

### 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.*

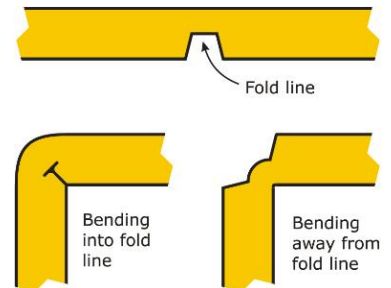
**GLUING BRASS** Instant super glues, Cyanoacrylate, CA for short, are very prominent in model building today. They will work perfectly with brass, and they are instant. We recommend a thick CA glue such as "**Zap-A-Gap**" from Pacer Technology. As I have also been building R/C airplanes for over 33 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.* Baking 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 Sides

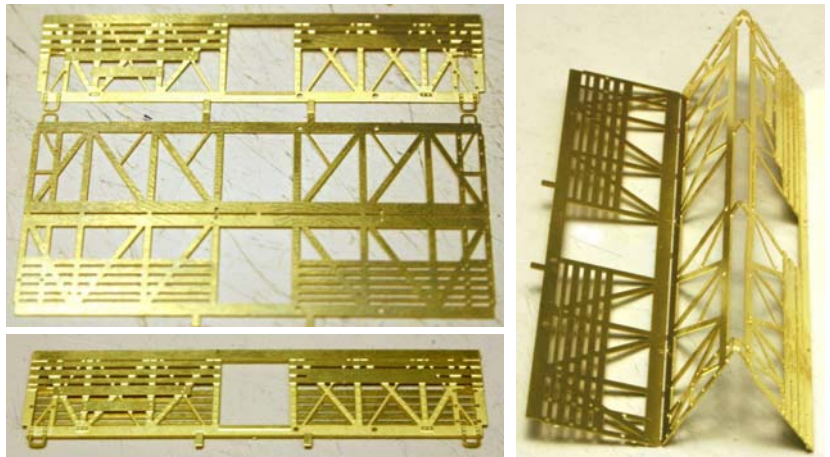
The Sides are actually three layers that are folded together to create the different layers. Since these folds are 180 degrees, all of these folds will be away from the fold line. Be sure all tie remnants have been filed off.

Begin by folding the half-etched Side over the full thickness middle layer. Then fold the middle layer over the inner layer. Ensure the Grab holes are aligned.

Remove the Grab Irons from the kit sprue and place them in the holes. This should be done BEFORE securing the Sides together to allow slight alignment of the holes through the layers

Secure the three layers together

Repeat for the other Side



### Step #2 – Building The Floor and Ends

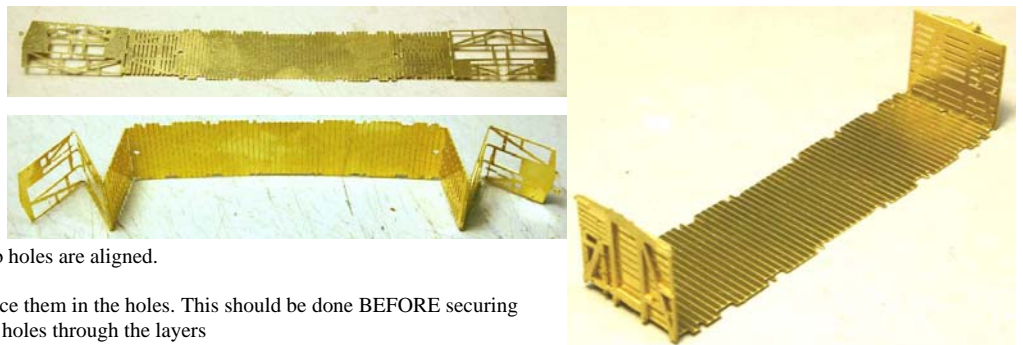
The Ends and Floor are one piece that has several folds in it. Before proceeding, the builder should have a bending tool as outlined on the TrainCat website. Since these folds are 180 degrees, all of these folds will be away from the fold line. Be sure all tie remnants have been filed off.

Begin by folding the half-etched End over the full thickness middle layer. Then fold the middle layer over the inner layer. Ensure the Grab holes are aligned.

Remove the Grab Irons from the kit sprue and place them in the holes. This should be done BEFORE securing the Ends together to allow slight alignment of the holes through the layers

Secure the three layers together

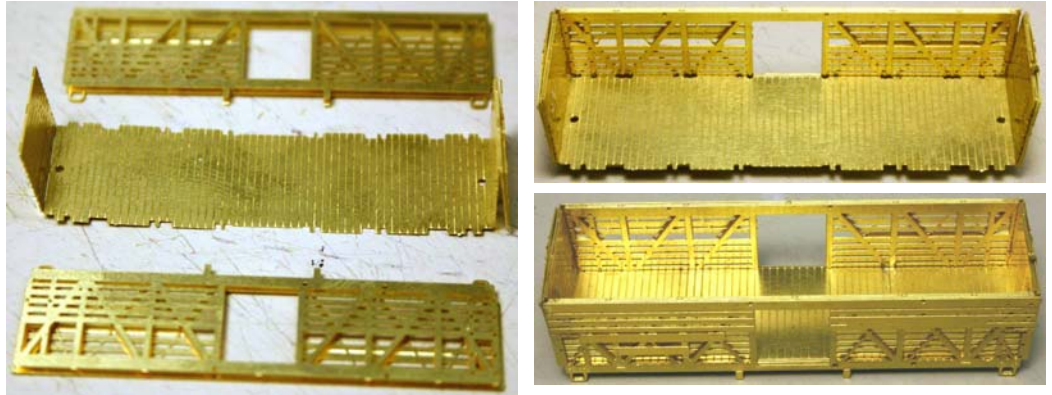
Repeat for the other End



### Step #3 – Assembly Of the Shell

The Floor fits in the opening directly above the Side's Sill. Insert the Floor into the Side. The Ends and the Sides have a very tight joint as the outer layers are slightly longer than the inner layers. Secure the Ends and Sides together.

Add the other Side to the Floor and secure it.

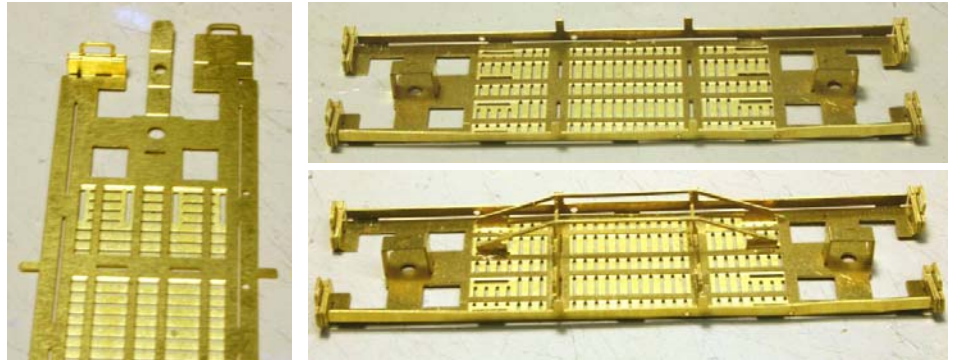


### Step #4– Build The Under Frame

Be sure all tie remnants have been filed off. The End Sills are actually three layers that are folded together to create the thick layer. Since these folds are 180 degrees, all of these folds will be away from the fold line. Complete all four End Sills and then bend the Side Sill away from the fold line. The Bolster Seat is bent into the fold lines and has a small tab at the end that goes into the Frame.

Secure the two Truss Rod Spacers into the Frame and then the Truss Rods themselves. The builder should note that there are two different heights of Truss Rods. The shorter ones are on the outside while the taller ones are the two middle ones.

Do not secure the Under Frame to the Shell just yet.



### Step #5 – Final Assemblies

Slightly bend the Roof to the pitch of the Shell and add the four Grab Irons to the Roof. Secure the Roof to the Shell through the open Doorways.

The Walkway has attachment doublers that must be bent 180 degrees away from the bend lines so they are under the Walkway. Once done, bend the two End Supports 90 degrees downward into the bend line and attach the Walkway to the Roof. Finish bending the End Supports and secure them to the End.

Secure the Under Frame to the Shell.

The Doors have two layers that must be bent like other parts. Bend the half-etched layer 180 degrees away from the fold line. The Upper Track has two tabs that must be bent 90 degrees. Install the Door Grabs. Secure the outer Door layer to the Door frame and then the assembly to the Shell.

Secure the long Side Grabs to the Shell and the Brakewheel.

