



Instructions: Chicago & North Western ICC Bay Window Caboose System Kit

Tangent Part Numbers: 60500-XX through 60501-XX

02/2025



Thank you for purchasing the Tangent Scale Models Chicago & North Western ICC Bay Window Caboose System Kit! A few quick notes before starting:

- **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. This is another advantage of a "digital download" 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!
- **This kit is 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 semi-scale wheels separately:** We offer semi-scale wheels separately for our caboose trucks in both blackened and nickel silver!



Overview of this kit's contents:



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 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
- Tweezers

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 the parts in the open and accessible.
- **Kit variations:** When you ordered this kit, there were 6 different prototype-based configurations to choose from. If you want to change the configuration of your kit, you can order all of our parts here: <https://www.tangentscalemodels.com/product-category/parts-rock-island-cnw-icc-bay-window-caboose/> or simply go to www.tangentscalemodels.com and click on “View & Buy Models” and then “Car and Caboose Parts”.

Caboose Construction Overview:

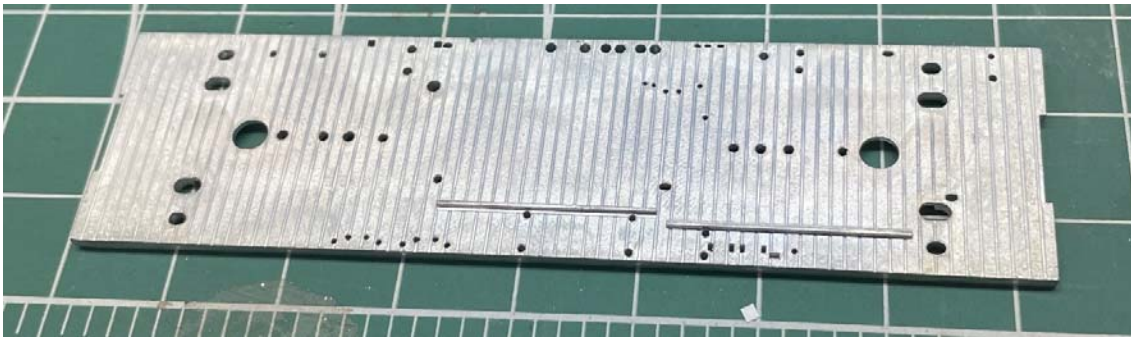
1. Kit Configuration: These instructions will demonstrate the assembly of the 1966 Modernized Body, 1970+ Era (SKU 60500-02). For Any other version of this kit, the assembly is basically the same other than the parts you will use.
2. As with our previous releases, this kit is made up of subassemblies. The order in which you choose to build is entirely up to you since the three assemblies do not get joined together until the very end of the build process. For the purposes of these instructions, we will build in the following order:
 - Underframe
 - Interior
 - Car body
3. Since the car is fairly complicated, it would be easiest to paint each subassembly after completion. You can refer to our website for photos of the completed interior for color identification, as well as prototype photos for the car body.
4. You will use parts from multiple bags during the construction process. It is suggested that you remove only the parts you need for each step and leave/return unused parts to the bags to prevent losing anything (some parts are very small and easily lost-don't ask us how we know!). Since there are multiple versions of the car you may end up with some spare/unused parts.

5. Some steps are very difficult to explain with text so photos of virtually every step in the process are included in these instructions. Keep them handy to assist with part identification and placement.
6. Couplers have been omitted from the build since we suggest that you leave them off until all paint and weathering steps are complete to prevent them from becoming "sticky" from paint and ensure proper operation.
7. It would also be easier to paint the car body before adding window glass and safety screens (one of the last steps in the build).

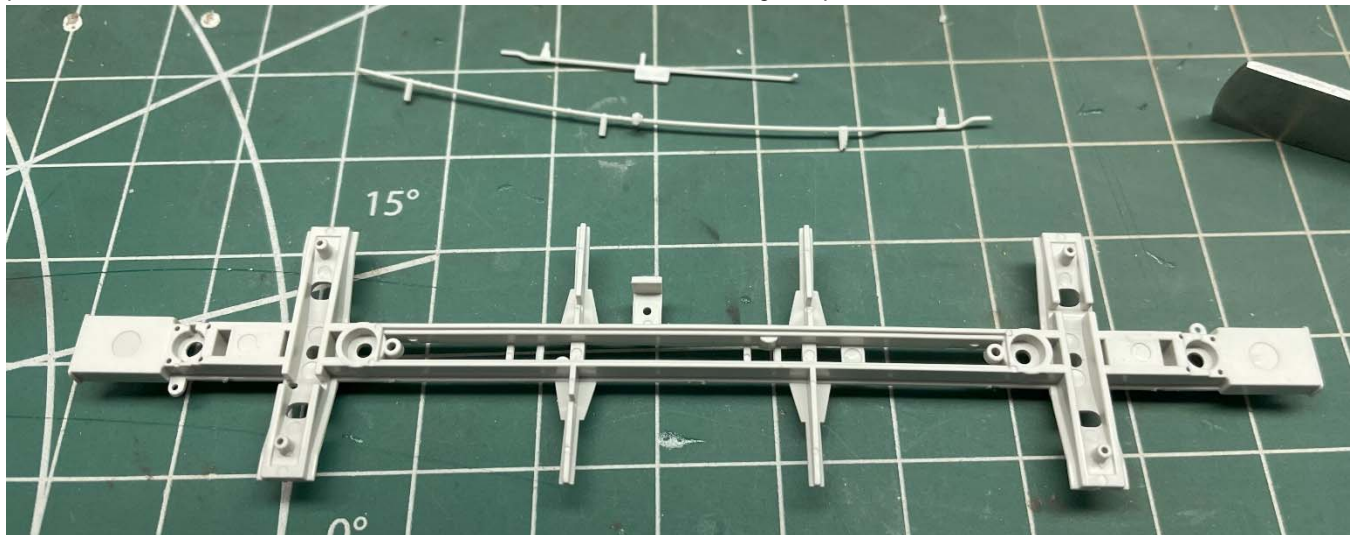
Let's begin!

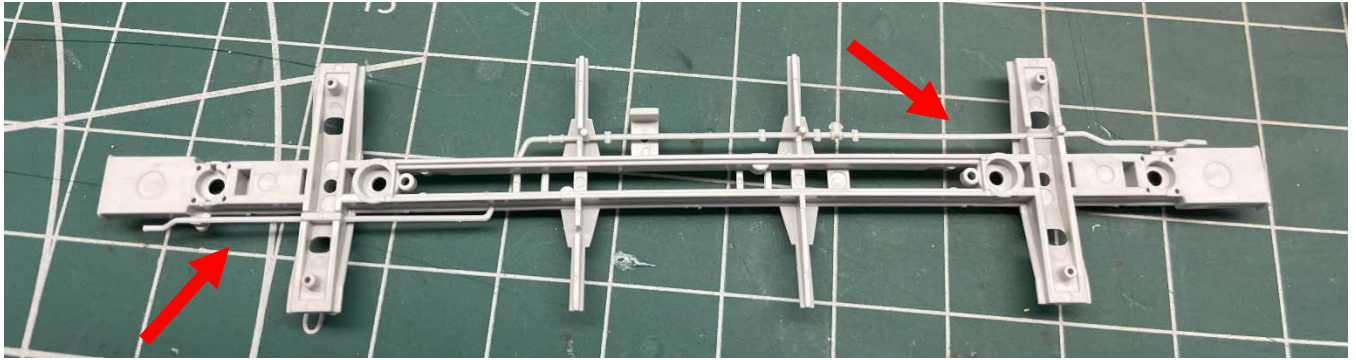
Underframe Assembly:

1. From bag 02, remove the metal underframe half of the weight set. The side with the recessed channel (on the reverse side) will be placed down on your work surface.

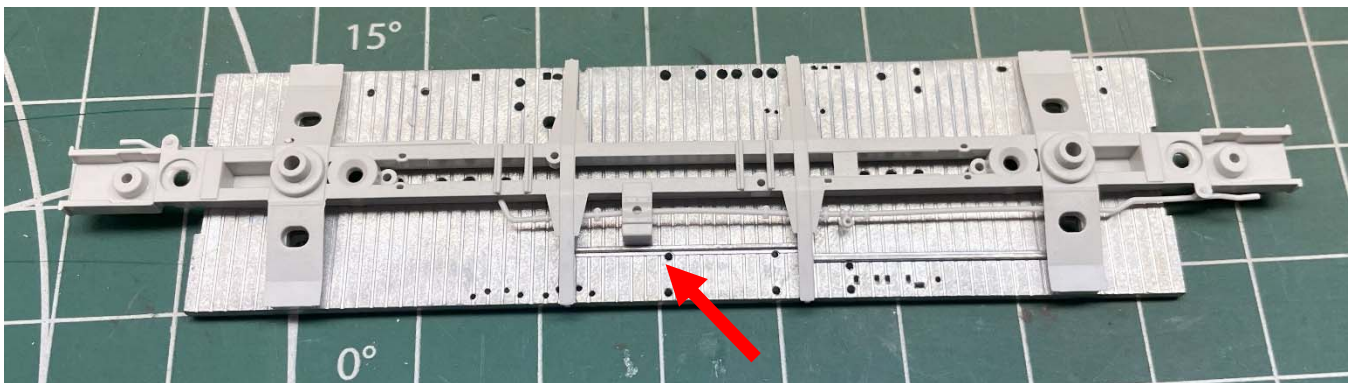


2. Locate the center sill and the two segments of the train line. The train line segments fit into slots in the bolsters and the cross members. Using the photo as a guide set the segments in place and secure (solvent cement or CA, whichever you prefer)



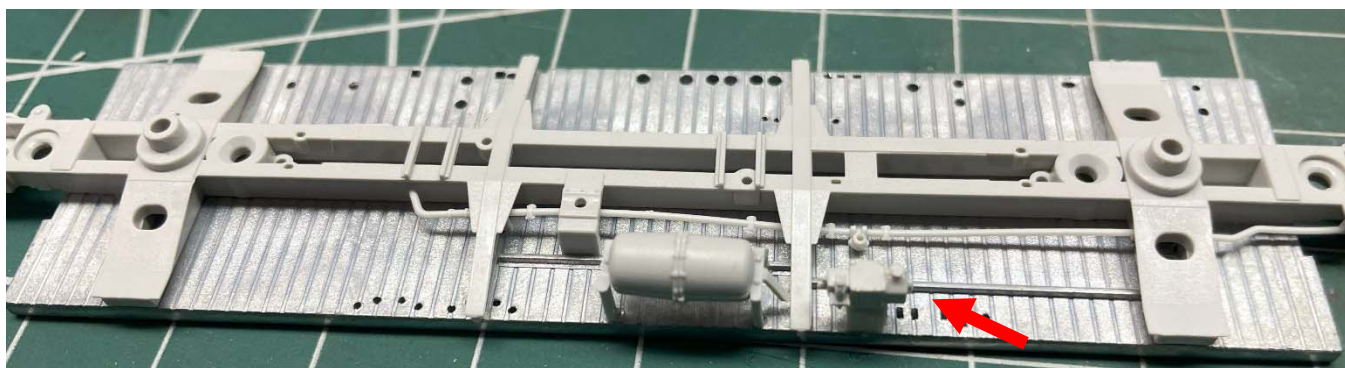
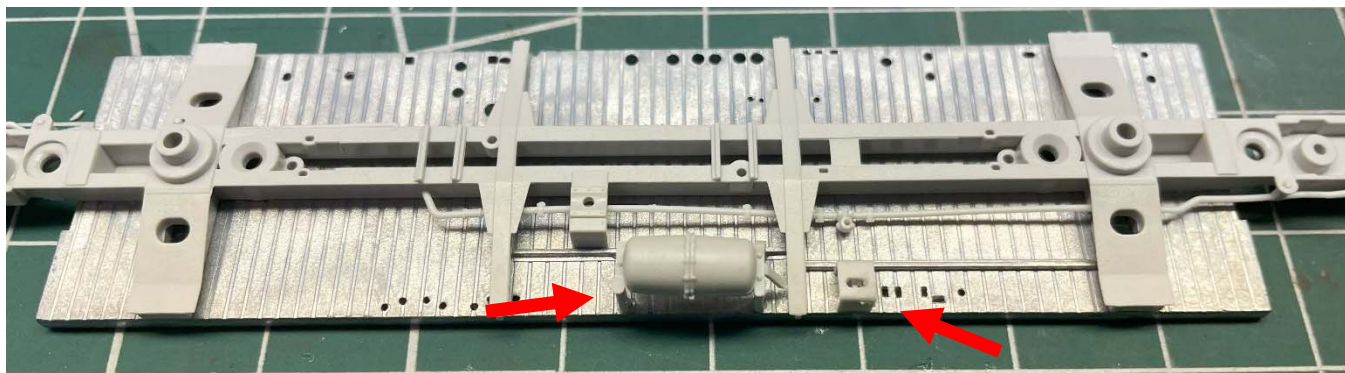


3. When the train line is set, flip the assembly over and install it on the underframe. Orient is so that the side that has the bracket for the cylinder is on the same side as the two raised ridges of the underframe. Tack in place with CA to make sure it doesn't move during the remainder of the construction of the underframe.

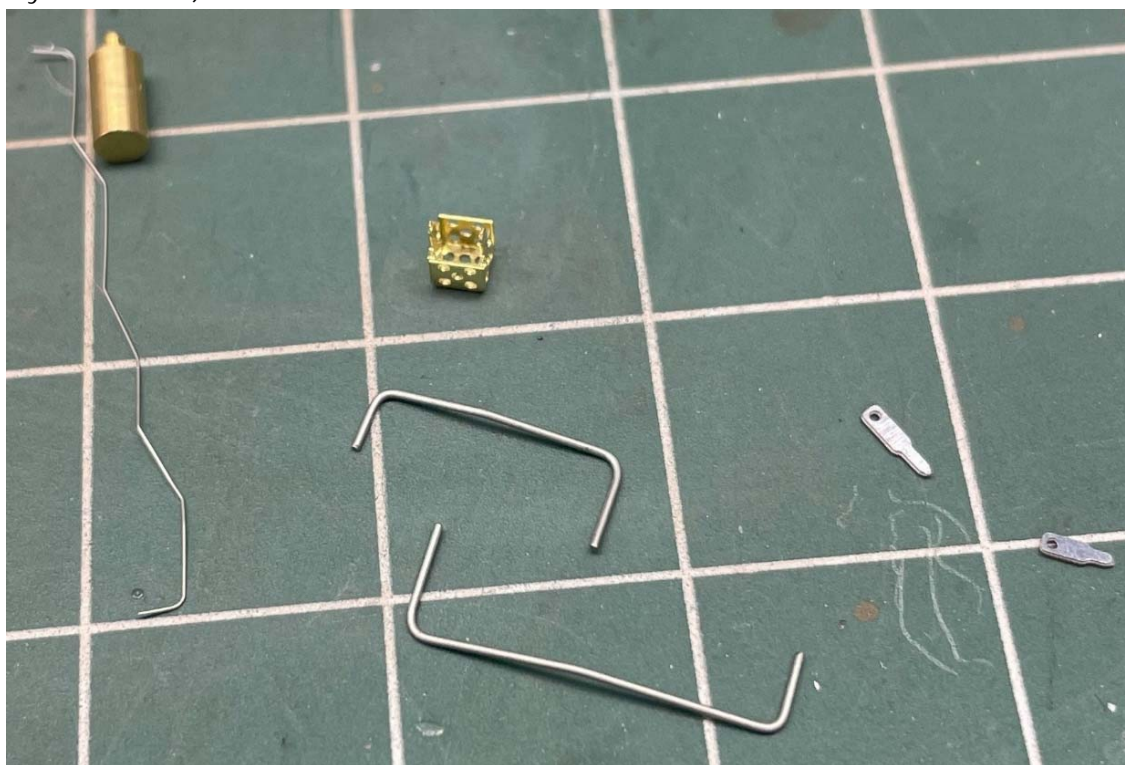


4. From bag 10 locate the reservoir, AB valve, and AB valve bracket. The reservoir fits in the four mounting holes that are adjacent to the cylinder bracket. Orient it so that the holes in the reservoir are facing the center sill and secure it with CA. The AB bracket fits in two mounting holes on the opposite side of the cross-member next to the reservoir. There is a slot on the bracket that is slightly offset - orient it so that the offset is closer to the edge of the underframe. Set in place and secure with CA. Install the AB valve on top of the bracket and orient so that the holes in the AB are facing the center sill. Secure the AB valve to the bracket.

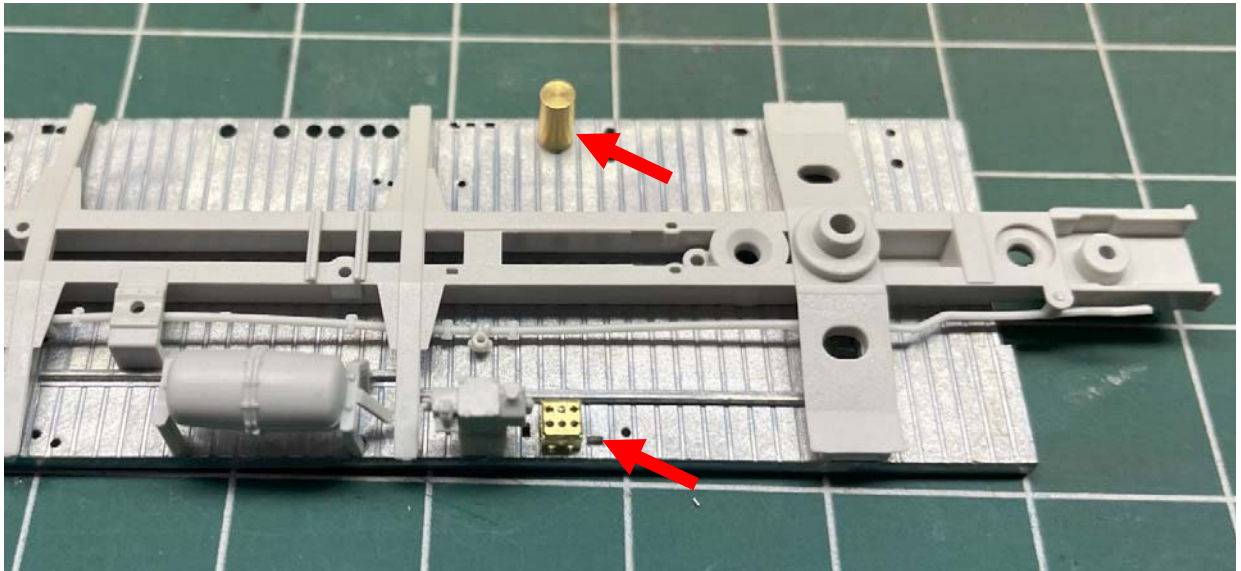




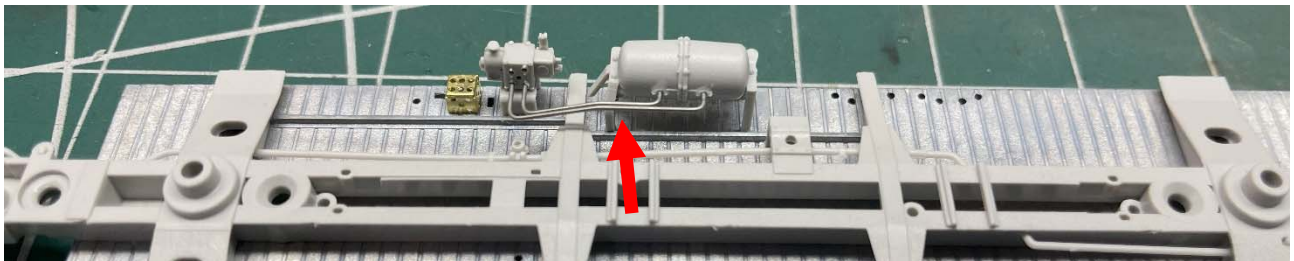
5. From bag 27 retrieve the following parts: air reservoir lines, Vapor heater breather block, toilet dump pipe, bleed rod, and standoffs (there may be a spare long standoff in the bag, you only need one)



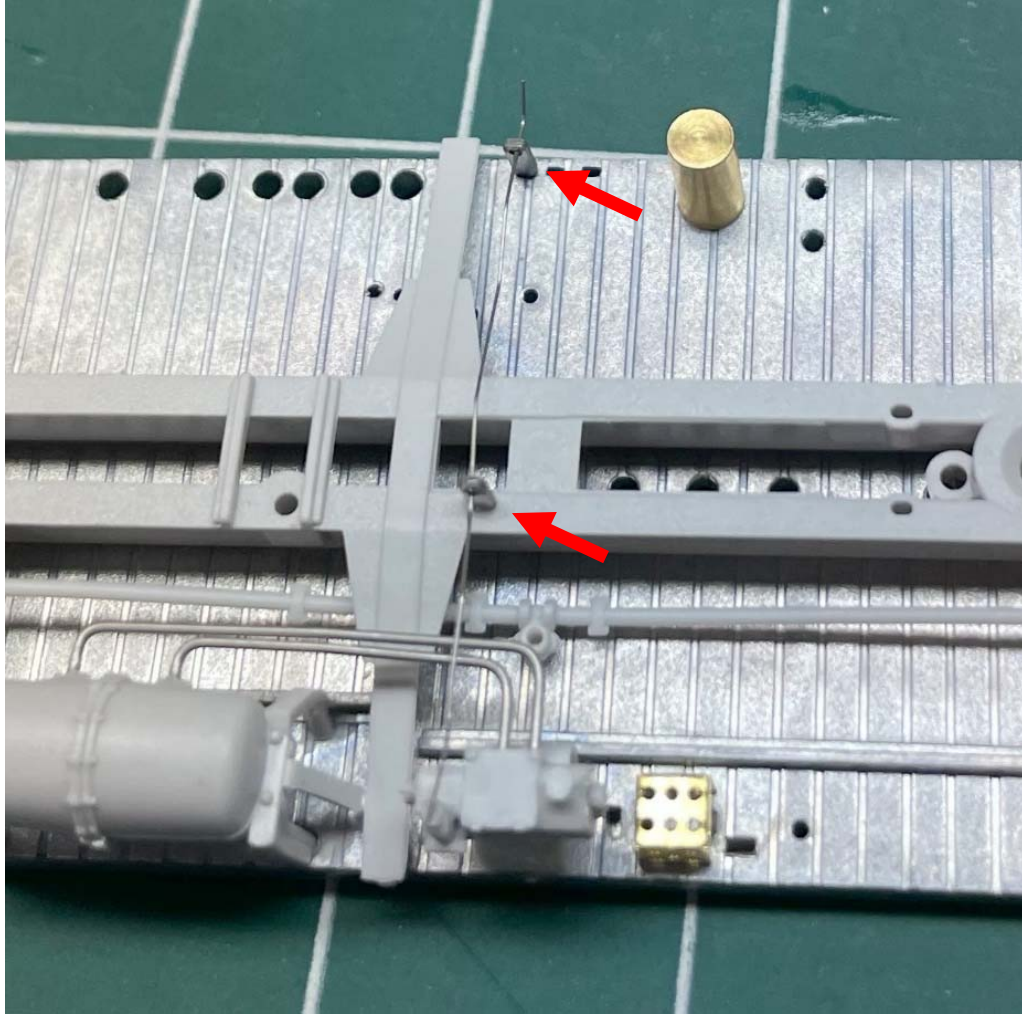
6. Install the Vapor heater breather block and toilet dump pipe as shown in the photo and secure both with CA.



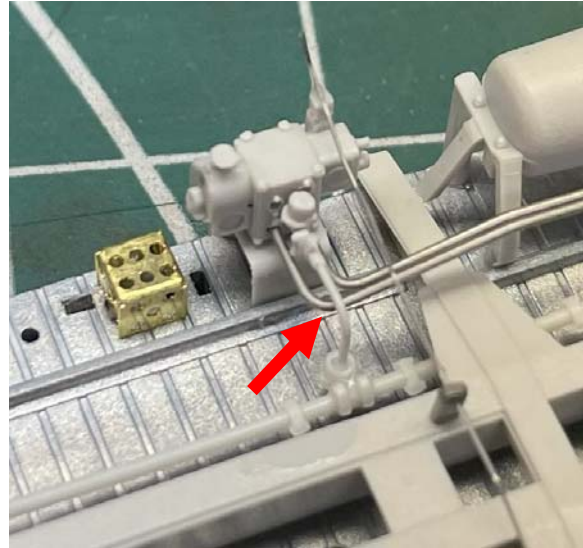
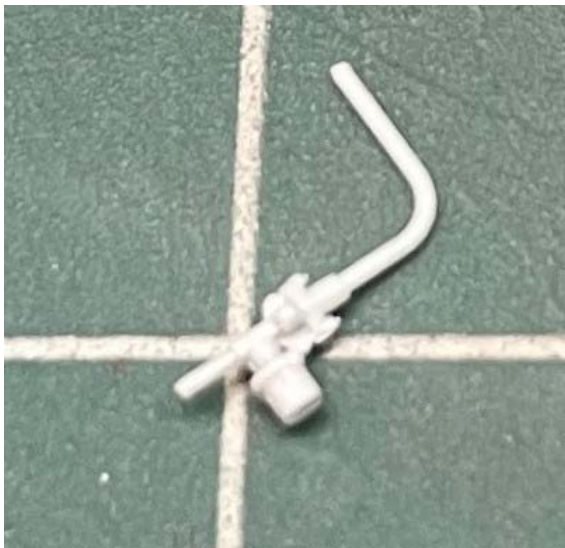
7. The reservoir lines have one leg that is slightly longer – this goes toward the AB valve. Insert the wires into the reservoir and into the two lower holes of the AB valve. Secure at the reservoir with CA but not at the AB yet to ensure that the other holes do not get blocked.



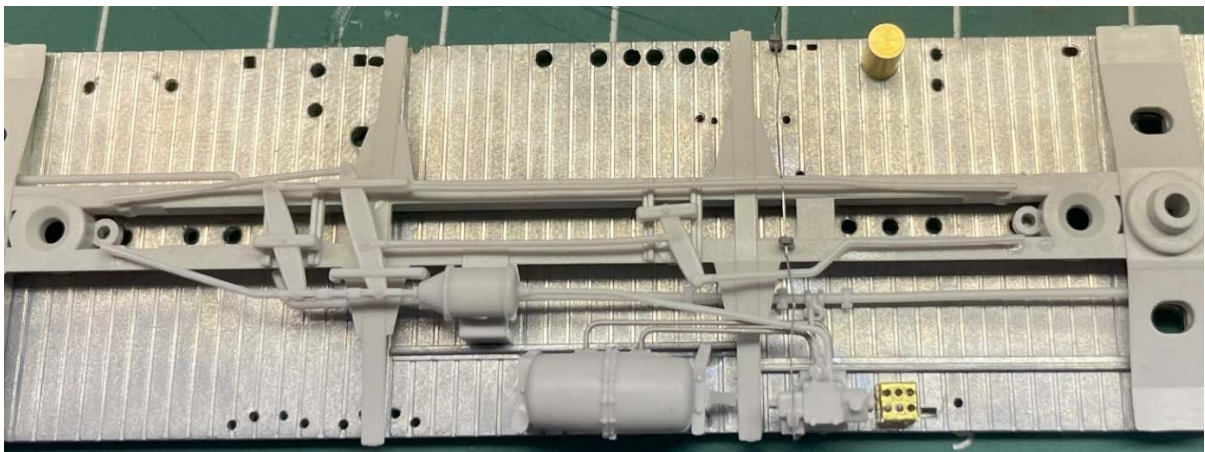
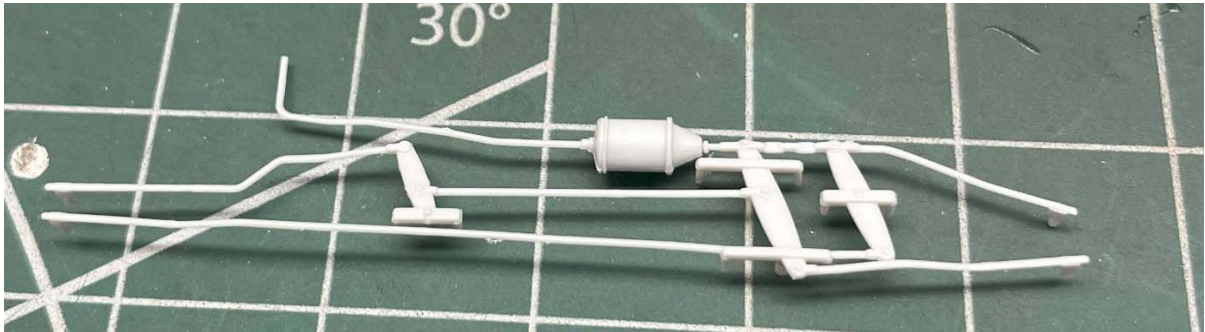
8. Locate the two standoffs for the bleed rod. One is slightly longer than the other- this one goes in a slot in the floor next to the cross member and directly across from the AB valve. The shorter one goes in a slot in the center sill. Set both in place and secure. Thread the bleed rod through the standoffs (due to its unique shape it will only fit one way. Orient it before fishing through the standoffs). It takes a bit of maneuvering but it is very flexible so it will fit. When it's in position secure with CA.



9. Retrieve the dirt collector pipe from bag 10. The pipe goes into the center hole in the AB valve and into the coupling in the train line. Set in place and secure in the train line.



10. Locate the cylinder/brake rigging assembly. The line from the back of the cylinder goes into the top left hole in the AB valve. Use the photo as a guide for the routing of the individual brake lines – some go over the bleed rod, some go under. When it's in position secure it to the center sill. You can now secure all parts going into the AB valve.



This concludes the assembly of the underframe. Set it aside for now.

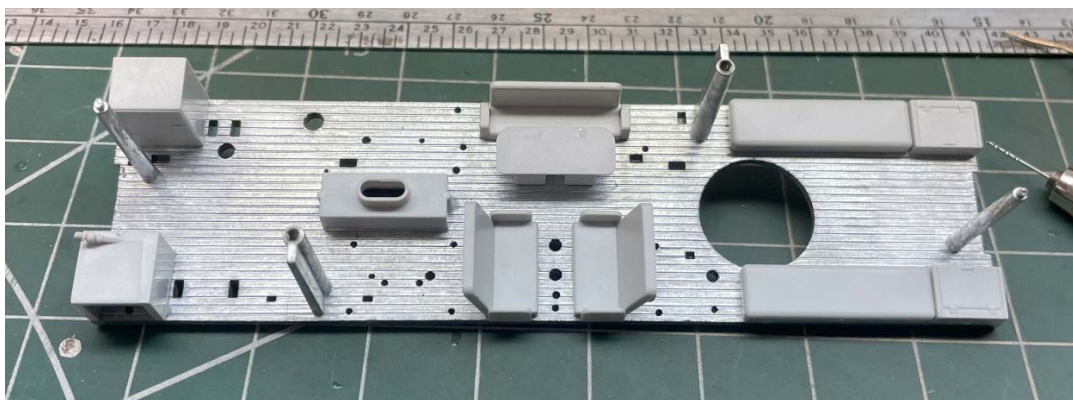
Interior Assembly:

11. Locate the interior sub floor from bag 02. Also retrieve bags 6, 7, 8, 9, 11, and 27 since you will need parts from each one.
12. From bag 06 remove the electrical guide. This part is not really necessary for this build as its purpose is to route the electrical for the lighting on the factory built cars. If you choose to install it, it goes over the small rectangular opening in the floor. Set in place and secure with CA.



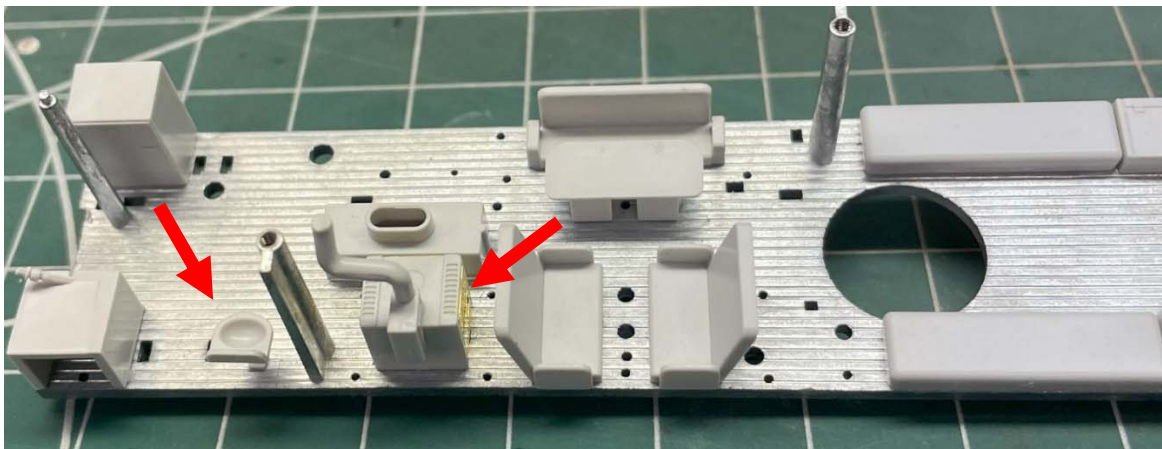
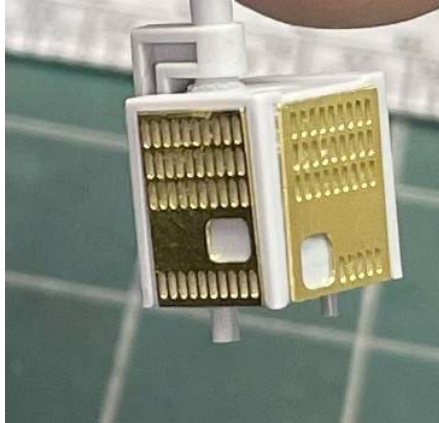


13. Remove the contents of bag 07 except for the smoke jack. Using the photo as a guide, set all parts in position and secure all with CA. (you should find an extra bench that will not be used)

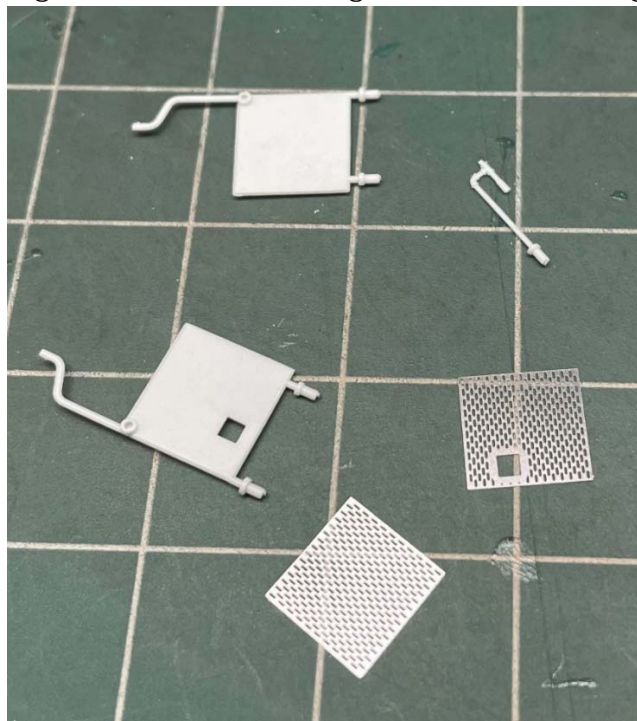


14. From bag 27 retrieve the three brass grates. These will be applied to the stove. Remove the contents of bag 08 except for the base for the smoke jack (stove, stove pipe, and sink). Using the photo as a guide, position the grates on the sides of the stove and secure with CA. Set the stove and sink and secure with CA and install the stove pipe.





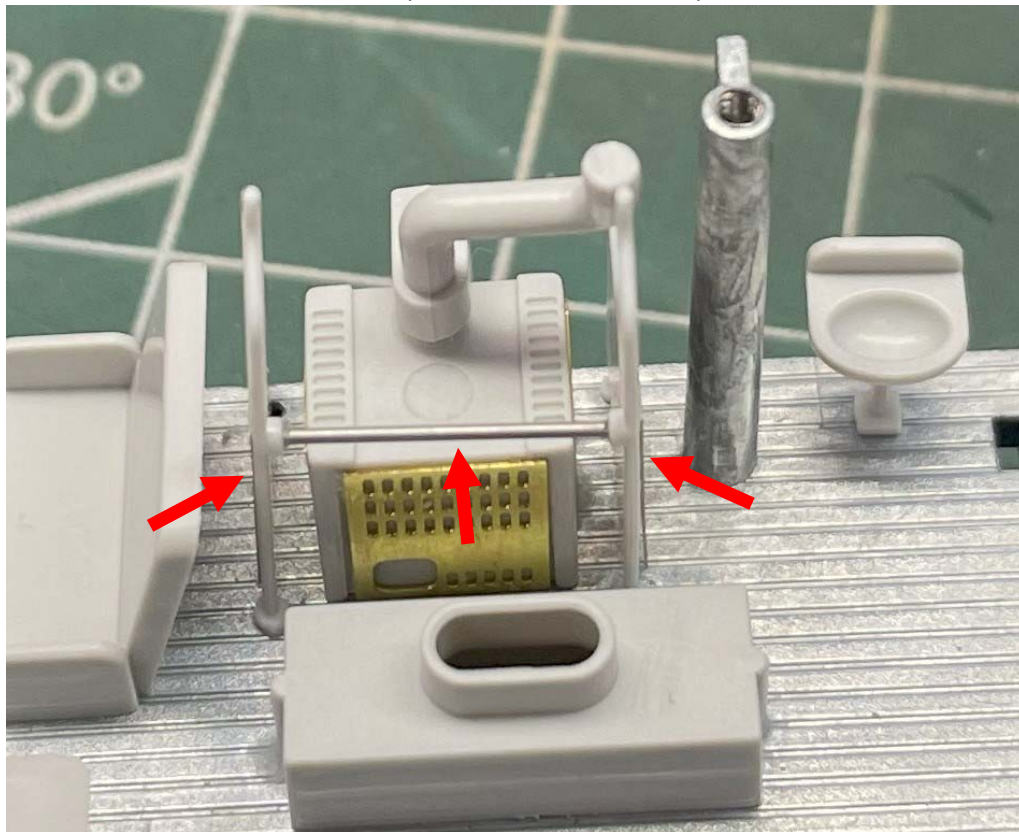
15. From bag 09 retrieve the stove guards and oil tank vent pipe, leaving the long retainer pipe in the bag. From bag 27 retrieve the silver grates for the stove guards.



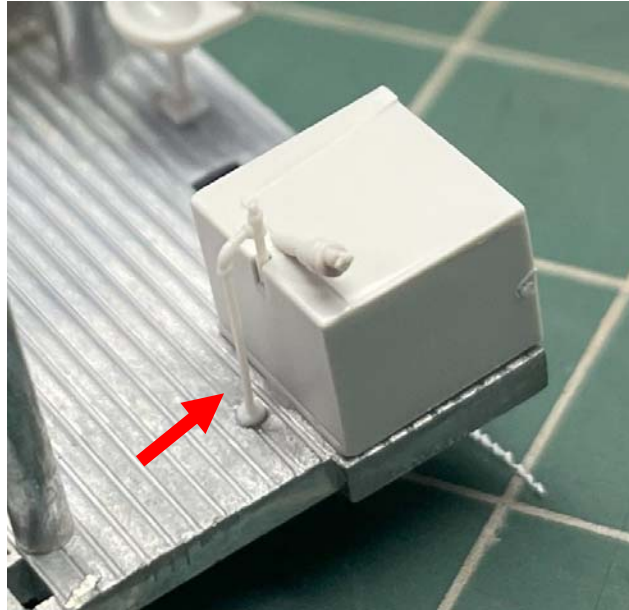
16. The stove guards have a small dimple in one corner- this side faces the stove. On the other side, install the grates with CA.



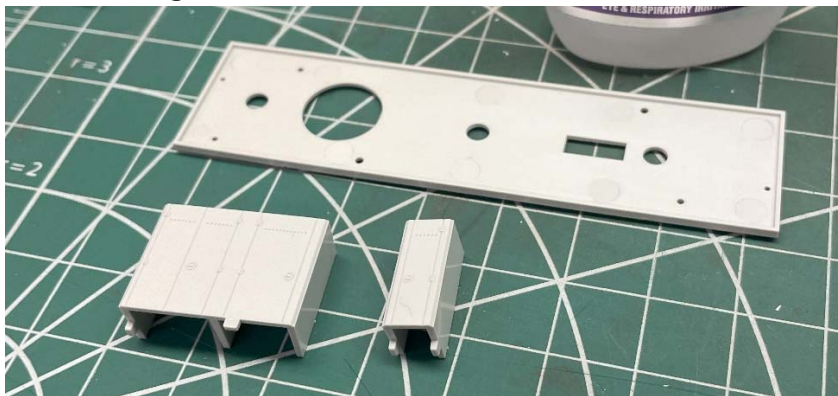
17. Install the guards on either side of the stove. From bag 27 retrieve the large straight wire. You will need to shorten it to approximately 3.5 scale feet (just long enough to fit between the guards when inserted into the dimples). Set the wire in place and secure with CA.



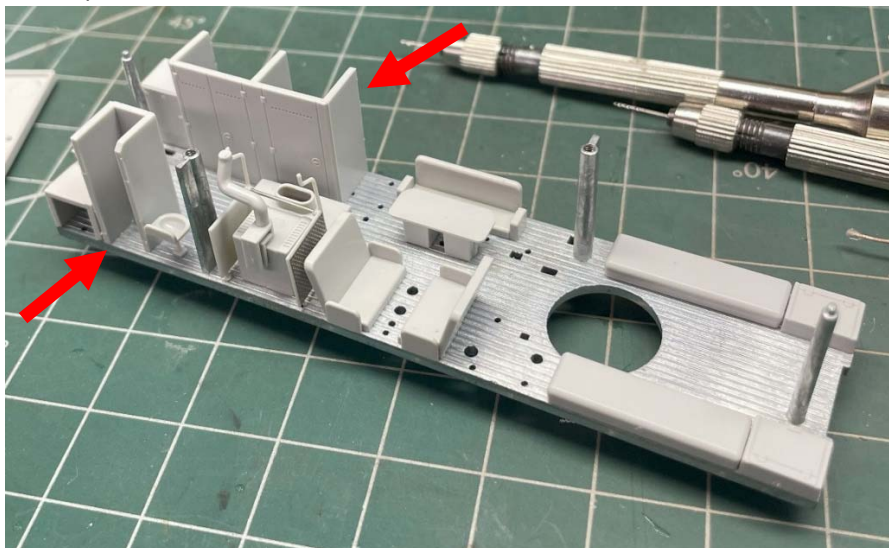
18. Install the stove fuel pipe and secure.



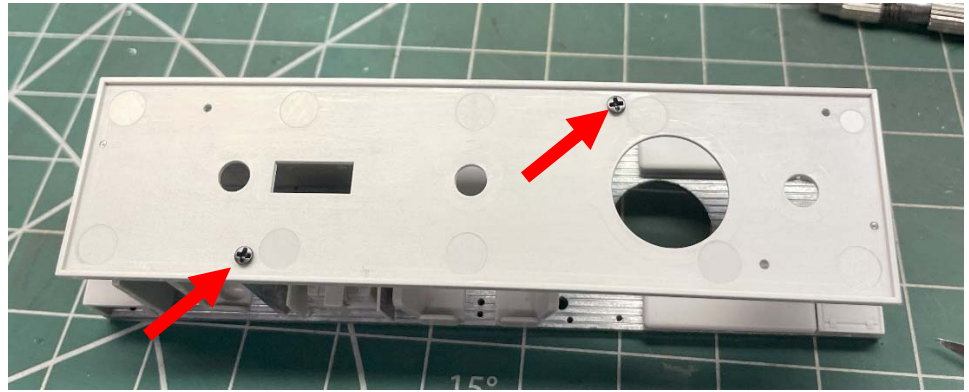
19. From bag 11 retrieve the large and small lockers/bathroom and interior sub roof.



20. Install each per the photo and secure with CA.



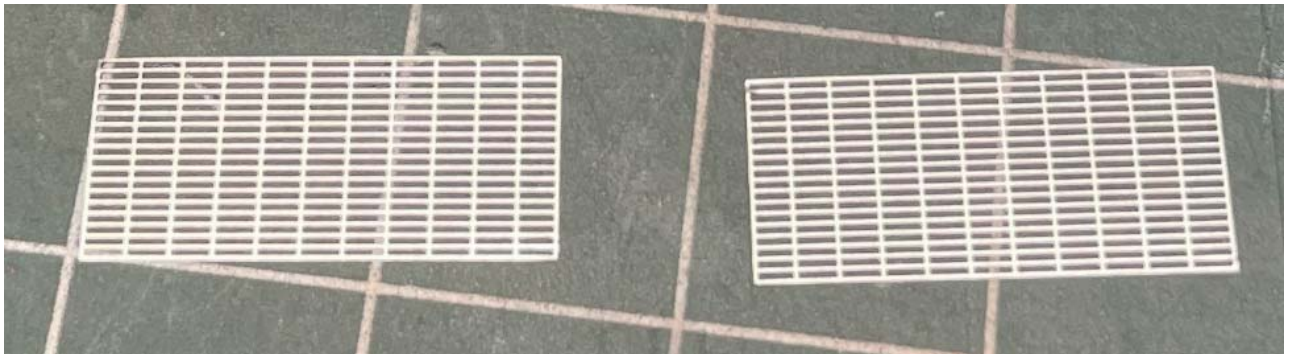
21. Position the sub roof so that the round hole lines up with the round hole in the floor. Orient the sub roof so that the recessed side is facing up and place it over the pegs on the posts of the floor. From bag 29 locate the two small round head screws and use them to secure sub roof to the posts.



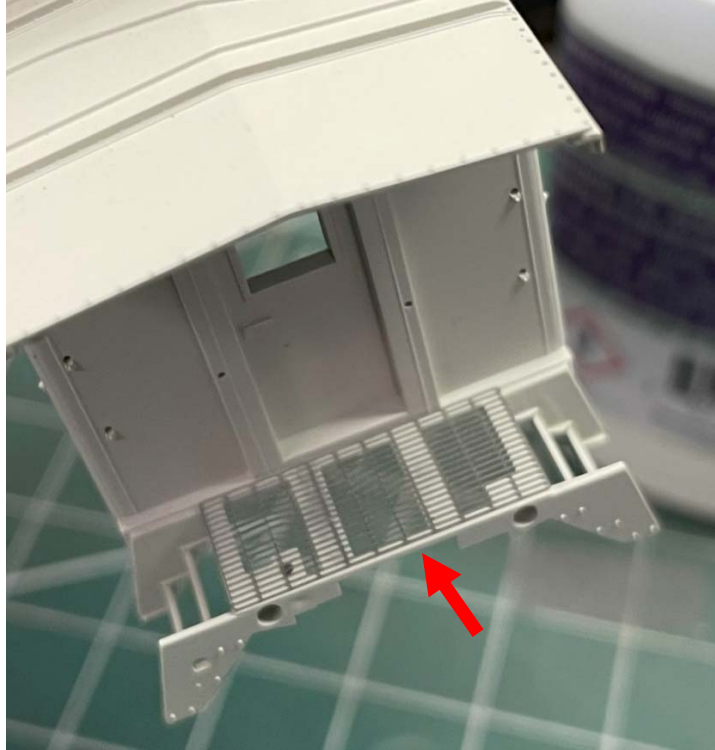
This completes the interior assembly. Set it aside for now.

Car Body Assembly:

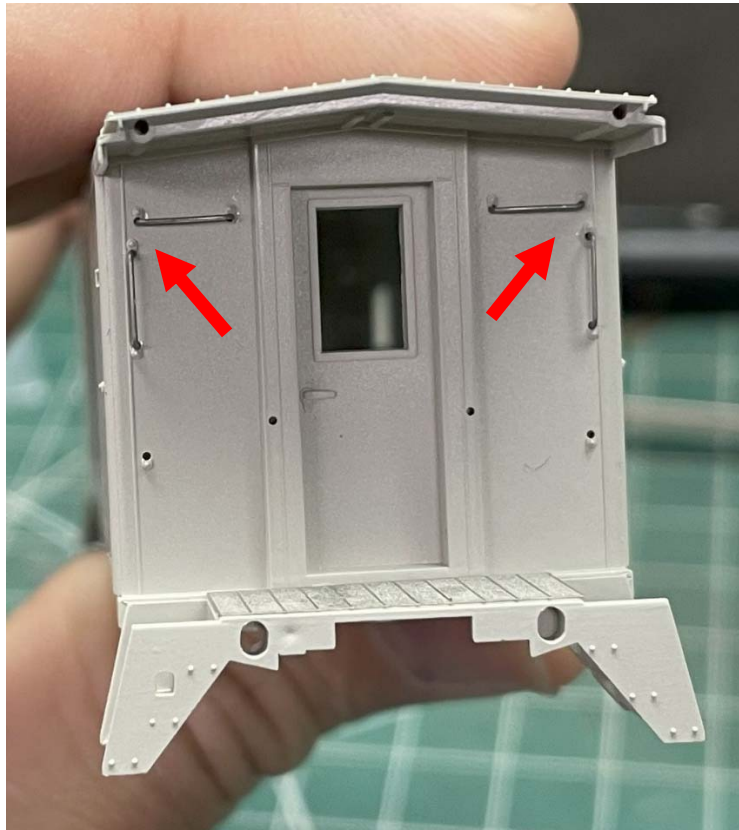
22. Remove the car body from bag 01. There is a possibility that the end platforms and step wells may be tilted upward slightly. This can be corrected by gently bending the platforms downward until they are parallel with the ground (do this in small increments to prevent damaging the body).
23. From bag 27 locate the end platform grates.



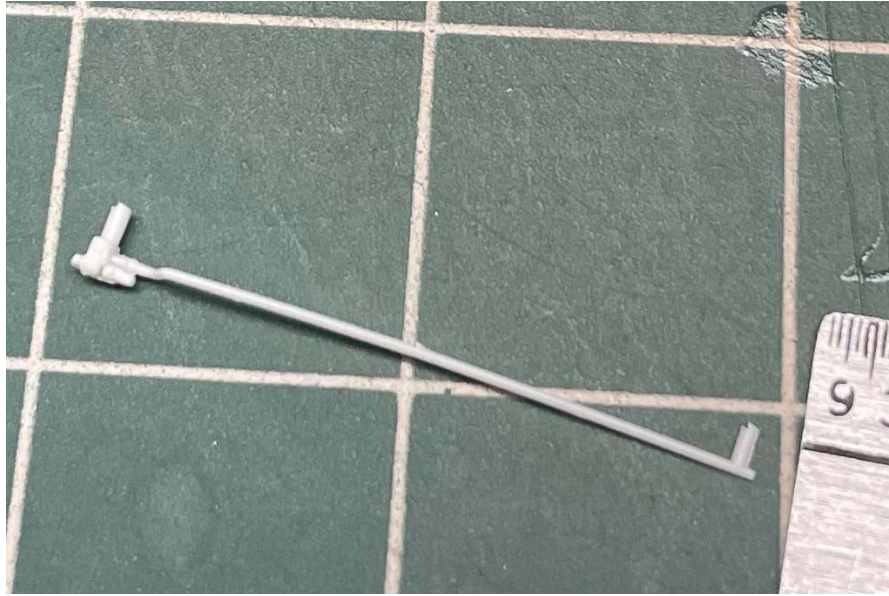
24. These will sit on the car body flush with the back wall and front edge of the end sill, and between the step wells. Set both in position and secure with CA.



25. Bag 27 contains grab irons and ladder rungs. The grab irons have slightly longer "legs" and there is a total of 12 of them. The ladder rungs have shorter legs and there is a total of 6. Using the photo as a guide install 4 grab irons on each end of the car body.



26. Retrieve the retainer line from bag 09.



27. One end of the car body has mounting holes (at the upper and lower corners of the door frame). Install and secure.



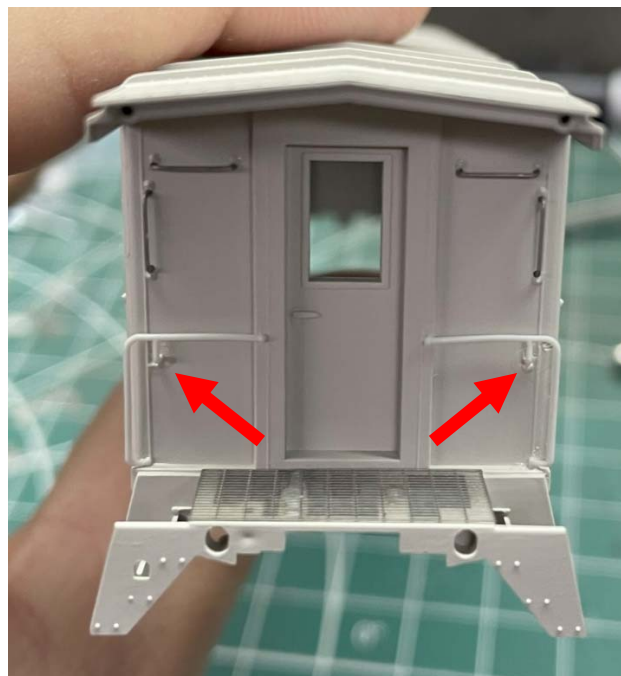
28. Bag 05 has the end railings.



29. There are mounting holes at the corners of the step wells that will need to be opened with a #77 drill to allow installation of the railings.



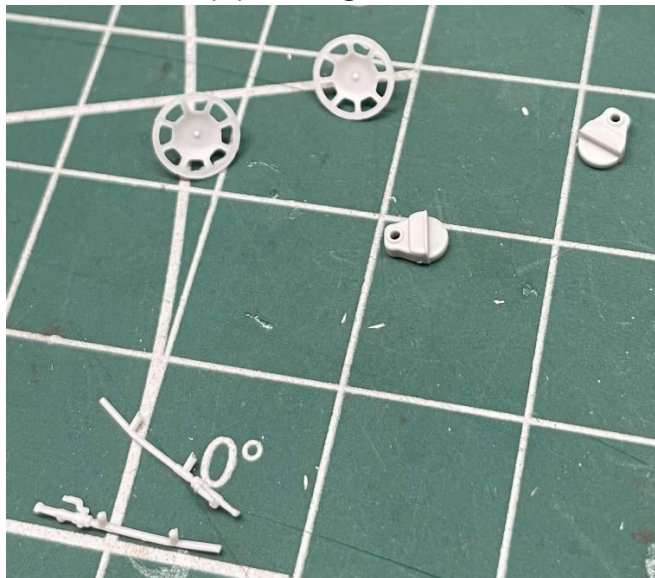
30. The railings will only fit in one position so use the appropriate railing for each location and secure.



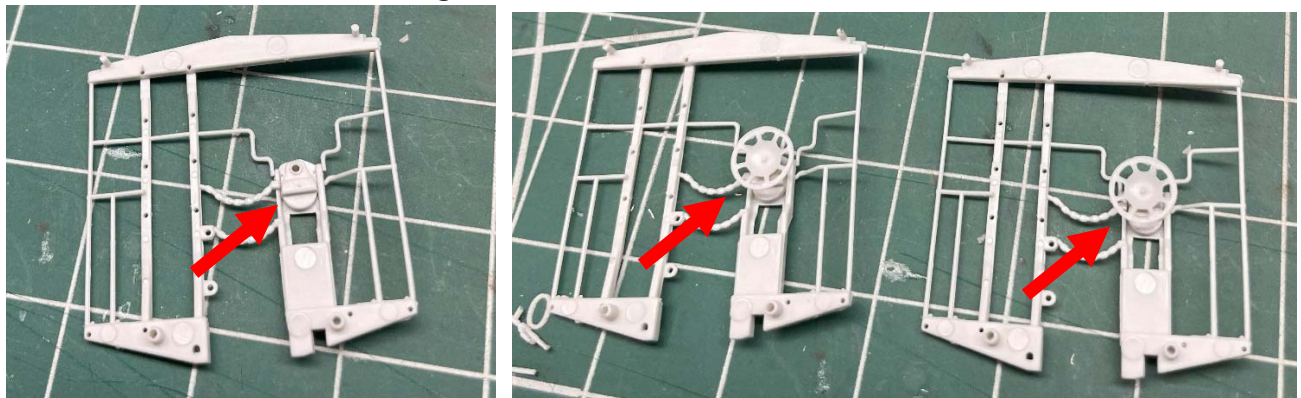
31. Bag 21 contains the end cages.



32. Bag 05 has the brake wheels and air pipes. Bag 06 has the brake housings.



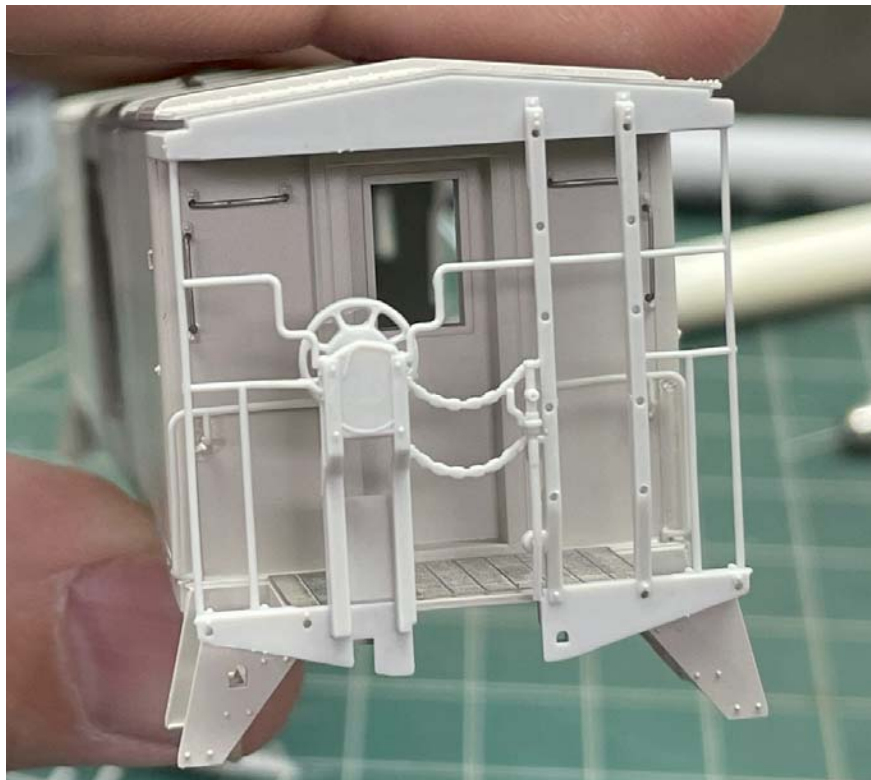
33. Install the power brake housing on the small tab on the brake support on each cage. Install the brake wheels in the housings.



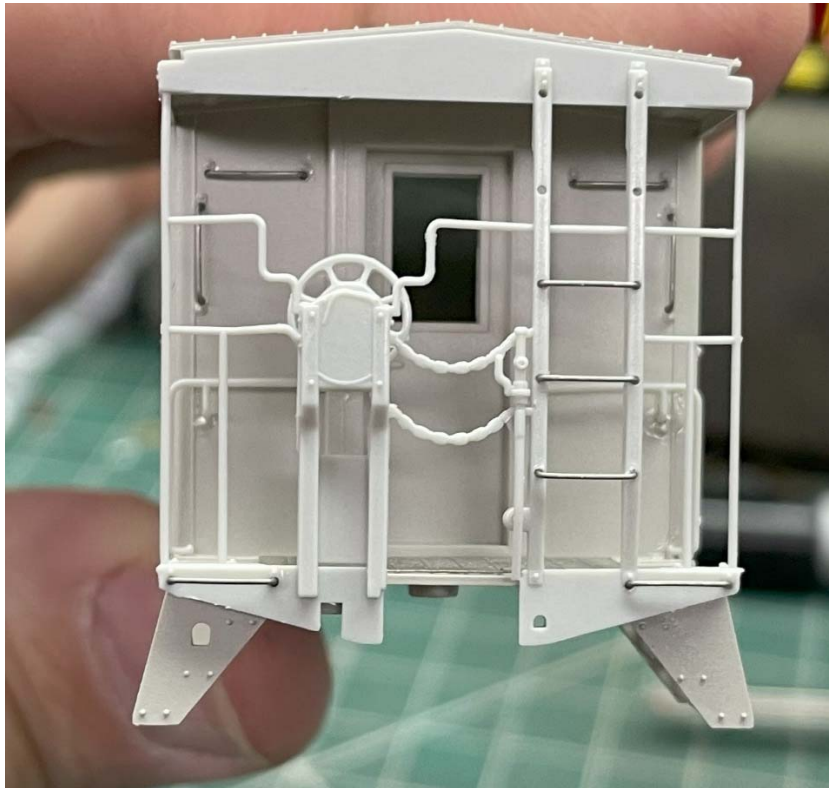
34. Flip the cages over and install the air pipes in the mounting holes to the right of the brake supports.



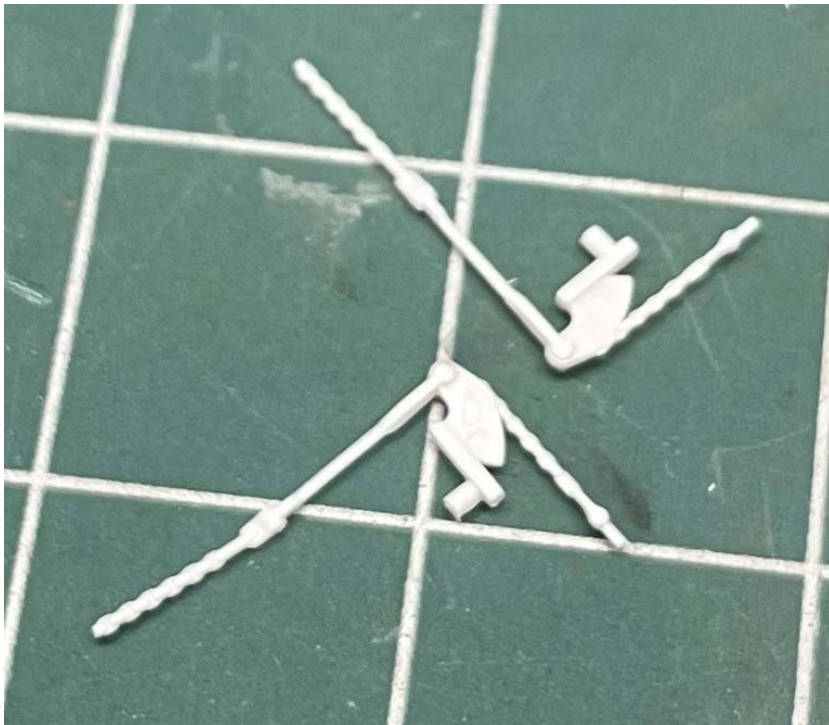
35. Install the end cages on the car body. They are keyed with pins to ensure proper positioning.



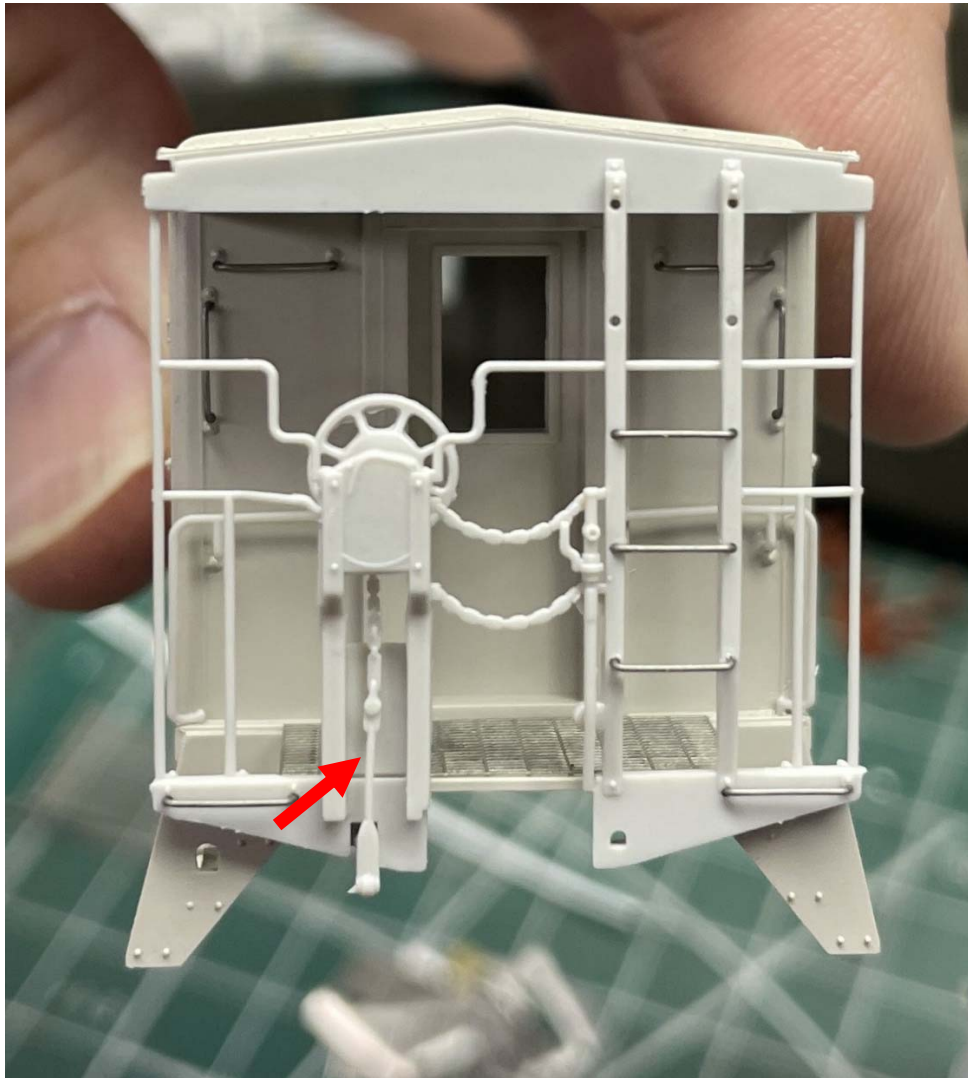
36. The 6 grab irons with shorter legs are installed in the three lowest mounting positions on the end ladder stiles. Secure with CA. The remaining 4 grab irons with the longer legs are installed at the lower corners of the end sills. Secure with CA.



37. Retrieve the fulcrum/staff parts from bag 05.



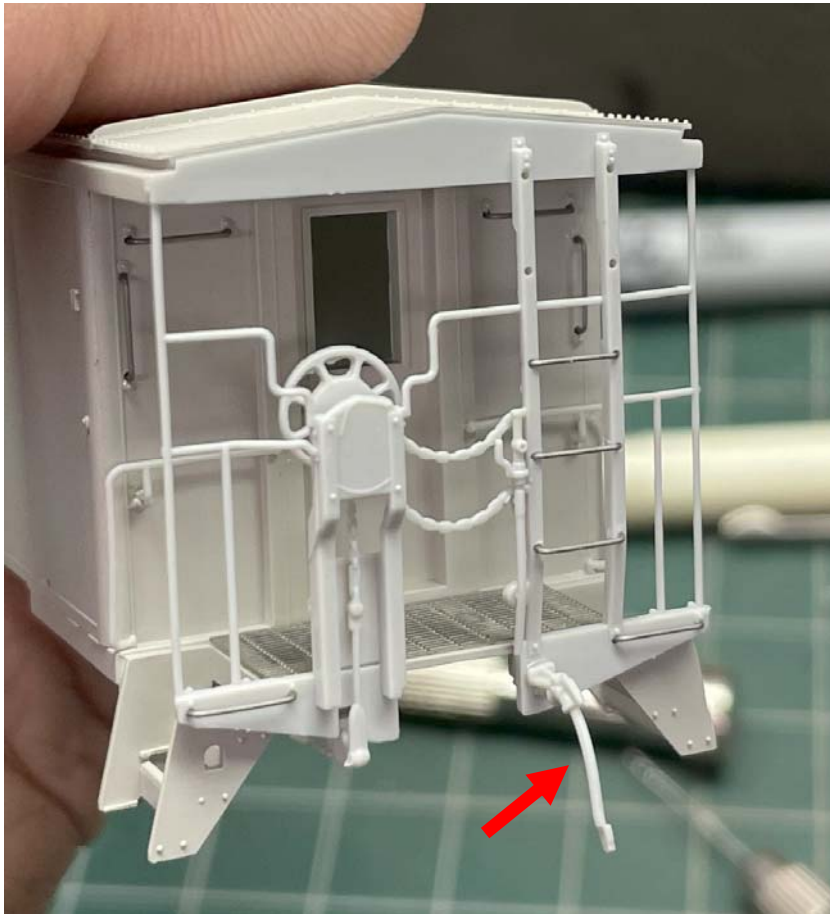
38. There is a mounting hole on the underside of the end sill that the pin on the casting fits into and the top of the staff fits behind the power brake housing. Install one on each end.



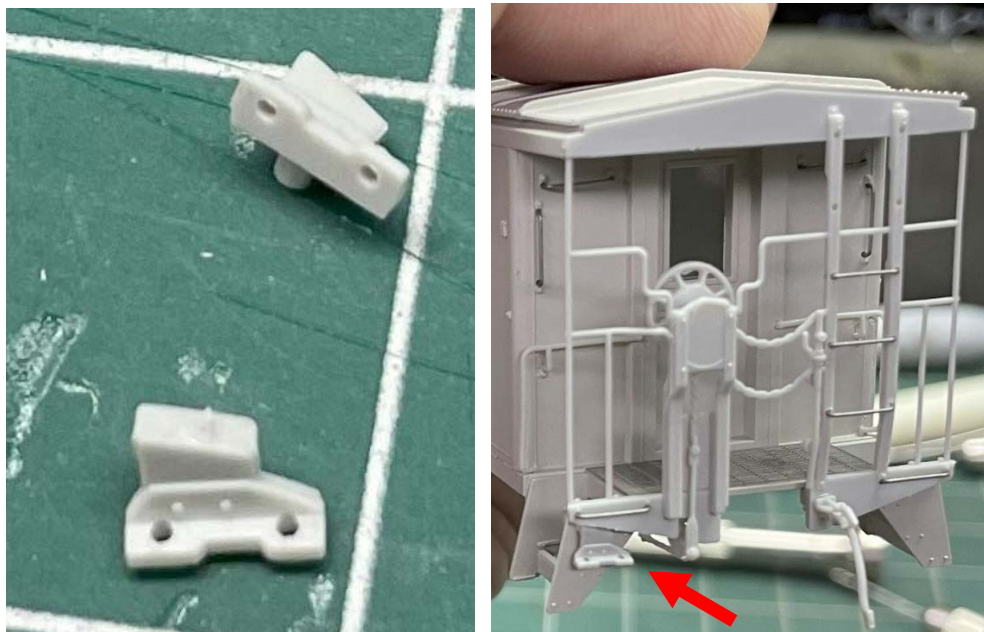
39. Locate the air hoses.



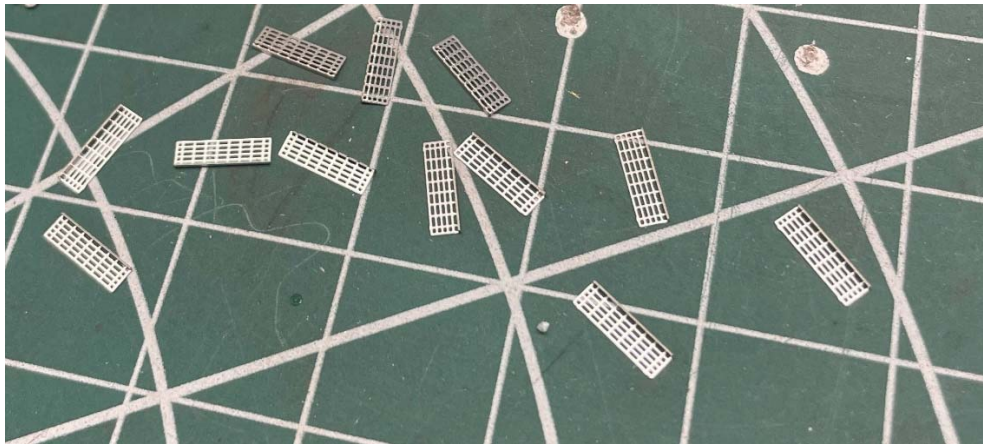
40. They are installed in the mounting holes on the end sills to the right of the coupler pocket opening. Set both in place and secure.



41. Bag 06 has the cut lever brackets. They are installed in the mounting holes at the left corners of the step wells. Set in place and secure.



42. Bag 27 contains the step treads (12 total).



43. The step wells have small ridges on each side that the treads rest on. Install the treads so that they sit flat on the tabs with the front lip flush with the front of the step well (lay the tread on the tabs, then slide it back until the front lip of the tread contacts the tabs). Secure with CA.



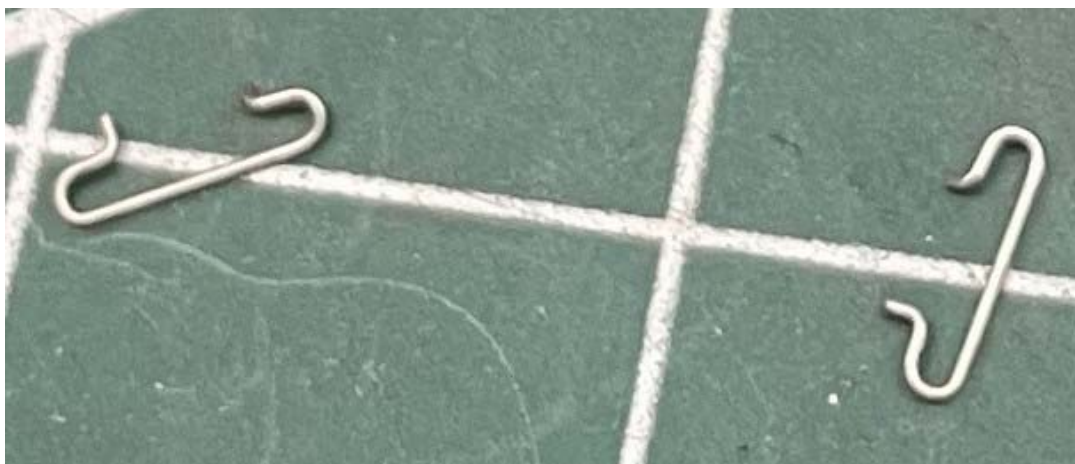
44. Locate the four curved side grab irons.



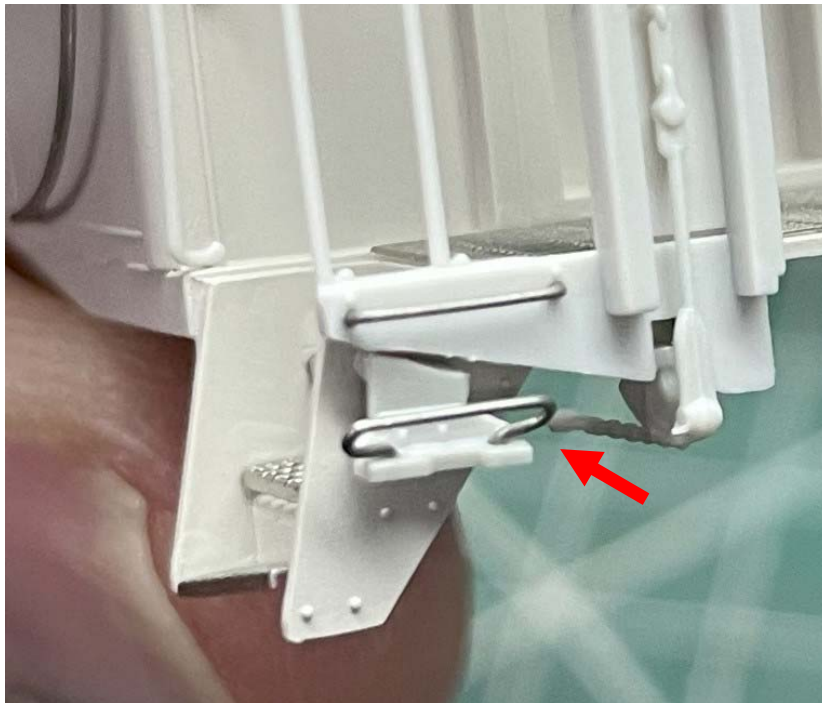
45. Set in place and secure with CA.



46. Locate the cut lever cradles.



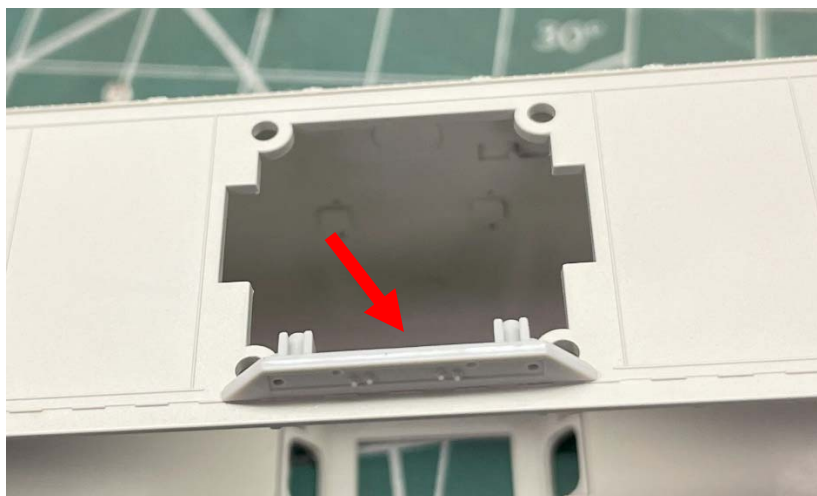
47. These fit in the mounting holes in the cut lever brackets. Set in place and secure.



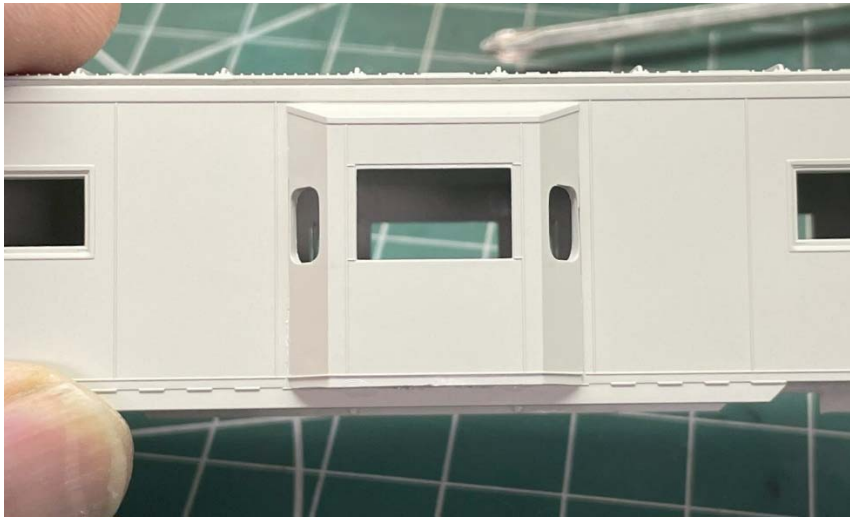
48. From bag 06 retrieve the bay window bases.



49. Set in position and secure.



50. From bag 04 retrieve the bay windows. Set in position and secure.



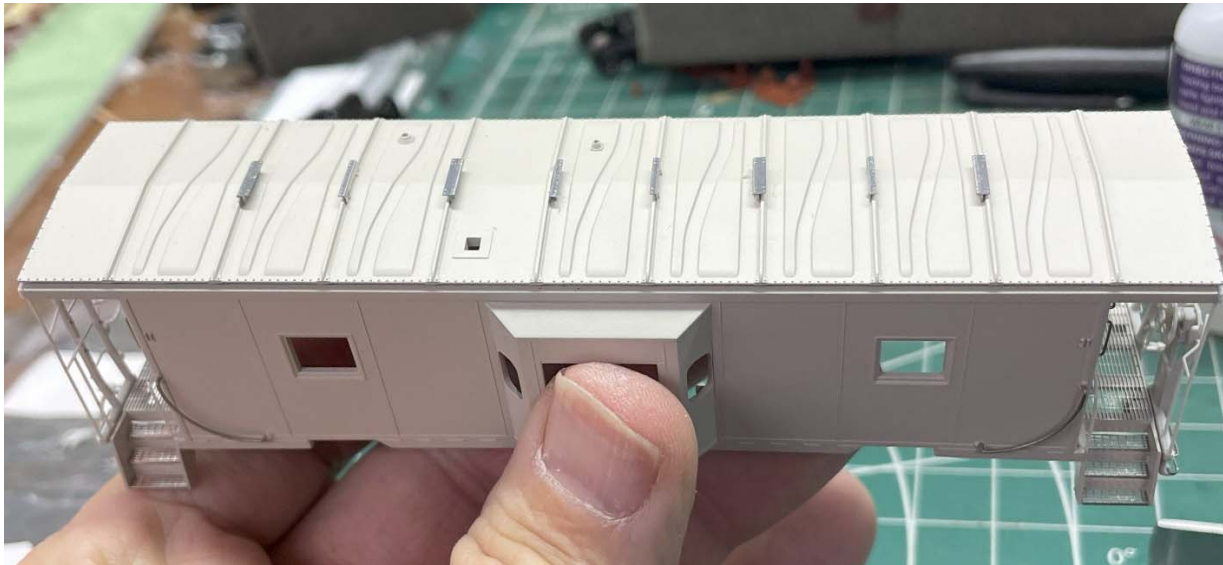
51. Turning the car body over you will see mounting holes for the running board supports. These will need to be opened with a #79 drill (there are additional supports that will not have locating holes - you will need to remove the mounting pins and glue them directly to the roof or drill your own holes).



52. There is a total of 8 supports – 4 that are T shaped and four that are L shaped.



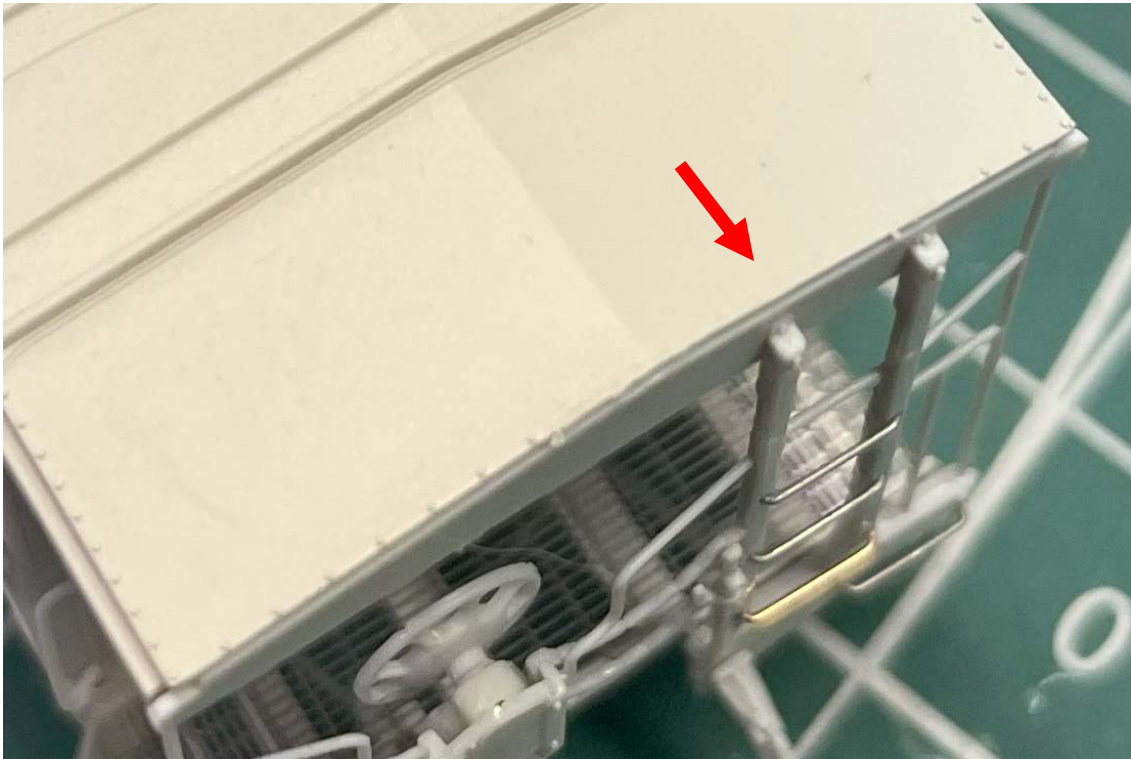
53. Starting from one end the T brackets will be located in the first, third, sixth, and eighth positions. The L brackets will be second, fourth, fifth, and seventh (see photo for clarity). Secure all with CA.



54. The lateral end supports do not have any mounting holes provided so you can either locate them yourself or remove the pins from the parts and secure them directly to the roof.



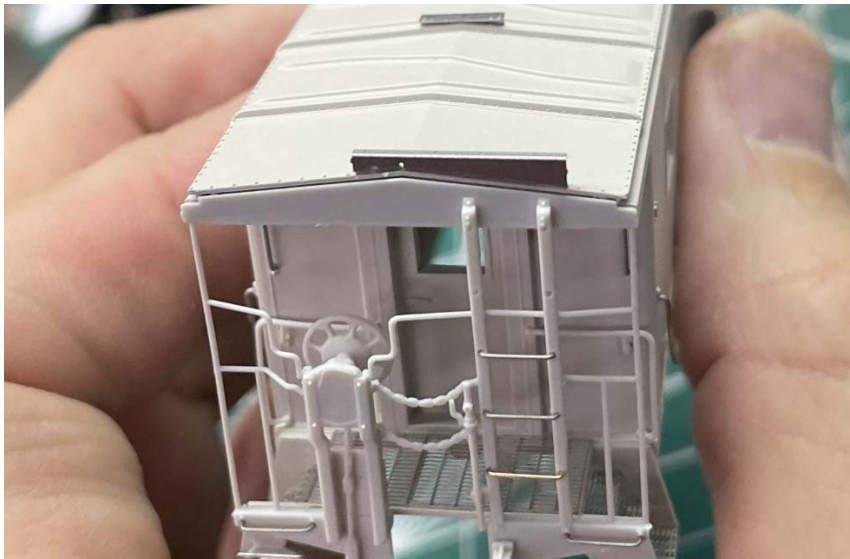
55. On the edge of the roof some of the rivets will need to be removed so that the bracket sits flush on the roof.



56. The outer support has a small notch where it sits on the peak of the roof.

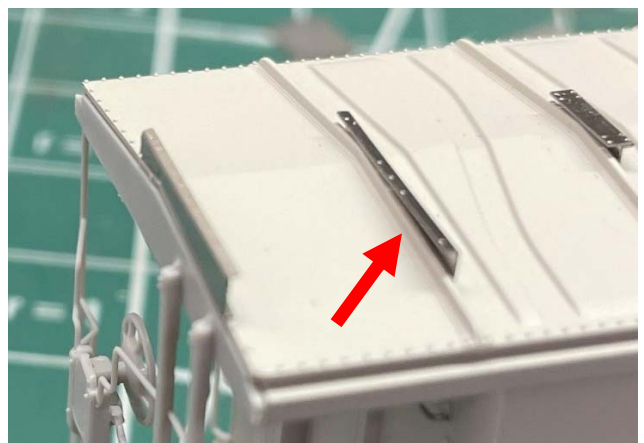


57. Set it in position and secure with CA.



58.

59. The inner support fits on the first roof rib on the side that faces the center of the car. Position so that the angle follows the contour of the roof and secure with CA.



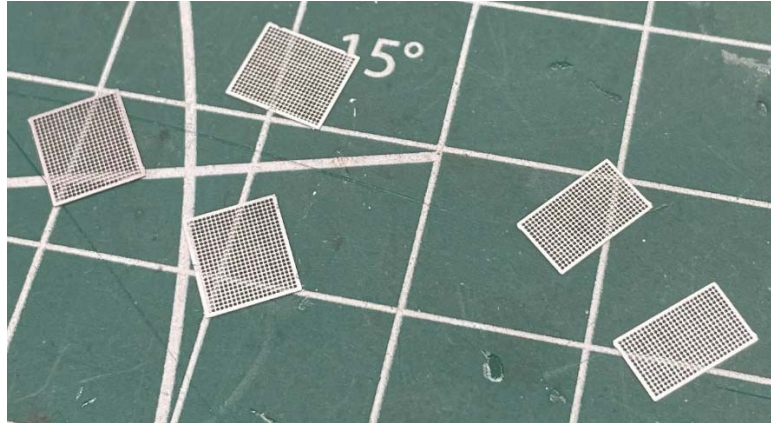
60. In the next steps you will install the windows and screens. As stated earlier, you may want to paint the car body before installing to make it a bit easier.

61. Bag 03 contains several bags that contain the windows. They are as follows:

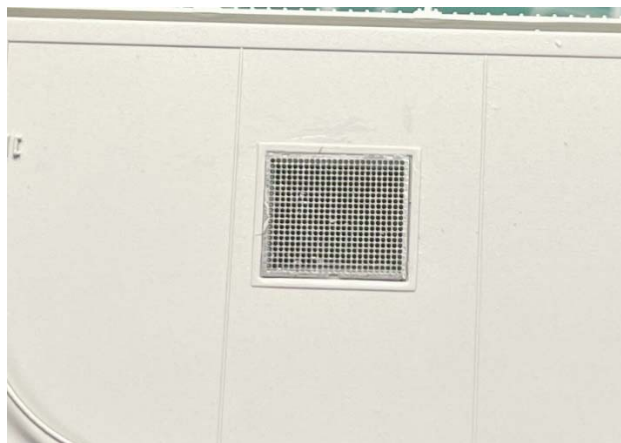
- Bag 5 has the main bay windows
- Bag 7 has the side windows
- Bags 10 and 11 have the end door windows
- Bag 16 has the side bay windows



62. We did not take any photos of the window installs since they can only fit in one position. We use canopy glue for installation since solvent cement can damage the plastic and CA can fog the glass.
63. There are 5 window screens-three for the side windows and two for the end doors.



64. The side windows have a small, recessed lip that the screen fits in. Set them in place and secure.



65. The end door screens are a bit tricky since there isn't much room to maneuver with the end cages in place. Set a small amount of canopy glue on the glass and set the screen in position.



66. Find the following parts:

- Bag 06 contains the bathroom vent
- Bag 07 has the smoke jack
- Bag 08 has the smoke jack base
- Bag 27 has the small wire for the antenna



67. The smoke jack base has a slight angle to it that allows it to sit level. Orient it correctly and install it in the square mounting hole in the roof.

68. Install the vent in the mounting hole to the right of the bay window and secure.

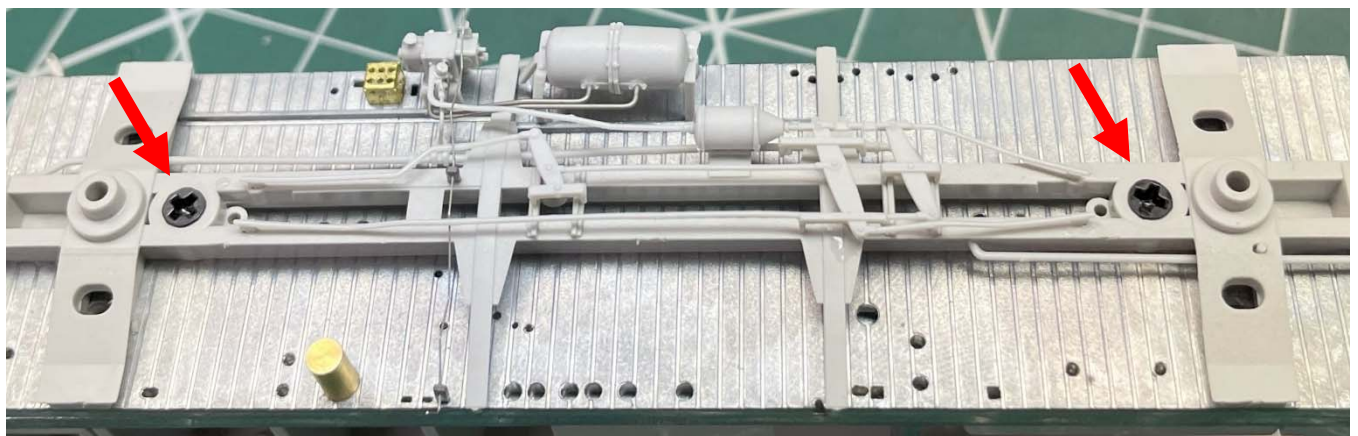
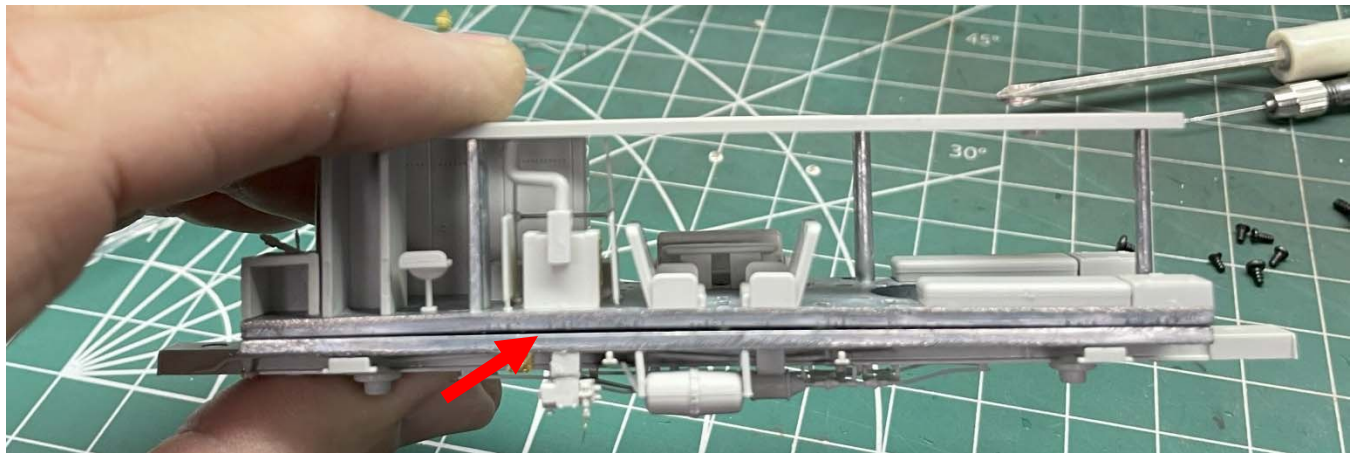
69. Install the antenna in the mounting hole above the bay window with CA.

70. Install the smoke jack in the base. Secure.

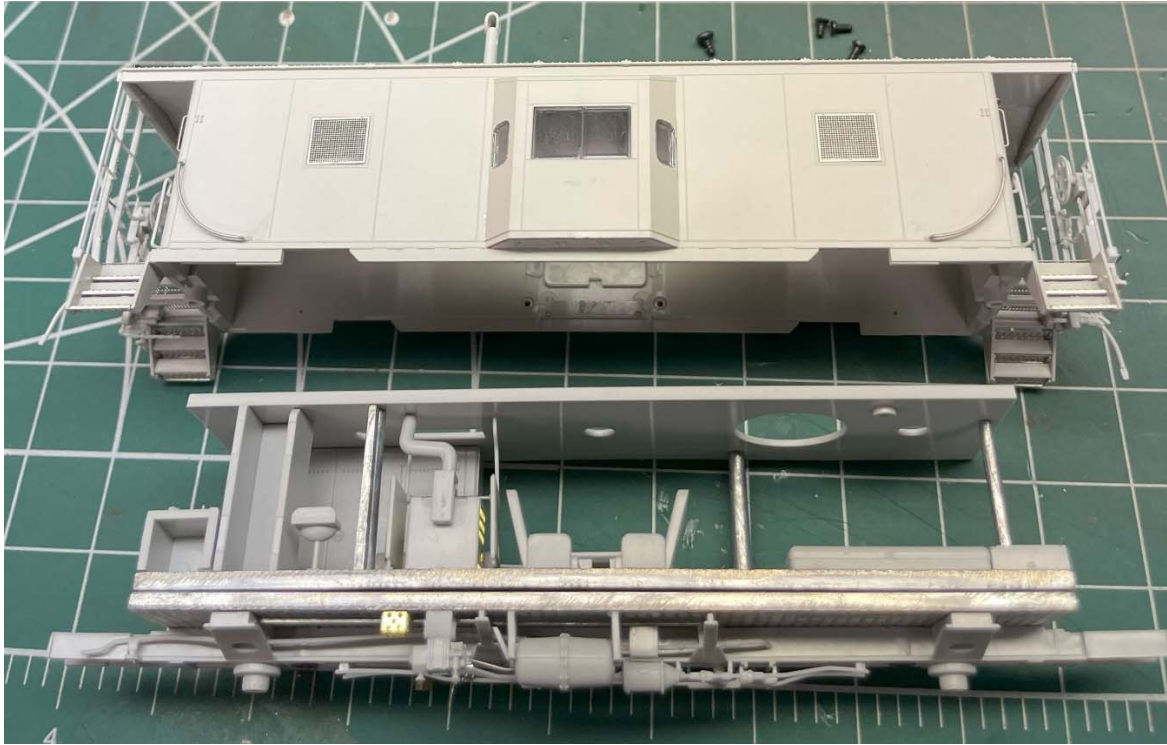


Final Assembly

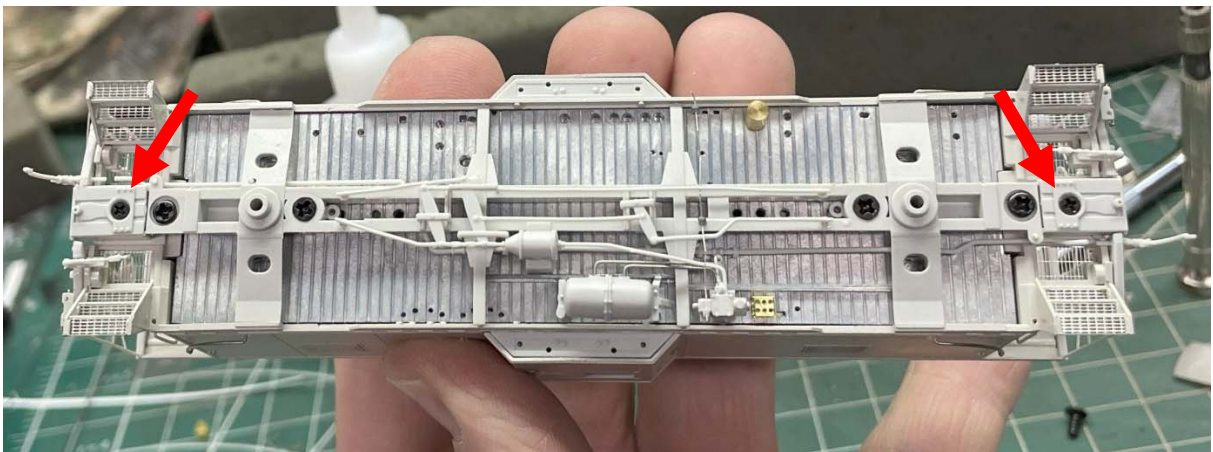
71. Join the underframe and interior. Orient the assemblies so that the AB valve lines up with the stove. Use the flat head screws in the holes just behind the bolsters.



72. Insert the underframe/interior assembly into the car body making sure that the stove is below the smoke jack. You may need to gently spread the sides of the car body to get it to seat properly. Using the medium size round head screws secure the frame to the body using the mounting holes directly behind the coupler pockets.



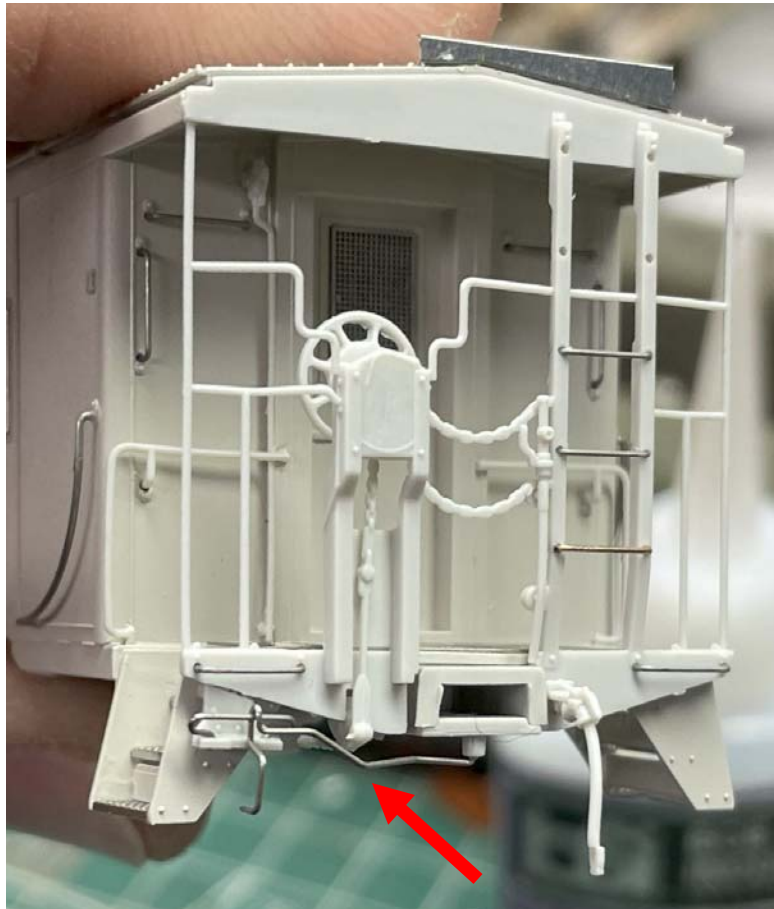
73. Bag 06 contains the coupler box covers. For the purposes of these instructions, we are not installing couplers. It is our belief that it is better to leave the couplers off until after all paint and weathering is complete to ensure proper coupler operation. Secure the covers using the small flat head screws.



74. Locate the cut levers.



75. Fish the handles over the loop on the cut lever bracket and insert the other end into the hole on the bottom of the coupler box cover. Tack at the cover with CA to allow removal of cover for coupler installation in the future.



76. Using the largest screws install the trucks (remove wires if not installing any lighting).

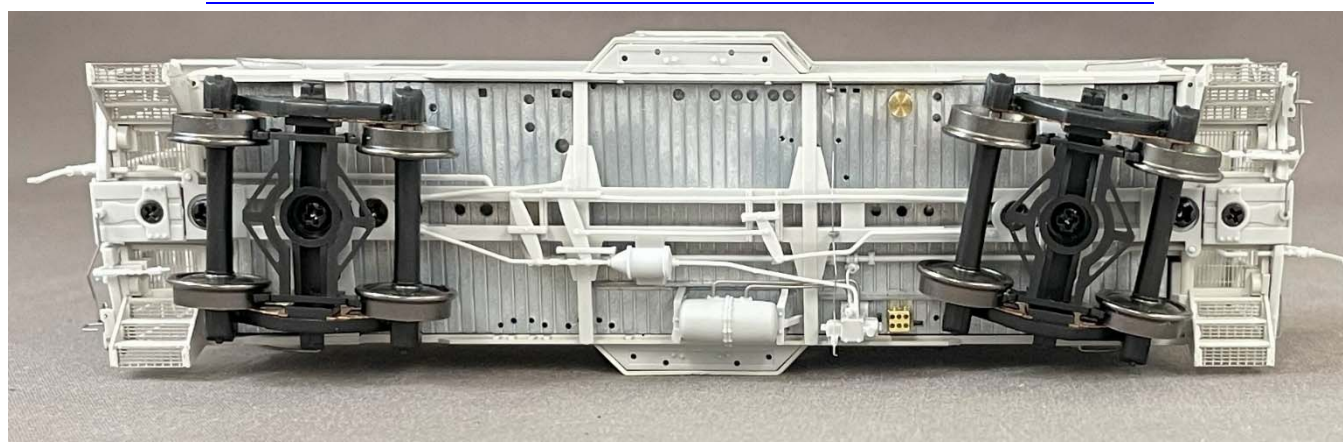
This concludes the assembly of your kit.

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.

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