

Before Starting

PREPARING BRASS The easiest way to remove the brass parts from the sheet they are produced on, is to use rail nippers. The brass is soft and won't affect their future cutting ability. This will reduce or eliminate the amount of filing to smooth the edge. The next best way is with small sharp diagonal cutters that will fit into the small areas between the part and the sheet holding them. *You should always use a file to remove the balance of the tie. This will ensure a perfect fit.*

GLUING BRASS Instant super glues, Cyanoacrylate, CA for short, are very prominent in model building today. They will work perfectly with brass, and they are instant. We recommend a thick CA glue such as "Zap-A-Gap" from Pacer Technology. As I have also been building R/C airplanes for over 33 years, I have many airplanes built entirely with CA glue and I can tell you that the wood will break before the glue joint. So it is great stuff! Besides being almost instant, thick CA glues will help create a small fillet and fill small gaps when applied to the inside of joints. Using a toothpick to apply the CA glue works really well for getting the glue into the interior areas and controlling the amount of glue used.

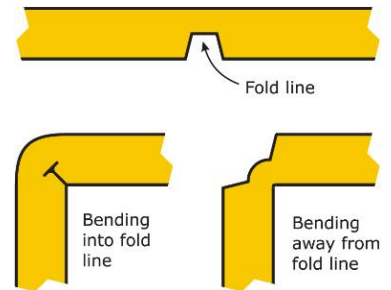
PAINTING BRASS Wash your completed assembly in warm soapy water. If it is really messed up with flux etc. you can clean it with a lacquer thinner first. *Do NOT bake the model if you used CA glue for construction.* This will set the paint to the brass as well as allowing you to paint over parts of it without the first coat dissolving as you spread on the second coat. One nice thing about painting on brass, if you don't like the paint job you can use paint remover to get rid of it and start again without hurting the brass.

BENDING BRASS

To control where a fold will be, we have put a Fold or Bend line into the design. This line is a small slot that has been etched half-way through the brass sheet at the point of the bend.

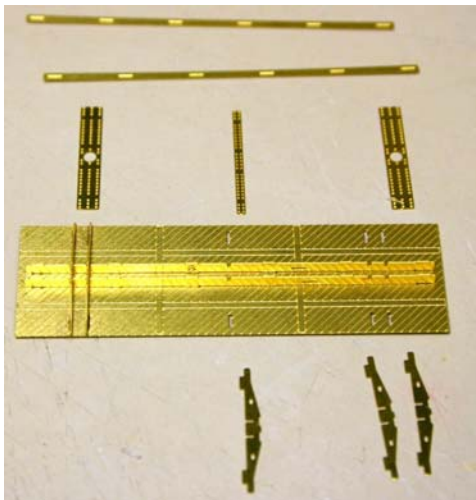
Normally, you fold into a bend line when the bend is less than 135 degrees. Notice how bend into the line creates a nice corner and the metal pinches together at the bend line.

For bends of 135 to 180 degrees, you must bend against the bend line otherwise the two pieces of metal can not lay flat at the bend due to pinching each other. Other times, you bend outward for better positioning of the piece or better display. The ladder on this Caboose build is bent outward to expose and "pop out" the rungs.



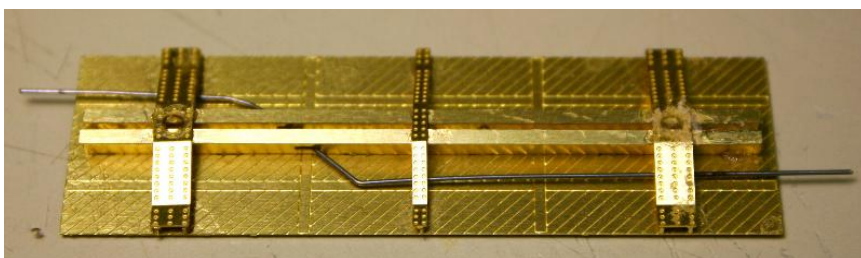
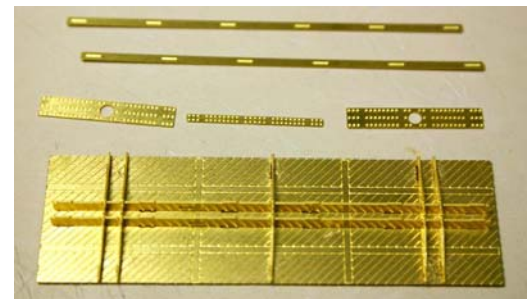
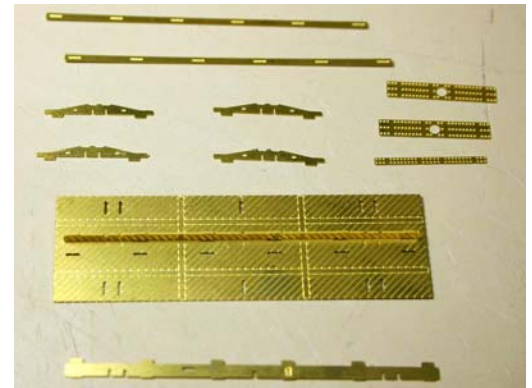
Step #1 – Building The Undercarriage Frame

First place the Outer Floor with the detail facing up. Get together all of the other components; I-Beam Webs A & B, I-Beam Cap Strips, Bolster Ribs & Plates, Air Line.



Secure the two I-Beam Webs to the center of the Outer Floor. Bend the Air Hose in a "Z" bend to fit the angle in the I-Beam Webs. Install the Air Hose.

Add the Bolster Ribs by sliding the slots in the Ribs into the slots in the I-Beam Web. Secure the Ribs to the Outer Floor.



Next goes the I-Beam Cap Strips. The Cap Strips have slots on the underside and the Webs have notches. Once Secure, add the Bolster Plates over the Bolster Ribs. I am still waiting for my custom brass castings to arrive. Included in the kit will be Air Hoses, Air Reservoir, Brake Actuator and Selector Valve with .008 brass wire for the plumbing.

Step #2 – Building The Body Shell

Remove the basic shell sections; Sides, Ends And Inner Floor. The Sides & Ends fold with a solid back and a half-etched detail outer layer. Each Side and End has a bend line that separates the two end halves. Begin by folding the Sides and Ends along the bend line. Here, you will be bending *against* the bend line. Ensure that all holes are aligned and secure the two halves together.

Important Note:

Ensure that there is NO gap between the two halves of the Sides and Ends, especially at the sides. A gap at the sides would cause a bulky corner joint and the covering Corner Fascia will not look correct in later steps.

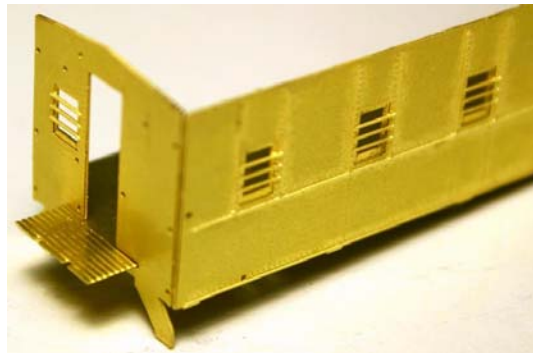


When the Side and End halves are folded together, you can begin to see the layers of details.

The Inner Floor has tabs that go into slots on the back of the Sides. Begin attaching the first Side to the Floor. Be sure the wood plank detail on the Landings is facing up.

Important Note:

A modification to the final kit has the center of the Inner Floor open for access from underneath the caboose. The means to secure the Outer Floor to the Body Shell is left to the builder.



Slide the Landing through the slot on the End and secure the End to both the Inner Floor and the First Side.

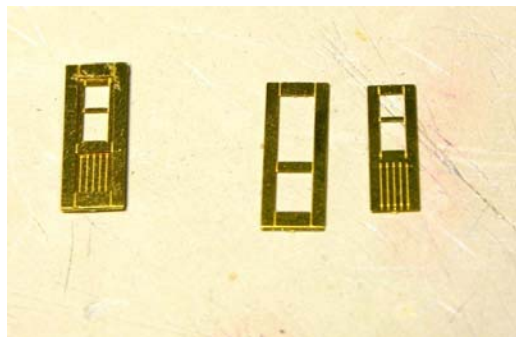
Important Note:

Ensure that the Sides and Ends meet cleanly and do not cause a bulky corner joint where the covering Corner Fascia will not look correct in later steps.

Continue attaching the second Side and End to the Inner Floor.

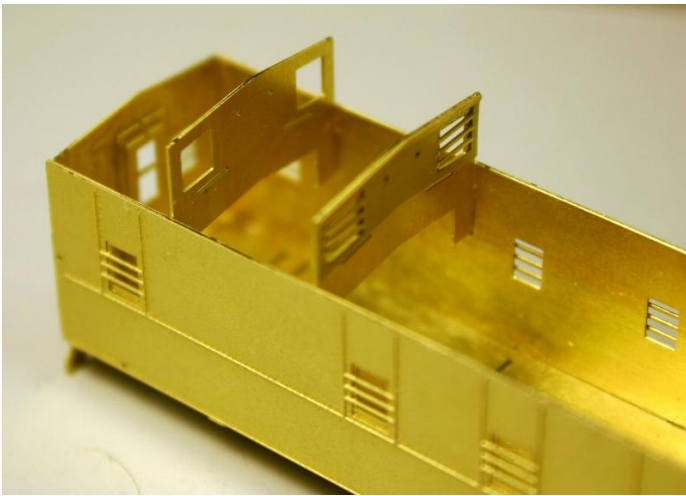
Test fit the Undercarriage trimming the Air Lines to the end of the Landings.

Step #3 – Attaching The Cupola And Roof



Now that the basic body shell is assembled, time to build and install the doors. Each door consists of an inner and an outer panel.

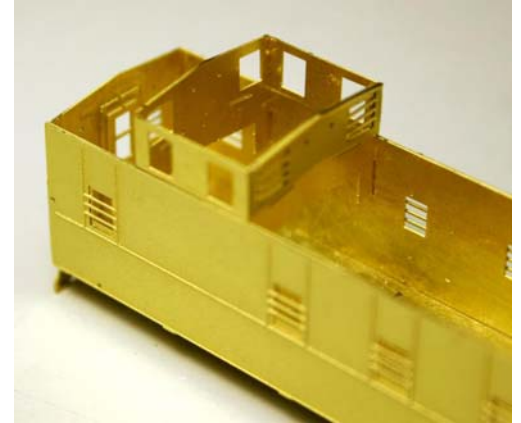
Once the doors are built, install the doors into opening from the inside. If you are going to paint or add details, do it now because the next steps will seal it tight.



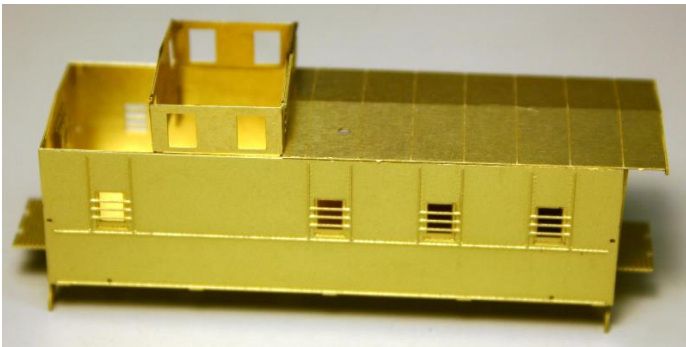
On the inside of the sides are two slots where the Cupola End tabs interlock. Put them in loose for now.

Important Note:

If you are going add glazing, lighting, painting the interior or just want access to the interior of the caboose, you may want to build the Cupola and Roof as one section that can be lifted off. In this case, you would NOT secure the Cupola Ends to the Caboose Sides as instructed later on. The means to create a holding latch for the roof is left to the builder.

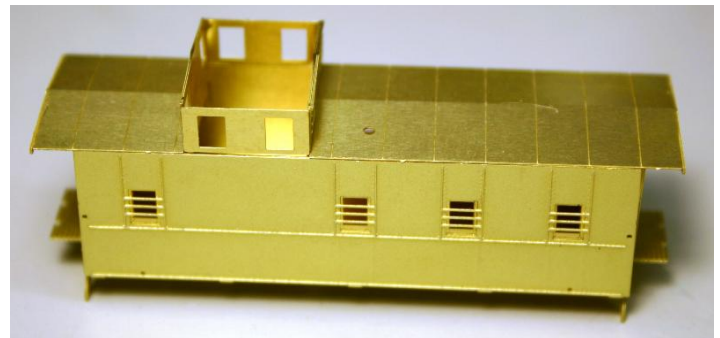


Secure the Cupola Sides to the Ends. Align the corners and ensure the bottom of the Cupola Side is flush against the top of the Caboose Side.



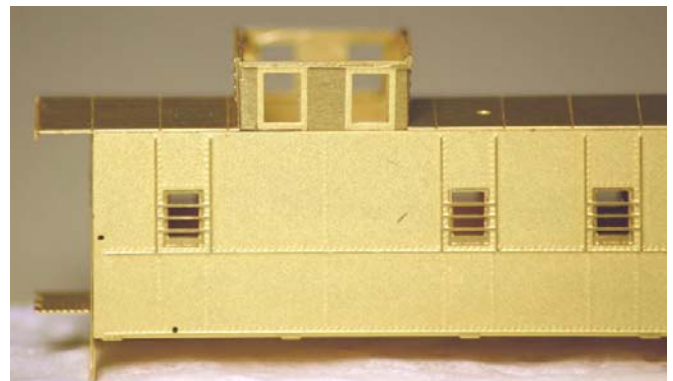
Take the long roof and bend it *into* the underside bend line. The proper angle can be set using the caboose ends. Secure the Roof End Fascia. OK, one end of the Long Roof has two tabs and both of the the Cupola End has two slots. Put the Roof tabs into the slots, center the Roof on the Caboose and secure it to the Cupola. If making a lift-off Roof, do not secure to the Body.

Use the same procedure and secure the Short Roof onto the caboose.



Attach the Cupola End Detail Overlays ensuring the holes for the handrails line up. This view also gives a look at the Roof Fascia and the good view of the caboose end up to this point.

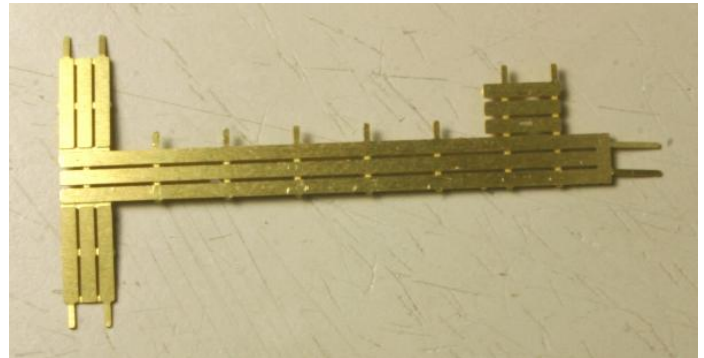
Attach the Cupola Side Detail Overlays ensuring the holes for the windows line up. Ensure the bottom of the Overlay is flush against the Caboose Side.





Insert two "wide" handrails into the holes in the Cupola Ends. Secure from the inside. Bend the Cupola Roof to fit. Center the roof to the Cupola and secure.

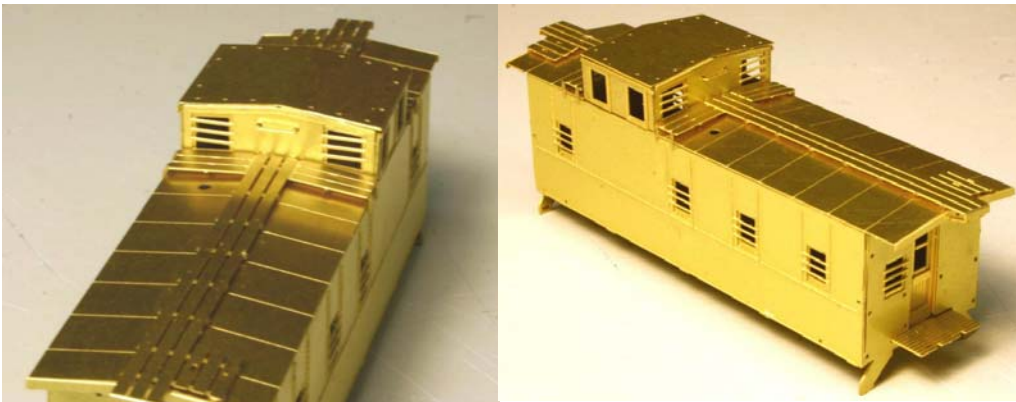
Do NOT add the Roof Railings or Walkway yet.



The walkways for the Long Roof and the Short Roof should be removed from the kit and the small attachments bent up under the Walkway. The image shows that attachments on one side have been bent under while the ones on the top half have not been bent yet.

Do NOT bend the long attachments yet.

Study the following images to see how the Walkways are secured. The small attachments that were bent under the Walkway now rest on the Roof to compensate for the sloping Roof angle. Secure the Walkway to the Roof at the small attachments. Carefully bend the Walkways adjacent to the Cupola to match the Roof slope. Use the long attachments to secure these walkways to the Caboose side.

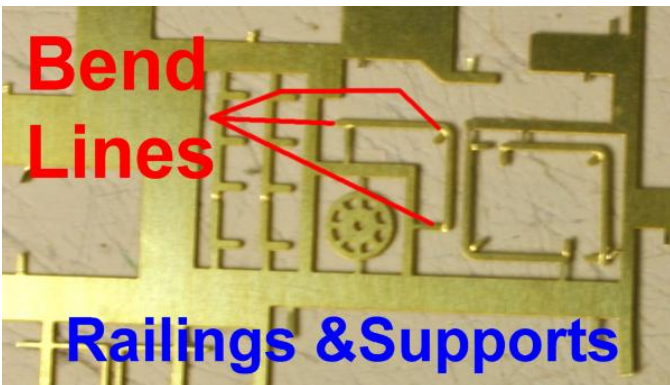


The overhang at the Caboose end actually has two bends. First is the Walkway End which is bent 90 degrees down to the Walkway. The long attachments on the Walkway End are then bent to the Roof Fascia and secured.

Repeat the process for the Short Walkway on the Short Roof.

Step #4 – Detailing The Caboose Ends

Up to this point, you may have been looking at the corners of the caboose and not liked seeing all the layers at the joint. Neither do I. Fortunately for the model, it follows the prototype here. The next item to be installed is the Corner Fascia. This is half etched metal with a .001" dashed line down the middle to aid in bending. Bend the Fascia down the dashed line and install over the corners. Ensure the cutouts go around the holes for Railings.

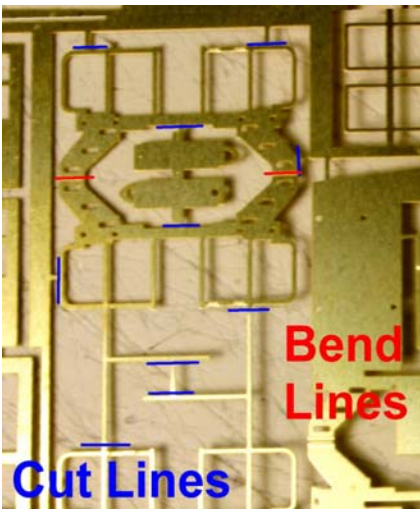


Install two "Large" grabs near the top of the doorway. The caboose ends are slightly different. Each ends has it's own type of end Railings. More on that in a minute.

What both types of Railings have in common is how they are designed and how they are attached to the caboose. Each Railing has a small support that must be bent 90 degrees to the Railing and then inserted in the appropriate hole. The supports

are bent *against* the etched bend line. Study the photo.

There are three "L" railings and one "h" shaped railing. Use the "h" railing on the end that has a hole above and left of the end door. Use a pair of tweezers and bend the Railing supports 90 *against* the bend line. The Railings are different in that you bend the support away from the bend line instead of into the bend line. Secure the railings to the caboose end.

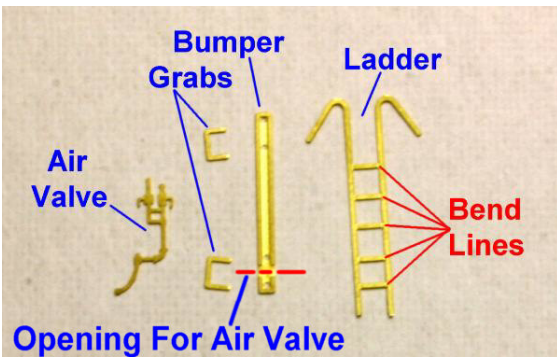
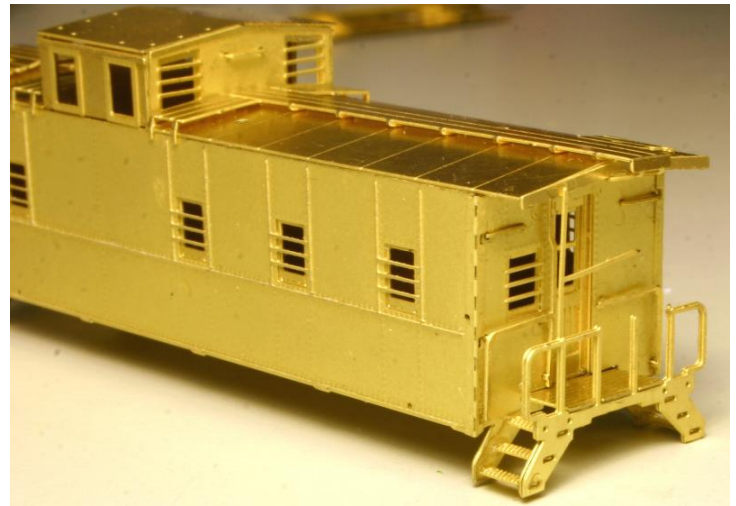


Study the photo for the End Railings. The blue lines indicate where to cut attachments. The red lines show where to find the half etched bend lines. End Railings are also different in that you bend the two halves away from the bend line instead of into the bend line.

The End Railing goes up under the Porch Landing with the two center Stanchions going into the notches in the Landings. Secure the End Railing to the Landing. Secure the upright to the Roof Fascia.

Time to add the Steps. Remove them from the sprue. Notice the ends of the Steps have tabs and the Stair Braces have notches. The Stair tabs are handed. One tab is slightly (.005") wider than the other tab. The wider tab will go into the notch of the caboose End. The smaller tab will go into the notch of the End Railing.

Place the tabs of the Steps into the notches of the Stair Braces. Secure them.

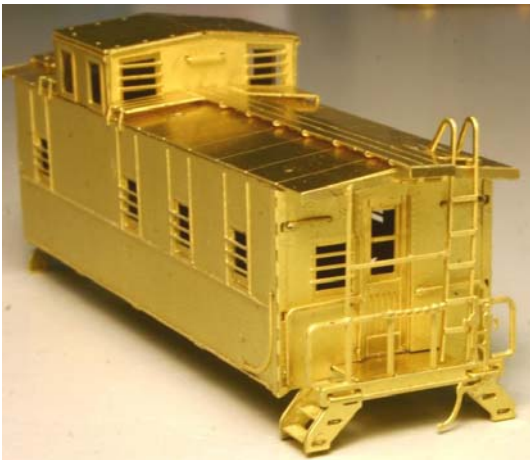


Retrieve the following parts; Air Valve, Bumper, Small Grabs(2), Ladder and a length of etched Chain. Begin by bending the vertical pieces of the Ladder on the bend lines. The Ladder is different in that you bend the vertical piece *against* the bend line instead of into the bend line.

Look where the Ladder will go into the End Railing. Trim enough of the Railing away using rail nippers to fit the Ladder. Secure the Ladder first up top on the Roof Walkway, then secure to the Railing. Secure the horizontal bar to the Ladder.

Secure a length of chain across the center opening of the Railing.

The builder should have noticed a opening for the pipe from the Air Valve to pass through the Bumper. This goes on the right side of the caboose. Place the two Small Grabs in the Bumper and then place the Bumper on the caboose. Secure the Bumper on the LEFT SIDE ONLY. Once secure, remove the right Grab and secure the Air Valve to the Railing. The down pipe of the Air Valve should go through the opening in the Bumper. Once secure, re-install the Small Grab into the Bumper over the down pipe.



Repeat the same steps for the other end.

Secure the curved Safety Railings to each corner of the caboose.

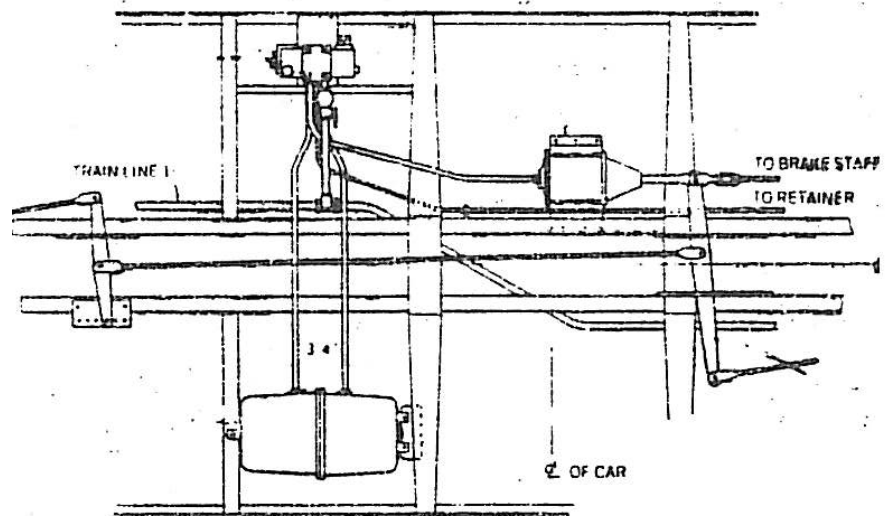
Step #5 – Detailing The Undercarriage

Using the supplied castings, etched brass arms and .008 brass wire, install the Brake System using the diagram. The Reservoir, Brake Actuator and Selector Valve are castings. The actuator Arms are etched brass.

The Coupler plates are mounted under the End Landing. Secure the Z-Scale coupler to the Coupler Plate after it has been secured to the Caboose.

The Trucks are mounted to the bolster using a kingpin provided by the builder. The supplied Bolster hole will accommodate either a Atlas or Micro-Trains plastic Kingpin. The user may have to drill through the I-Beam Cap Strips for the Kingpin.

Secure the Outer Floor with details to the Inner Floor of the caboose.



BOTTOM VIEW
**WEST. "AB" TYPE BRAKE GEAR ARRANGEMENT
FOR BOX & REFRIGERATOR CARS
(Standard Gauge)**

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