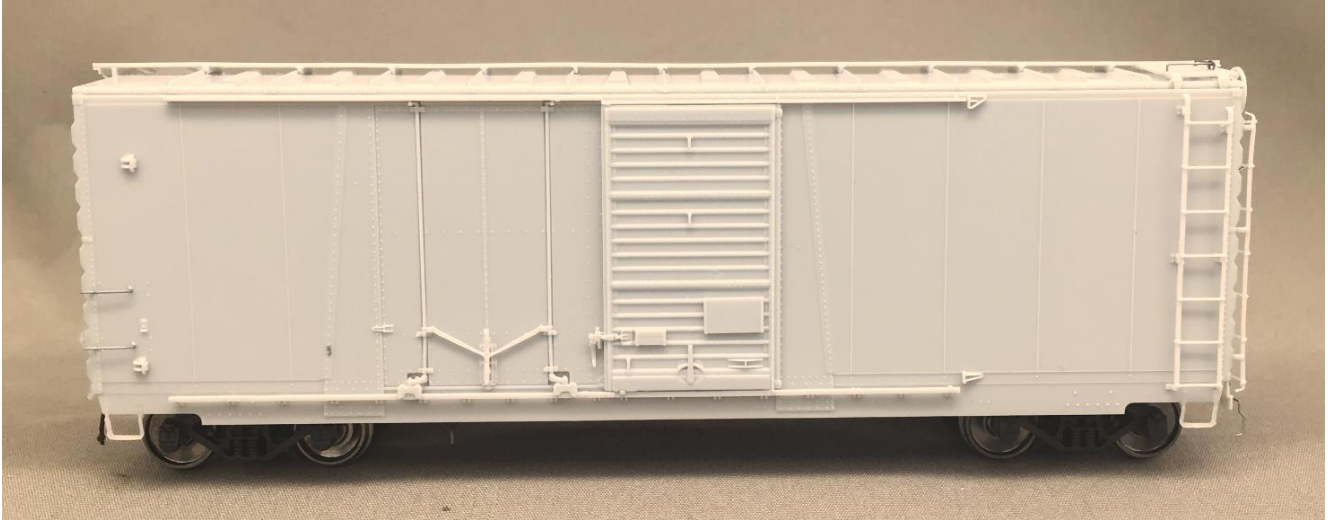




## Instructions: Pullman-Standard 40' PS-1 Combination Door Boxcar Kit

5/1/2021



Thank you for purchasing the Tangent Scale Models Pullman-Standard 40' PS-1 Combination Door Boxcar Kit! We have tooled three different configurations of our Pullman-Standard 40' PS-1 box cars so far. These kits are all very similar to each other, so we have one version of the instructions to work from! Here are a few quick notes before starting:

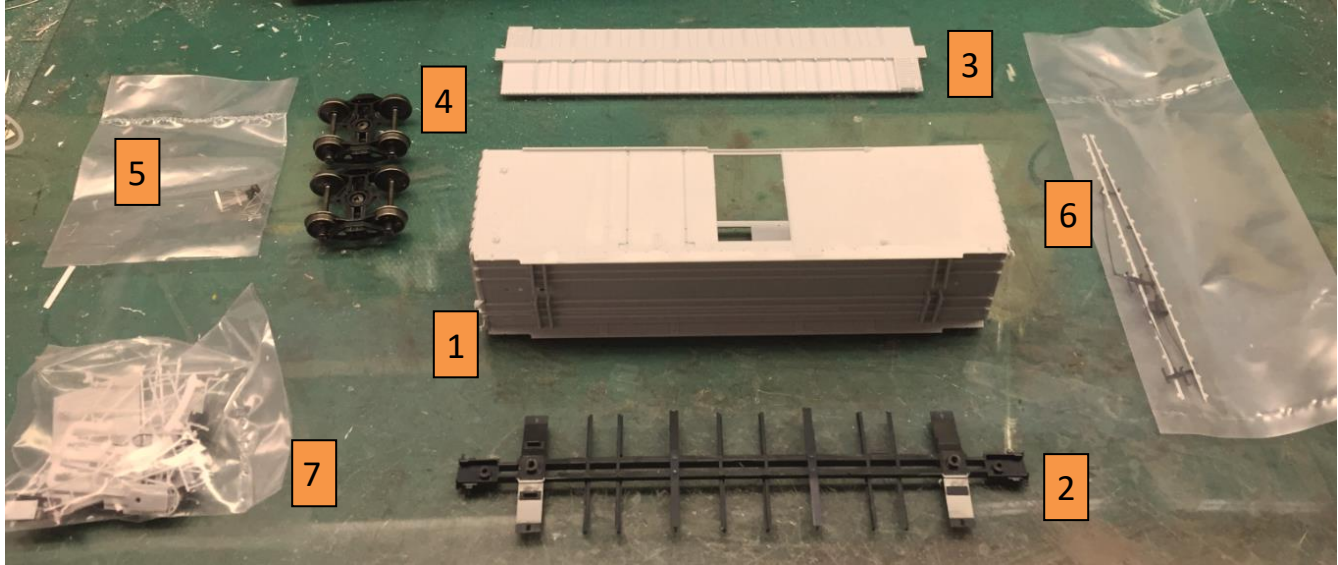
- **Do not download or print these instructions until you actually are ready to build.** Why? We update the instructions frequently, so If you saved this file or printed it for later use, please understand that we may have updated the instructions since then. Please check our website to see if this document 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 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.

- **Modeling from a computer screen is ideal:** If possible, we recommend modeling from your computer screen. 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.
- **Extra parts are available online:** They are on our website under “Parts for Cars.”
- **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 60 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 50-Ton ASF Ride Control Roller Bearing Trucks (with “rotating” roller bearing caps) and 50-Ton Barber S-2 Plain Bearing Trucks are available separately, with your choice of blackened RP25, blackened Semi-Scale tread, or nickel-plated Semi-Scale tread free-rolling all-metal wheels! Each of those truck and wheel combinations are also available with your choice of three different roller bearing caps. 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](mailto:support@tangentscalemodels.com) Thank you!

## Overview of this kit's contents:



### Standalone parts included:

- Part 1 - Carbody
- Part 2 - Underframe
- Part 3 - Roof
- Part 4 – Truck assemblies

### Parts bags included:

- Bag 5 – Wire parts bag including all wire parts, etched part(s), and screws
- Bag 6 – Parts bag – Door track and train line assembly
- Bag 7 – Small parts bag including coupler lids,

### Parts needed/recommended:

- Couplers. Our draft gear is designed for Kadee “whisker” shank couplers - #158.

### Tools needed/recommended:

- Liquid styrene cement to bond plastic to plastic parts
- CA-type cement or cyanpoxy – for wire to plastic joins
- 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. An inexpensive offering is here: <https://www.micromark.com/Foam-Cradle>

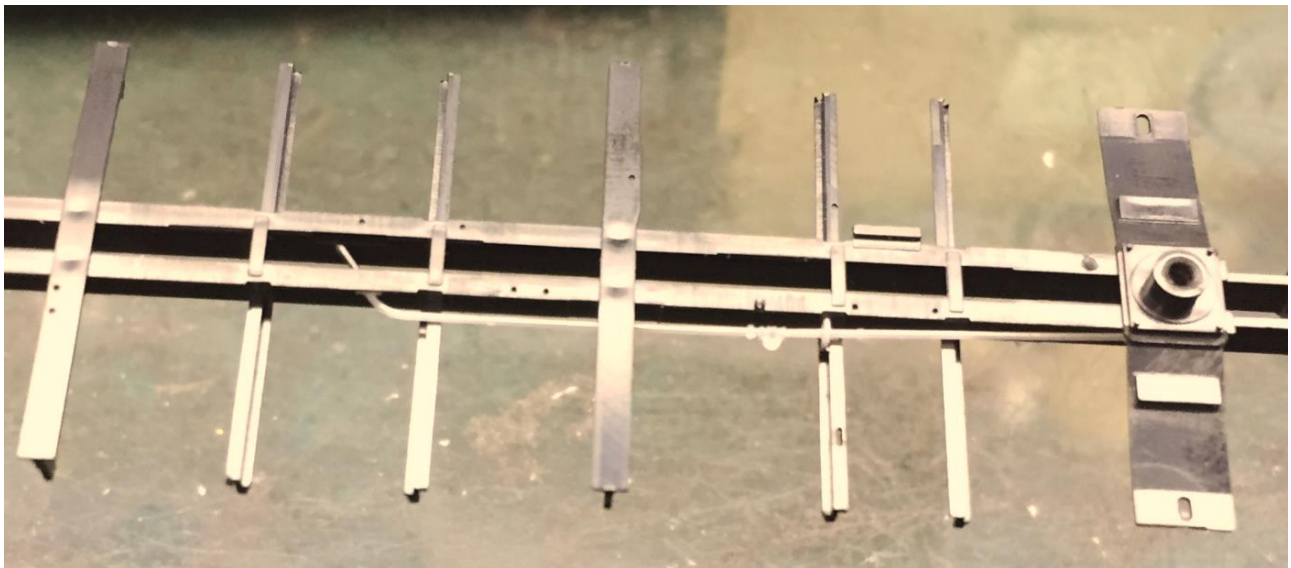
## PREAMBLE – THINGS YOU SHOULD KNOW

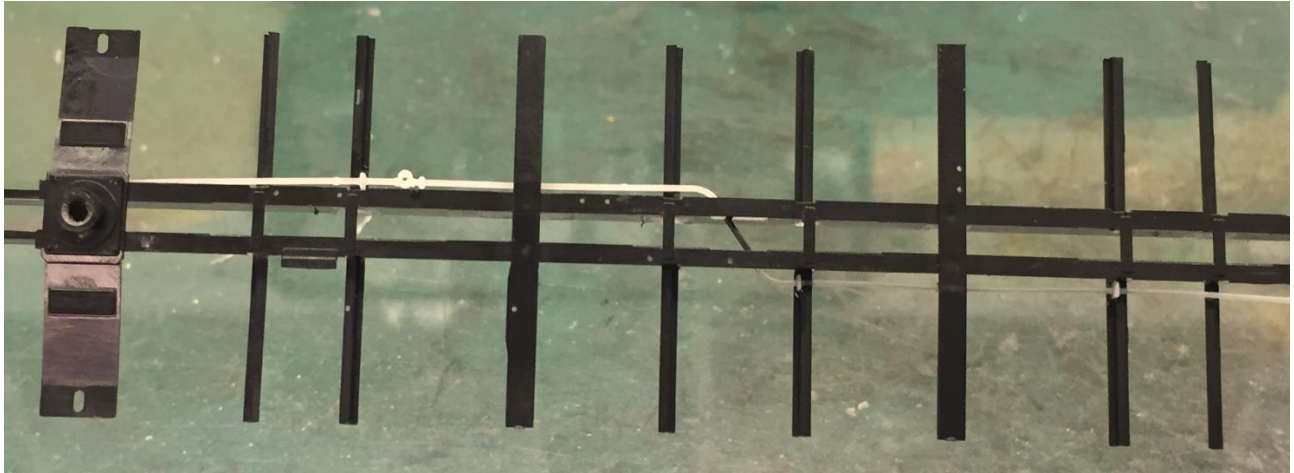
- **This kit is NOT recommended for children aged 14 and under.**
- **Small parts:** there are many very small parts included in this kit. The assembly sequence requires you to have several bags open at a time, so we recommend a clean and open work surface so that you can keep all of the parts in the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

- **Overview of the build:** This kit will start with the underframe assembly first, meaning everything underneath the carbody including the draft gear ("coupler boxes"). The next step will be to finish the parts that affix to the body. This sequence is best because it is easier to protect the details of the car as you "build up."
- **PS-1 body variations:** The instructions for this kit cover the 26052-02 version of the Pullman-Standard 40' PS-1 Combination Door Boxcar Kit, however all versions of our PS-1 40' box cars are very similar to each other. We provide many photos in this document and there are extra photos at the end of this document provided for reference. Let's get started, and enjoy your build!

## UNDERFRAME CONSTRUCTION:

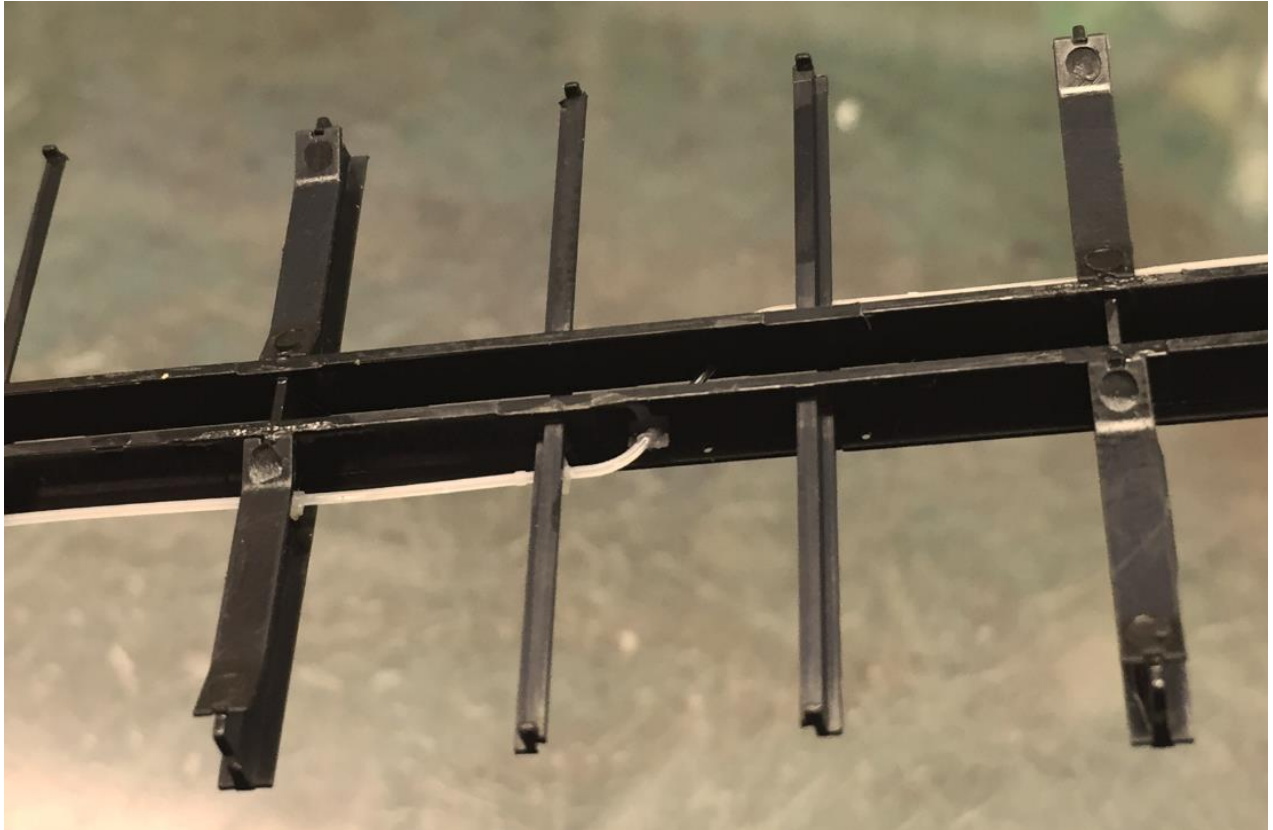
1. **Install the train line into the underframe.** Begin by removing the trucks and underframe from the car body. Set the trucks aside and locate the two pieces of the train line from the part bag #6. The piece of the train line that has the circular coupling in it for the dirt collector pipe goes toward the "A" end of the underframe (the underframe has a small B on the coupler pocket that goes on the B end of the car. There is also a small pin that fits in a hole on the floor of the car to index). The underframe has notches in the cross members that tabs on the train line fit into. The train line needs to be weaved through the cross members - it goes under the large cross members and over the small ones. Maneuver each half of the train line through the cross members and insert the tabs into the slots in the cross members. Also, make sure the ends of each half line up with the molded section of the train line that crosses the center sill. Glue where the ends meet the center sill and where the tabs fit into the slots making sure that the tabs do not protrude above the cross members where they are seated. The ends that are by the bolsters need to float temporarily so they can be fit into the slots on the body when the underframe is installed on the car.



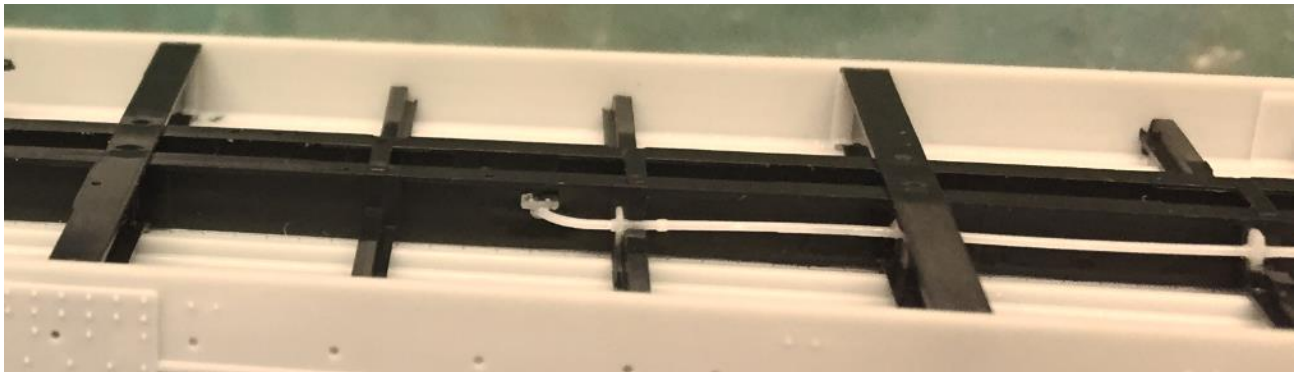


2. **Finish assembling the underframe.** There are 8 small, angled pieces of black plastic in the parts bag. We will use 4 of them to create an "I" cross section on the large cross members. This is why it's important that the train line tabs don't protrude above them. Lay the underframe on the work surface so that the side that will go against the carbody floor is facing up and glue the 4 flat pieces on top of the large cross members.

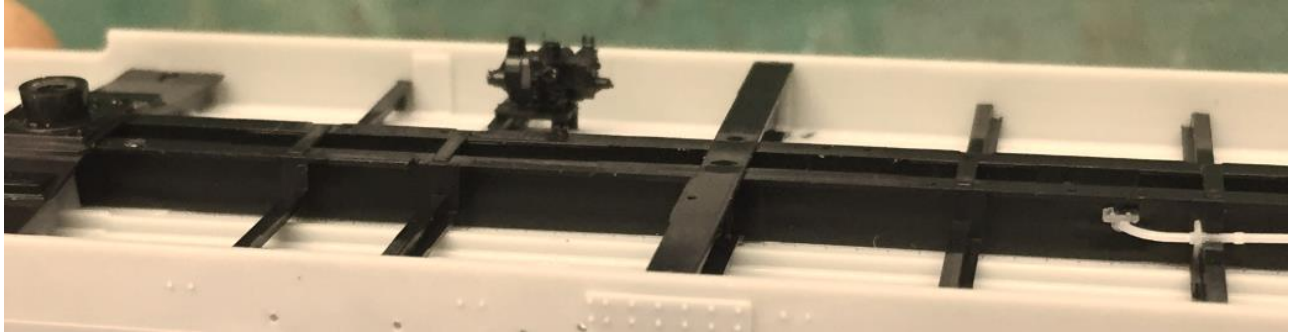




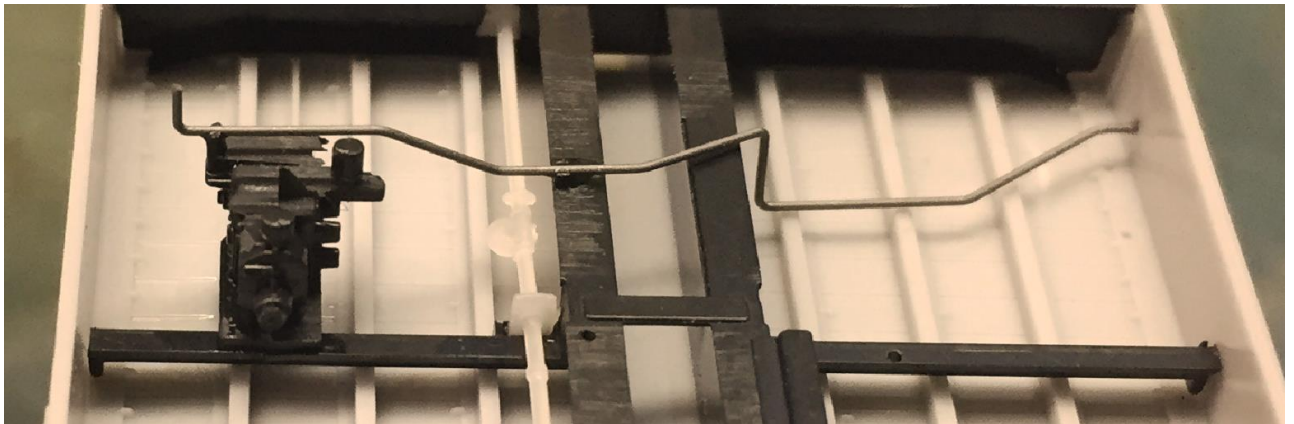
3. **Install the underframe to the bottom of the carbody.** When these parts are dry, install the underframe onto the carbody making sure to locate the ends of the train lines into the slots in the bolsters.



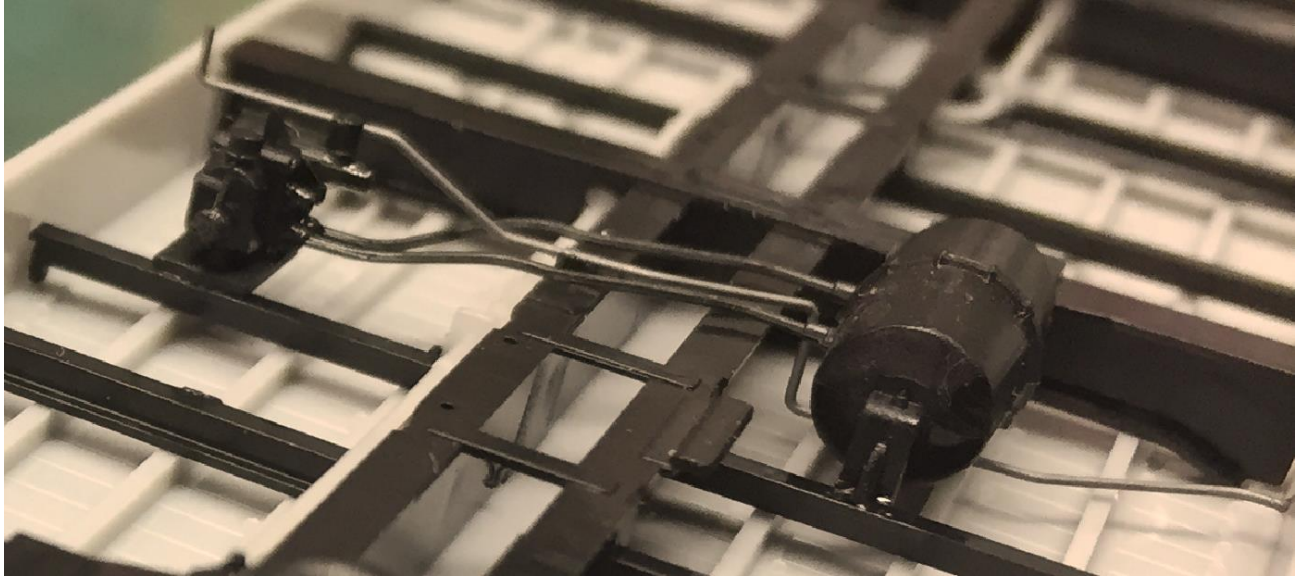
4. **Install the AB valve.** The AB valve has a small tab that fits in a slot on one of the cross members. Orient so that the holes in the AB valve face the center of the car and glue in place.



5. **Install the retainer rod.** In the wire parts bag, locate the retainer rod. It is the most oddly shaped wire so it is hard to mistake it for anything else! Feed the end of the wire through the small hole in the side sill from the inside and lay the rod over the center sill and in the small locating notches—one on the center sill and the other on top of the AB valve. Secure with CA. \*On the NP and Milwaukee cars the bleed rod does not go through the side sill. It sits below it. There is a small vertical bracket that it will rest on that gets installed into the floor of the car.



6. **Install the air reservoir and the two wire “pipes” that go with it.** Locate the air reservoir from the plastic parts bag. There are locating holes on the underframe to aid in positioning. Glue in place and glue the two pipes from the reservoir into the two bottom holes in the AB valve.



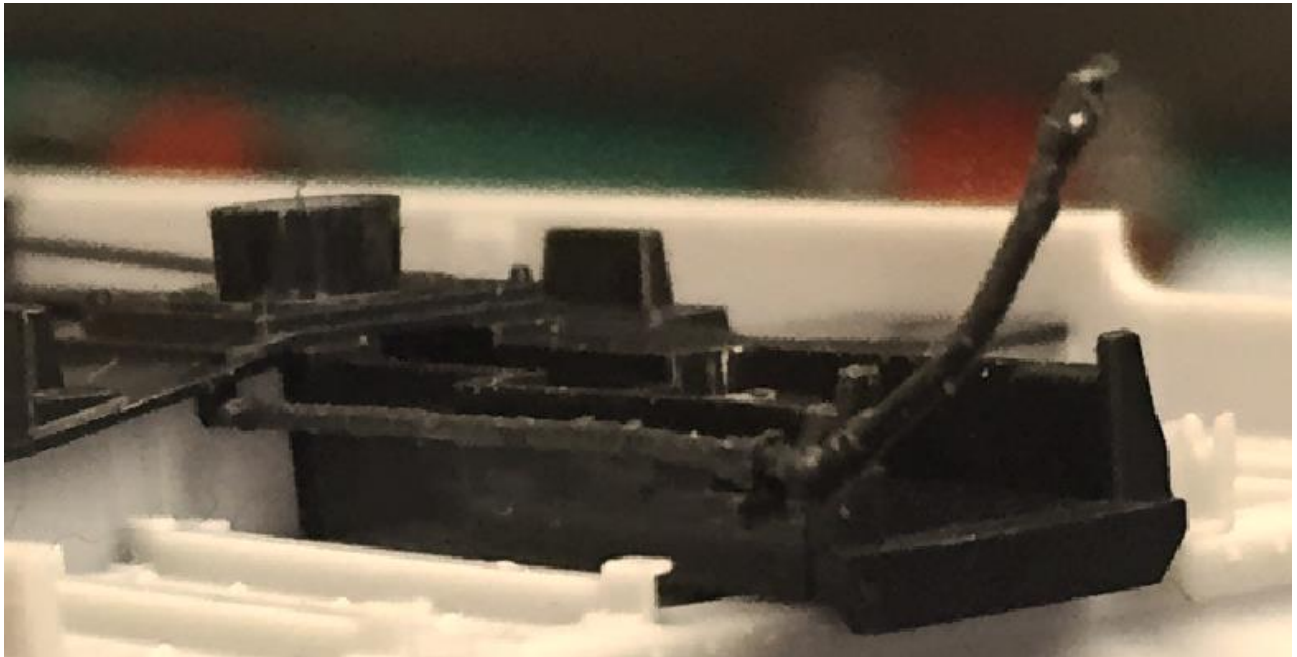
7. **Install the dirt collector pipe.** Locate the dirt collector pipe from the wire parts bag. This part has a small offset on one end that will go into the hole in the AB valve. The other end of the part goes into the hole in the train line. Position the part and secure both ends with CA.



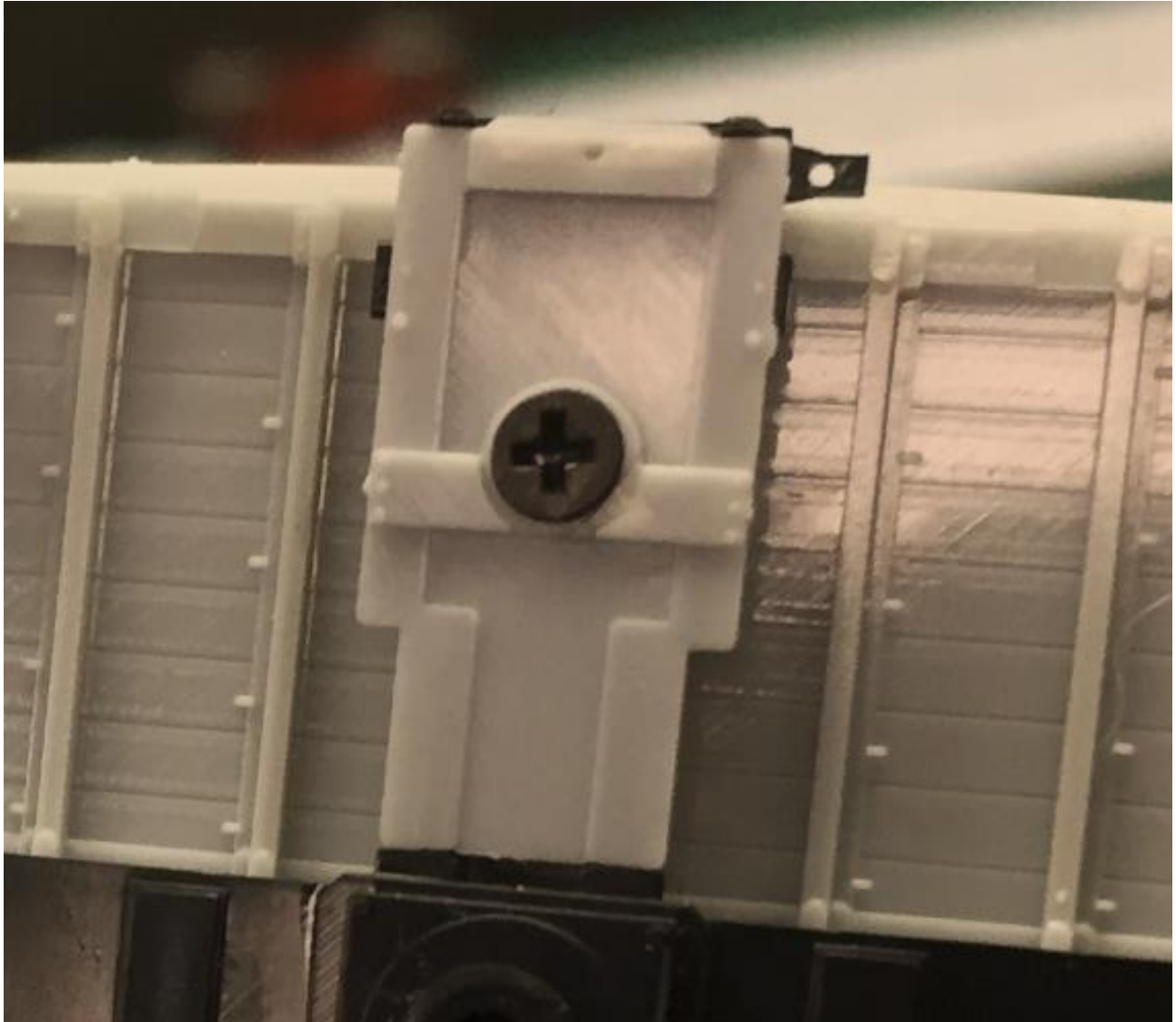
8. **Install the train air line assembly.** Locate the train air line assembly from parts bag #6 and very carefully clean any flash from the casting. There are locating holes on the center sill that will aid in the positioning. Once the brake rigging is positioned, glue in place.



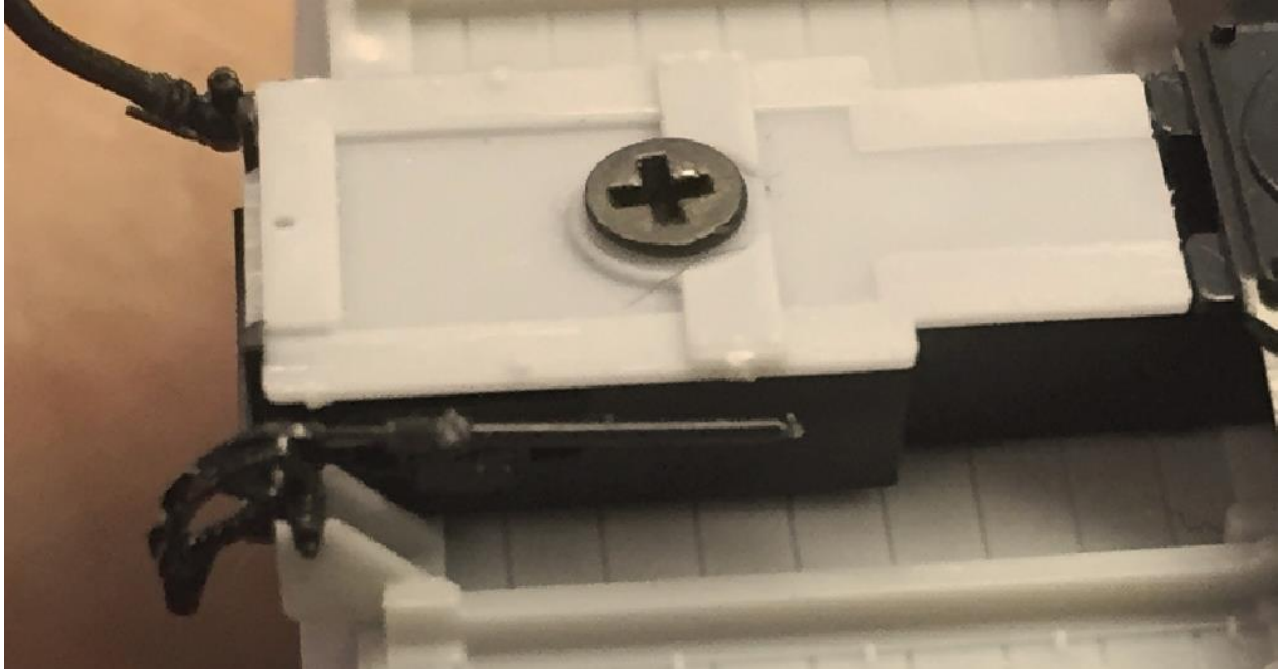
9. **Install the rubber air hoses.** Locate the rubber air hoses from the parts bag. There may be a small amount of flash to clean off to make sure it will fit properly. On the side of the coupler pockets you will see a small tab with a hole in it. Enlarge this hole with a #76 drill to allow the small pin on the air hose to fit. Maneuver the back end of the air hose into the slot in the bolster and insert the small pin into the hole on the coupler pocket. When positioned correctly, secure with CA.



10. **Install the coupler box covers.** Install the coupler box covers with the small screws in the wire parts bag. We recommend that you not install couplers until after painting to prevent them from becoming "sticky"



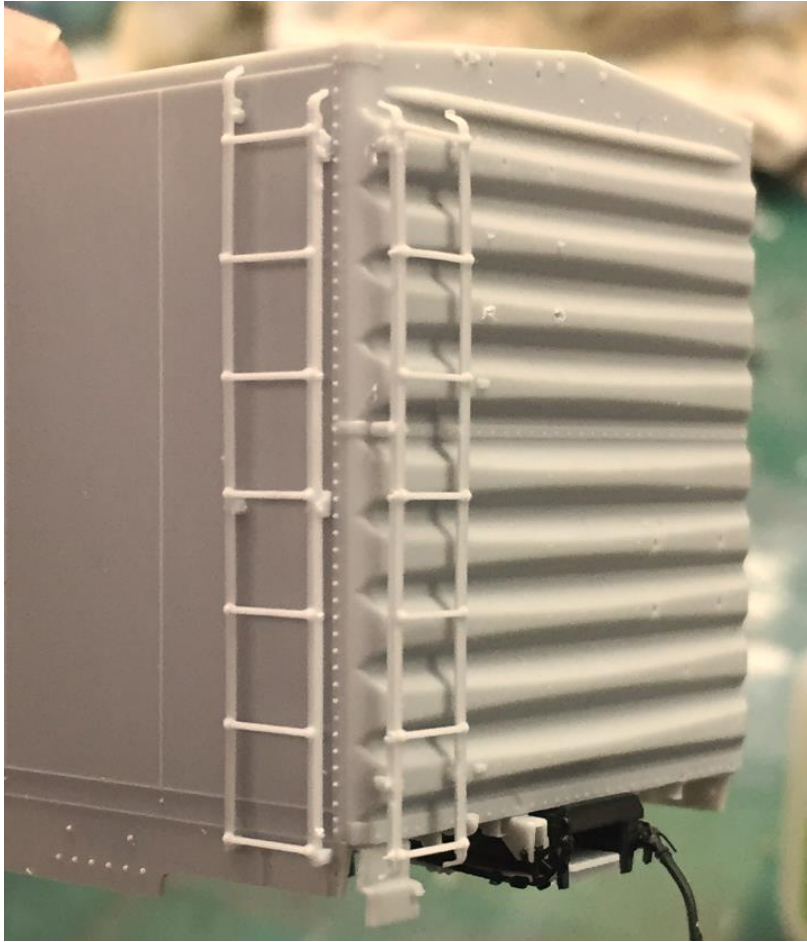
11. **Install the handbrake fulcrum.** Locate the fulcrum. It has small pins that fit into the cradle that is next to the coupler pocket. Position it so that the rod goes toward the bolster and it sits parallel to the floor, and the fulcrum is parallel to the end of the car. Glue in place.



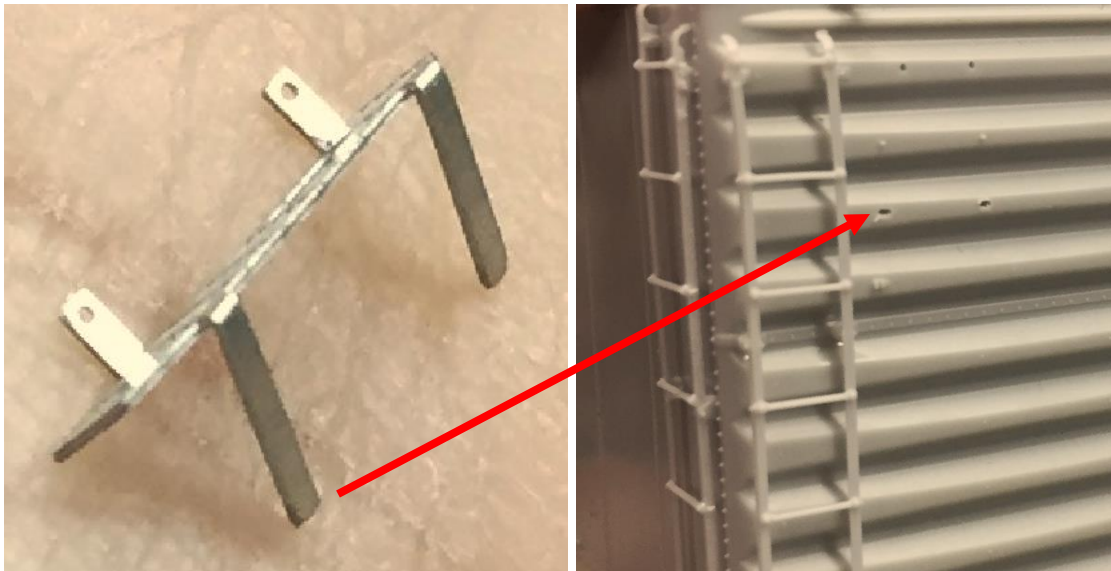
This completes the underframe assembly.

**BODY ASSEMBLY:**

12. **Install the side and end ladders.** There are three different ladders included in the kit. The widest ladders go on the car sides. There are two different types of end ladders: one is straight and one has the bottom two rungs offset. The UP car uses the straight version, and the NP and MILW cars use the offset version. All are keyed, so position and glue in place.



13. **Prepare and install the etched metal brake platform onto the B end of the car.** Assembly of the B end of the car begins with the forming of the brake platform. Make the bends in the platform as per the photograph. The longer legs of the platform get inserted into the small slots in the end, and the short legs have small holes that fit over nubs cast on the end rib. Position and secure with CA.



14. **Install the retainer valve onto the B end of the car.** Locate the retainer valve from the parts bag. It has a pin that fits in a hole in the car end, and it also has a locating hole for the retainer pipe. Position the part so that the hole is facing down. Glue in place.



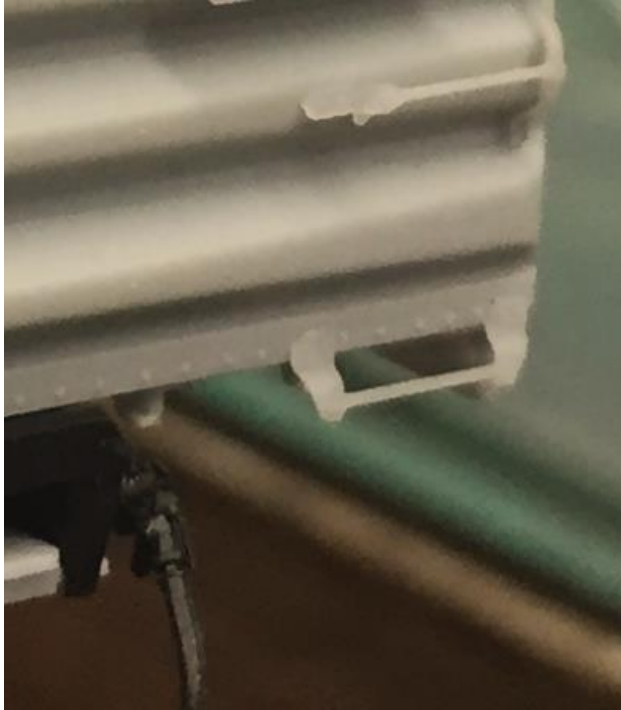
15. **Install the brakewheel housing and rod and brakewheel.** On the B end of the car only, the brakewheel housing/rod needs to be fished through the opening in the brake platform. Place the end of the rod over the fulcrum and glue the entire assembly.



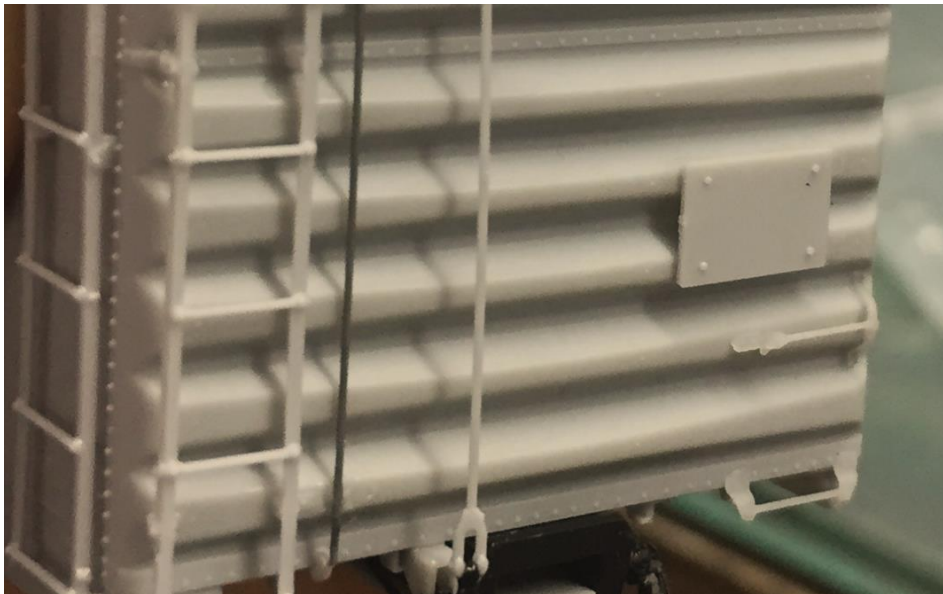
16. Locate the retainer pipe from the parts bag. It is straight with a small offset on one end. This goes toward the bottom of the car. There are small notches in the car end that will help to position the retainer rod. Insert the straight end of the retainer pipe into the small hole in the bottom of the retainer valve and lay the pipe into the notches. The bottom end should come to rest on the small tab at the bottom of the end sill. Secure with CA.



17. **Install the end bracket grab iron and lower sill grab iron.** The end bracket grab and lower sill grab are very delicate parts so be careful when taking them off of the sprues. Locate per the photos and glue in place. Repeat on the other end of the car.



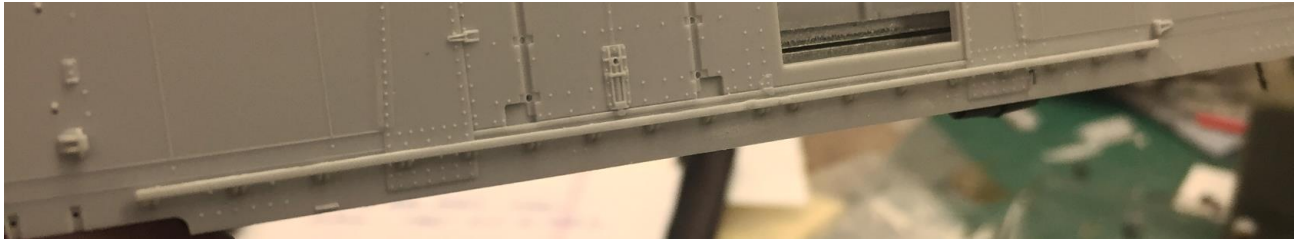
18. **Install the end tack boards.** There are two different sizes of large tack boards. The smaller of the two go on the ends. Glue in place. Repeat on the other end of the car.



19. **On the UP car only, add the lumber door to the A end of the car.** Locate the A end door and secure it in the opening at the top end of the car. Insert the small grab iron from the wire parts bag and secure with CA.



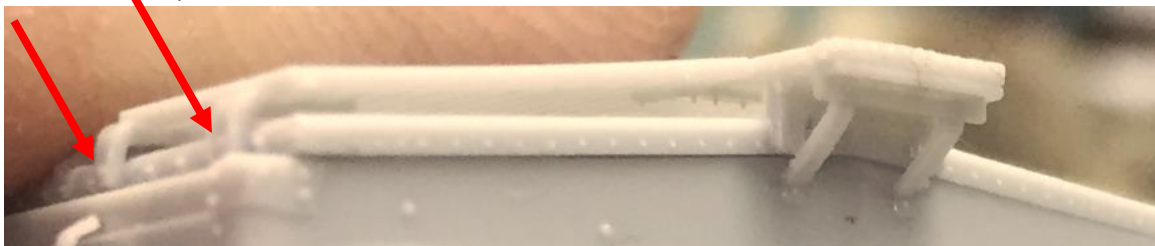
20. **Install the lower door tracks.** Locate the lower door tracks from the parts bag. There may be a small amount of flash that needs to be cleaned off. Be very careful as this part is very delicate. When satisfied, install to the carbody using the mounting pins as a guide.



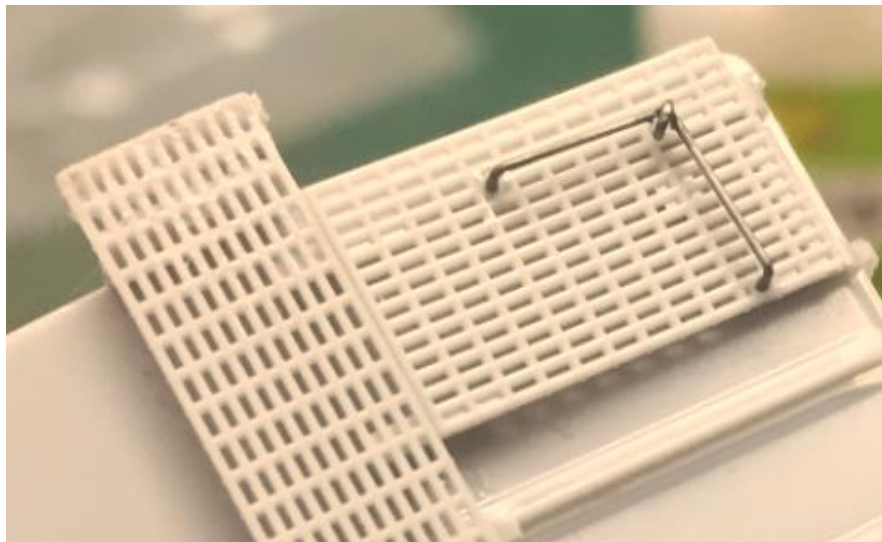
21. **Weight is pre-installed.** Please note that the weight is pre-installed. If you want to model the car with one or more open doors, you may want to consider removing the pre-installed weight and install weights over the ends so that you don't "see" a weight.
22. **Install the running board to the roof.** Before you install the roof onto the carbody, it is easier to install the running board onto the roof. Align the running board pins into the roof and then press fit the running board into the roof.
23. **Install the roof.** Position roof onto the carbody and glue in place.



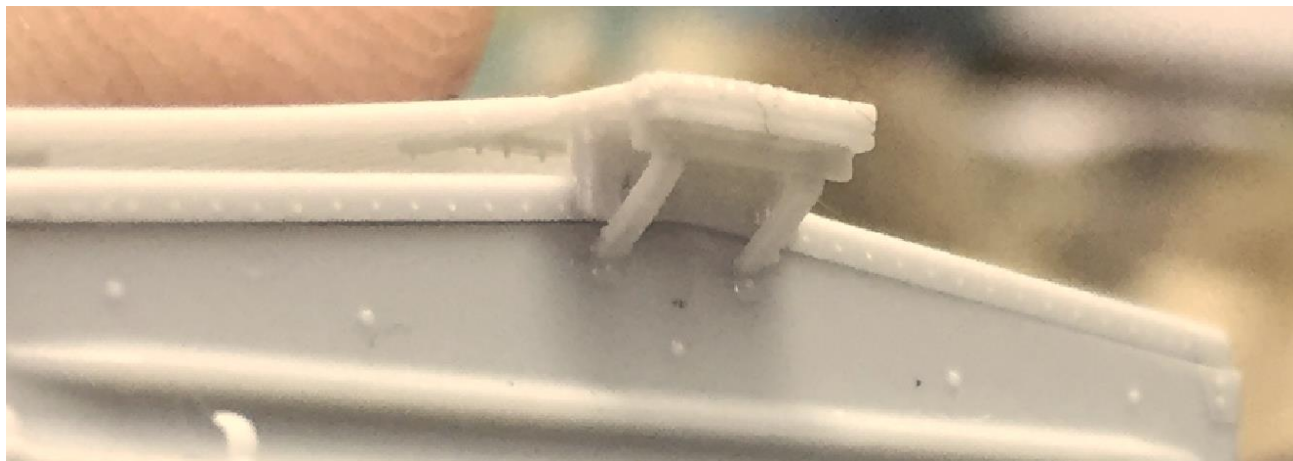
24. **Glue down the end lateral roofwalk parts.** Glue the small tabs on the ends of the laterals to the car body.



25. **Install the running board lateral grab irons.** Going back to the roof, there are two small eyelets for the running board lateral grab irons. Install them so that they are angled at 45 degrees. Fish the grab iron through the eyelet and into the locating holes in the lateral. Secure with CA.



26. **Install the end running board supports.** The running board end supports have a small amount of flash that needs to be cleaned off. Again, do so carefully since the parts are fragile. There are small pins on the legs of the part that fit into holes on the car end. Position and glue in place.



27. **Install the plug door rods to the car.** They are keyed so they can only fit one way. Clean off any flash before installing. Glue in place.



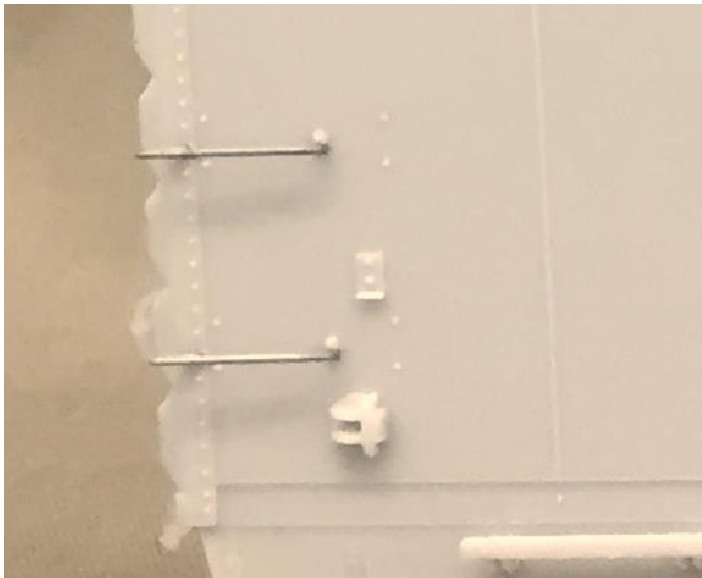
28. **Install the sliding doors into the door openings.** Glue in place.



29. **Glue the tack boards to the doors.**



30. **Install the left side grab irons.** Using CA, install the left side grab iron parts. These parts will vary depending on which car is being built.

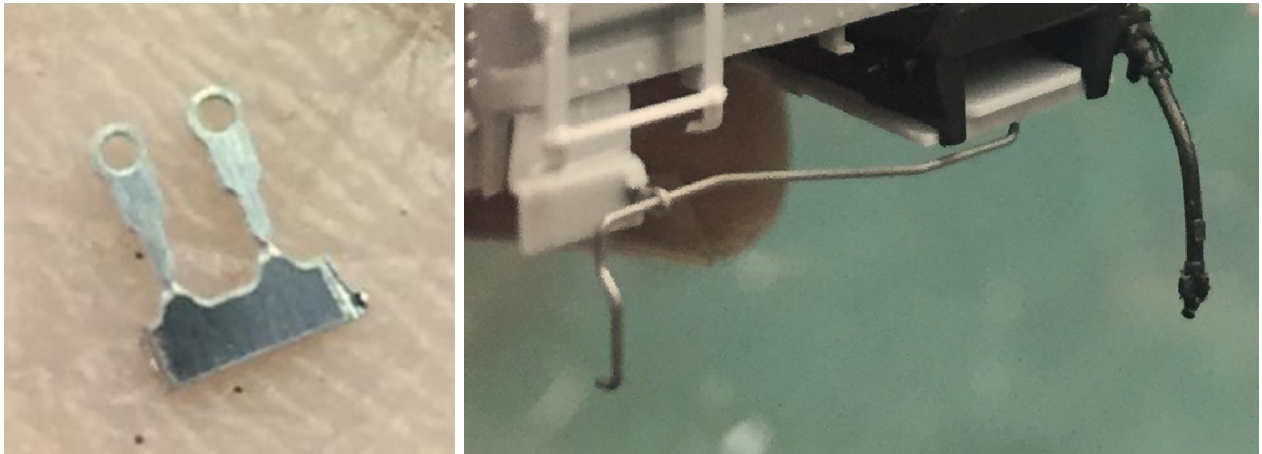


31. **Glue the stirrups in place.** These are bent slightly inward toward the center of the car so do not try to straighten them!



32. **Install the coupler lift bars.** There are two small silver eyelets for the cut levers. These get inserted into the small holes in the brackets on the outside ends of the car. Fish the cut

lever through the eyelet and insert the end into the hole in the end of the coupler pocket. Tack with CA but you may not want to secure permanently since you may need to remove the coupler box covers to install the couplers later.



This concludes the assembly.

#### **FINISHING UP:**

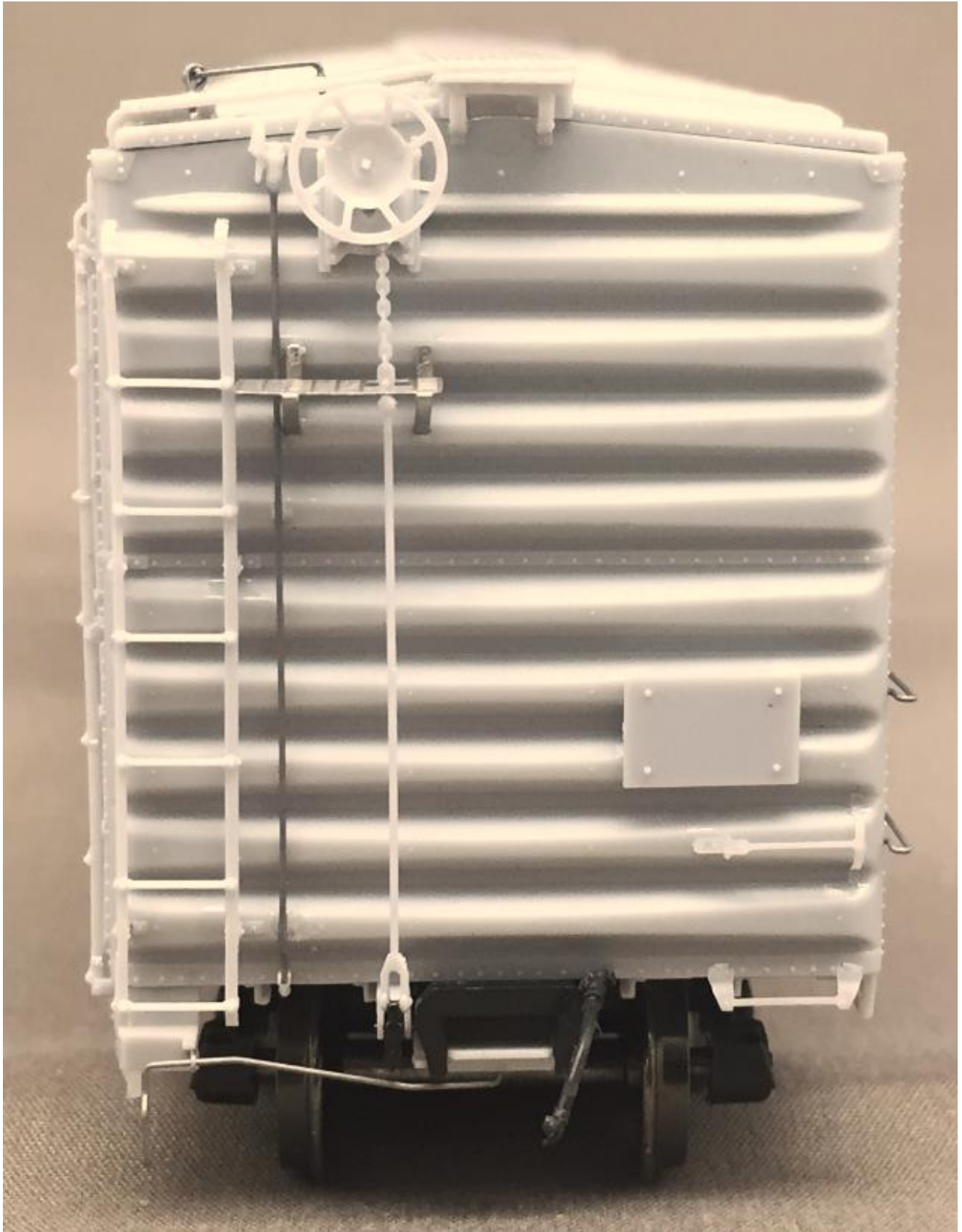
33. **Paint the car.** We only have two suggestions for painting this car. The first we have already mentioned: wait until the car is painted before installing the couplers. Painting couplers could make them very "sticky" and not perform at their best. If you have had success in the past in painting 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 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/>

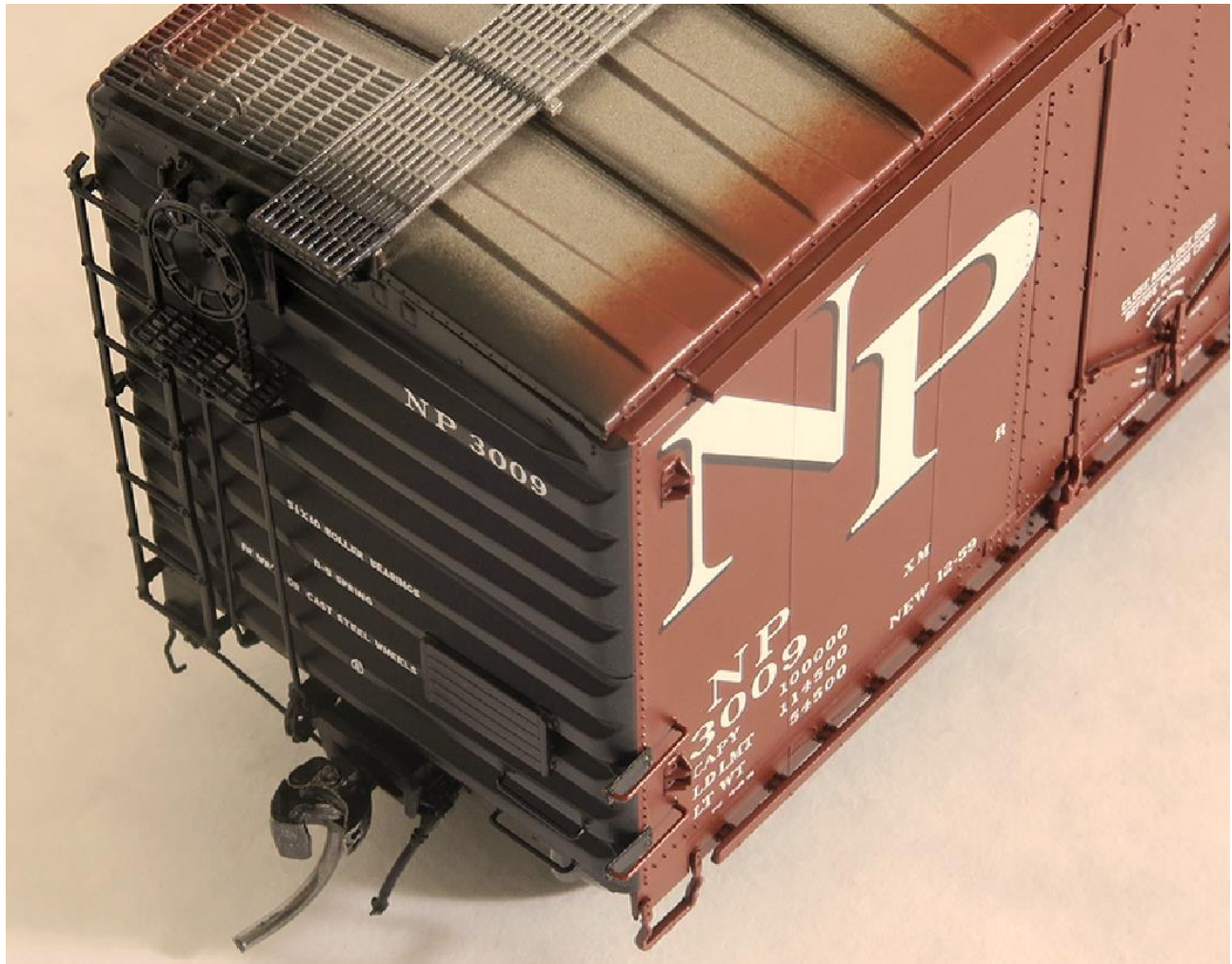
More images of finished cars are on the following pages.















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