

# N Scale ALCo C415 Instruction Article

**To build this model, you will need the following items:**

Atlas RS3, Atlas RS11, or True Line RS18 locomotive mechanism. This must be a Chinese production model, not Kato drive. I used an Atlas RS11 drive because I got it cheap.

Micro Trains #1015 couplers

CA glue

Pin Vise with #80, 78, and #75 bits

XActo knife with fresh #11 blades

400 grit sandpaper

Soldering iron and solder

small files

miniature flat bladed screwdriver

toothpicks

sprue cutters are helpful, as are photo etch shears

**The following printed parts are included in the kit:**

1 frame

2 worm covers

1 front hood

1 rear hood

1 cab

1 fuel tank

2 fuel fillers

2 air tanks

1 fuel tank bulge

4 jacking pads

2 all weather windows

1 bell/mount assembly

2 pilot assemblies

3 stacks (1 used)

1 corner grab iron jig

4 cab steps

1 handbrake assembly

4 sideframes (HI-Ad equipped prototypes only)

**The following miscellaneous parts are included:**

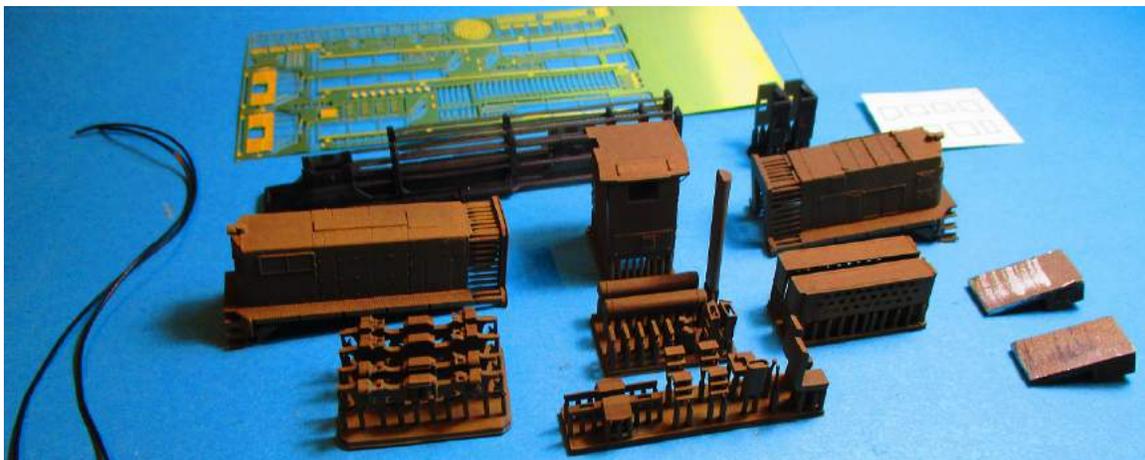
2 weights

.01" wire

electrical wire

window glass sheet

window glass template



**The following etched parts are included in this kit:**

3 handrail/side sill assemblies

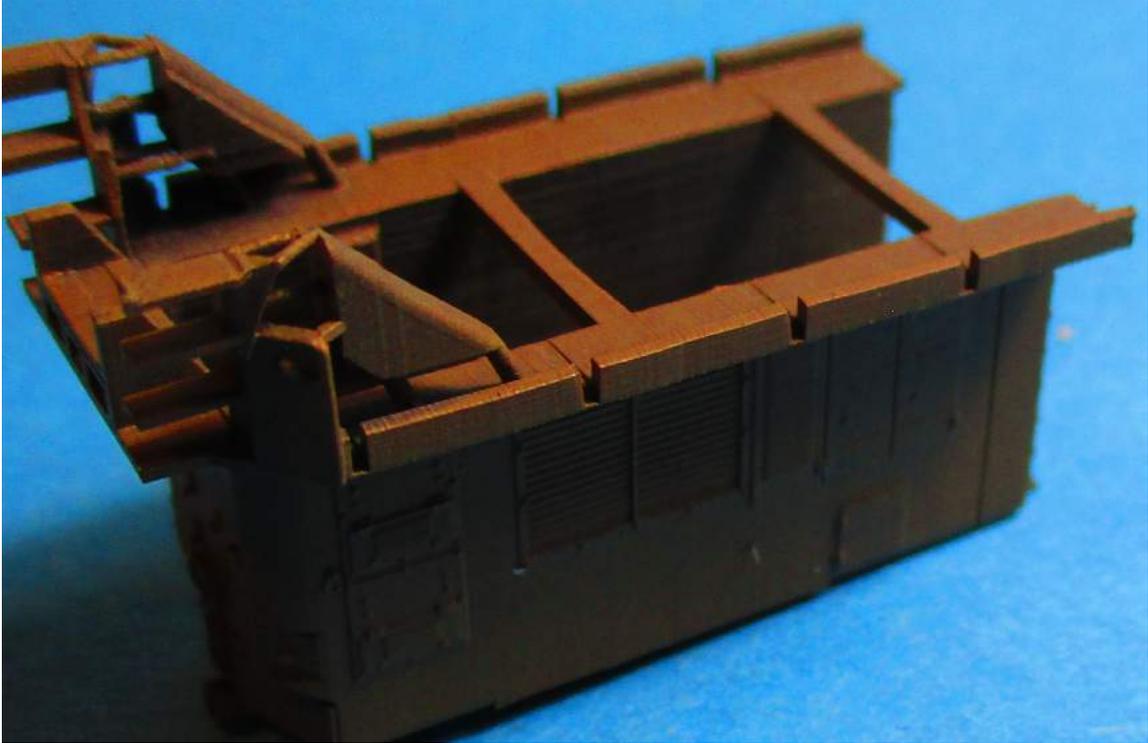
2 end handrail/pilot assemblies  
22 standard handrail stanchions (plus extras)  
4 end handrail stanchions (plus extras)  
4 small end handrail stanchions (plus extras)  
4 foot boards  
2 cab window frames  
4 MU Hose assemblies  
1 demonstrator fan grille  
2 radiator walkway grilles  
2 drop steps  
2 cut levers  
2 pilot handrails  
4 number boards  
8 exposed journal caps (1 extra)  
2 sunshades  
4 wind deflectors  
eyebolts for wind deflector mounting  
SP style lift rings  
ALCo style lift rings  
door handles  
grab irons

For this article, I am building a SP version of the model, with all the neat lights. I wont be decorating it in SP, but probably just applying a short line or industrial customer lettering at a later time. I have primed my parts with a sand color so they are easier to photograph and see. Acrylic paint adheres to the material best, I used Testor Acryl. Also keep in mind I am using pre-production prints. They may have some flaws that have been corrected for production items. I

do these instruction articles not only for instruction use, but to iron out any kinks in production before shipping starts.

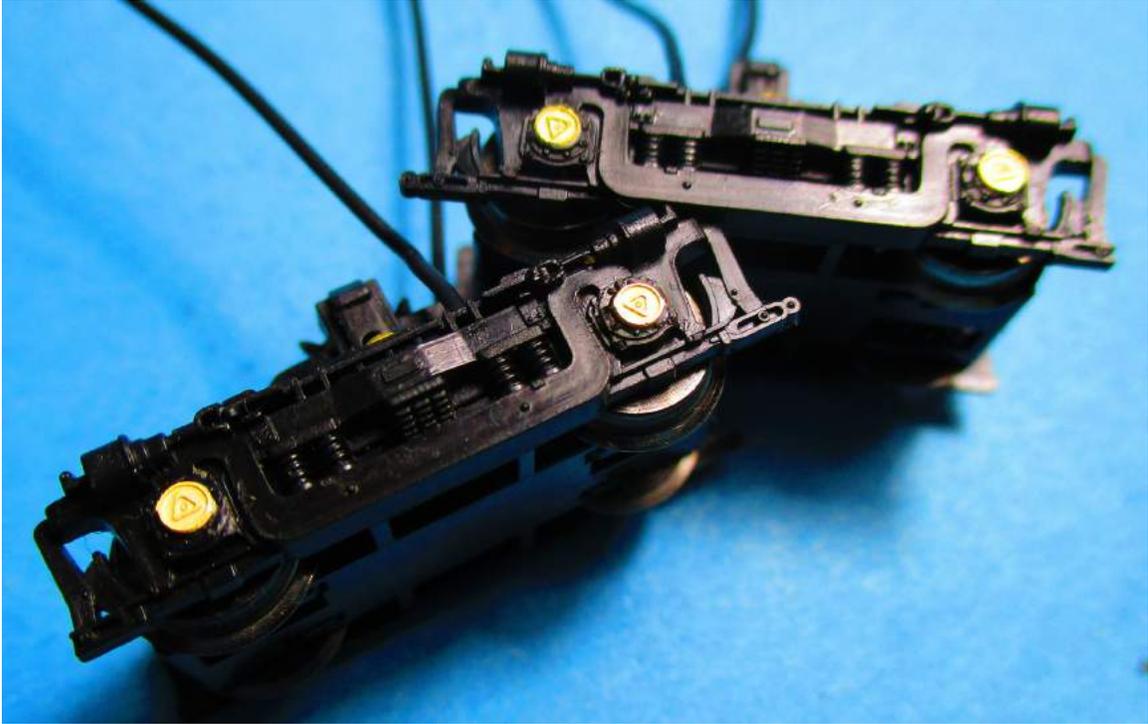
1. Remove the printed parts from the sprues. Use a sprue cutter to carefully trim the attachment points one at a time. Use flush cutters or sprue cutters to remove the posts one at a time, and move slowly. Clean up the attachment points with 400 grit sandpaper. Keep the parts in a container, as some of them are very small and delicate. There is some bracing inside the hoods. Leave it there for now. I only removed the parts I needed to for my SP unit.



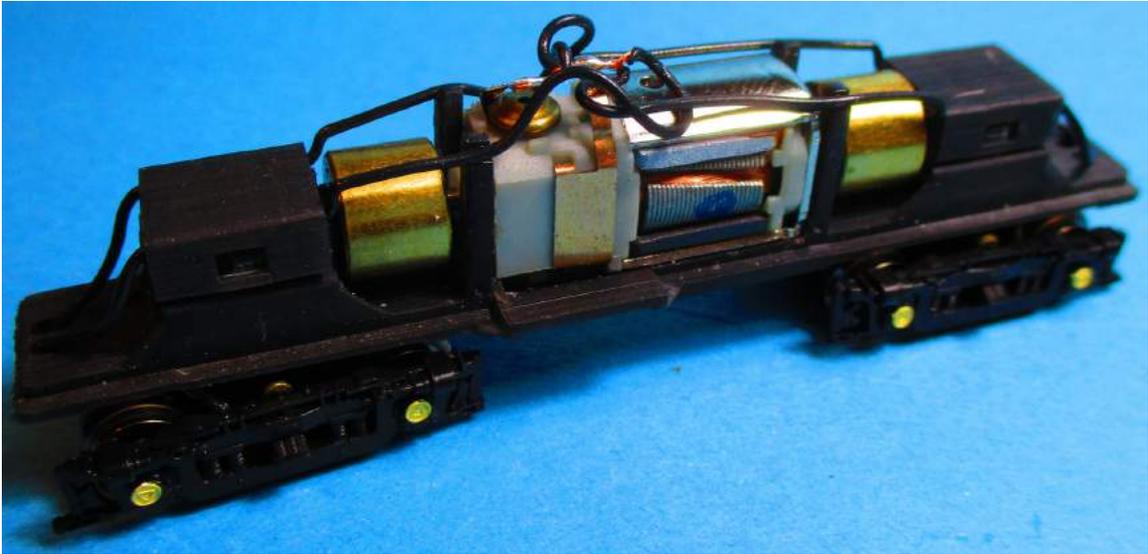


2. Disassemble the Atlas frame and remove the side frames and pickups from the Atlas trucks. Cut the electrical wire into 4 parts and solder them as the photo shows to the pickups. Arrange the wire as shown. Re-install the pickups to the trucks. Shave off the journal caps, remove the etched parts from the fret, and glue them in place. If you are modelling a unit with HI-Ad trucks, trim the sideframes from the gearbox cover assembly and use acrylic glue such as Micro Scale Crystal Clear to glue the pickups to the trucks. Leave the side frames off until after painting.

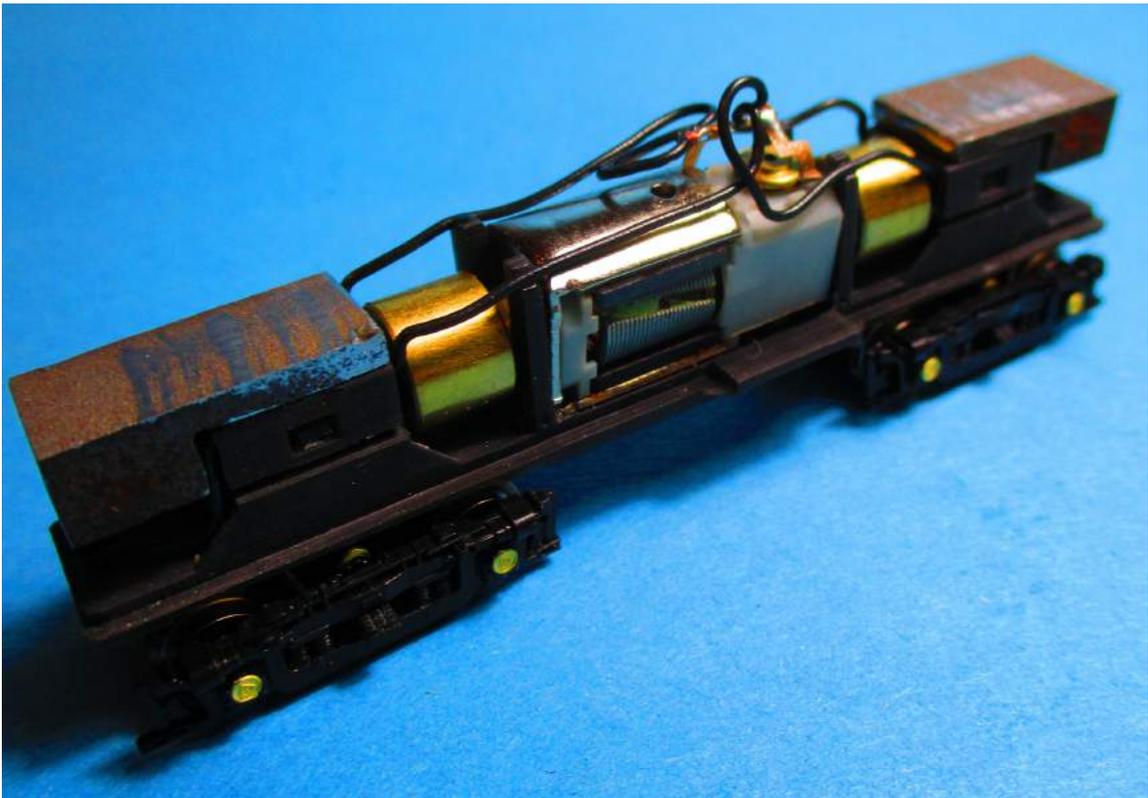




3. Clip the trucks into the frame. If they are a bit stiff, gently file the inside of the opening until they rotate freely. Insert the motor into the frame with the plastic brush end situated with the wider part of the frame. Try and install the universal couplings. You will see the worm assemblies are slightly too long. Remove them, push the plastic couplings onto the worm shafts a bit more, then file the worm shaft down slightly so they fit easily. You will also have to file down the worm couplings to get them shorter. Route the wires through the slots in the upper outside of the worm brackets and clip the covers in place. Make sure the wires are arranged as in the photo so that they clear the weights (coming up next) and the interior of the hoods and flywheels. The production parts differ from the parts shown so the wires have more clearance and ease of installation.



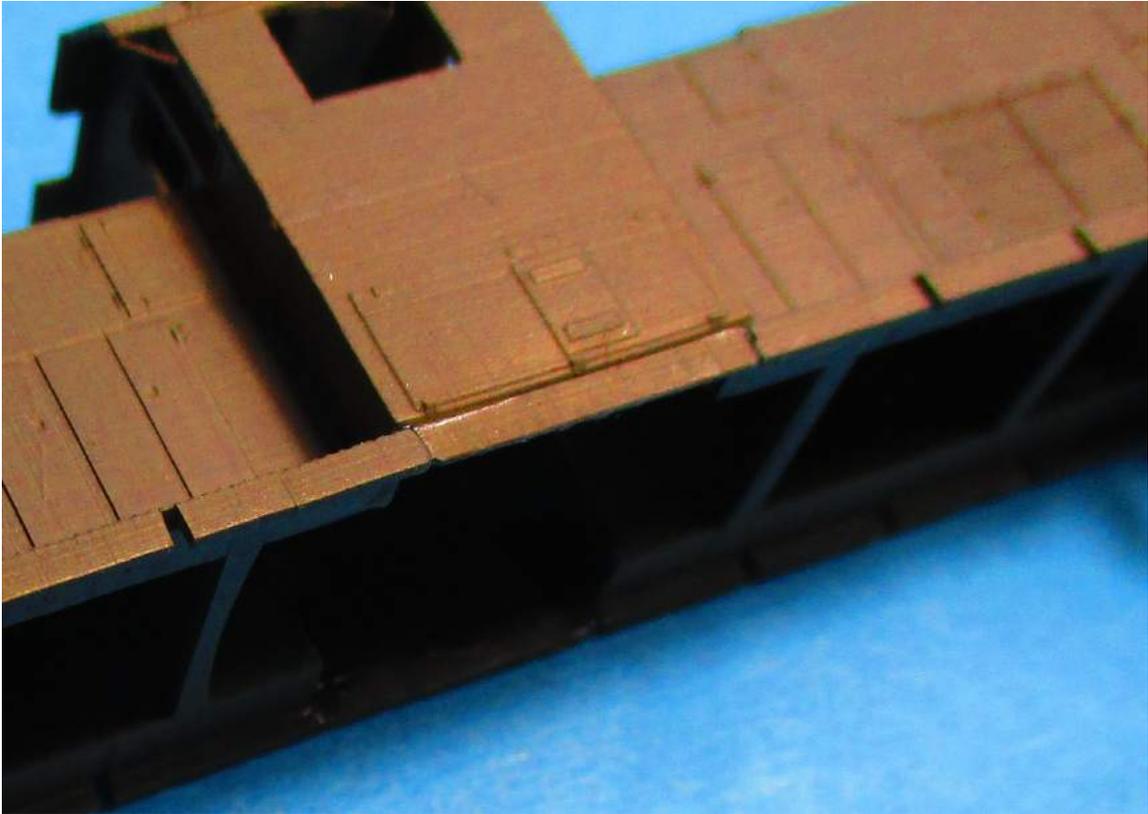
4. Plan the electrical work and DCC installation work now. The best place for a decoder is on top of the motor, inside the cab. If you wait until the next step, you will see how the body and frame fit together and how this would best fit. I am not planning DCC for this model so I left it as is.



5. Inspect the hoods and cab. Make sure you have sanded off the sprue attachment points. Glue

the hoods to the cab. There is a little nub on the rear/short hood end of the cab and a corresponding slot in the short hood to ensure correct orientation. Glue these three assemblies together. Take your time to make sure you get a smooth joint on the side sill and where the cab meets the hoods.



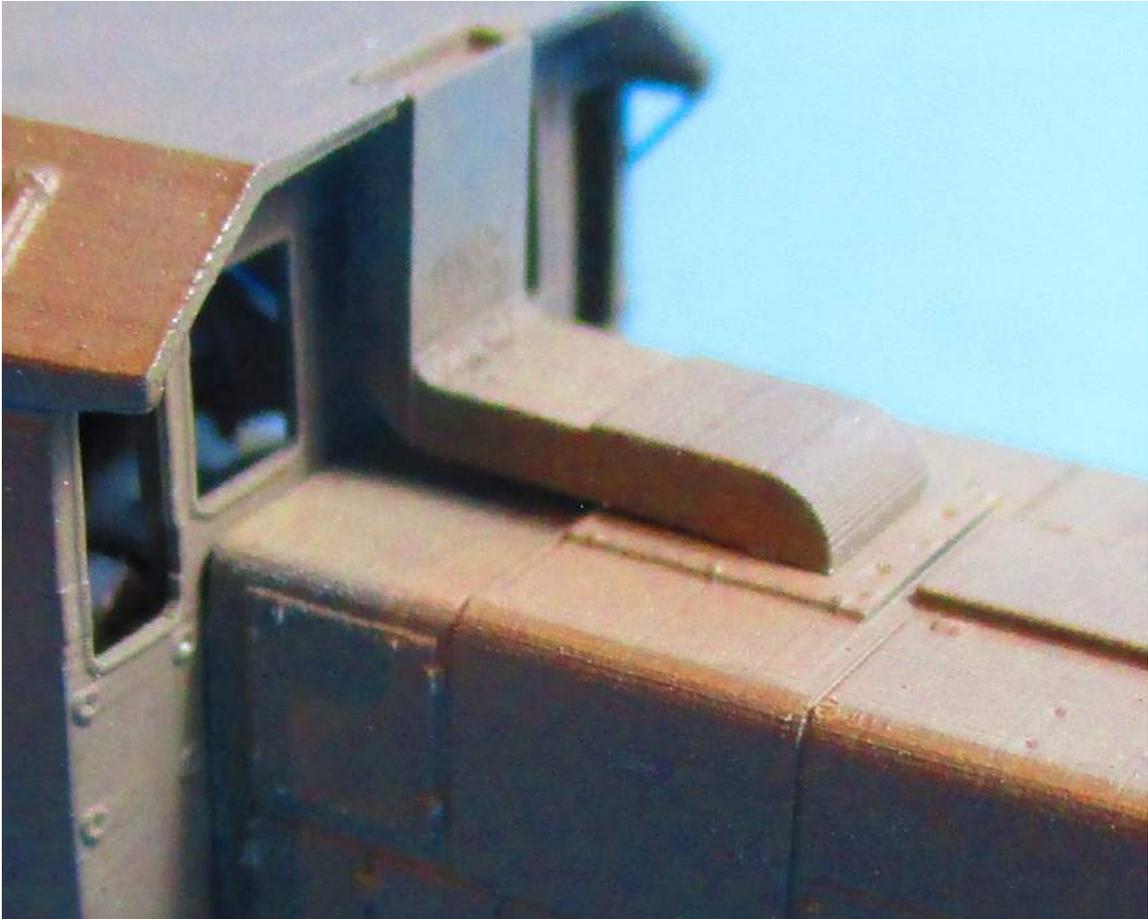


Once you get this operation done, remove the braces inside the hoods and test fit the body to the chassis. Decide if you are adding sound to the model. If so, the fuel tank is perforated for a speaker. Install the speaker if you want. If not, I would add more weight to the fuel tank. Glue the two fuel tank halves in place on the frame. The little recesses for the fillers should be oriented towards the long hood of the model. Leave off the fillers for now as they are tiny and fragile. You will notice on mine the trucks are too close to the fuel tank. This was a flaw in my printing settings. I fixed it for production, but later on in this article this model loses the fuel tank while I wait for a new one to print.



7. Some prototypes had a fuel tank bulge on the left side and two air tanks on the right, some had one air tank on each side. The SP units had two air tanks on the right and no bulge. Check your prototype photos here for accuracy. Glue the air tanks and/or bulge to the fuel tank sides as appropriate.

8. Glue the appropriate stack in place. There is a high cab stack, low cab stack, and one straight stack for Columbia and Cowlitz/Chehalis Western units.



12. Drill the holes in the coupler pads #60. Shorten the screws so they dont go through the deck. Install the couplers. At this point, drill all the grab iron and lift ring holes #80, and the sunshade mounting holes (if your prototype has those) and handrail mounting holes in the ends of the cab #78. When drilling the cab mounting holes, drill in at an angle so you dont crack out the side of the cab. I used a #80 as a pilot hole for the #78 to ensure perfect centering.

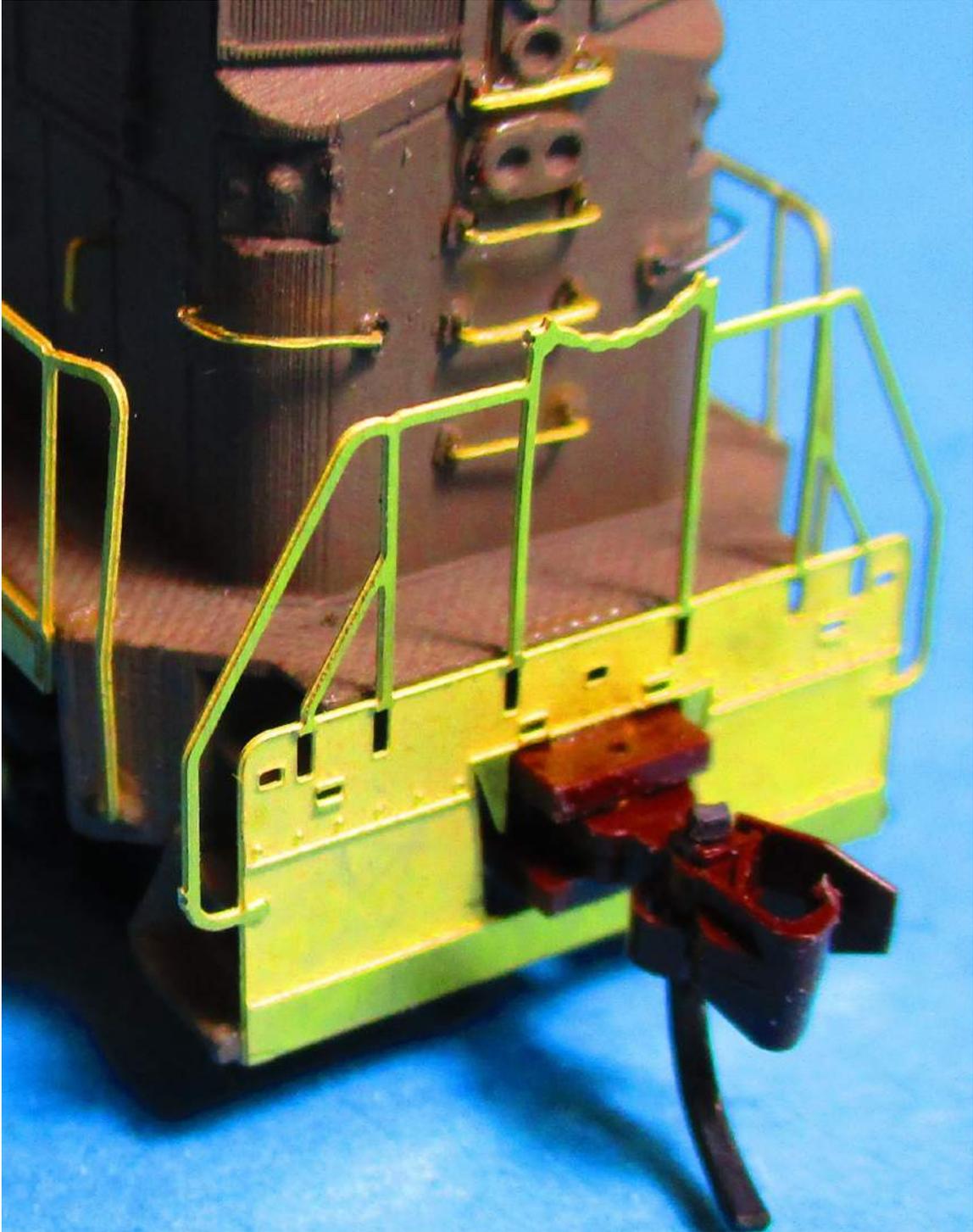
9. Inspect the etched fret. Notice how the ties are made to the sheet. Some parts need to be removed directly next to the sheet, some directly next to the part. Look at the photos following to determine which parts should be done how. I started by removing all the grab irons, lift rings, and sunshades from the fret. These parts should all be removed right against the fret. I install these by dipping the ends in gap filling CA. I started installing the door handles and other small body mounted parts now including the long radiator walkway over the rear radiator shutters, and the sunshades. I forgot the lift rings and added them later. Use later photos to reference locations. Keep in mind SP had some different special locations.



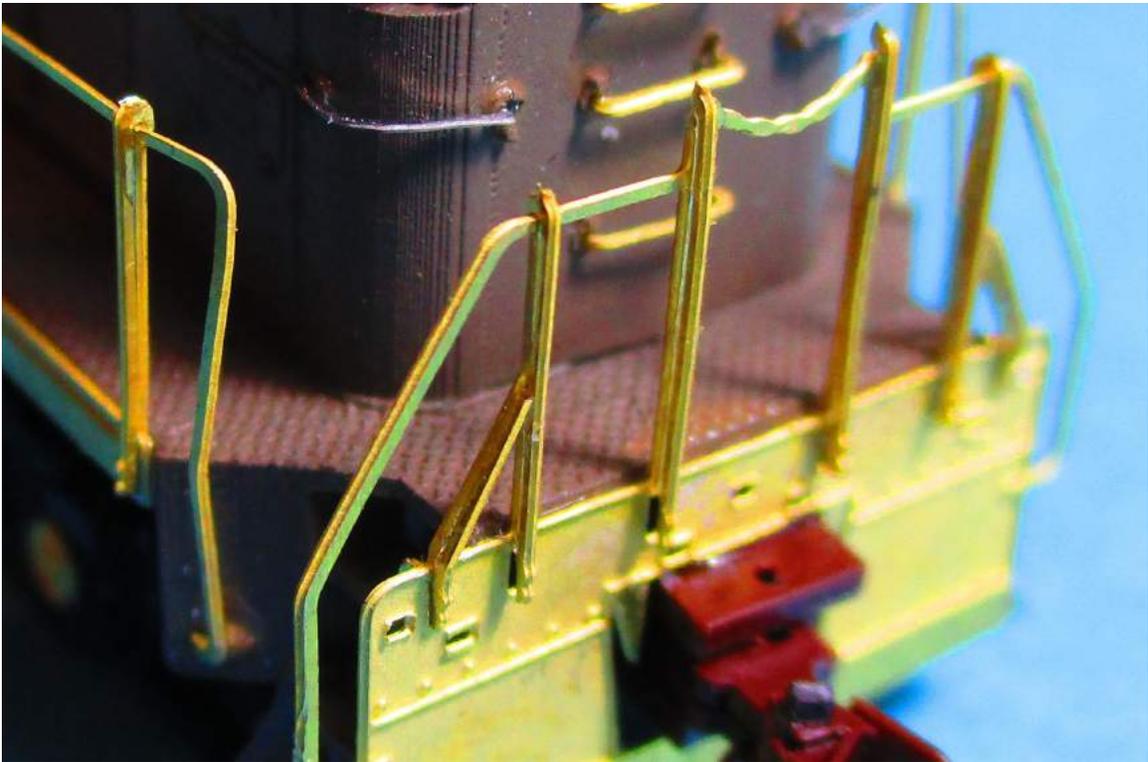
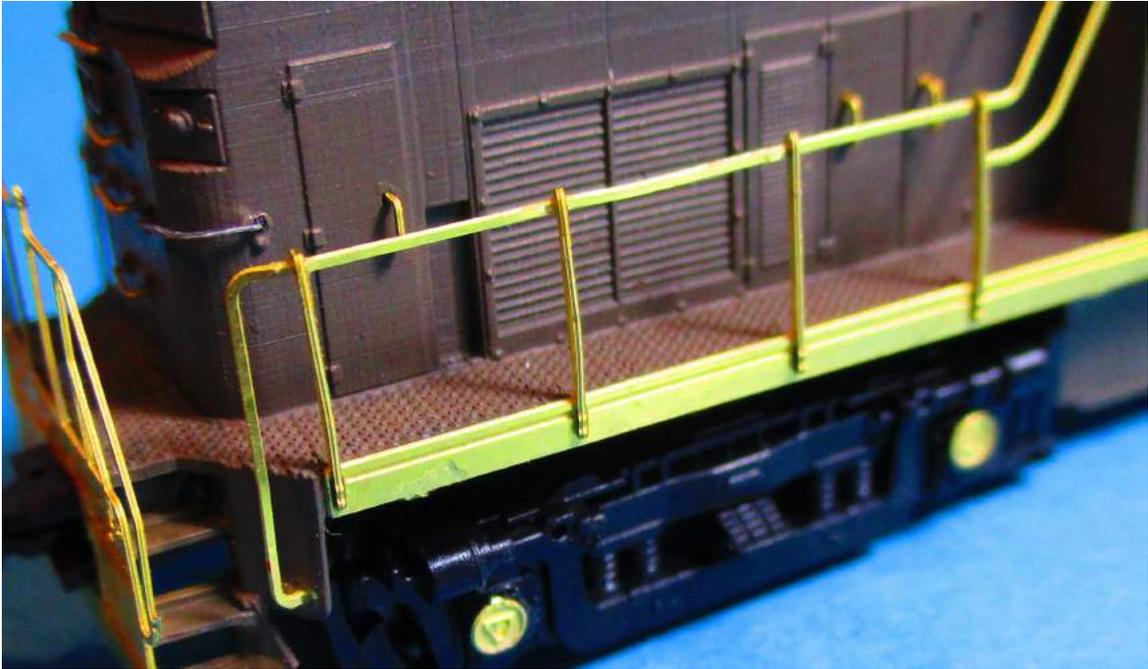
10. Next on to the handrail/side sill assemblies. There is one right side and two left side assemblies included. The two left side assemblies are different, as one has a handbrake bracket etched in place in place of one of the rear stanchions. I used the assembly without the stand, as this is for SP units only. Install the handrail assemblies. **IMPORTANT! Make sure you don't plug the clearance slots in the side sills with glue!** Now use tweezers to bend the corners to shape. I used acrylic glue to glue these in place to the model so the mounting would retain some flexibility. Now glue the handbrake assembly either into the recess in the hood for SP units, or to the inside surface of the etched in bracket for other units.



10. Remove the end pilot/handrail assemblies from the fret. Glue them in place. These are tricky to get over the coupler, if you use tweezers to compress the knuckle and flap a little its easier. Again, make absolutely sure you do not plug any of the mounting holes in the etched part, or the clearance slots in the printed parts! On my model I had pre-production etched parts, and the jacking pads are missing. I printed some to go with this model, but production models have this detail incorporated into the side sill etched part.



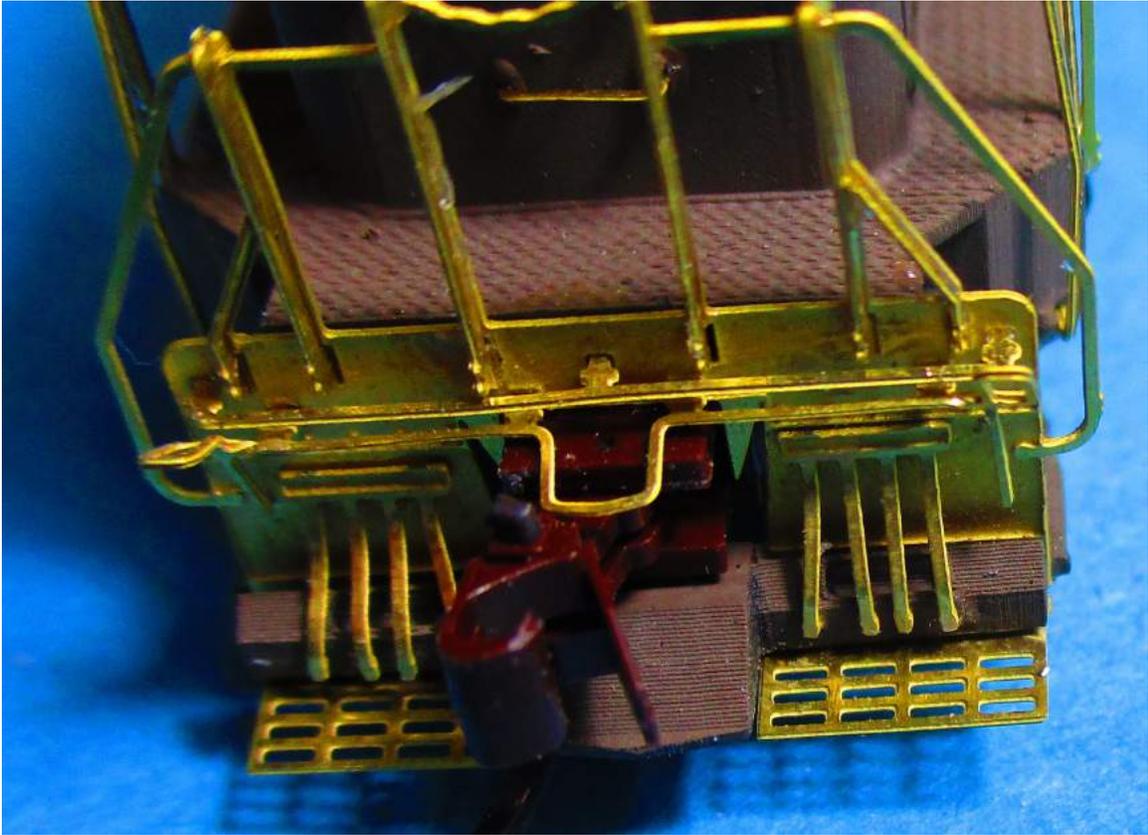
13. Remove the handrail stanchions from the fret. There is a little hook on the top. This goes over the top of the handrail, and the tab on the bottom goes through the side sill. Glue these all in place. For the end stanchions, the two outside ones are the same as the side. The tall middle ones dont have a hook on top. There are small angled stanchions which need to be bent then installed.



14. Glue the pilot assemblies to the face of the etched pilots. Glue the footboards to the bottom of the pilot assemblies. Install the MU hose assemblies at this time also.

15. Remove the cut levers and pilot handrails from the fret and glue in place. Bend up the drop

steps and glue them in place, and install the cab windows.



16. Glue the cab steps to the walkways. There are two different styles included, the slightly higher ones are for the high cab.

18. ONLY if you are building an ALCo demonstrator/Hammersly Iron unit, glue the radiator screen and walkway over it, to the long hood. No photo, sorry! I built the SP version.

19. There are eyebolts to hold the wind deflectors if your unit is equipped. I have not seen many equipped, as most seem to have the all weather windows. I didn't put them on my unit.



This is as far as I took the build of my model at this time. I also left off some parts which are extremely delicate.



I will update this instruction sheet later on when I get around to finishing the model off and I decide on a paint scheme. After painting, install the remaining parts. I installed my number boards now to demonstrate, but I would leave them off and paint them separately for cleanliness of the painting. To create the windows, stick the window template to the glass sheet, cut it out, and install it in the openings as required for your prototype.

That's pretty much it, check back in a week for updates to this article with painted photos and completed installation of details.