters.



25. **Install the brake chain.** Locate the brake chain.



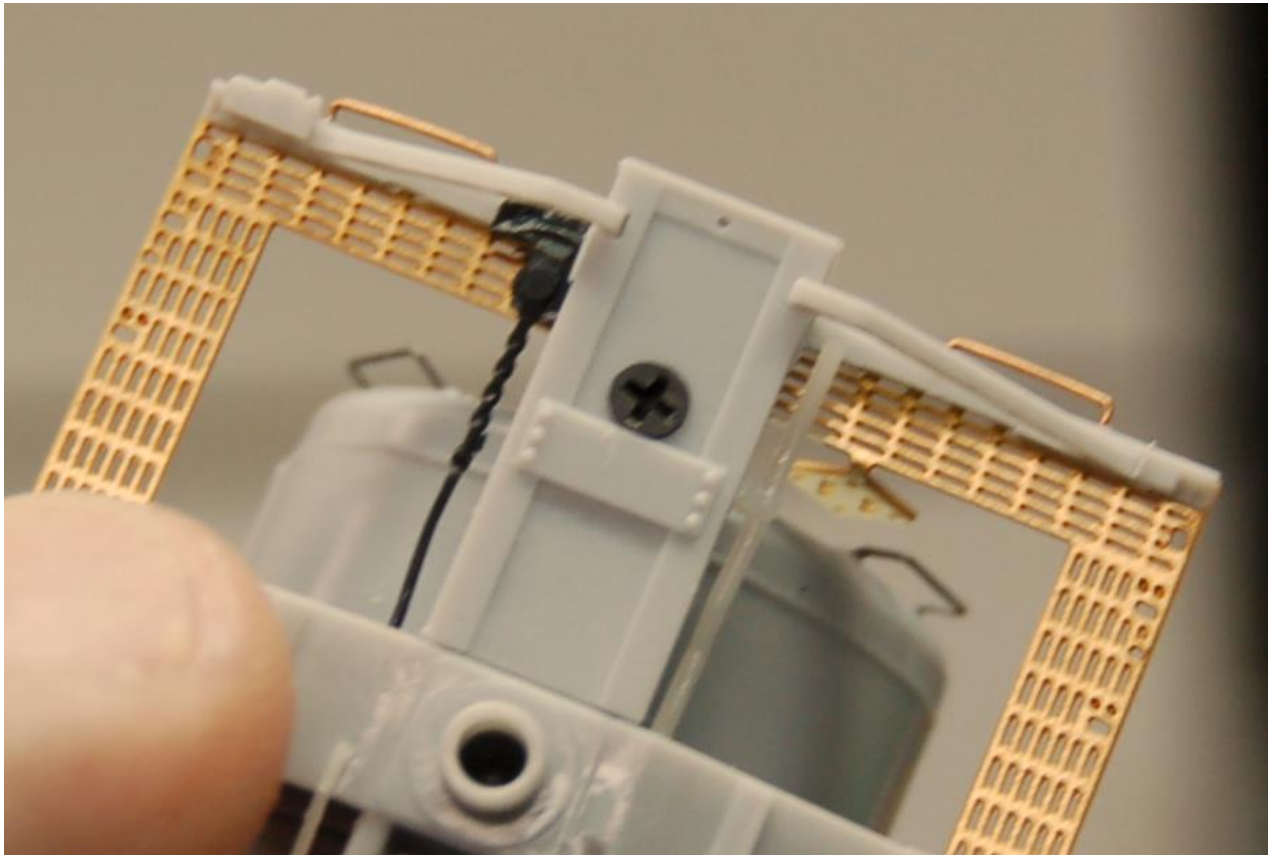
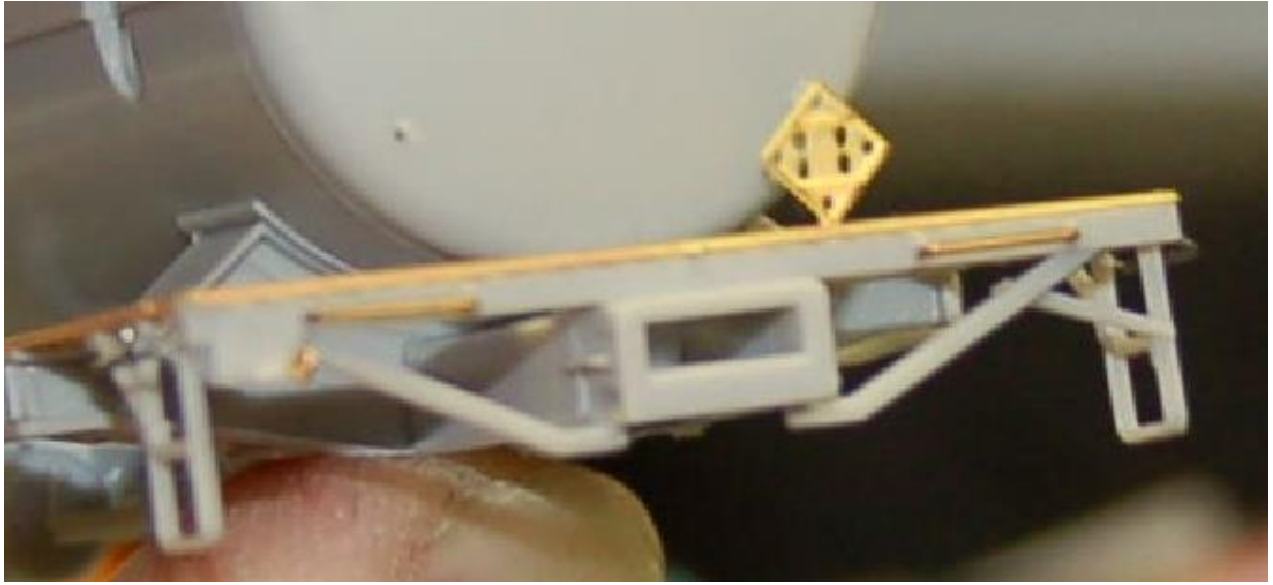
The brake chain has two pins that fit into the two outer holes in the end sill. Mount this part on the underside of the sill with the end of the chain fitting into a small hole in the bolster face. Glue in place.



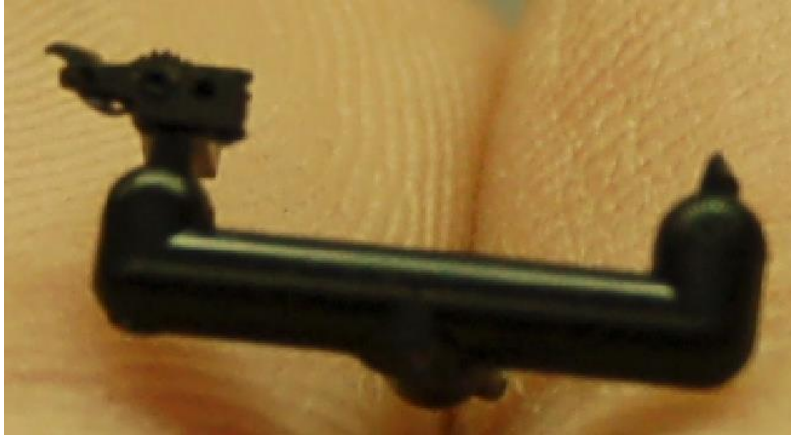
26. Install the coupler box covers. You may or may not choose to install the couplers at this time. If you choose to do so, take great care when painting the car as the paint could impede the couplers from working properly.

The coupler boxes are installed with the smallest screws. Place the coupler box covers on the coupler boxes and secure with the screws.

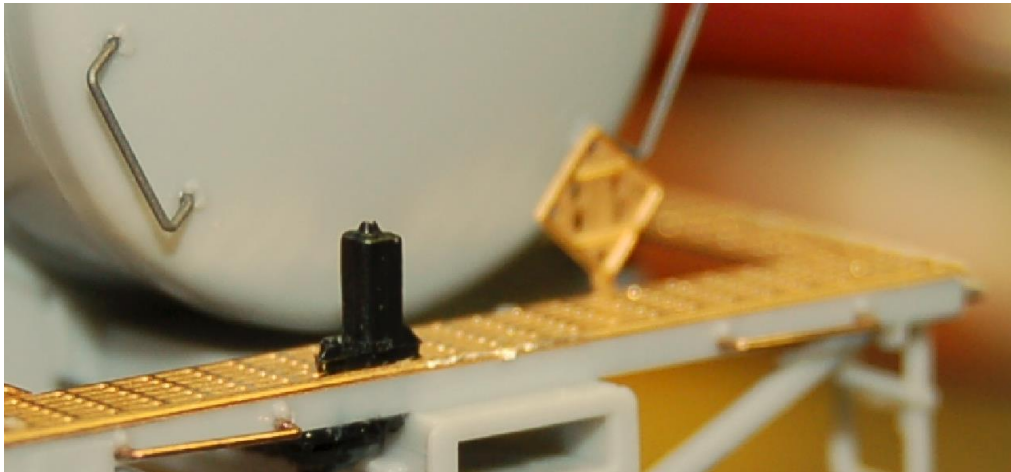




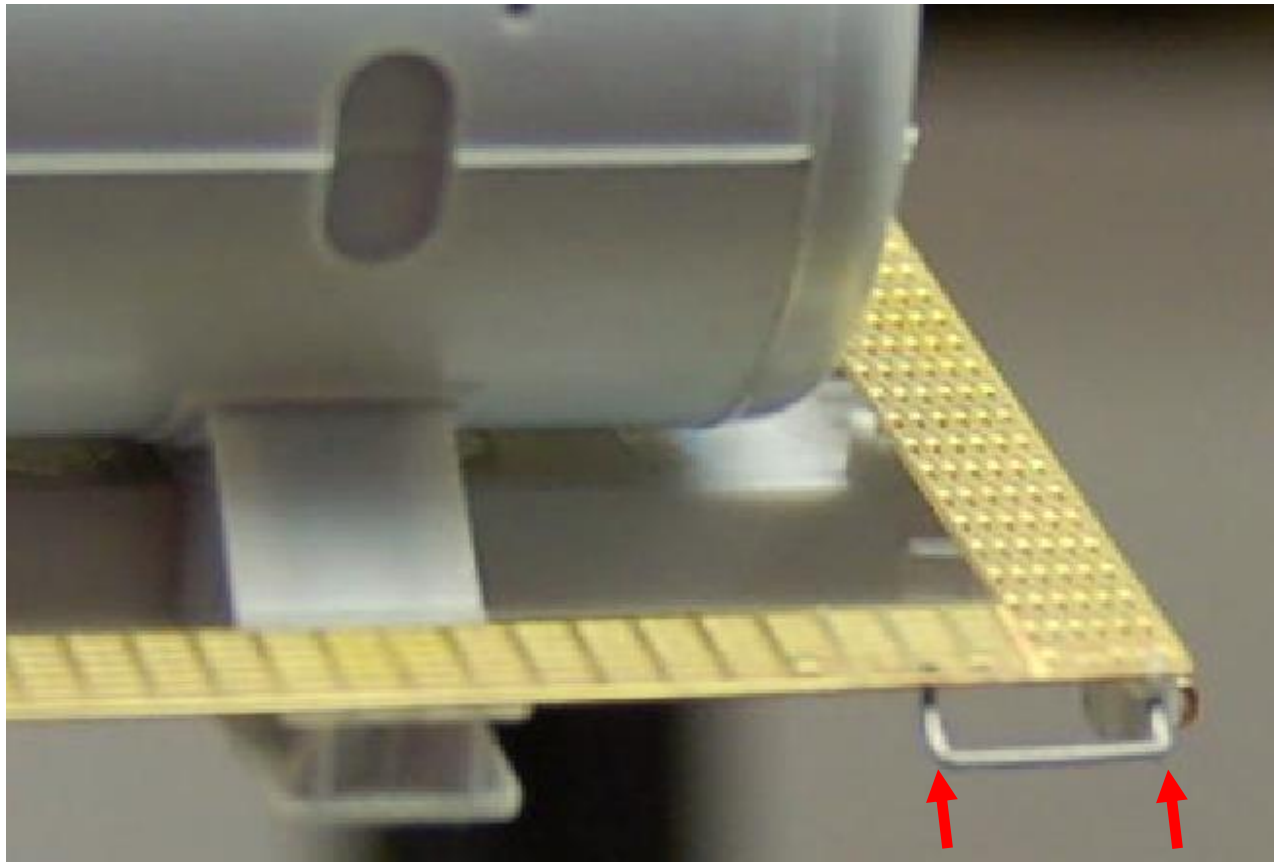
27. **Install the brake staff support.** Locate the plastic brake staff support.

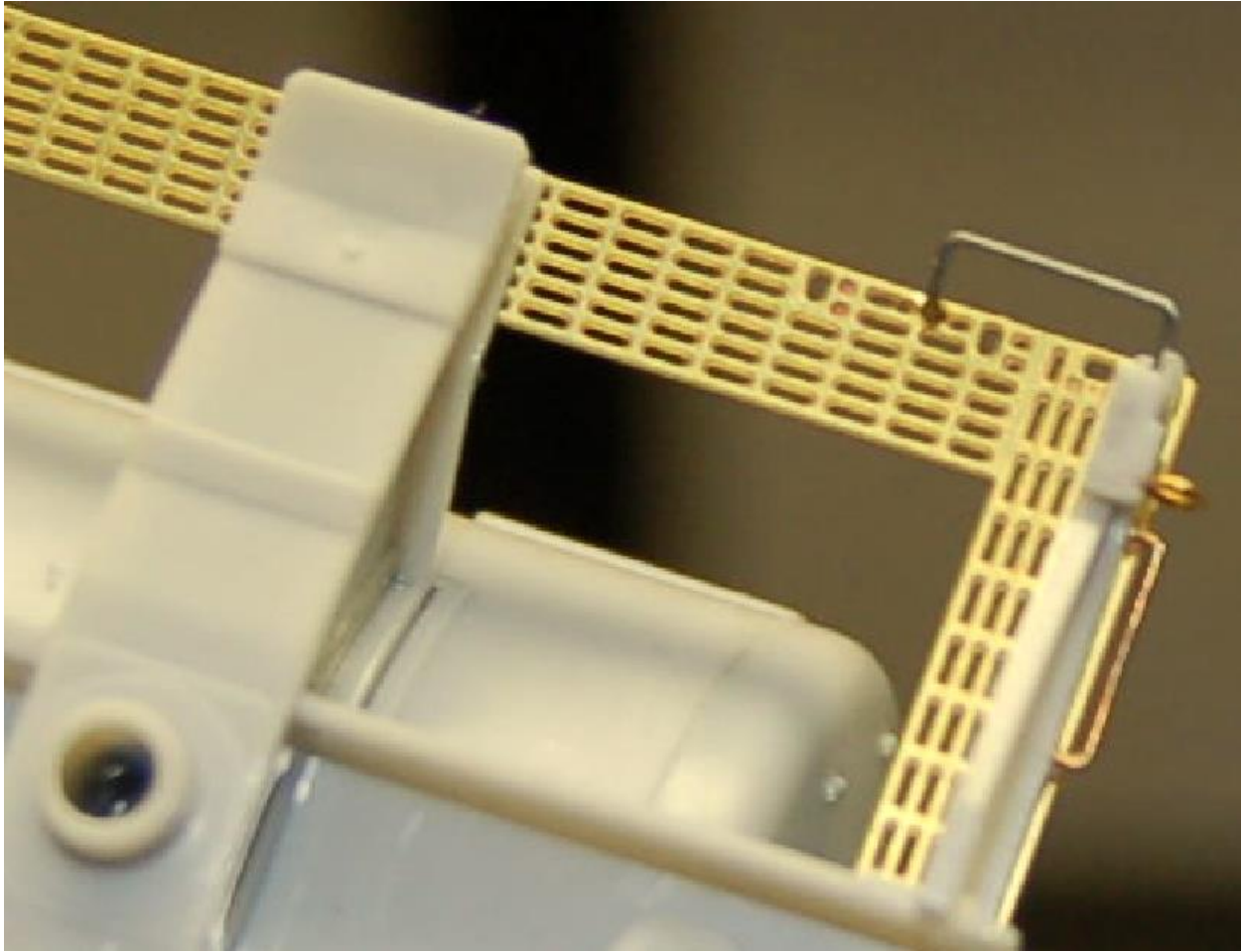


This part fits into the two outer mounting holes on the walkway end. Orient it so that the small ratchet lever is on the left as you face the end of the car. Secure with CA.

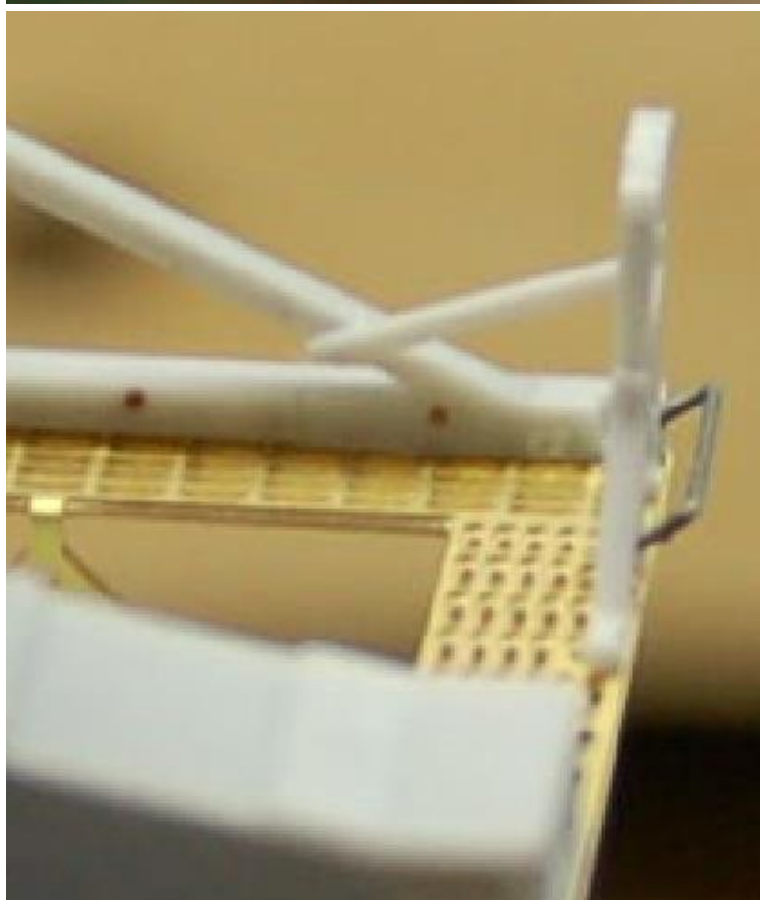
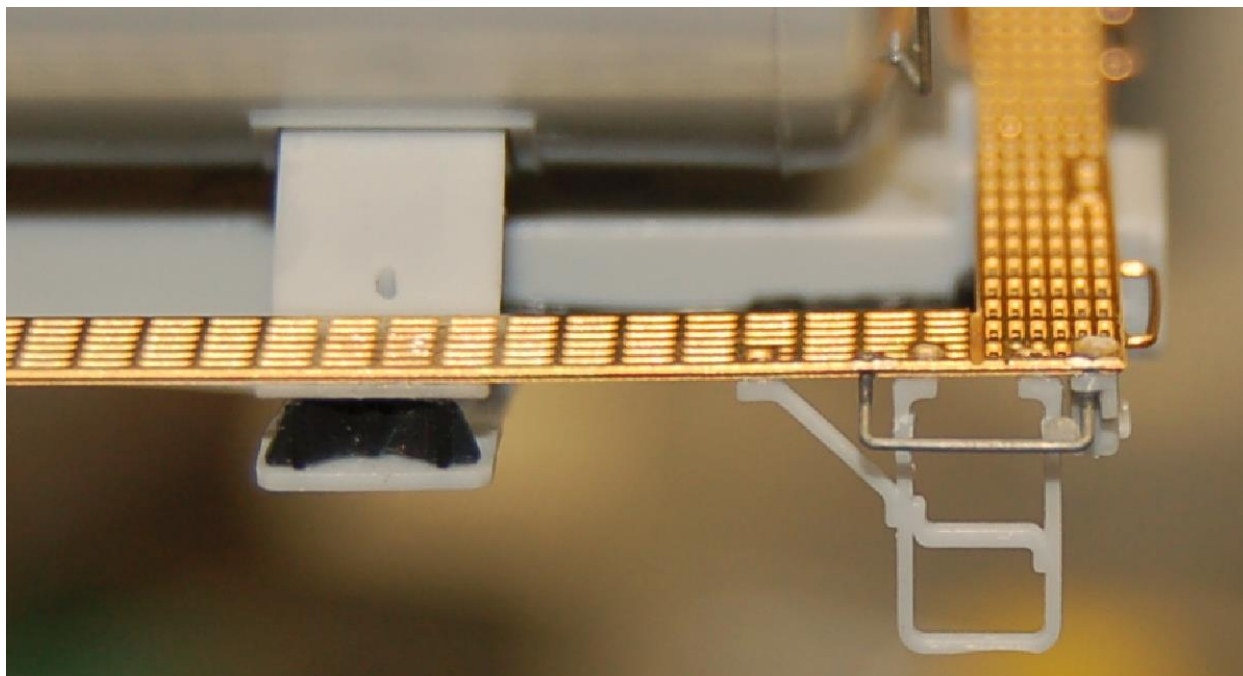


28. **Install the grab irons into the side sills.** Locate the small drop style grab irons from the wire parts. These will go on the four corners of the side sills. You may need to open the mounting holes on the corners in order for the wires to fit completely. Use a #80 drill to do so. Insert the wires from underneath and position so that the wires do not protrude above the walkway and the grabs are parallel with it. Secure with CA.





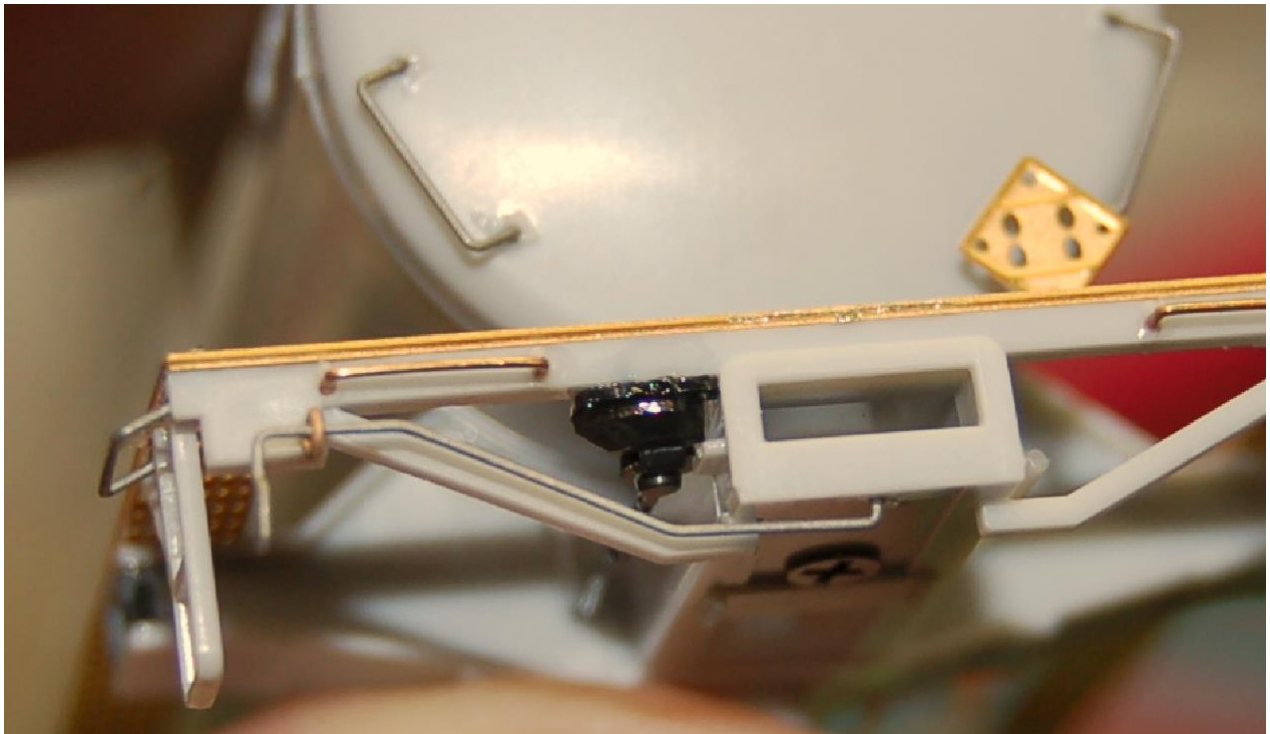
29. **Install the side stirrup steps.** There are two different types of stirrup steps (part 8). One has an extra leg that is used for support and is attached to the end sill. These are located on the left as you are looking at the side of the car. The stirrups without the extra leg go on the right. Orient stirrups and secure with CA.



30. **Install the eyebolts for the coupler lift bars.** There are two small eye bolts for the coupler lift bars. Install these in the end sills with CA.



31. **Install the coupler lift bars.** Insert the cut levers through the eyebolts and into the small hole on the bottom of the coupler box cover. If you have not installed the couplers yet, just tack the cut lever in place at the coupler box so that it can be removed to install the couplers after painting.



32. **Install the trucks to the underframe.** To ensure that there is no damage done to the air stirrup steps (they are delicate!), you may want to install the trucks at this time. Add the brake hangars to the trucks by snapping them into place on the bolsters from below. There

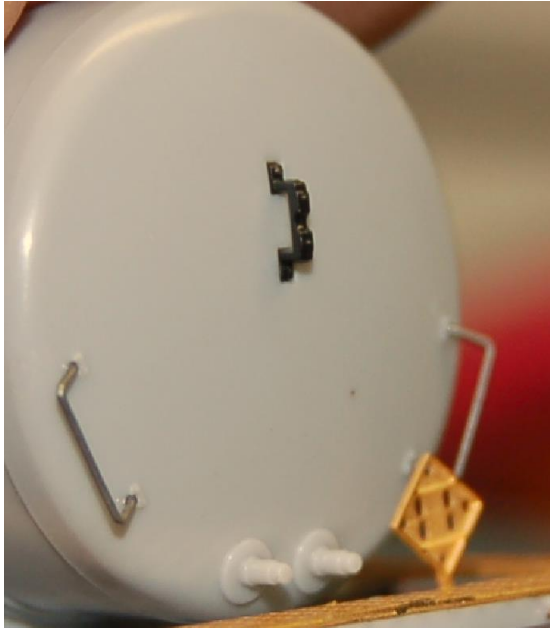
are two small slots on the bolsters that the hangars snap into. Insert the wheelsets into the trucks, and then install the trucks to the underframe with two remaining screws.



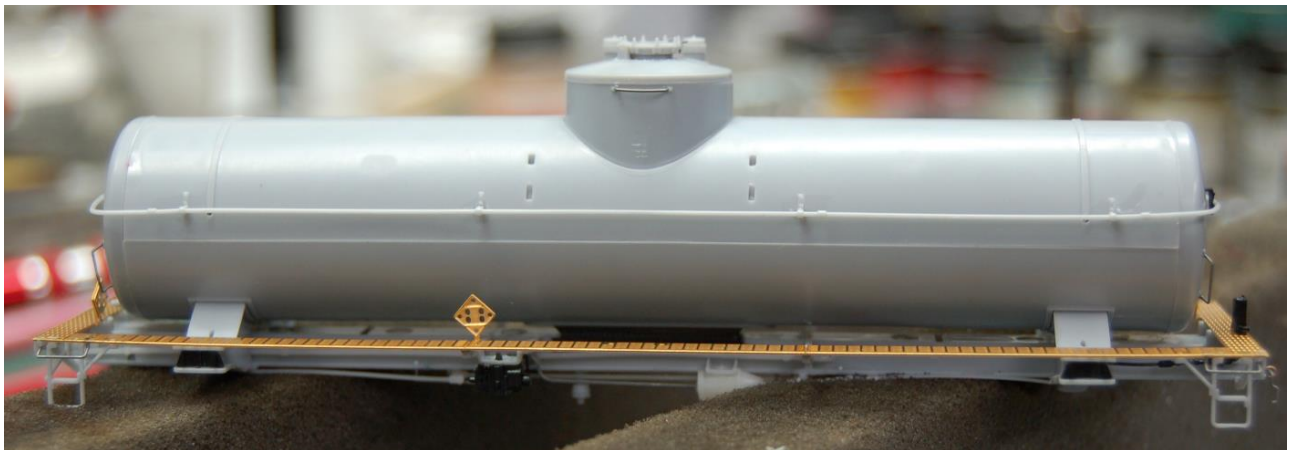
33. **Install end tank rail brackets.** Locate the two end tank rail brackets (in bag 18).



Glue into the slots on the tank ends.

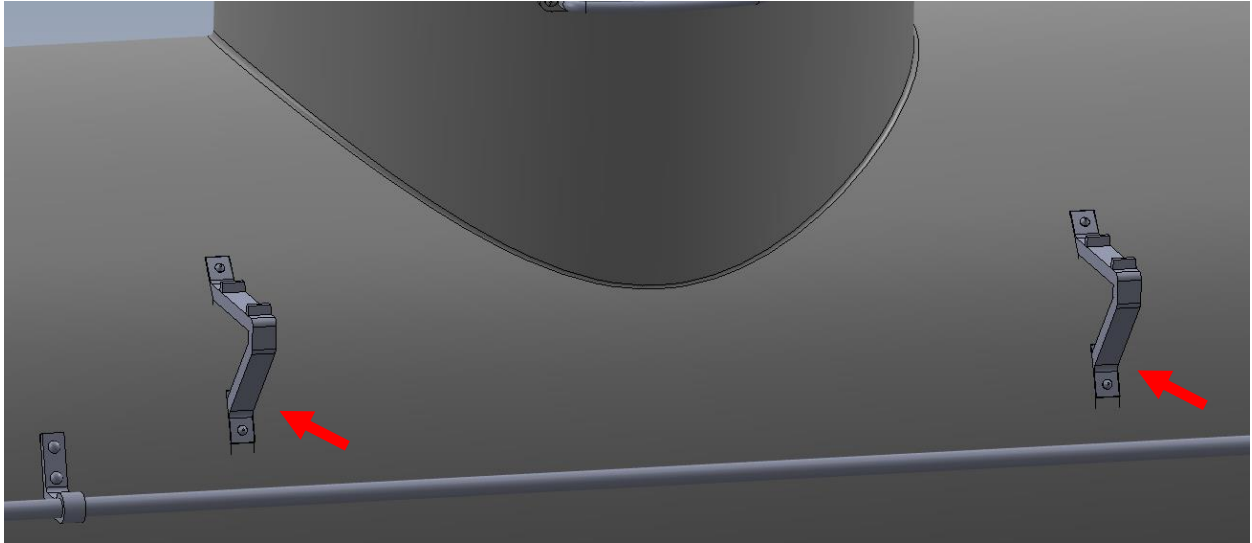


34. **Install the tank handrail.** Locate the tank rail (part 4). Glue the end brackets into the slots on the ends of the tank. Separate the tank railing from the sprue, again being careful to not damage the railing. Starting on one end, fit the tank rail in the slot on the bracket, then insert pins into the locating holes on the tank working your way to the other end. Glue in place when finished.

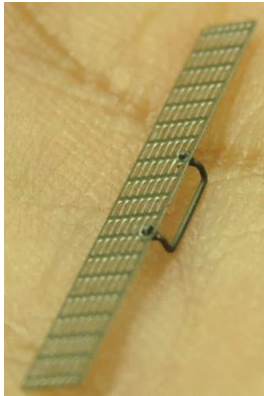


Note: *If you are building a 1952/1957 version of our kit, please go to the end of this build - to step 45 (skip steps 35-37).*

35. **Install the side platform supports.** There are four plastic triangular side platform supports (parts bag 18). Install them into the side of the tank body in the holes located adjacent to the dome.



36. **Assemble the side platforms.** Locate the etched metal platform parts. Install the last two grab irons into the bottom. Install them so they project outward from the platform and are vertical. Glue in place with CA.



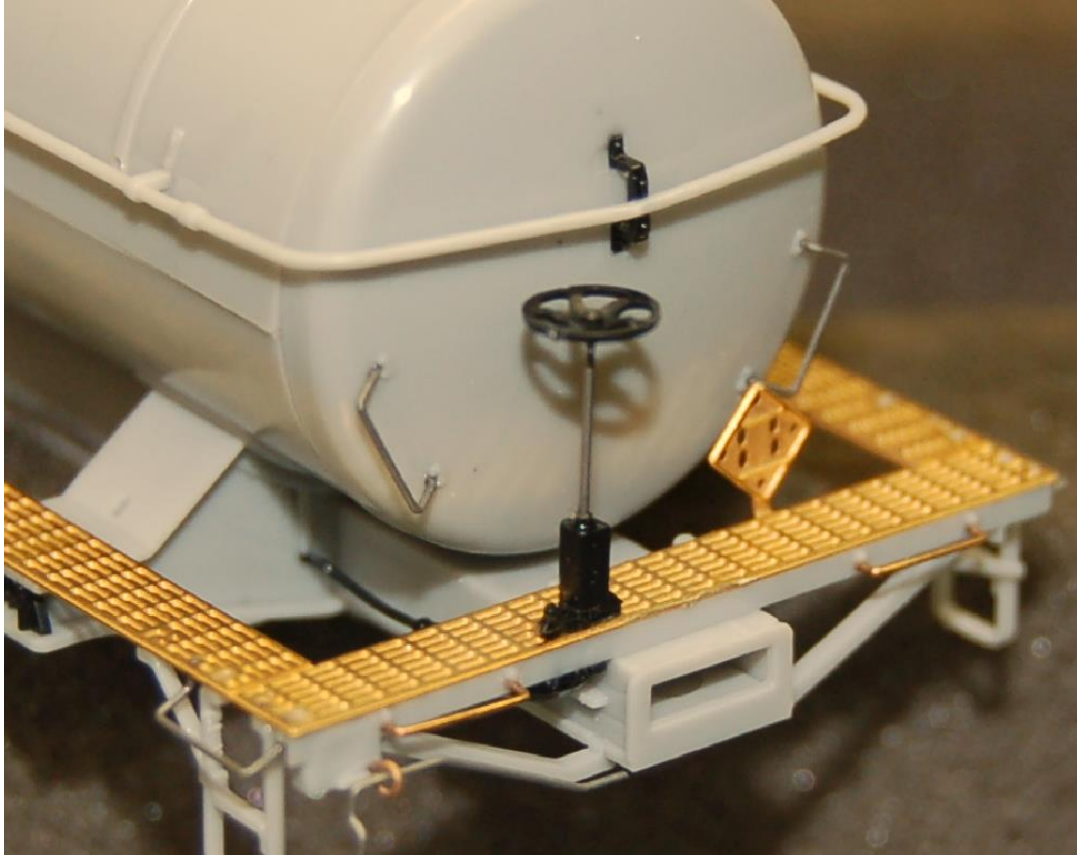
37. **Install side platforms.** Install the two side platform assemblies created in the previous step into the side platform supports.



38. **Install the brake staff into the brakewheel.** There is one more piece of straight wire that is for the brake staff. Select the brakewheel you want to use. Insert the straight wire into the brakewheel you intend to use.

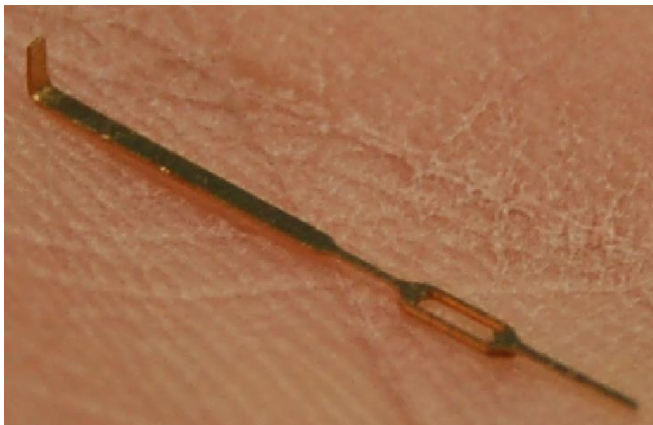


39. **Install the brakewheel and staff assembly into the brake housing.** Insert the staff/brakewheel into the upper brake housing until it bottoms out and secure with CA.

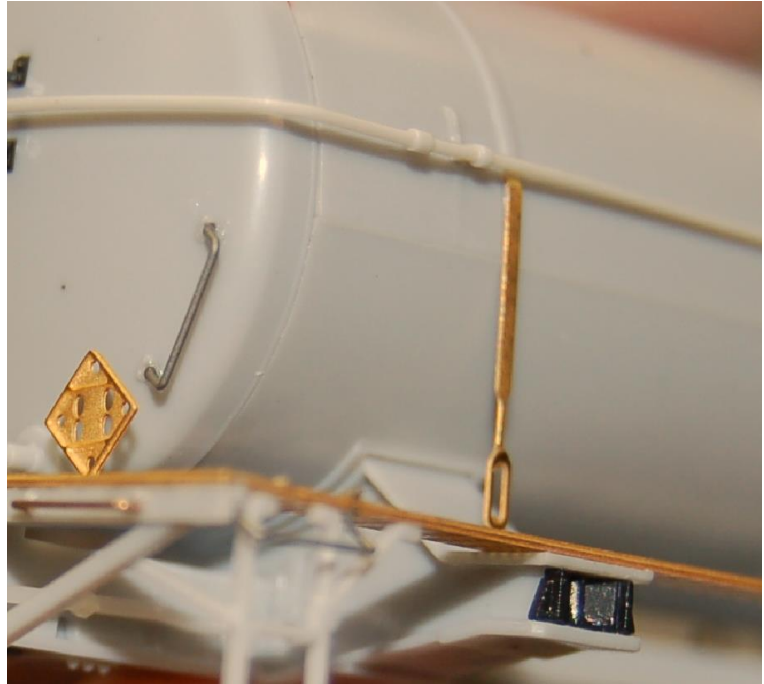
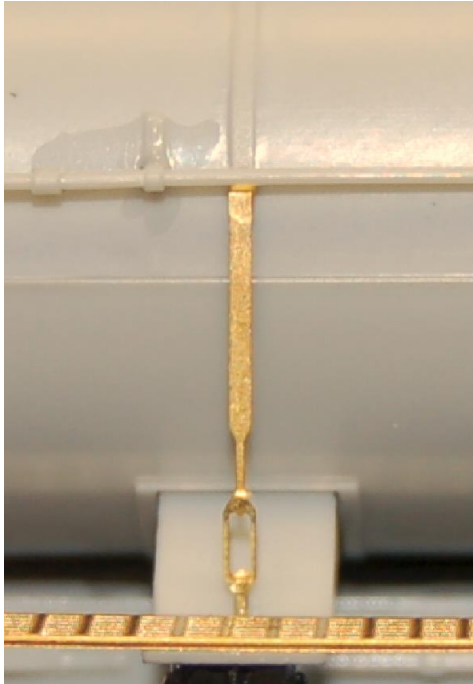


Note: *If you are building a 1957 version of our kit, please go to steps 49-50 to be executed in lieu of steps 40-41.*

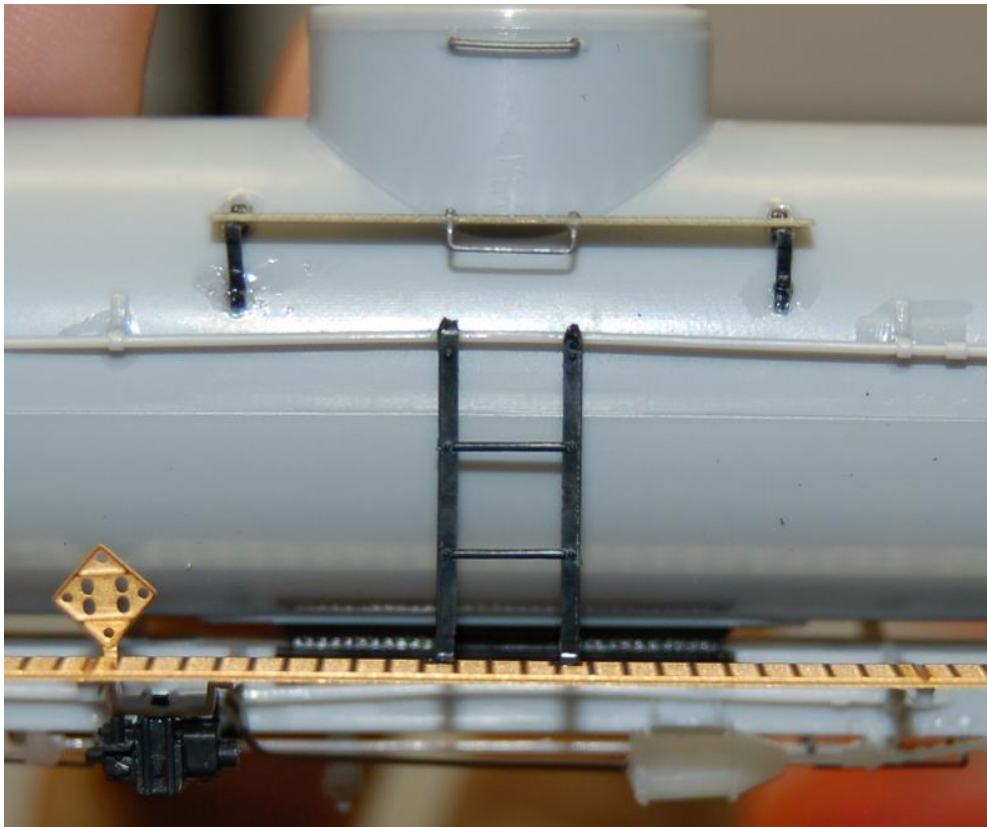
40. **Separate the tank straps from the sprue.** The tank straps have a smooth side and a side that is slightly raised at the turnbuckle. The raised side faces out. Bend the top of the band about 1/16".



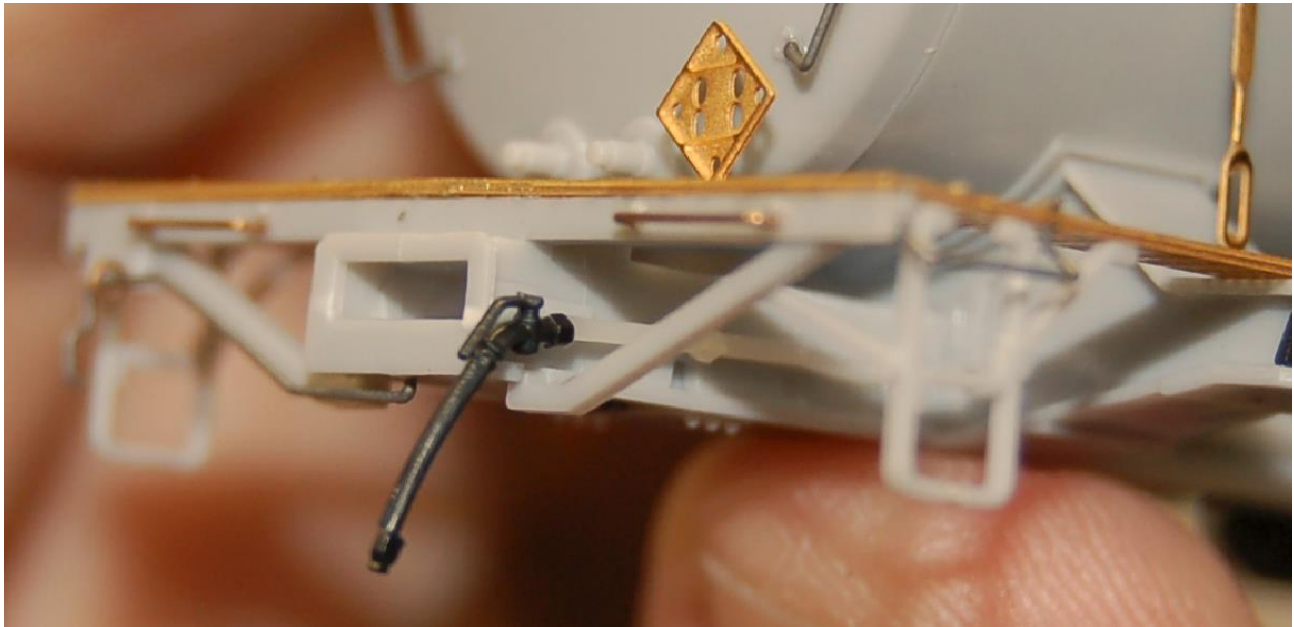
41. **Attach the tank straps to the tank and underframe.** Insert the straight end of the strap into the hole in the bolster and the bent end into the hole in the side of the tank. Secure both ends with CA. Repeat this process for all four tank straps.



42. **Install the side ladders.** Glue the side ladders to the tank railing and to the walkway. The side ladders have pins at the bottom that fit into holes in the walkway and hooks that go over the tank rail. Set in position and glue in place.



43. **Install the air hoses.** Glue the air hoses to the ends of the train line next to the coupler boxes. Be careful not to get any glue on the coupler box so that the cover can be removed for any future maintenance.



FINISHING UP:

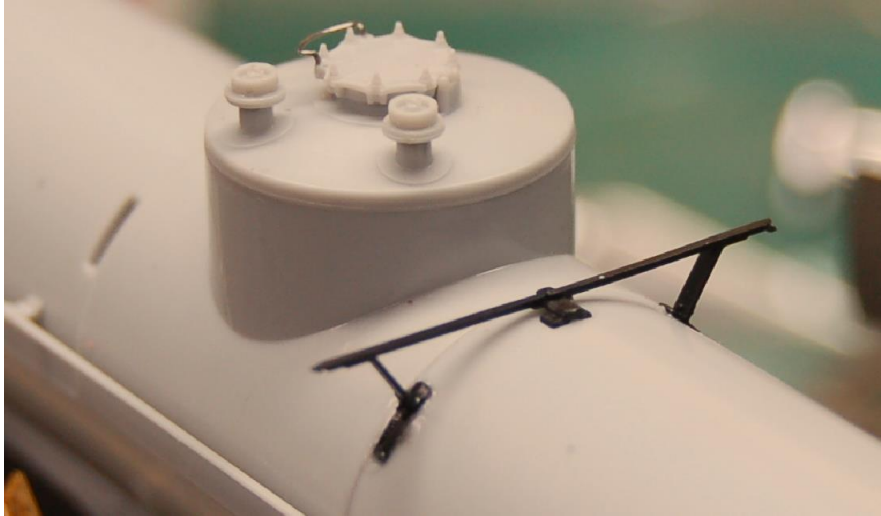
44. **Paint the car.** We only have two suggestions for painting this car. The first we have already mentioned—wait until the car is painted before installing couplers. Painting couplers could make them very "sticky" and not perform at their best. If you have had success in the past in painting couplers then disregard this suggestion! If the couplers are not installed, we recommend you stuff a small piece of paper towel into the coupler pocket to keep paint from getting inside. This is not absolutely necessary, but it will allow couplers to operate more more freely.

This completes the assembly of our kit. After decaling and a bit of weathering, install trucks and couplers and enjoy your work!

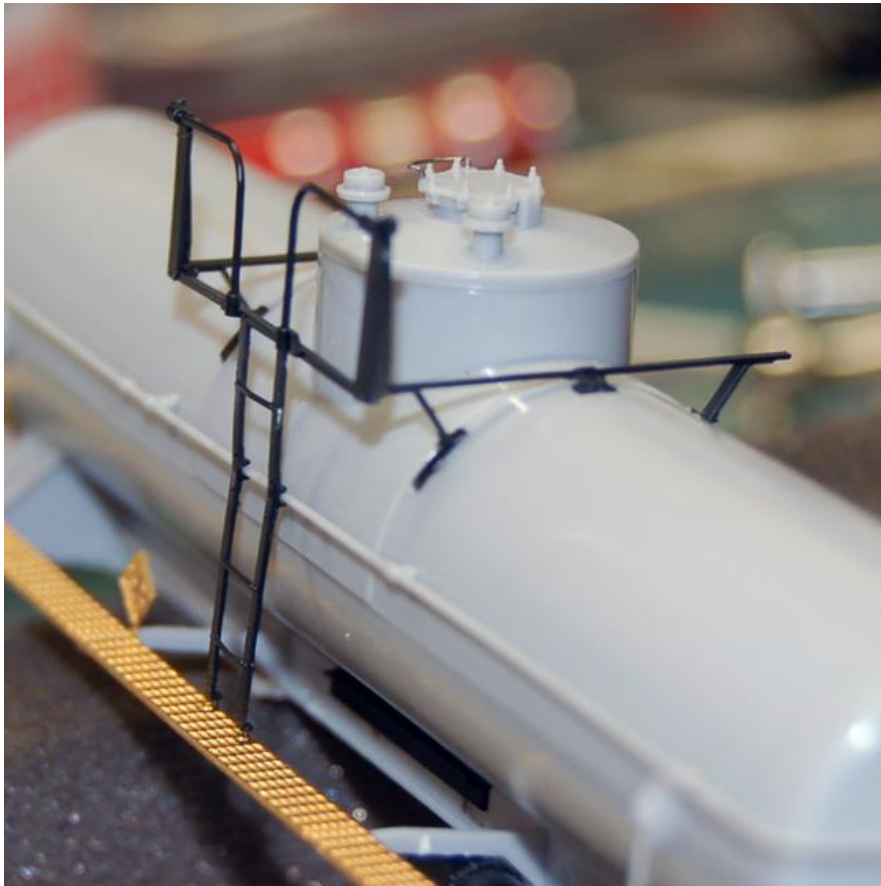
Additional instructions for the 1952 and 1957 versions of the 8000 gallon welded tank car:

These instructions are so you can build up the dome platform area.

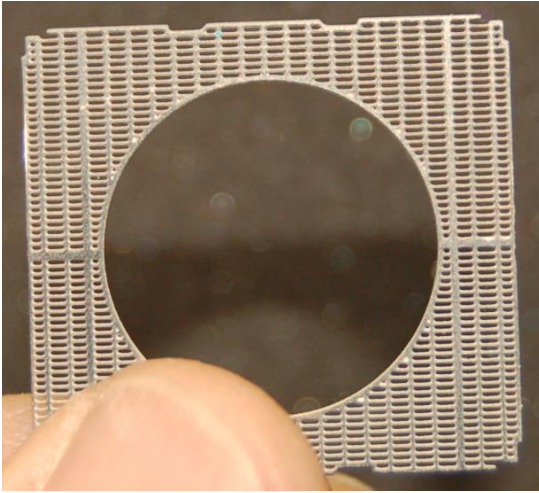
45. **Install the dome supports to the top of the tank.** The dome platform supports are the "U" shaped brackets. These brackets fit into slots in the top of the tank. There are small tabs on these brackets which only allow them to fit one way. Orient and glue in place. You will also have to remove some molding flash on the flat part (top) of the brackets so that the platform will sit flat.



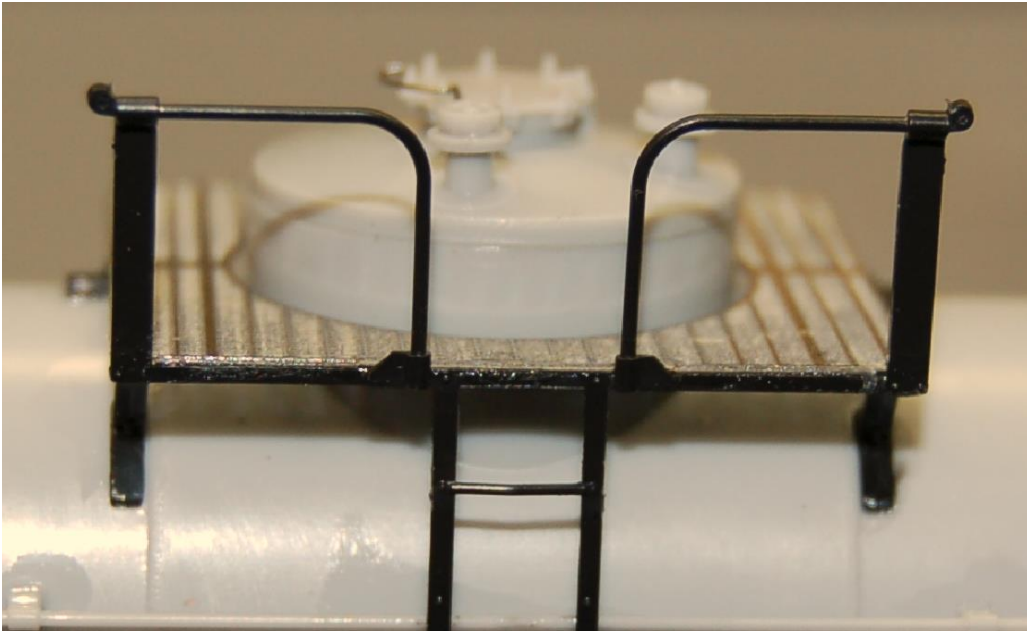
46. **Install the dome platform railing and ladder assembly.** The platform railing/ladder assemblies have small notches on them that fit the corners of the platform supports. Glue at the corners of the platform, and also insert the locating pins on the bottom of the ladders into the holes of the walkway. Glue the ladders to the walkway with CA. Repeat on other side.



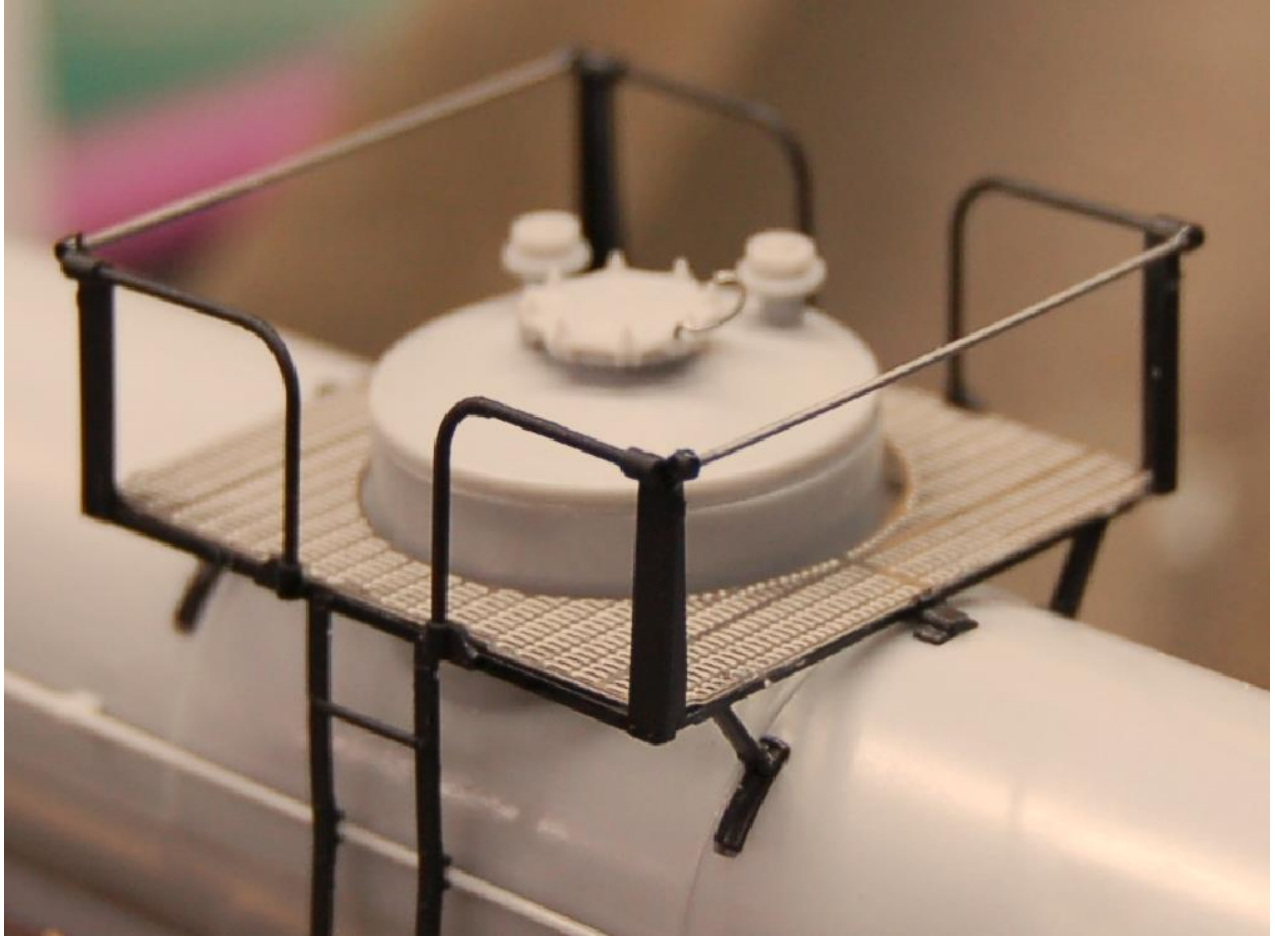
47. **Install the dome platform.** Locate the etched metal dome platform (from bag 19).



Place over dome and on top of brackets ensuring that the walkway is centered and square on the supports. Secure with CA.

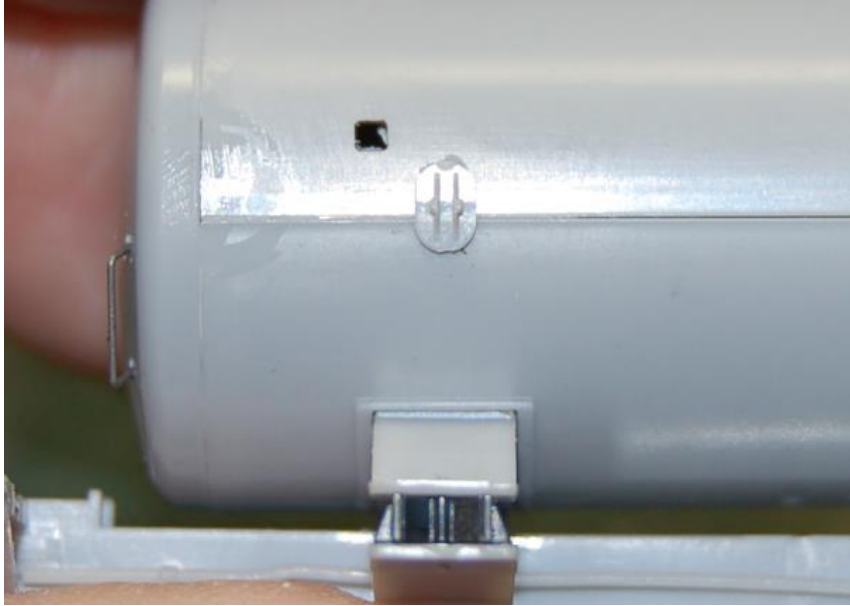


48. **Install horizontal railings in platform.** There are two pieces of straight wire that are equal in length. These are for the horizontal railings of the platform. You will notice small circular “cups” on the corners of the railing/ladder assemblies that the horizontal railings fit into. Gently insert one end of the wire into one of the cups and maneuver it into the cup on the other railing assembly. You may need to slightly spread the railings apart to fit the wires in, so exercise care. When wires are in place, secure with a small drop of CA.



Note: At this point, return to step 38. (Steps 45-48 are used for the 1952 / 1957 tank car builds and are to be executed in lieu of steps 35-37).

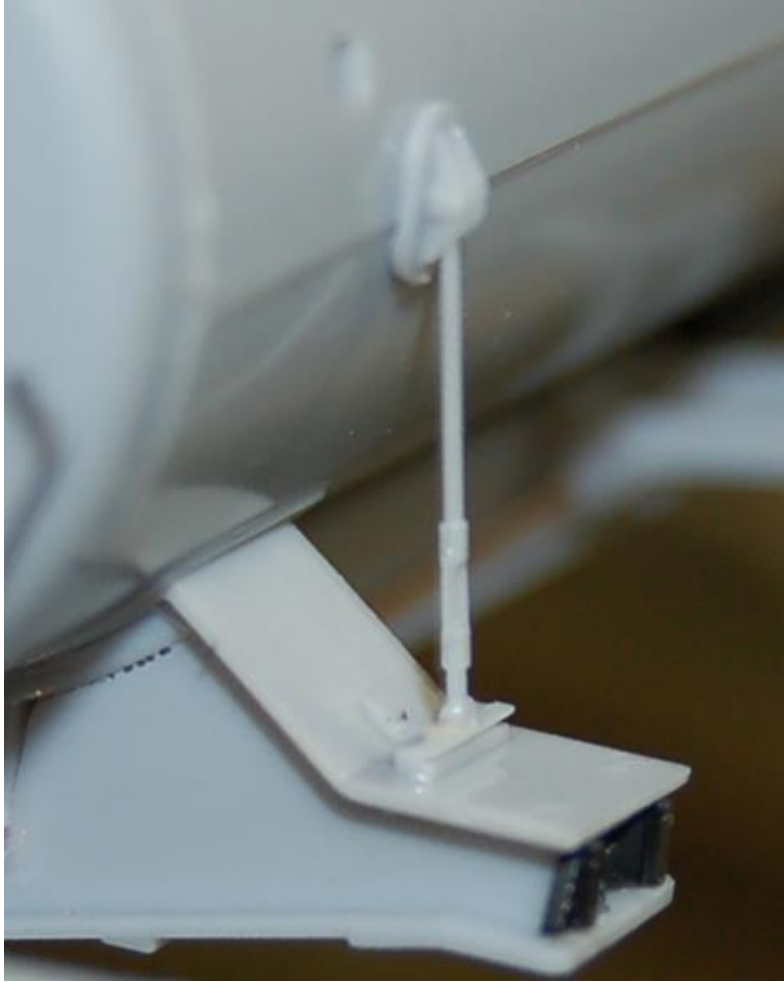
49. **Attach the tank strap anchors to the tank body.** There are four oval strap anchors that fit into holes in the tank body. Glue all four in place.



50. **Install the tank straps that connect the underframe to the tank.** Locate the four plastic tank straps.



Each of the four tank straps has a long end and a short end. The short end goes into a hole in the top of the bolster located right behind the walkway. The long end fits into the slot in the strap anchor. Insert the short end into the hole in the bolster and rest the long end of the strap into the slot in the strap anchor with the end to the strap fitting all the way to the top of the slot. Secure with CA being careful not to fill the slot with glue. Repeat this process for all four.



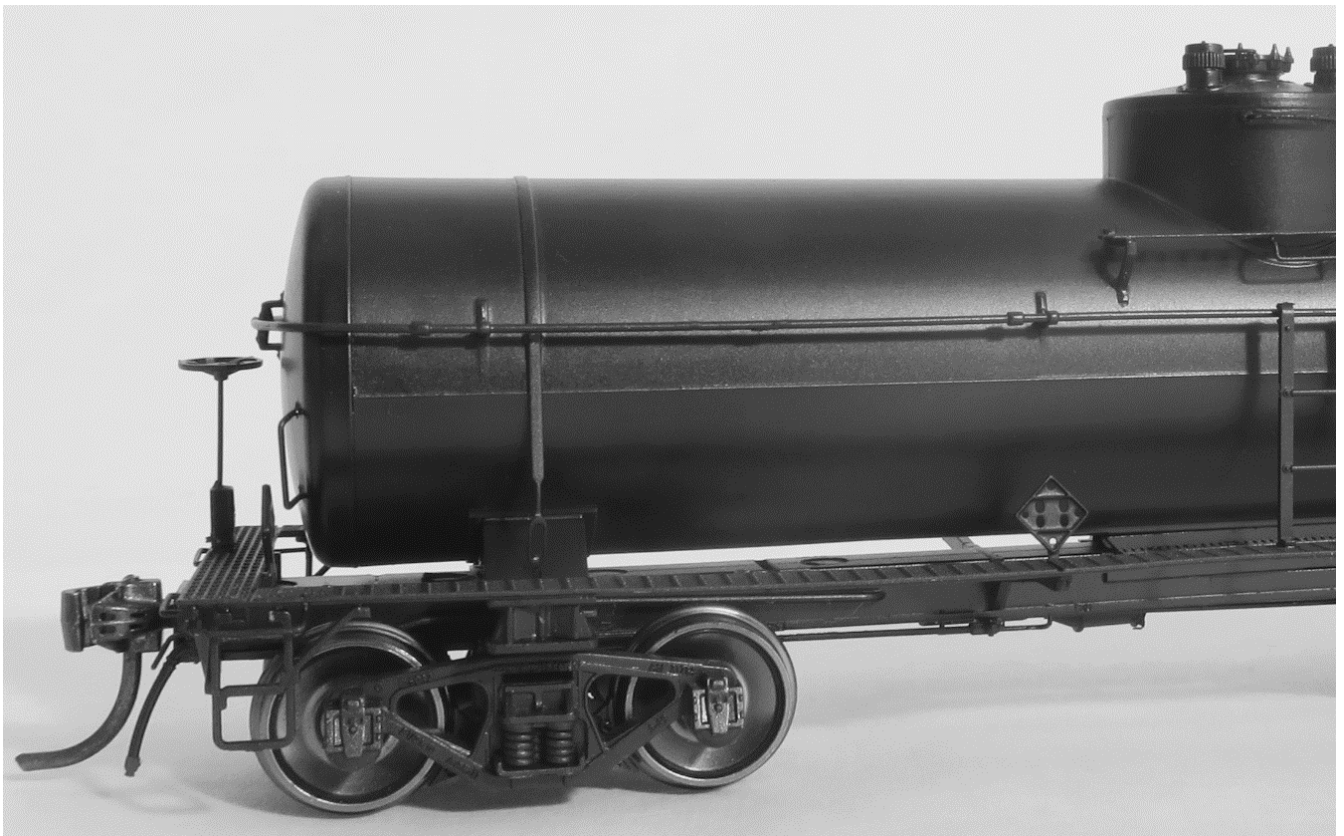
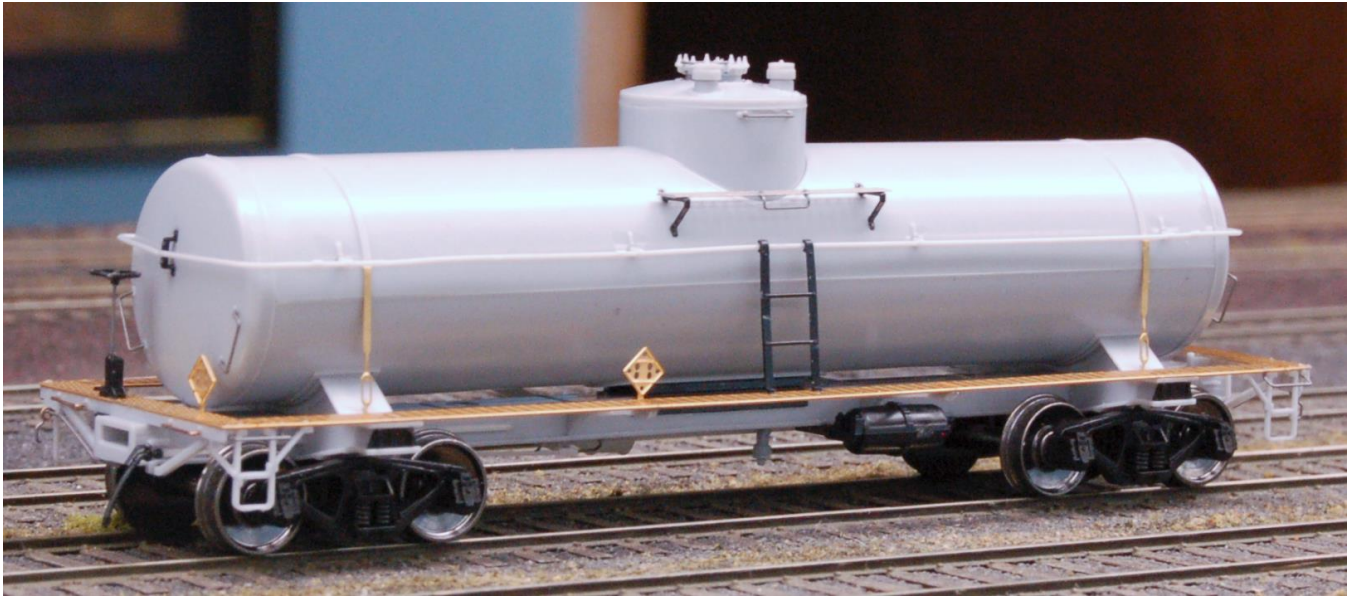
Note: At this point, return to step 42. (Steps 49-50 are used for the 1957 tank car builds and are to be executed in lieu of steps 40-41).

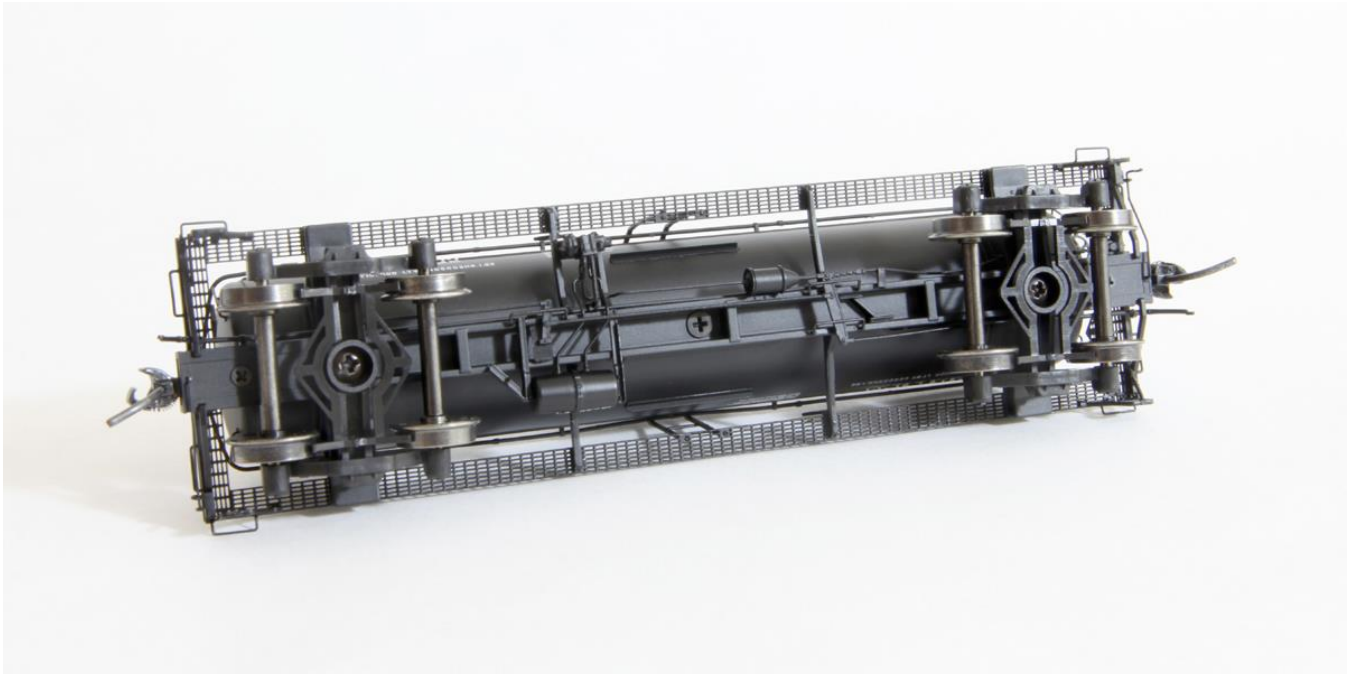
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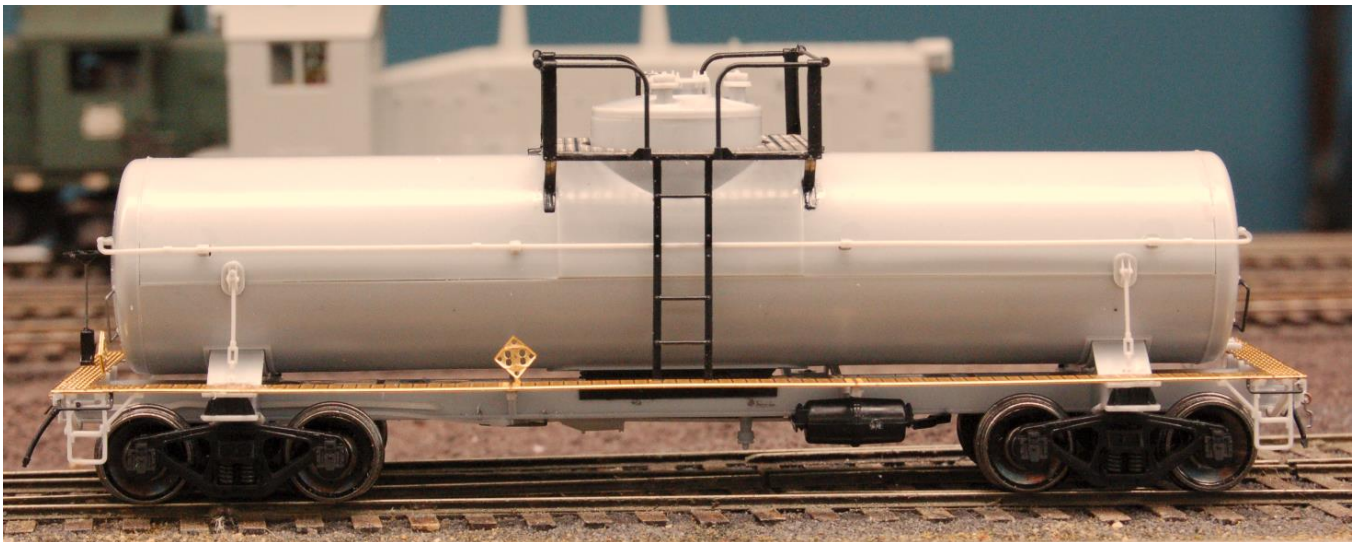
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