

### 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 burr 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.

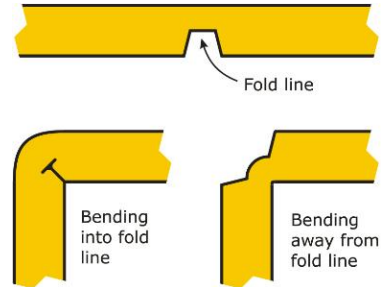
**PAINTING BRASS** Wash your completed assembly in warm soapy water. If it is really messed up with flux etc. you can clean it with a lacquer thinner first. *Do NOT bake the model if you used CA glue for construction.* This will set the paint to the brass as well as allowing you to paint over parts of 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.

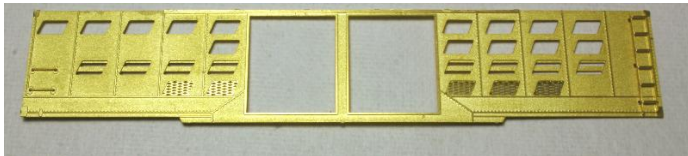
For bends of 135 to 180 degrees, you must bend against the bend line otherwise the two pieces of metal can not lay flat at the bend due to pinching each other. Other times, you bend outward for better positioning of the piece or better display. The ladder on this Caboose build is bent outward to expose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



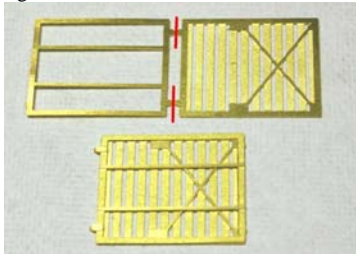
### Step #1 – Building The Sides & Ends

The sides are going to be folded into two layers. The process starts with the side as shown to the right. For the first fold, bend the Detail Layer downward away from the fold line 180 degrees until the two layers are flat on the bottom layer.

Here you can see the side after the fold. Secure all layers at this time. Add the two Grabs on the left side and the Ladder on the right. The Ladder must be bent first. The Ladder sides, or rails, must be bent 90 degrees from the rungs. Bend the sides away from the bend line where the rungs join the sides. Repeat for the other Side.

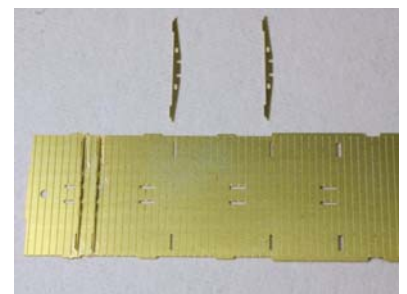
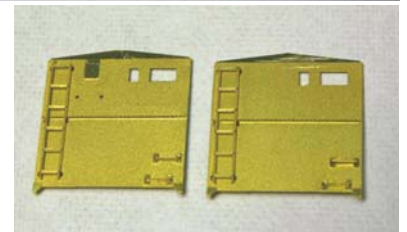
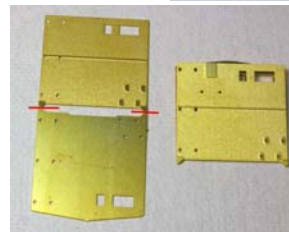
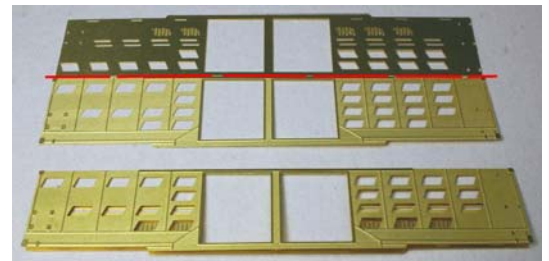


The Ends are also folded like the Sides. Fold the Outer Edging away from the fold line 180 degrees until the outer layer is flat on the bottom layer. Be sure the holes for the Grabs and Ladder on the sides are aligned. Secure the two layers except where the Grab holes are on the right side.



Carefully bend the Ladder the same way as you did for the Sides. Secure the Ladder to the left side of the End. Repeat for the other End.

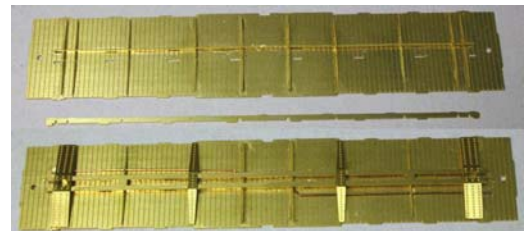
Building the Doors is similar to the techniques used so far. Bend the Detail Layer downward away from the fold line 180 degrees until the detail is flat on the slated layer. Secure the layers together. Add the two Grabs at the Door center and the Door bottom. Repeat for the other Door.



### Step #2 – Building the Sub-Floor

Study the image to the right. Remove each of the 12 Ribs (8 peaked and 4 flat) from the kit spue and clean off all tie remnants. It does not matter what side of the Floor you begin the installation on. Begin installing two peaked Ribs towards each end of the Floor. The tabs on the Ribs must fit into the slots in the Floor. Ensure the Ribs are perpendicular to the Floor. Leaving the two middle slots open for now, install the remaining four peaked Ribs to the Floor. The middle four slots are wider than the previous slots where the other Ribs were attached. At each slot, two flat Ribs will be put into each slot. Secure the four flat Ribs to the Floor using two flat Ribs per slot.

There are slots in each Rib that corresponds to a slot in the Keel. Also, there are tabs on the Keel that fit into slots of the Floor. Carefully fit the Keel into the slots of the Ribs and the Keel tabs into the Floor slots. Carefully keep working the Keel down until the Keel is flat against the Sub-Floor. Secure the Keel to the Floor and the Ribs.



Once the Keel is secure, you can add the Keel Capstrip. There are tabs on the Keel and half-etched slots on the underside of the Capstrip. Secure the Capstrip to the keel. Add the Bolster Plates and the Rib Caps to the Ribs. The builder should take note of where each Cap goes by studying the image to the right. DO NOT add the brake detail yet.

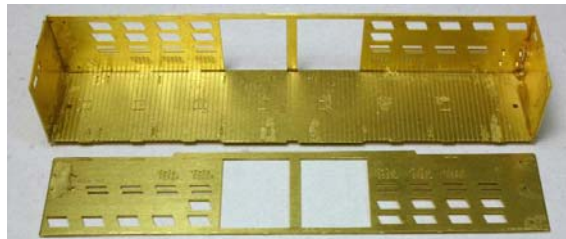


### Step #3 – Building The Body Shell

Remove the Floor from the kit and clean off all tie remnants. Begin the assembly by inserting the end tabs of the Floor into the slots on the inside of the car Ends. Secure the Ends to the Floor



The sides of the Floor have tabs that align to slots in the Sides. Test fit the Side to the Floor and secure when satisfied. Secure the Side to the Ends in the corners. Install the other Side.



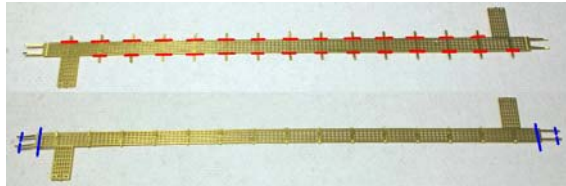
The Side Stiffeners are now installed on the inside and are mated to the top of the Sides. The Stiffeners are also secured to the car Ends and match the slope of the Roof line. The Stiffeners will also support the roof along the sides.



Center the Roof in all directions. Secure the Roof to the Stiffeners and the car Ends from the inside of the car.



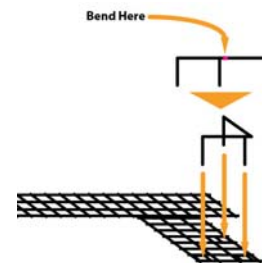
The Roofwalk has small tabs on its sides that help level Roofwalk by compensating for the Roof pitch. Bend these tabs away from the fold line 180 degrees until the detail is flat on the bottom of the Roofwalk.



Add the Grabs on the Roofwalk. These Grabs are folded into a "L" shape, inserted into the holes and secured from

the bottom side of the Roofwalk.

Align the Roofwalk on top of the Roof so the center is directly over the peak of the Roof. The small tabs folded earlier are aligned to be secured at the rivet patterns. Secure the Roofwalk to the Roof making sure it is level. Do not worry about the walkways just yet. Once secured, bend the ends down 90 degrees and then bend the Support Struts to the Ends. Secure the Support Struts to the Ends. Now you can bend the Side Walkways to match the Roof pitch and secure them to the Roof.



### Step #4 – Final Details

Secure the Brake Wheel Platform to the appropriate End, add the Brake Wheel Spacer and finally the Brake Wheel. A small piece of the supplied wire will serve as the Brake Rod. Secure the Doors to the Sides. Add the Brake Details as shown.

