



Instructions: General American 8,000 Gallon Acid Tank Car Kit

12/2014



Thank you for purchasing the Tangent Scale Models General American 8,000 Gallon Welded Acid Tank Car Kit! A few quick notes before starting:

- **Instructions have many large images:** Since some model builders are more visually oriented, we have included *both* text and photos 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. This is another advantage over a printed instruction sheet.
- **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.

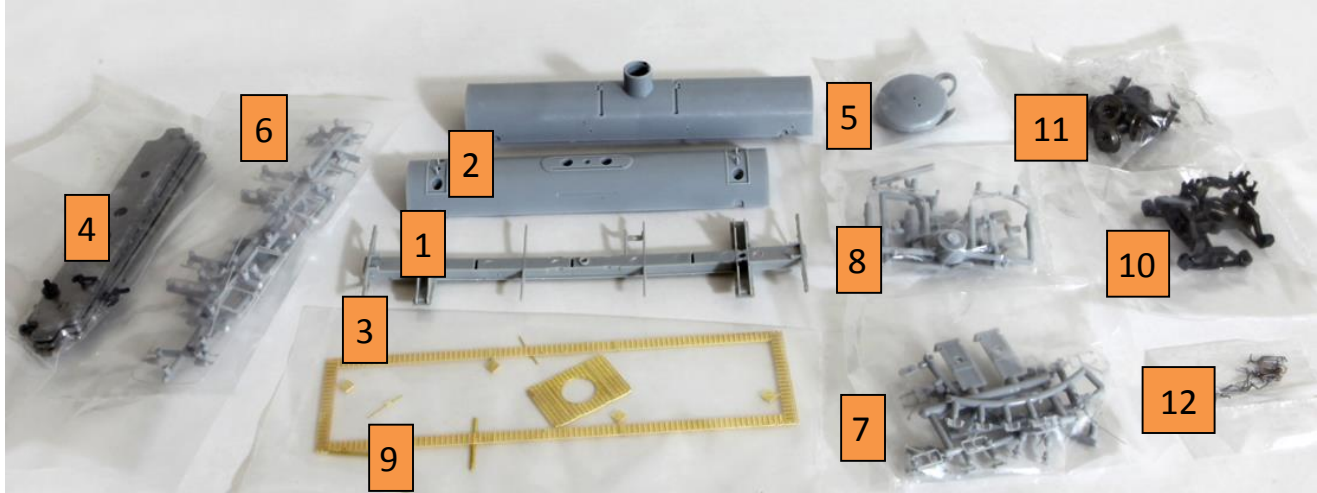
- **We want feedback:** If you find something missing from our text instructions, or an error within these instructions, please let us know by submitting a comment to us on our website or sending an email to support@tangentscalemodels.com Thank you!
- **These instructions are meant for adults:** While we applaud bringing younger modelers into our hobby, this model includes many small parts, some 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 new 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!



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

Parts bags included:

- Item #4 contains the tank body weights (for inside tank body) and all screws for the kit
- Item #5 contains the tank body ends and dome parts
- Item #6 contains the top part of the frame, brake rigging and tank handrail
- Item #7 contains the poling pockets, coupler box covers, brake appliances, and stirrup steps
- Item #8 contains the dome and ladders
- Item #9 contains the car running board and the dome platform floor, as well as the tank straps
- Item #10 contains one pair of trucks and brake beam parts
- Item #11 contains four 33" all-metal standard tread wheelsets
- Item #12 contains all of the wire 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 cyanopoxy – for wire to plastic joins
- Canopy cement – for running board to plastic roof joins (made by Pacer and other brands)
- 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

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

TANK BODY CONSTRUCTION:

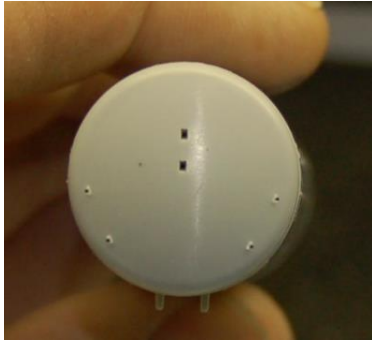
1. **Install weight into lower tank body.** Locate the weights and the lower half of the tank body. Make a sandwich with the weights and install them into the tank bottom. Using the two screws with the “collar” from bag 4, secure the weights in place.



2. **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.



3. **Install the end caps into the body assembly.** 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.



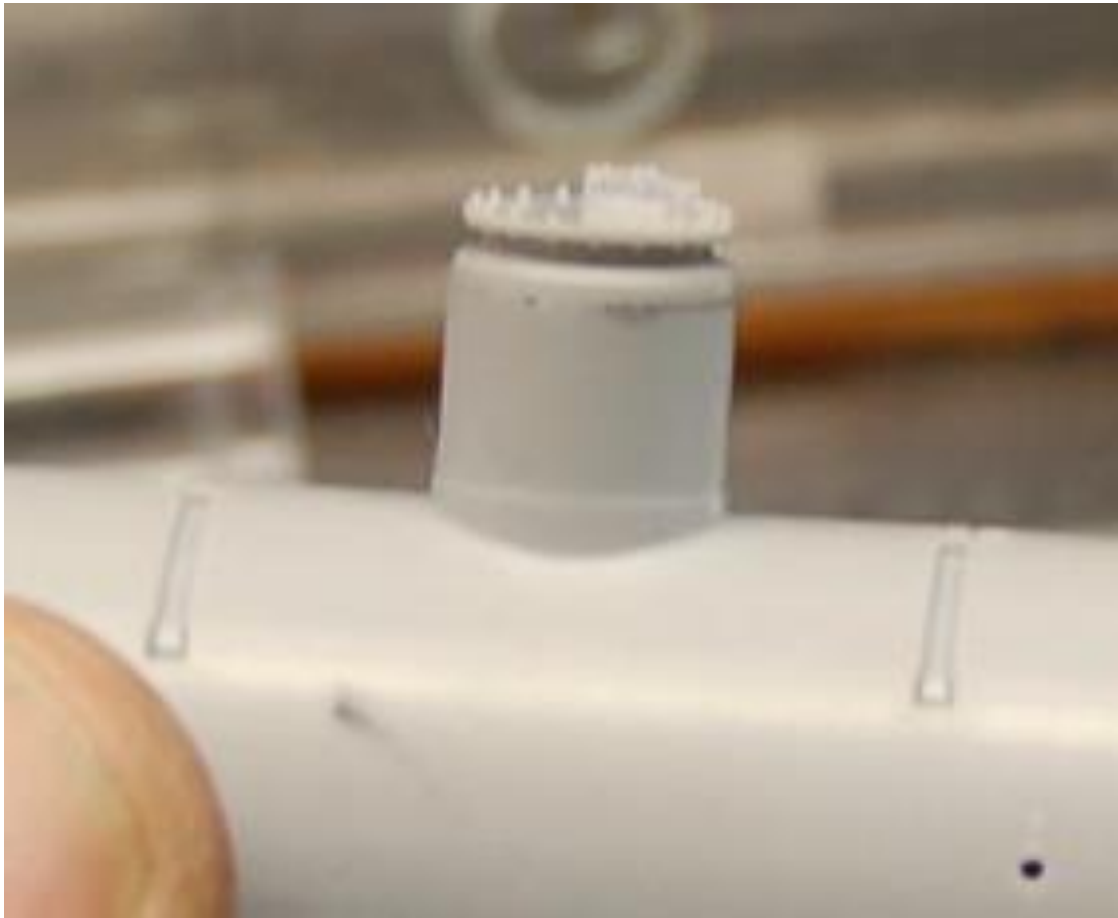
4. **Install the acid dome collar.** The dome lid is actually two parts, a collar and the lid itself. Install the collar first. This part is keyed with a slot that fits a tab on the dome so it will only go on one way. Glue in place.



5. **Install the acid dome lid.** The dome lid is also keyed to be placed onto the collar.



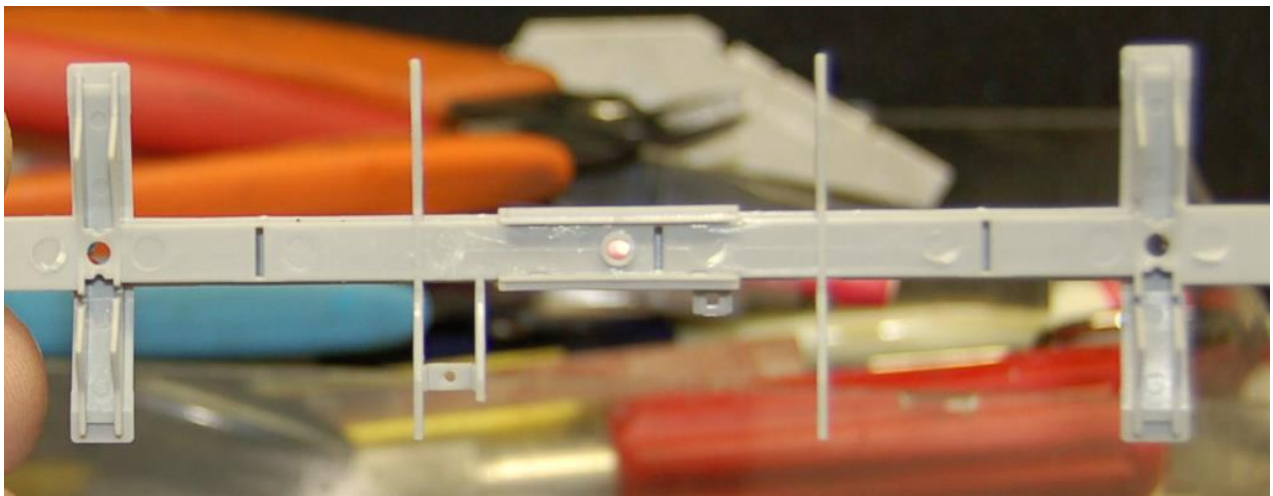
Orient and glue in place.



Now, place the tank assembly aside while you work on the underframe.

UNDERFRAME CONSTRUCTION:

6. **Install center tank supports.** The first step in the underframe assembly is to locate and install the center tank supports. These parts fit into recesses on either side of the center sill and into slots on the bottom of the tank. When gluing these parts in place take care to make sure that they are vertical and not canted inward or outward to ensure a proper fit with the tank.



7. **Install the train air line into the center sill.** The air line is in two pieces and is installed alongside the center sill. There are locating holes for where the airline passes through the sill, and notches in the bolster where it passes through it. The longer section goes toward the A end of the car (non-brake wheel end). Glue both pieces in place.
8. **Install the tank saddles.** Next come the tank saddles. These are the curved “W” shaped parts in bag 8. 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.



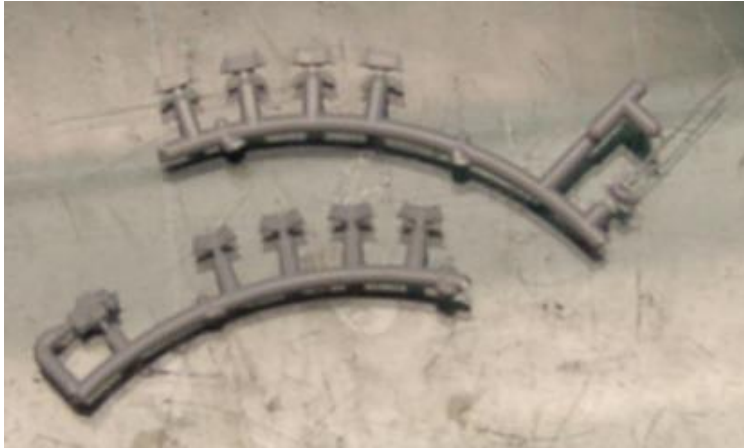
9. **Test fit the underframe to the tank body.** It does not matter which way the tank is positioned at this time (end for end). When satisfied with the fit, secure with screw.





Note that when the frame is secured with the screw, the warp in the frame disappears. You can glue the tank into the tank saddles.

10. **Install the poling pockets onto the bolster sides.** There are two types of poling pockets.



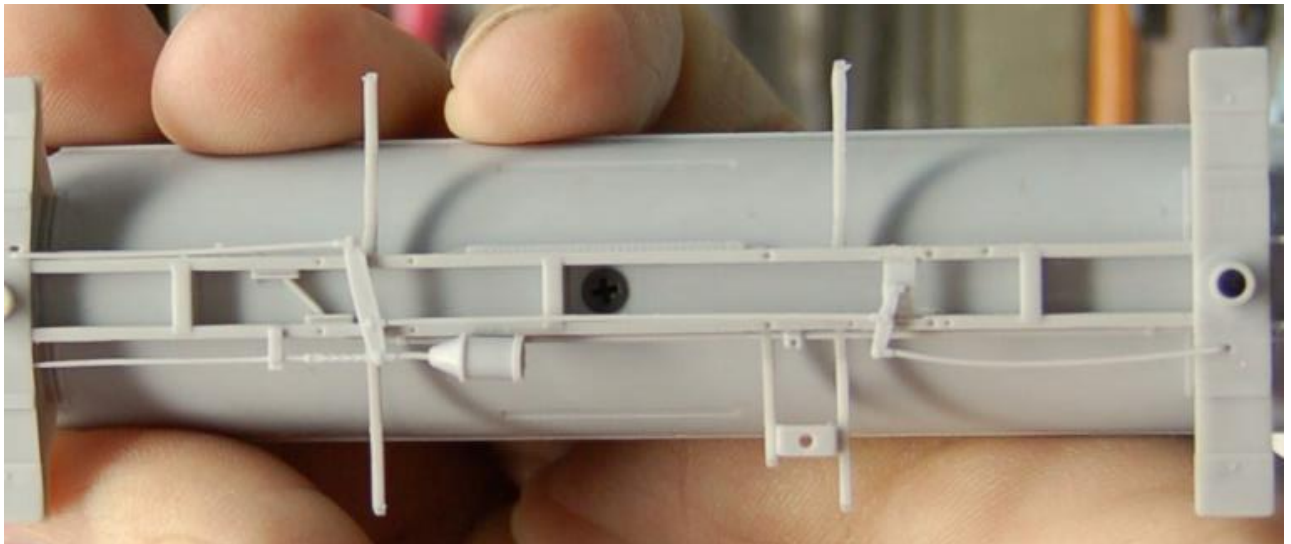
Choose which one for your prototype. For cars assembled prior to 1951, use the one with the “wedges” inside (see image below). For cars assembled 1951 and later, use the “open rectangle” design. They are triangular in shape, and the wider side goes on the bottom. Insert into the ends of the bolsters and glue in place.



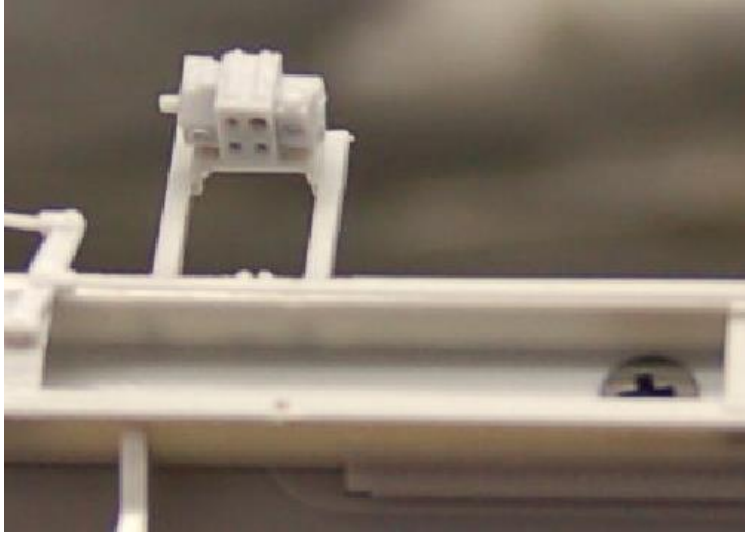
Above is the pre-1951 style inserted into the body.

11. **Install brake rigging and brake lines.** The next step is to install the brake rigging. Locate the brake cylinder assembly from bag 5 (this is the part with the two brake levers and all of the piping attached to it). 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 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.



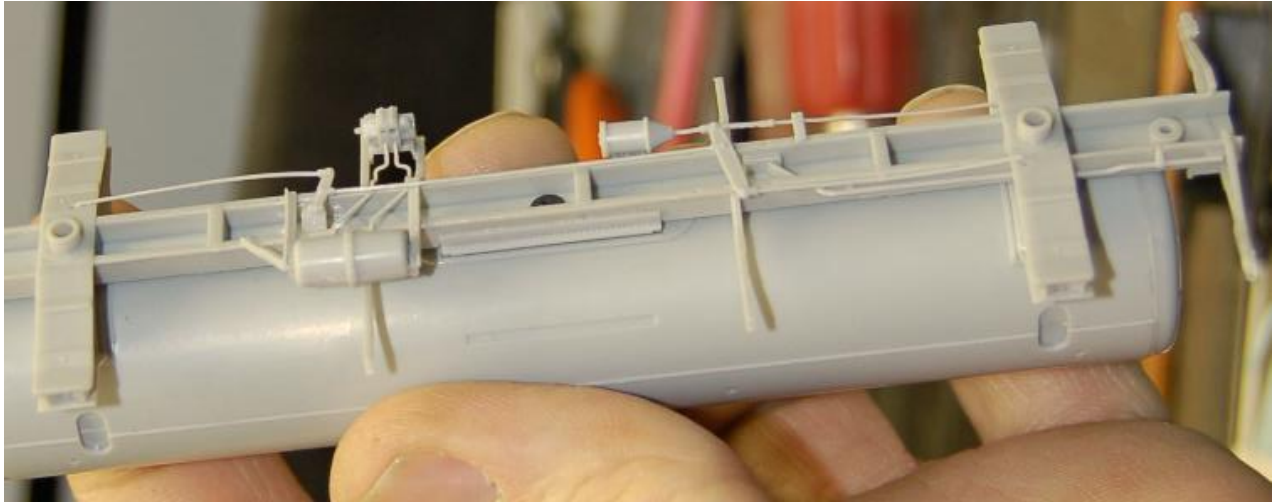


12. **Install the ab valve.** The ab valve is mounted on the bracket that is on the same side of the center sill as the cylinder. Orient it so that the holes the triple valve face the center sill. Glue in place.

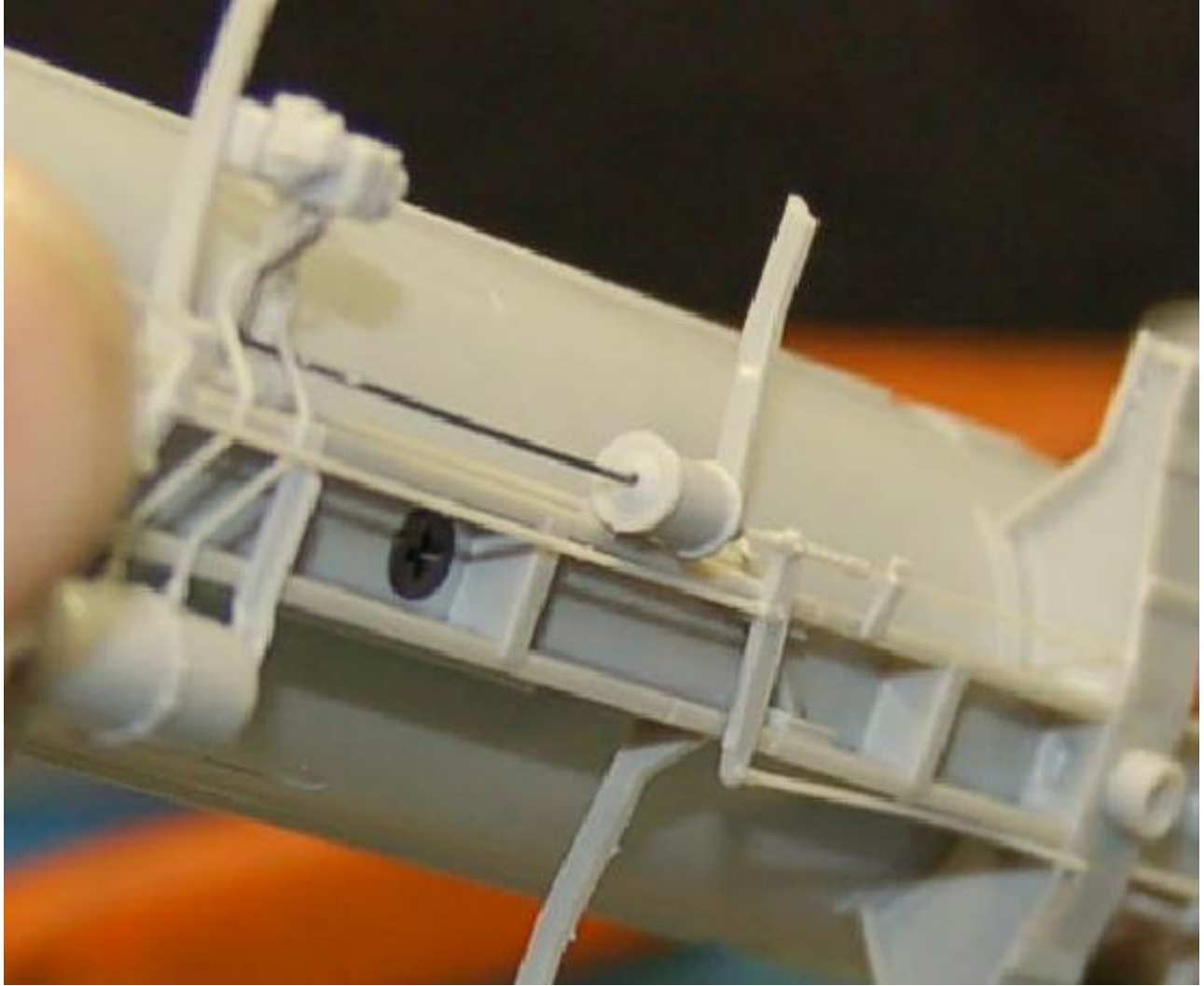


13. **Install the air reservoir.** The air reservoir has three mounting legs that have tabs that fit into holes in the center sill. The two air lines coming out of it fit into the two bottom holes in the triple valve (the ones closest to the tank body). Glue assembly in place.

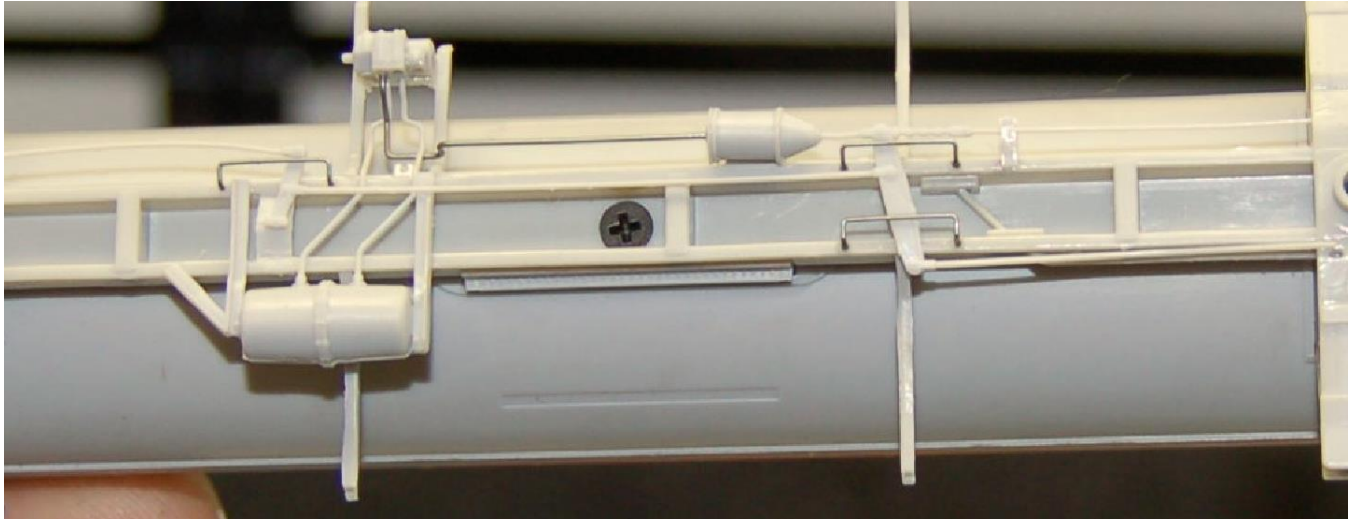




14. **Install the small wire parts for the brake system.** The next few steps will be to add wire parts to the underframe assembly. Open bag 2 and locate the pipe that goes from the brake cylinder to the triple valve. This part is easy to recognize because it is the one with all of the bends in it! The 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.

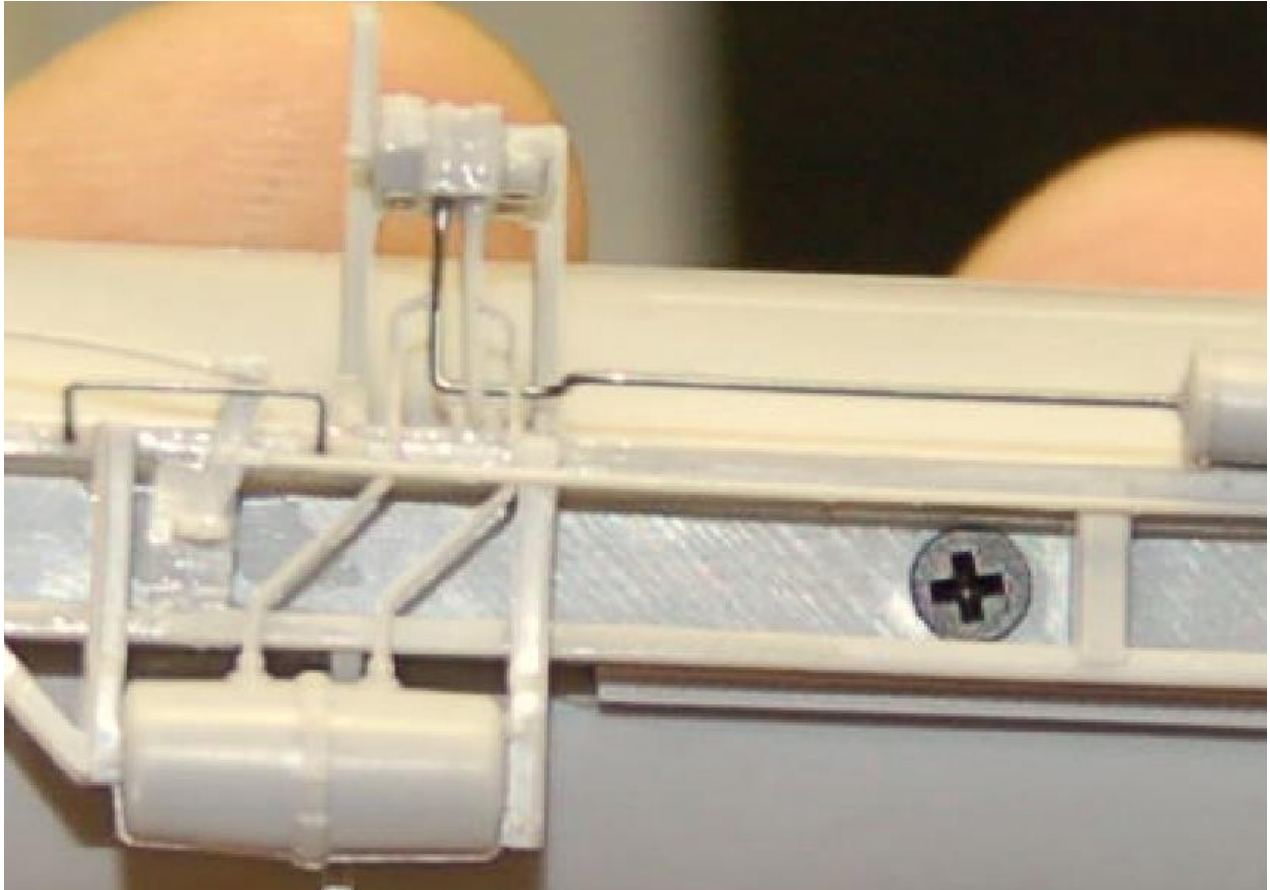


15. **Install the largest drop grab irons.** Locate the three largest drop style grab irons from the wire parts. These will fit into holes in the center sill by the levers. Orient them so that the “drop” is facing toward the triple valve side of the sill on all three. Glue in place with CA.

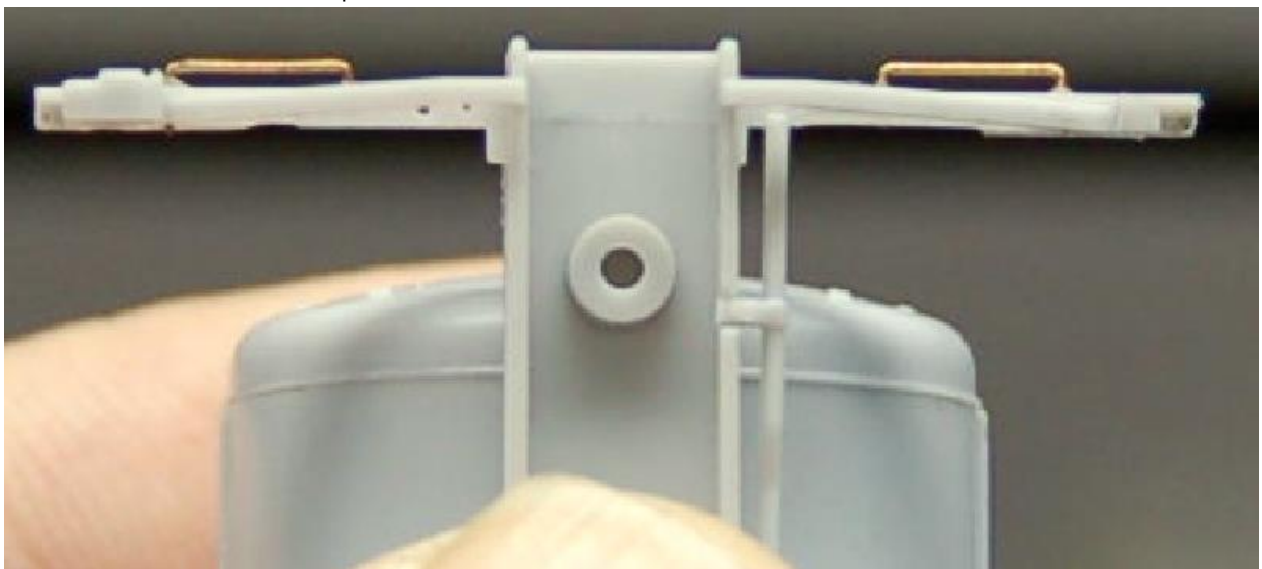


- 16. Install the dust collector pipe.** To complete the underframe piping, locate the dust collector pipe. This is a small L-shaped plastic piece. It fits into the remaining hole in the triple valve and a small locating tab in the train line. Glue in place.





17. **Install the end grab irons.** Locate the four small copper colored straight grab irons from the wire parts. 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.



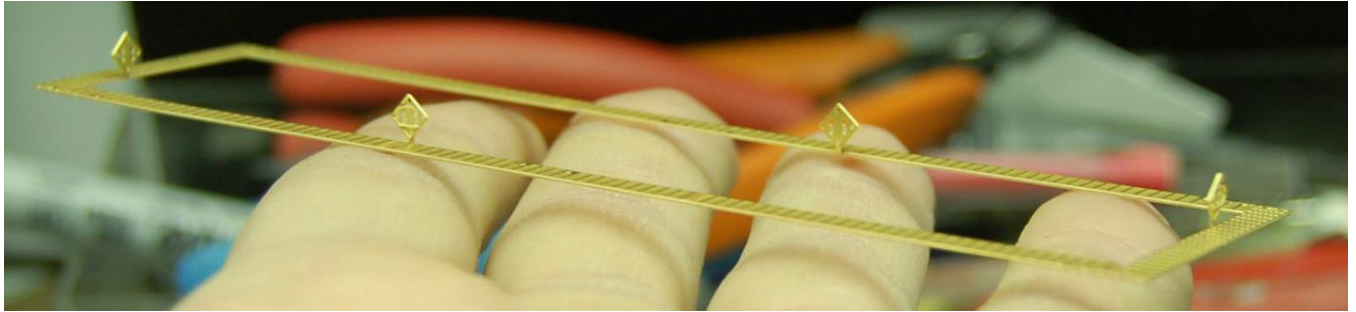
18. **Install the eyebolts for pin lifters.** There are two small eye bolts for the cut levers. Install these in the end sills with CA.



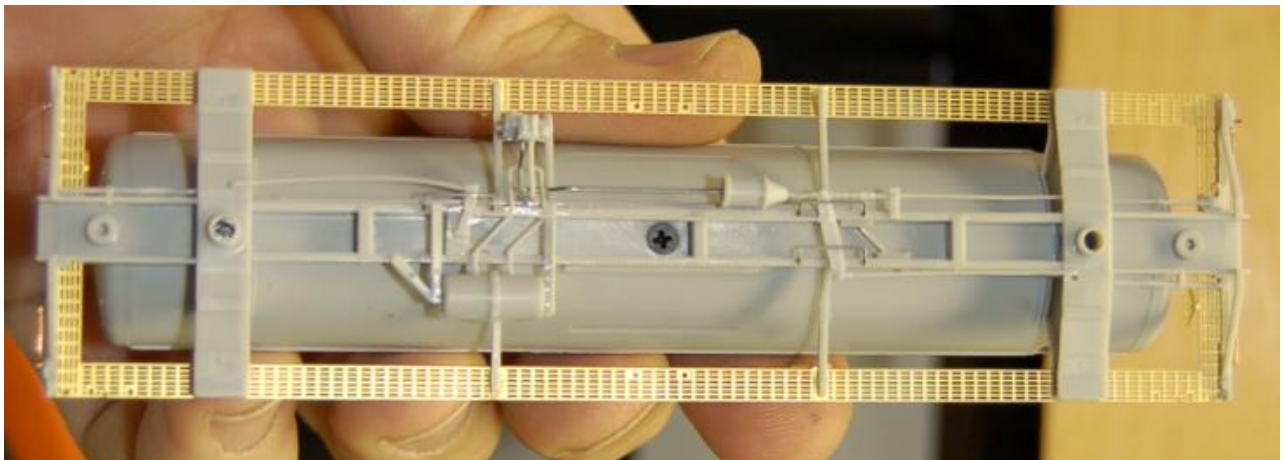
19. **Install the brake chain.** The brake chain has two pins that fit into the two outer holes in the end sill. Mount this part on the underside of the sill with the end of the chain fitting into a small hole in the bolster face. Glue in place.

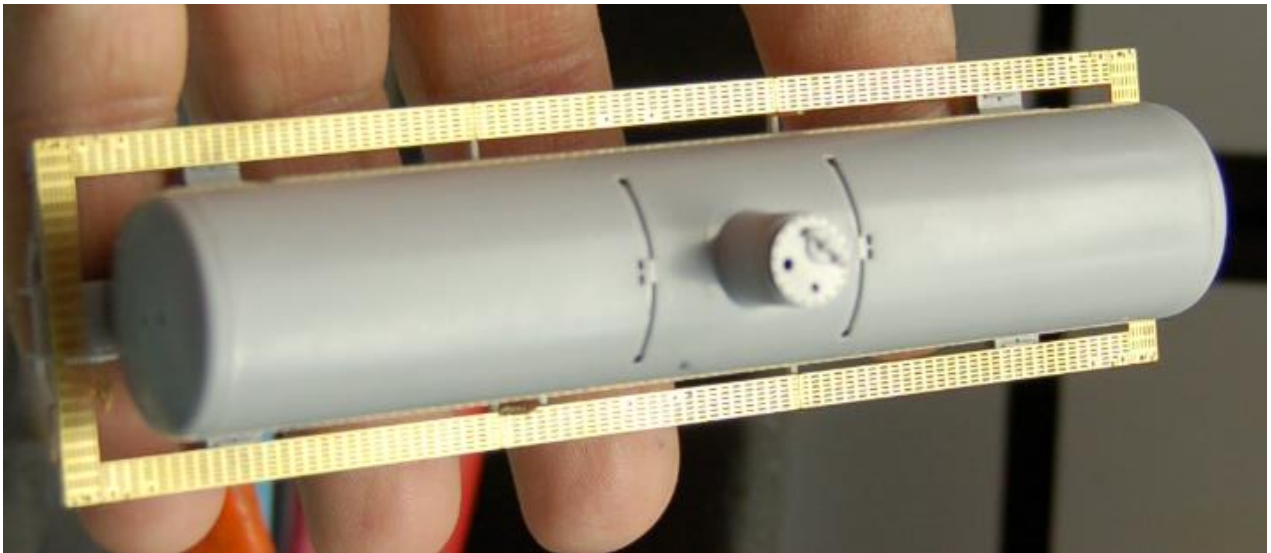
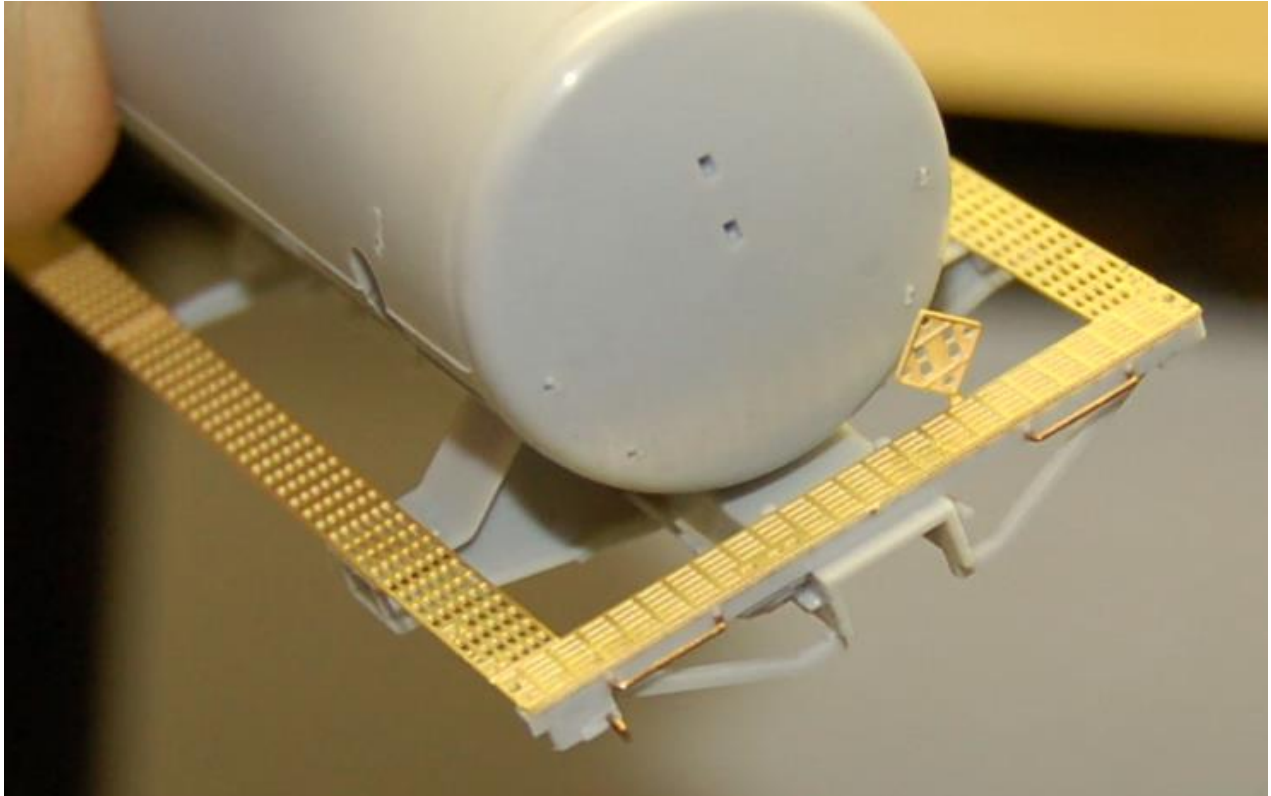


20. **Prepare the running board to be mounted to the underframe.** Remove the walkway from bag 4. You will notice that the four placards are different on each side. The side that has the raised ribs will face outward when the walkway is mounted on the car. Bend the placards at a 90 degree angle to the walkway.



21. **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 CA, 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 CA.

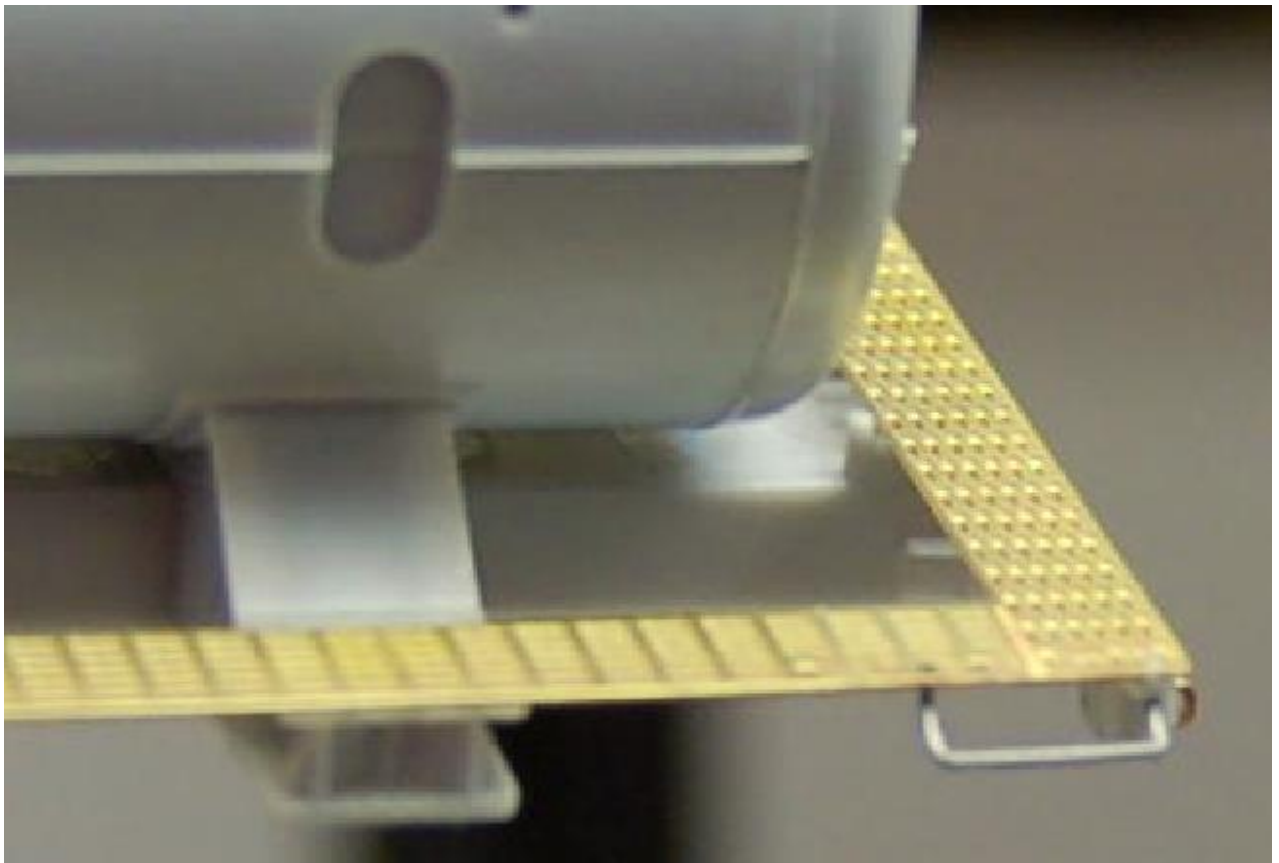


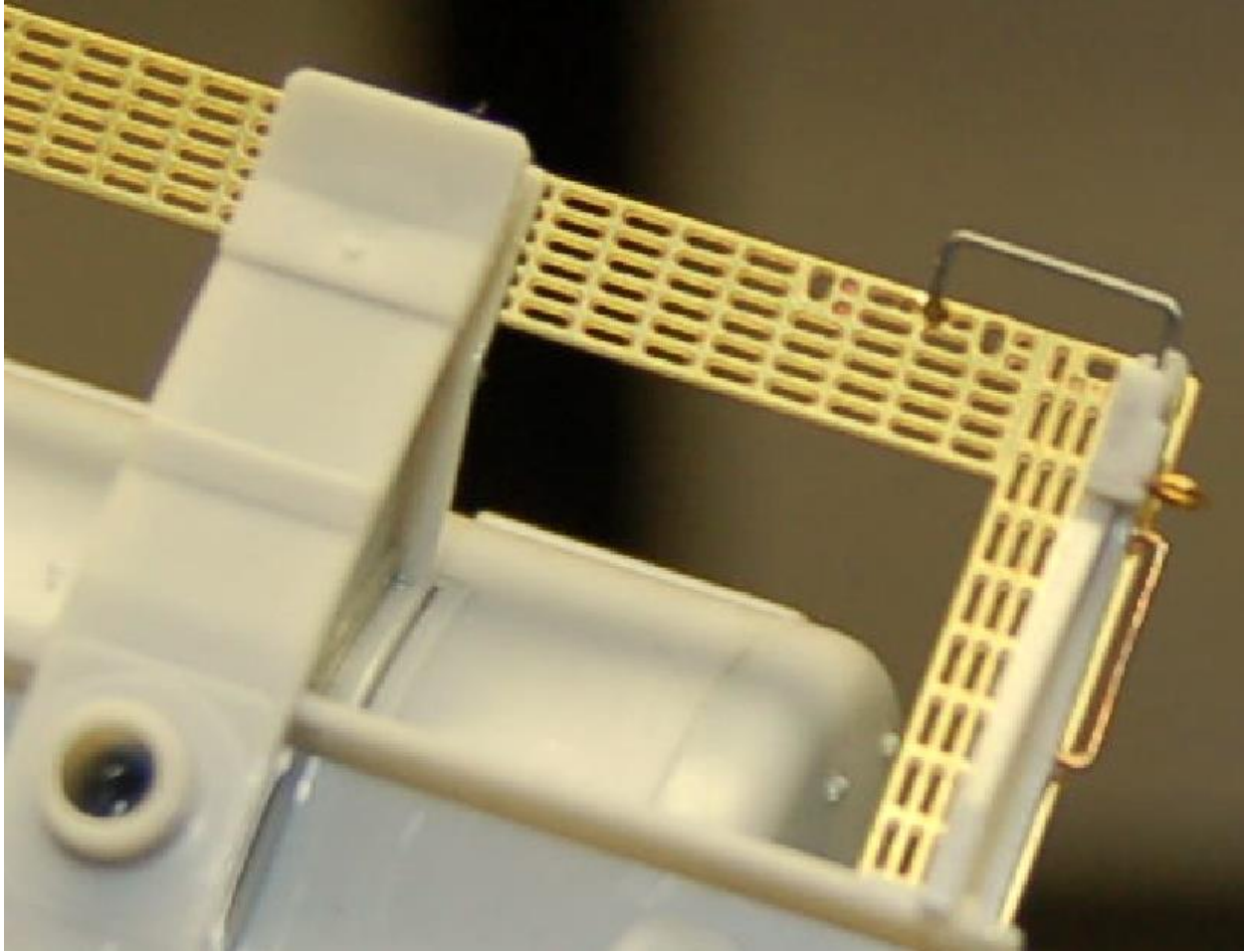


22. **Install the brake staff support.** Locate the plastic brake staff support. This part fits into the two outer mounting holes on the walkway end. Orient it so that the small ratchet lever is on the left as you face the end of the car. Secure with CA.

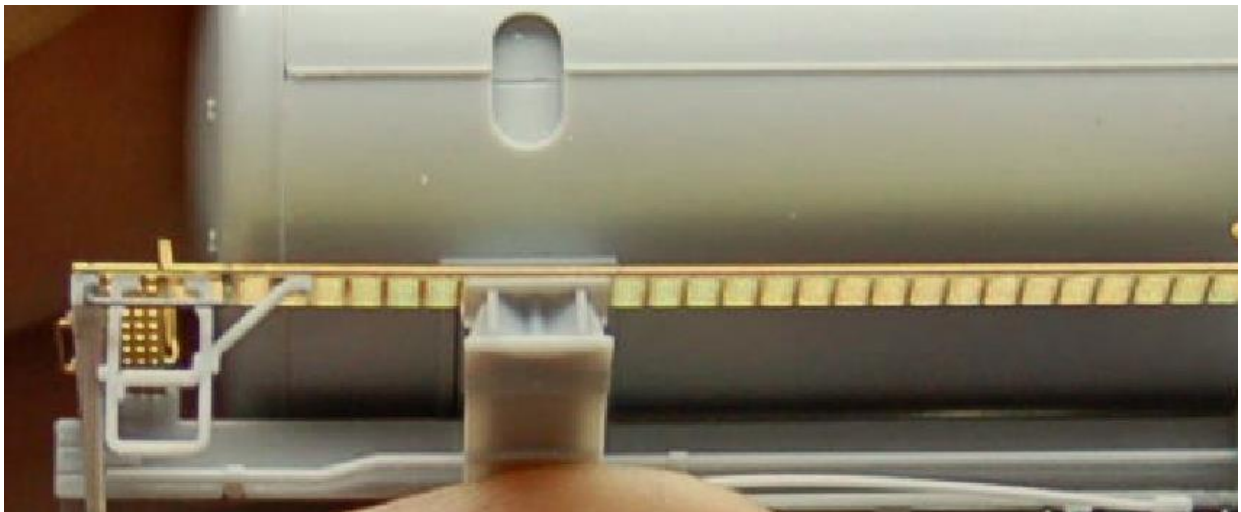


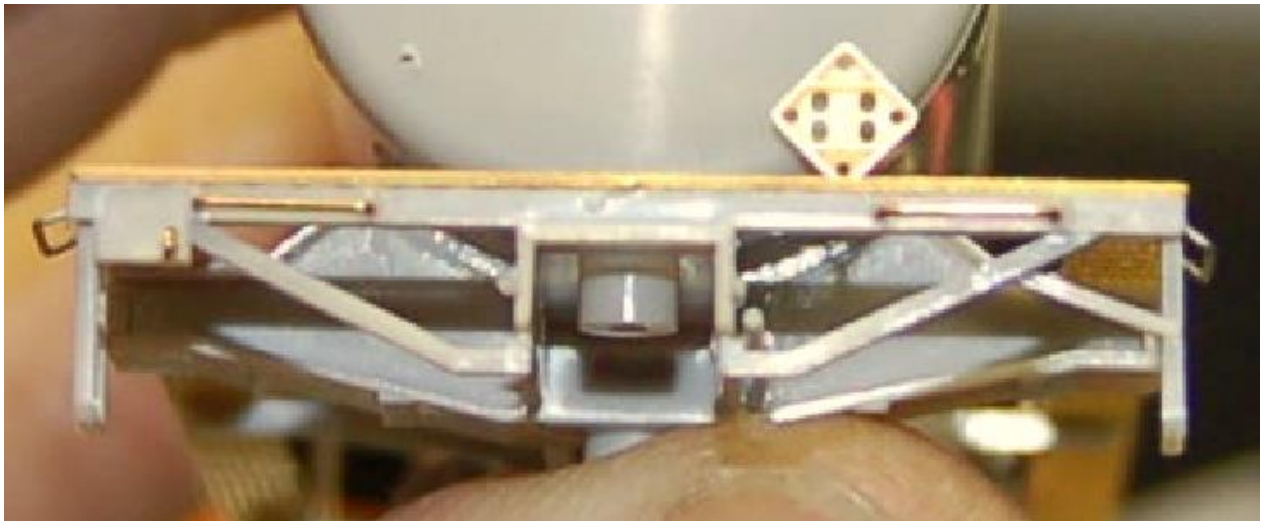
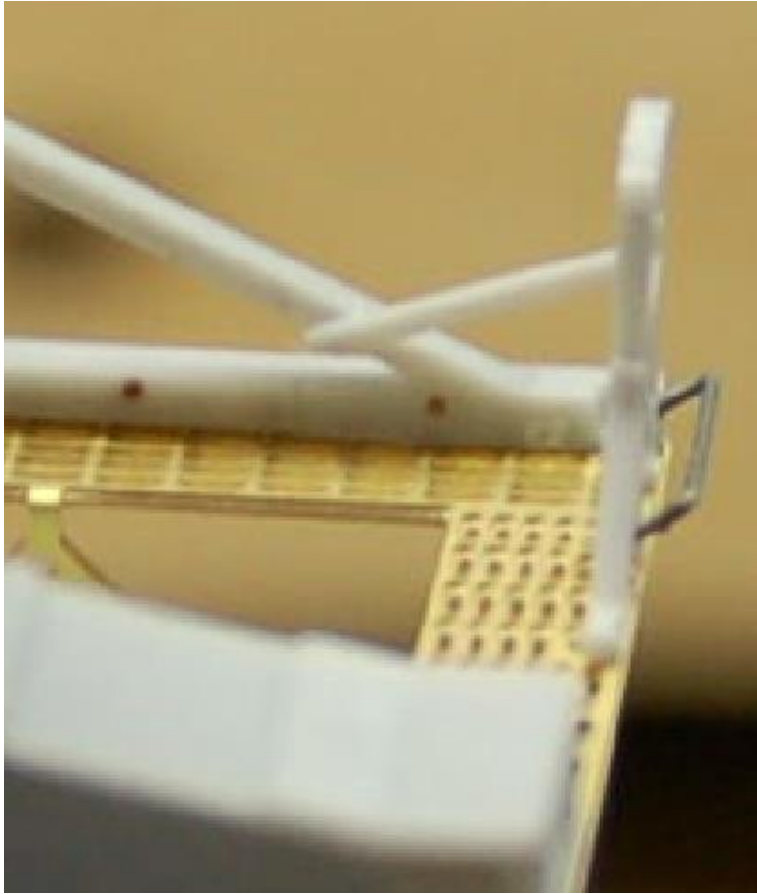
23. **Install the grab irons into the side sills.** Locate the small drop style grab irons from the wire parts. These will go on the four corners of the side sills. You may need to open the mounting holes on the corners in order for the wires to fit completely. Use a #80 drill to do so. Insert the wires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





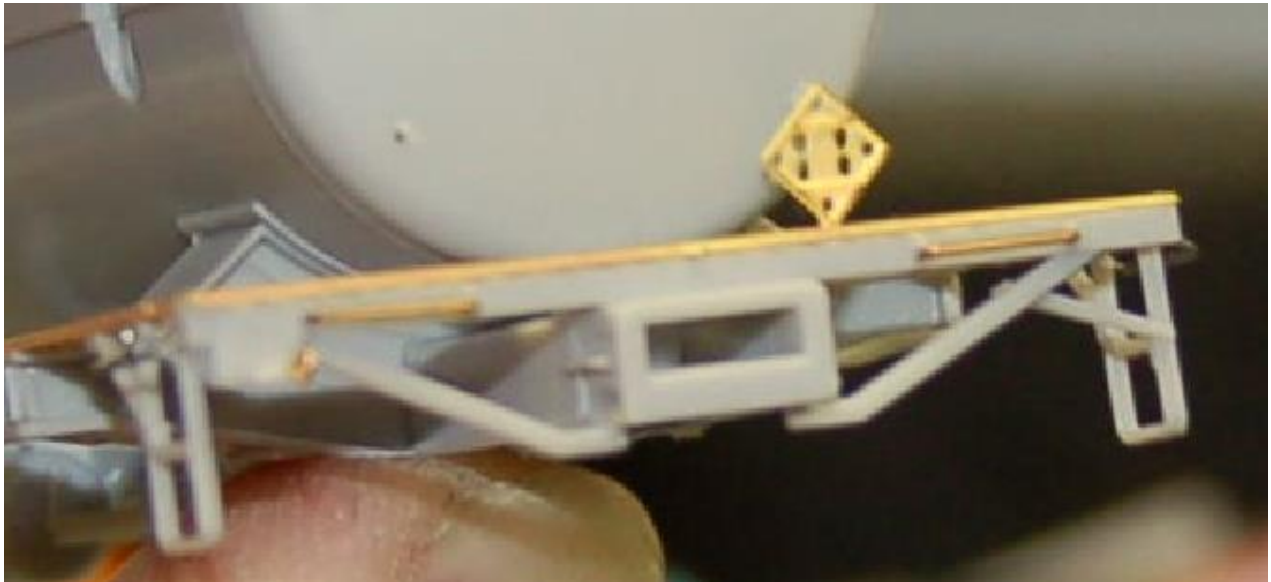
24. **Install the side stirrup steps.** There are two different types of stirrups. One has an extra leg that is used for support and is attached to the end sill. These are located on the left as you are looking at the side of the car. The stirrups without the extra leg go on the right. Orient stirrups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





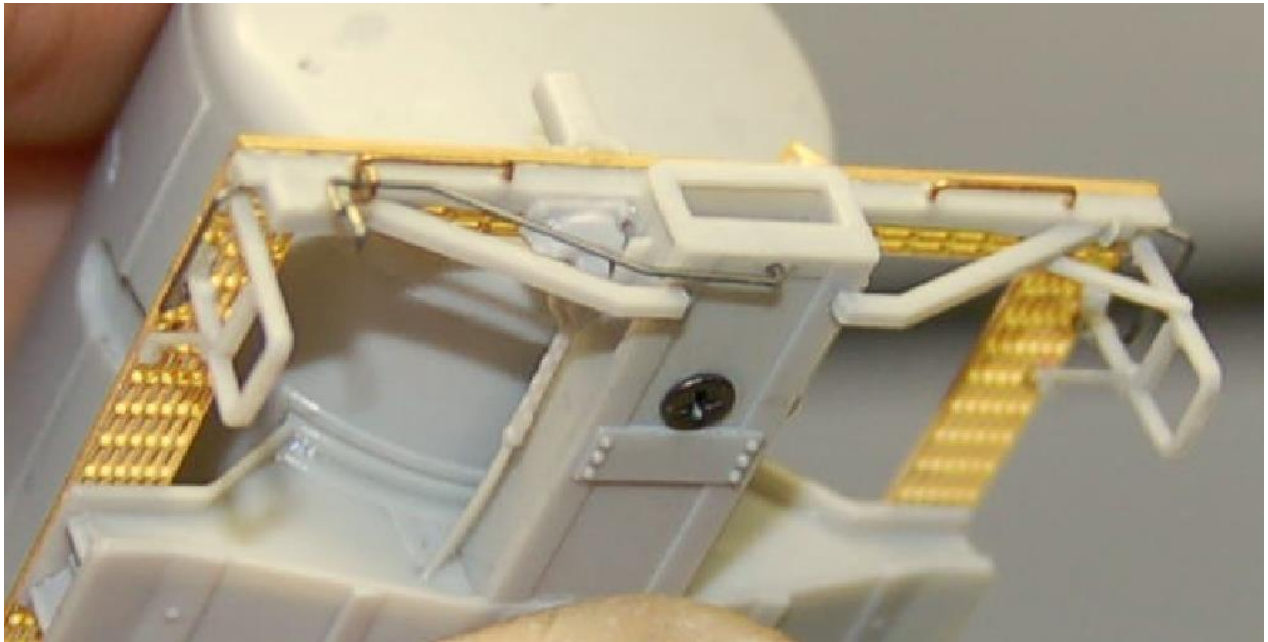
25. **Install the coupler box covers.** You may or may not choose to install the couplers at this time. If you choose to do so, take great care when painting the car as the paint could impede the couplers from working properly.

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

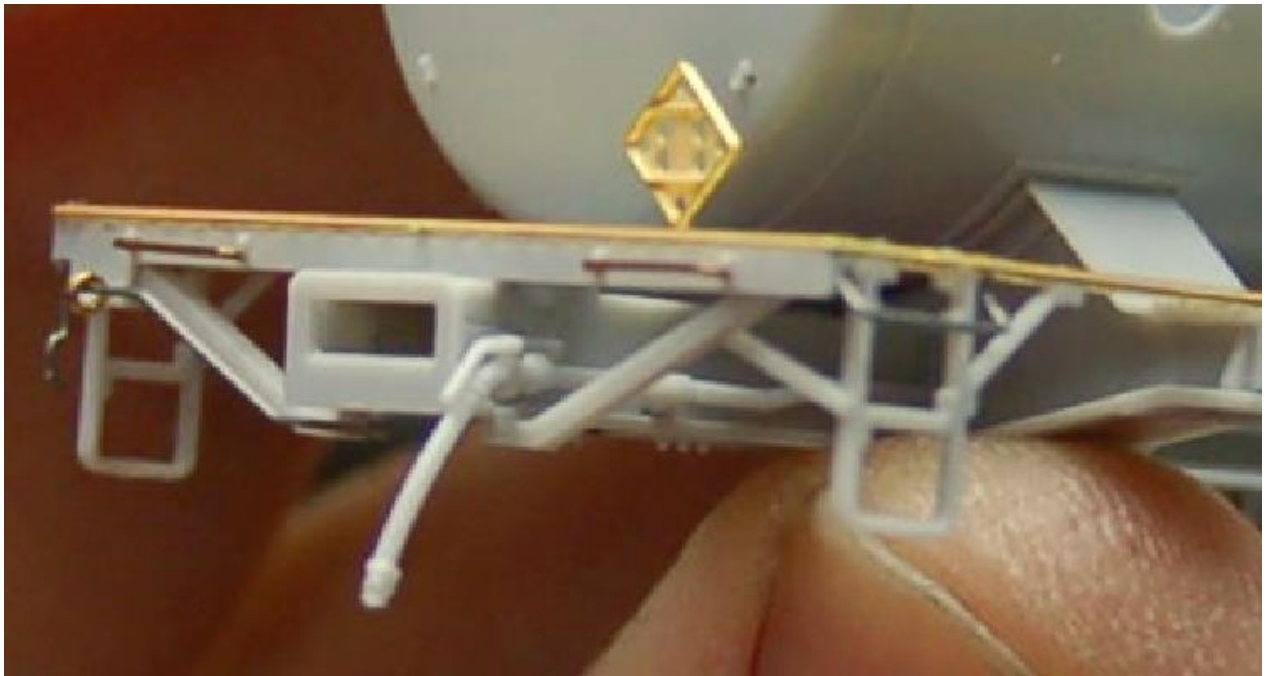


26. **Install the coupler cut levers.** Insert the cut levers through the eyebolts and into the small hole on the bottom of the coupler box cover. If you have not installed the couplers yet,

just tack the cut lever in place at the coupler box so that it can be removed to install the couplers after painting.



27. **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.



28. **Install the trucks to the underframe.** To ensure that there is no damage done to the air hoses and stirrups, 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.



FINAL DETAILING AND ASSEMBLY:

29. **Install brass tank drop rails.** There are two brass L-brackets in bag 4 that fit into slots in the side of the tank body. Orient so that the flange protruding outward faces up and secure with CA. Use glue sparingly as it is very visible if there is any excess.



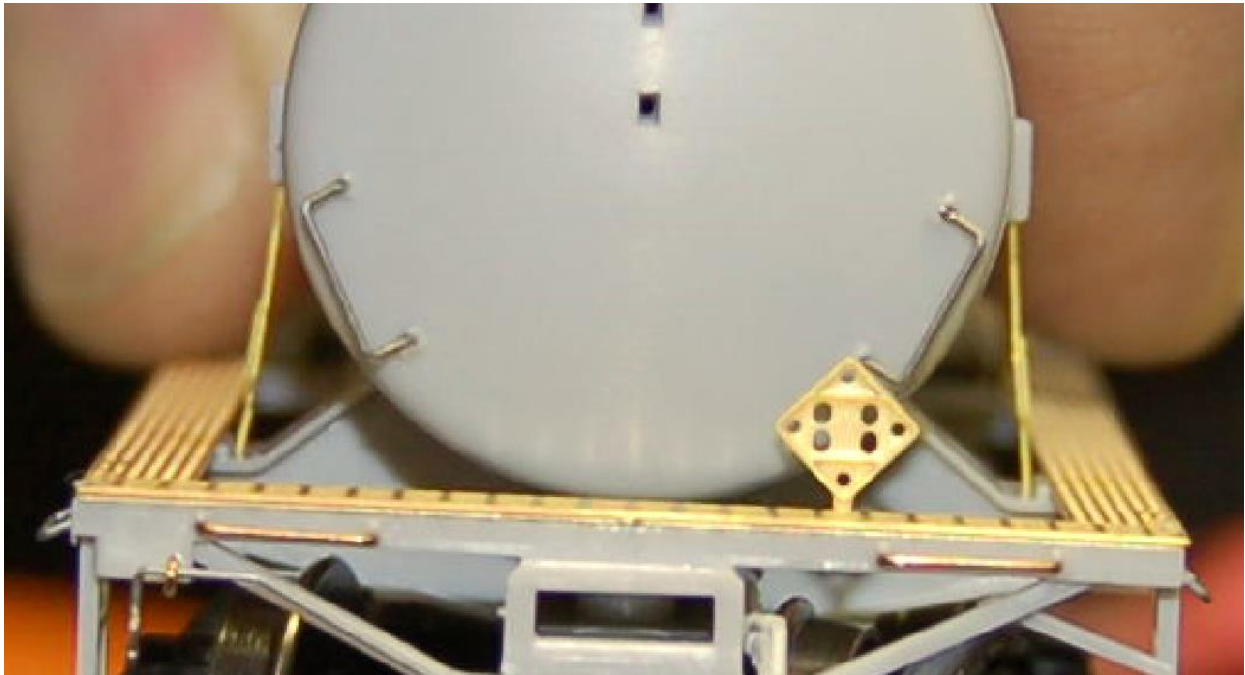
30. **Attach the tank strap anchors to the tank body.** There are four oval strap anchors that fit into recesses in the tank body. Orient these so that the open end of the slot on the part is facing the bottom of the car. Glue all four in place.



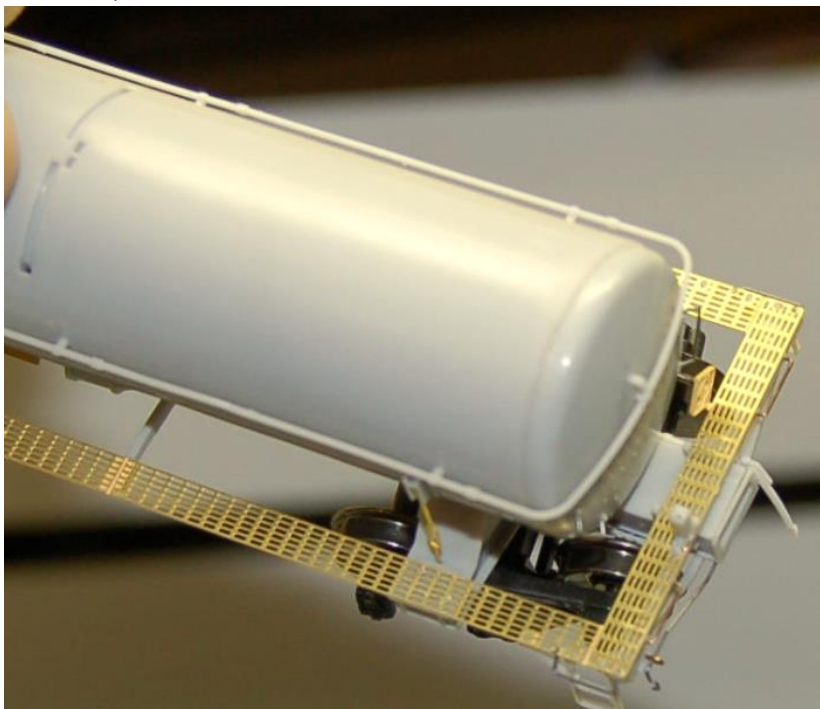
31. **Attach the tank straps to the tank and underframe.** Each of the four tank straps has a long end and a short end. The short end goes into a hole in the top of the bolster located right behind the walkway. The long end fits into the slot in the strap anchor. Insert the short end into the hole in 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.



32. **Install the tank grab irons.** Locate the last four drop style grab irons for the ends of the tank. Orient so that the drop goes toward the outside of the car. Secure in place with CA.



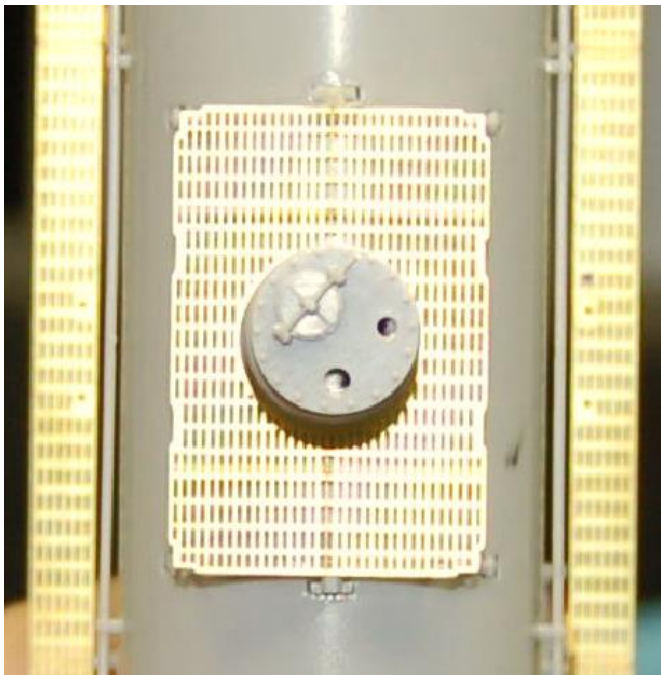
33. **Install the tank handrail.** To begin the tank rail installation, glue the end brackets into the slots on the ends of the tank. Separate the tank railing from the sprue, again being careful to not damage the railing. Starting on one end, fit the tank rail in the slot on the bracket, then insert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

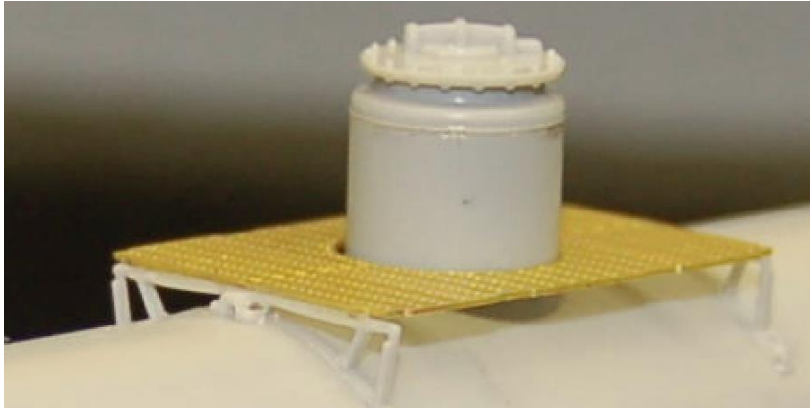


34. **Install the dome supports to the top of the tank.** The dome platform supports are the “U” shaped brackets. These brackets fit into slots in the top of the tank. There are small tabs on these brackets which only allow them to fit one way. Orient and glue in place. You will also have to remove some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

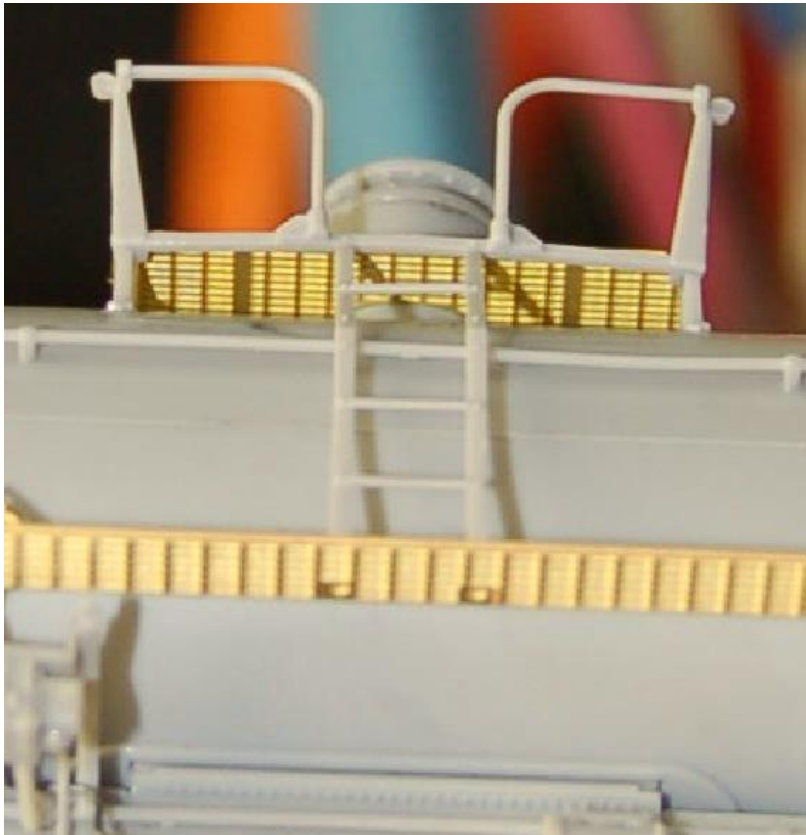


35. **Install the dome platform.** Locate the dome platform. It has a top side and a bottom side. The bottom side is the side that has what look like straps. Place over dome and on top of brackets ensuring that the walkway is centered and square on the supports. Secure with CA.



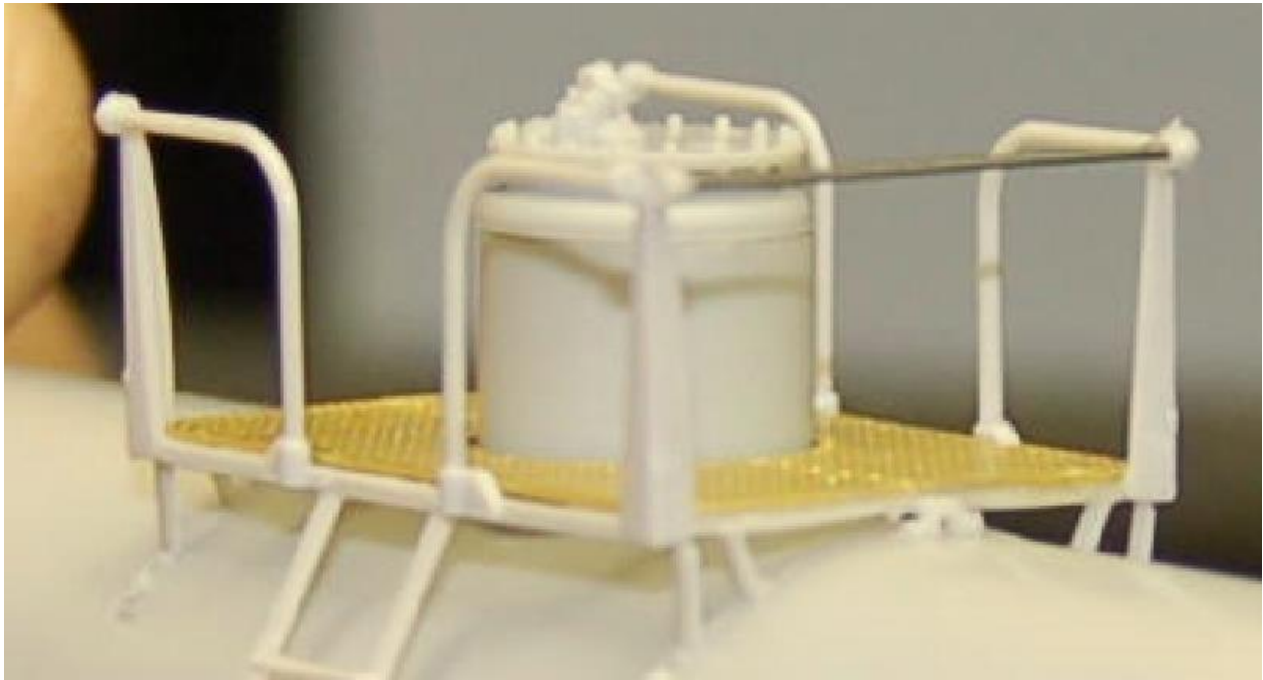


36. **Install the dome platform railing and ladder assembly.** The platform railing/ladder assemblies have small notches on them that fit the corners of the platform supports. Glue at the corners of the platform, and also insert the locating pins on the bottom of the ladders into the holes of the walkway.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

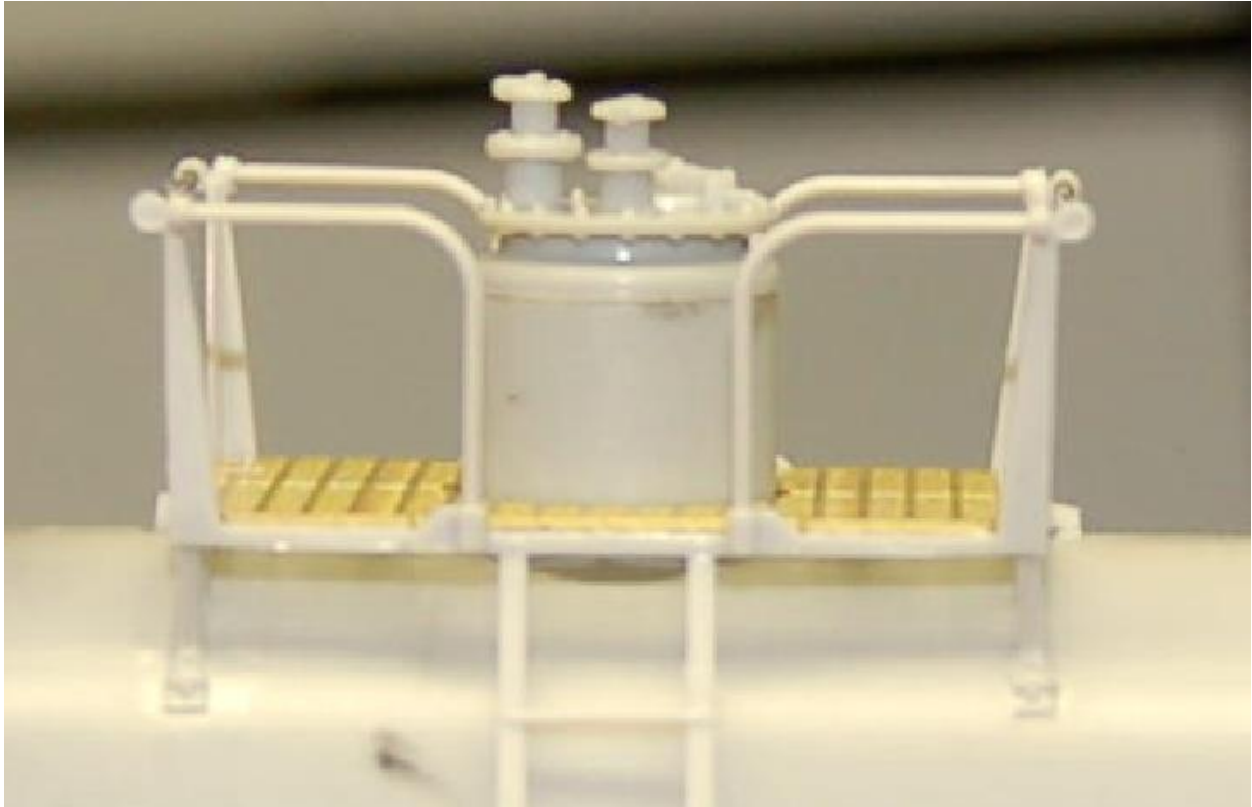


37. **Install horizontal railings in platform.** There are two pieces of straight wire that are equal in length. These are for the horizontal railings of the platform. You will notice small circular “cups” on the corners of the railing/ladder assemblies that the horizontal railings fit into. Gently insert 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.



38. **Install the dome relief valves.** There are two holes on the dome cover, one is larger than the other. These are for the relief valves. The mounting tabs on the valves are also of different size, so they fit into the corresponding holes. Glue in place.



39. **Install the brake staff and brakewheel.** There is one more piece of straight wire that is for the brake staff. Insert it into the brakewheel bracket on the end sill. You may need to trim this wire down a bit as the brakewheel should come to a point a bit below the tank rail. When satisfied with the length of the wire, glue in place with CA. Glue the brakewheel on top of the staff with the wire just protruding through the top of the brakewheel.



FINISHING UP:

40. **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! The second-if you are going to follow the first-is to stuff a small piece of paper towel into the coupler pocket to keep paint from getting inside. Also not absolutely necessary, but it could allow couplers to operate alot more freely.

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

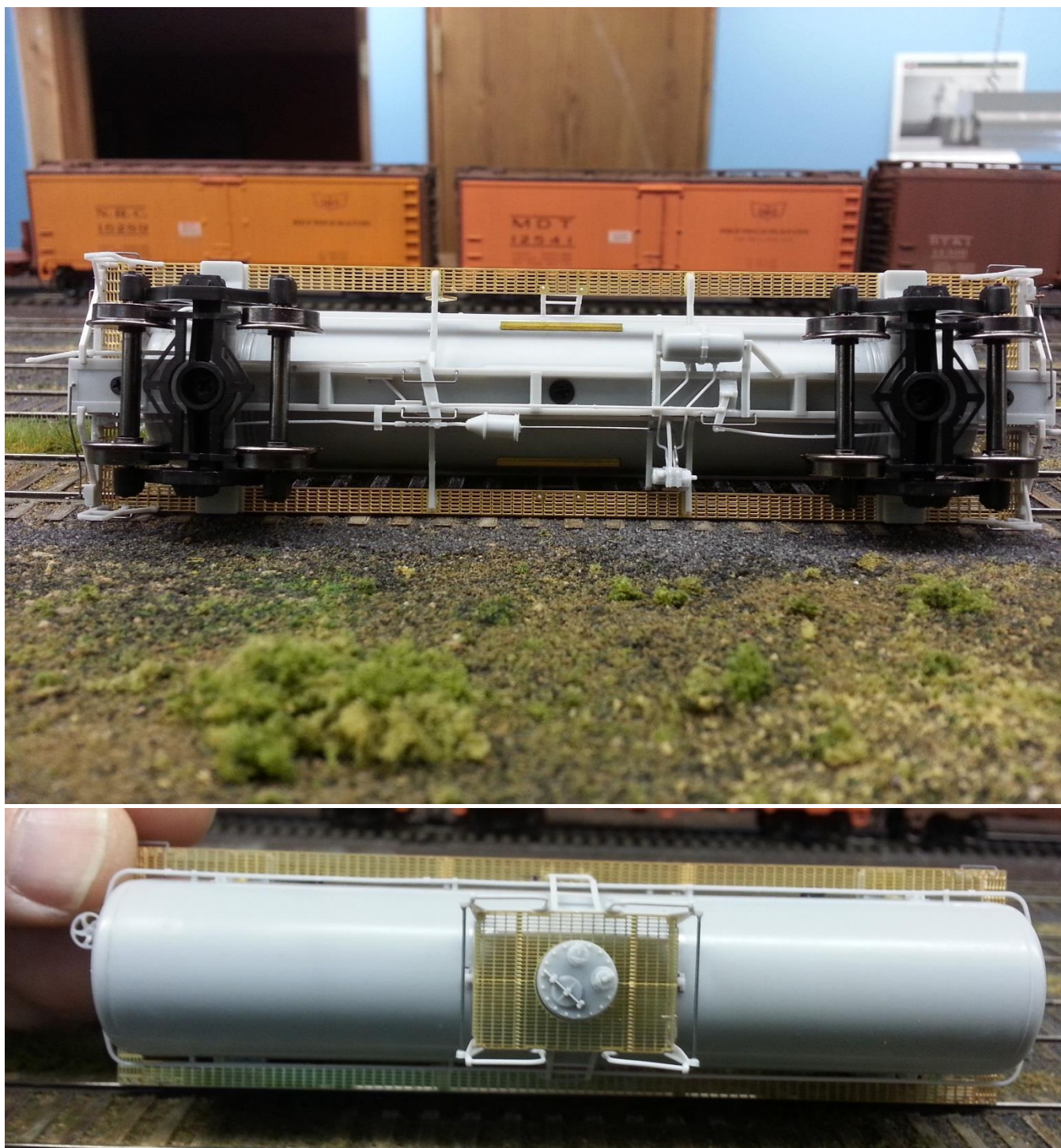
Thank you again for buying this car from Tangent Scale Models. Your hard-earned dollars allow us to continue to bring you more models in the future.

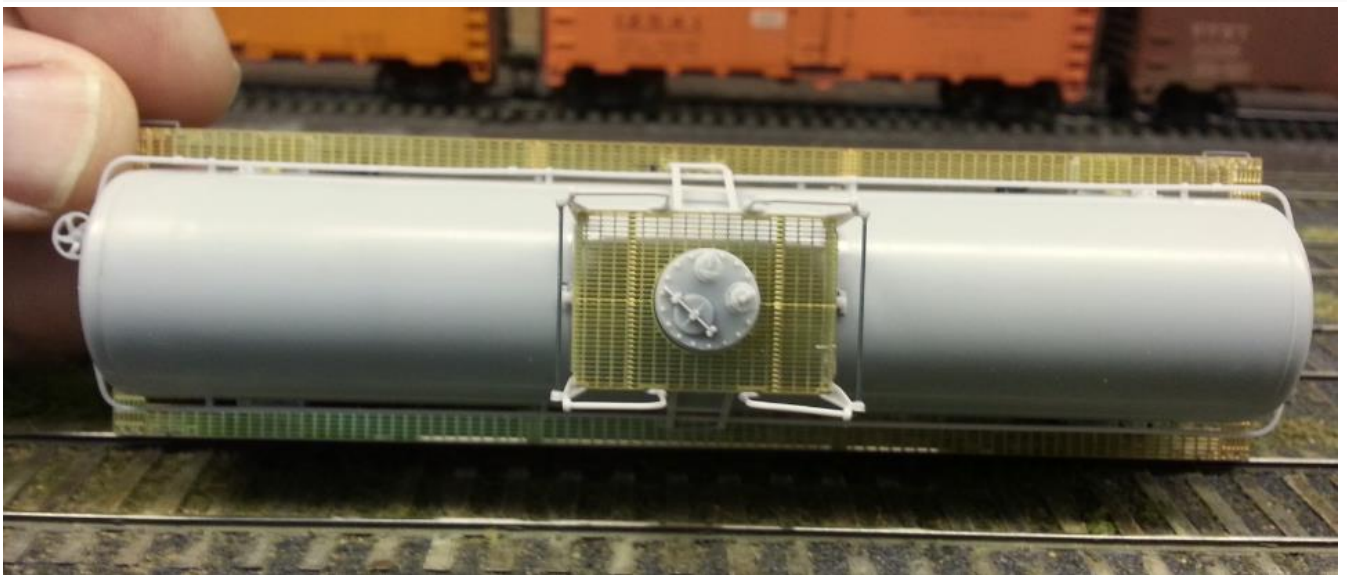
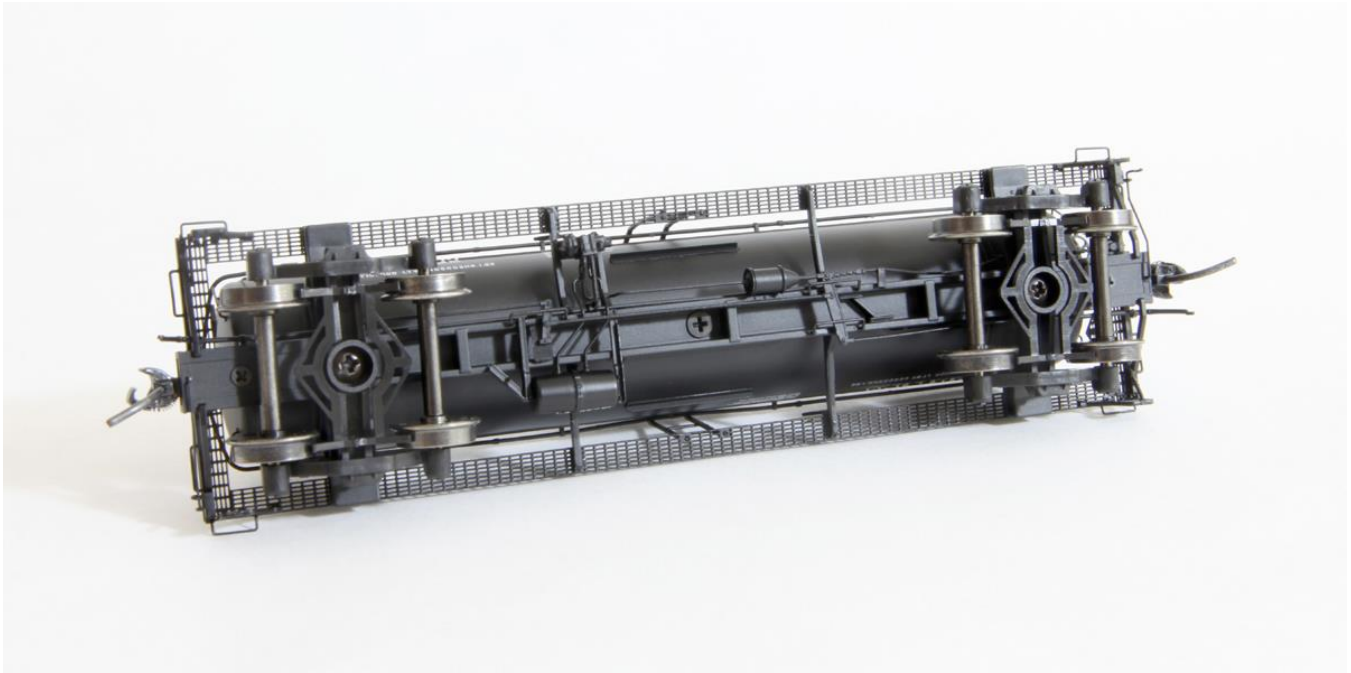
Want to share your creation with the world? Please feel free to upload an image of your customized Tangent model to: <http://tangentscalemodels.com/share/>

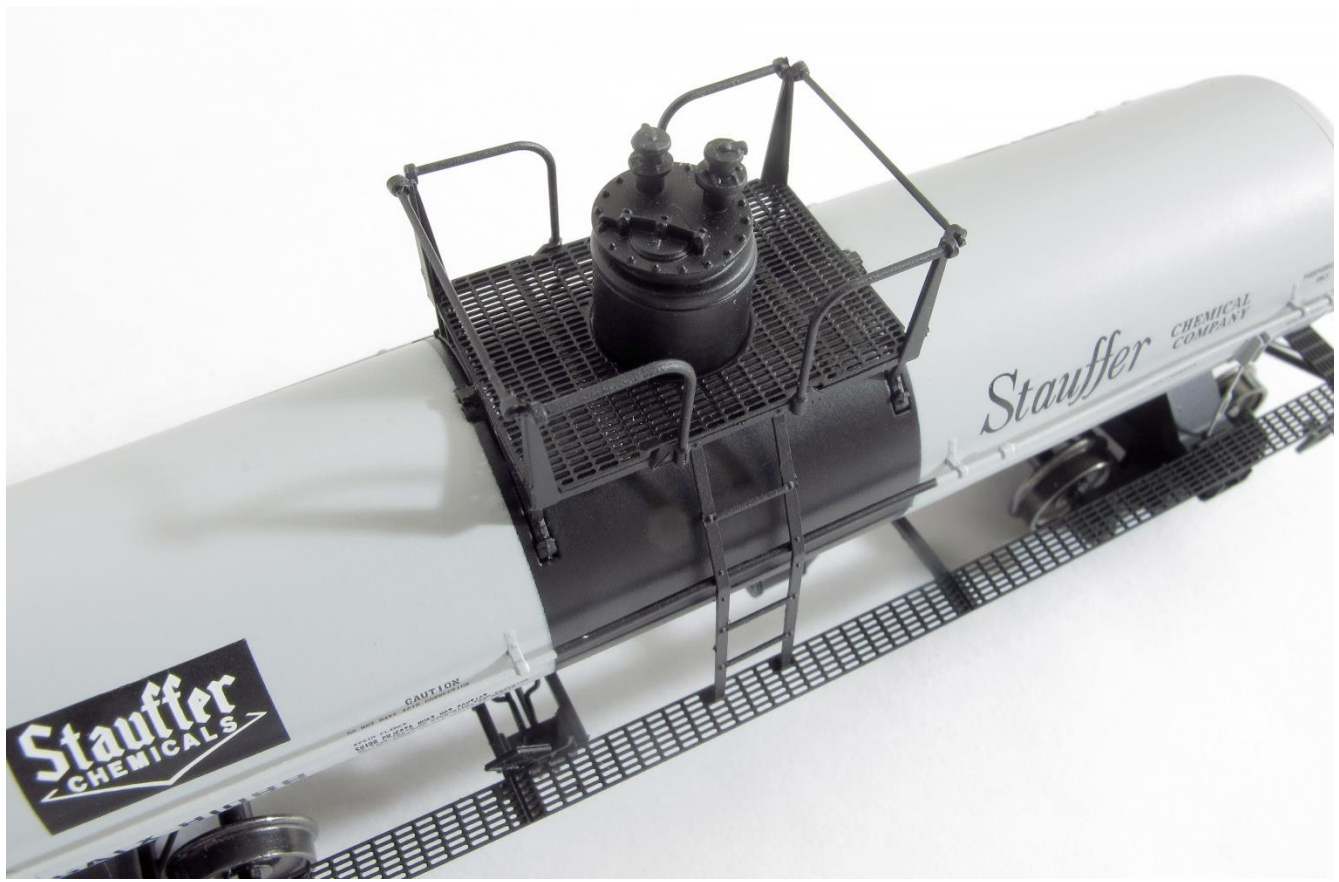
More images of finished cars are below.

















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