

### 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.*

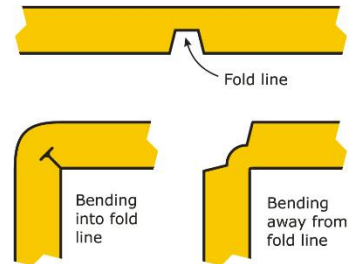
**GLUING BRASS** Instant super glues, Cyanoacrylate, CA for short, are very prominent in model building today. They will work perfectly with brass, and they are instant. We recommend a thick CA glue such as "Zap-A-Gap" from Pacer Technology. As I have also been building R/C airplanes for over 33 years,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

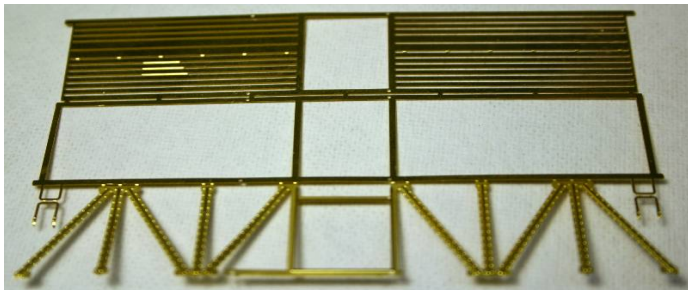
### BENDING BRASS

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.

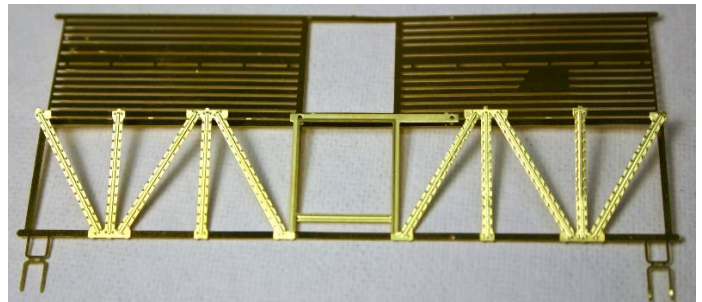
For bends of 135 to 180 degrees, you must bend against the bend line otherwise the two pieces of metal can not lay flat at the bend due to pinching each other. Other times, you bend outward for better positioning of the piece or better display. The ladder on this Caboose build is bent outward to expose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



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



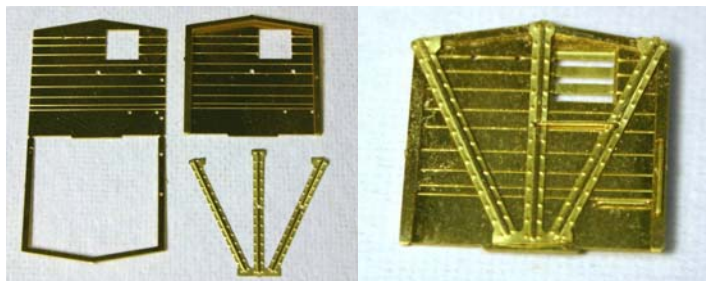
The sides are going to be folded twice into three layers. The process starts with the side as shown to the left. For the first fold, Outer Diagonal Struts with the etched rivet detail should always face up. Bend the Outer Diagonal Struts downward away from the fold line 180 degrees until the detail is flat on the center layer. Be careful not to bend or damage the Stirrups.



Flip the side over so it resembles the image to the right. Bend the Center Layer/Outer Diagonal Struts downward away from the fold line 180 degrees until the two layers are flat on the bottom layer. Be careful not to bend or damage the Stirrups.



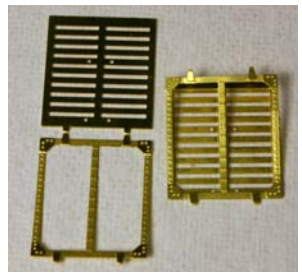
Here you can see the side after the two major folds. The last folds are the Stirrups. Fold these over now. Secure all layers at this time. Add the one Grab on the left side and the two Door Rails at the top and bottom of the Door opening. Repeat for the other Side.



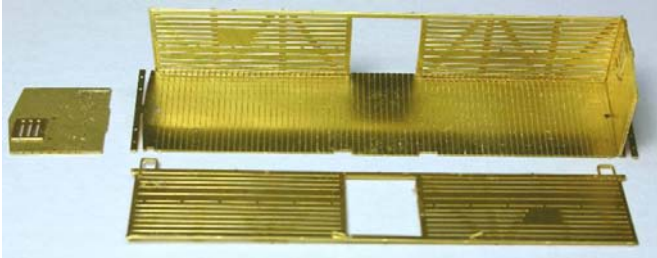
The Ends are also folded but their Outer Bracing is a separate piece. Fold the Outer Edging away from the fold line 180 degrees until the Outer Bracing is flat on the bottom layer. Be sure the holes for the Grabs on the right side are aligned. Secure the two layers except where the Grab holes are on the right side.

Carefully position the Outer Bracing over the End assembly aligning the Grab holes on the vertical Brace and right diagonal Brace. Secure the layers except where the Grab holes. 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. Do NOT attach to the sides yet.



### Step #2 – Building The Body Shell



Get the two Sides and two Ends together along with the main Floor. The main Floor has the end Strike Plates attached to it.

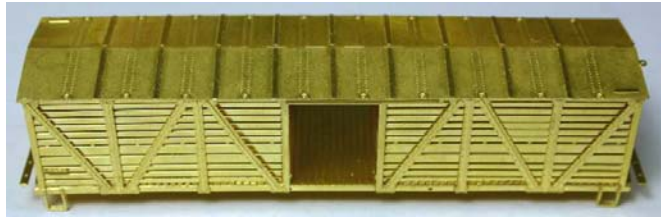
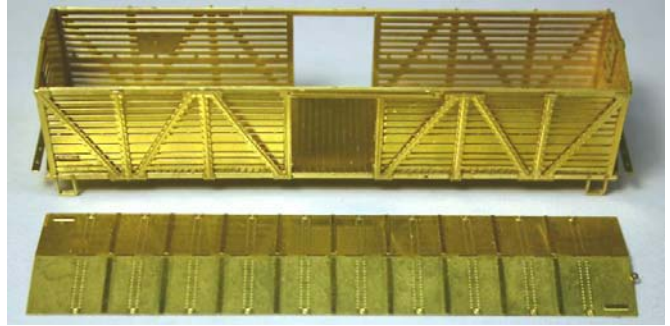
Begin the assembly by fitting the Floor into the first slot between the Sill and the first Slat. The notches in the Floor will allow the vertical posts to fit. Secure the Side to the Floor.

Add an End to the assembly by placing the tab on the bottom of the End into the slot at the end of the Floor. *Be sure that end that has the mounting holes for the Brake Wheel*

Platform matches to the end of the Floor that has the hole for the Brake Rod. Secure the End to the Floor and to the Side.

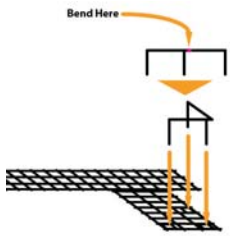
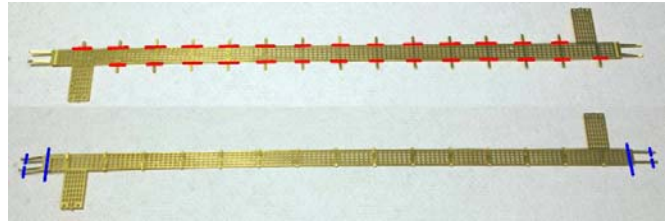
Add the other End and Side to the assembly making sure there are no exposed seams at the corners.

The Roof needs to be bent slightly down the center to match the pitch of the ends.



Attach the Roof to the assembly from the inside through the door openings.

The Roofwalk has many small pins that must be bent under the Walk to help level the Walk from the Roof pitch. Bend these pins 180 degrees away from the bend line until flat against the bottom of the Walkway.



At the ends of the Walkway are the Support Brackets for the Walkway that extends over the car Ends. Bend the Support Brackets 90 degrees into the bend line.

The Handrails for the Side Walks are bent to 90 degrees into the bend line and then inserted into the three holes as shown in the image. Secure and trim the excess.

Test fit Walkway over the Roof ensuring that the Walkway is centered in all directions. Note that the small pins bent under the Walkway earlier will be secured to

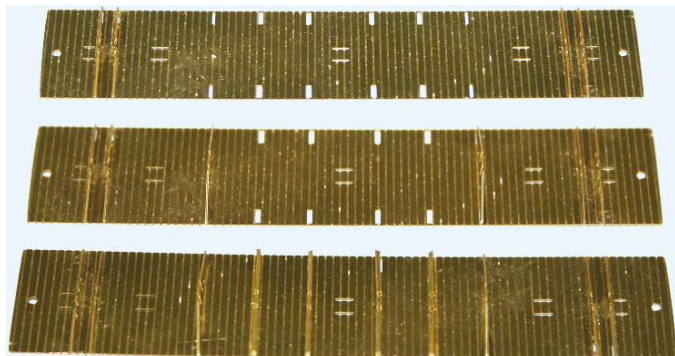
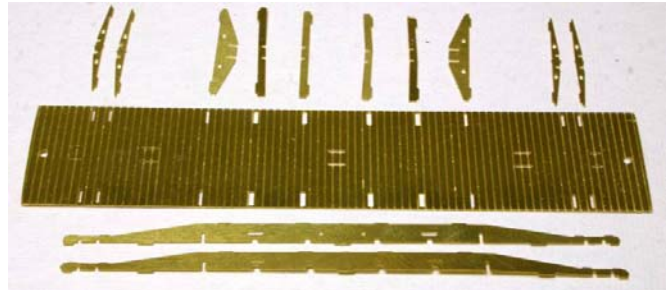
the Roof at the raised rivet detail on the Roof. Bend the Side Walkways to match the Roof pitch while the Walkway remains flat at the top of the Roof peak. Secure the Walkway to the center of the Roof.



Continue the bending of the Walkway Support Brackets until they are against the car Side. Secure the Brackets to the Sides. Finally, secure the Side Walkways to the Roof.

### Step #3 – Building the Sub Floor

Gather together all of the parts shown in the image to the right and clean off all tie remnants before proceeding. There are four small tapered Ribs in the kit. Begin by securing these four Ribs to the Sub-Floor at the slots towards the ends of the Sub-Floor. There are tabs on the Ribs to help in alignment. Ensure the Ribs are vertical to the Sub-Floor.

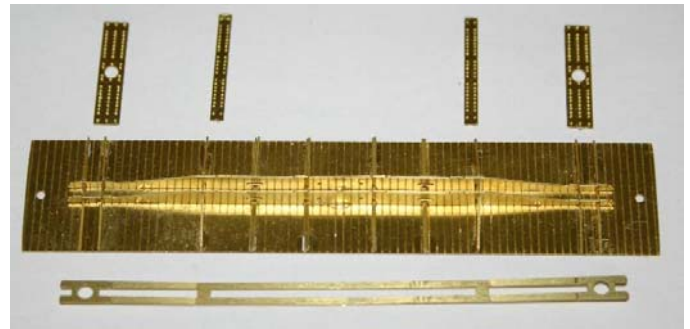
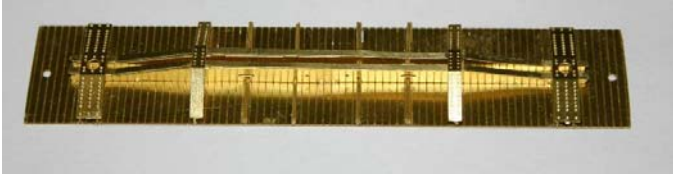


Next, add the two large tapered Ribs into the third slots from the end. As before, ensure they are perpendicular to the Sub-Floor. The builder should now note that the center group of four slots are double the width as the previous slots. For each of these slots, the builder must use two flat Ribs per slot. Continue until all Ribs are secured to the Sub-Floor.

Now that all of the Ribs are secure, begin to work the fishbelly Keel down into the slots of the Ribs. Each Keel has five tabs that will fit into slots in the Sub-Floor. These tabs will require firm pressure to fit into these slots as they are a tight fit. Work each Keel down until they are in the slots and fit snugly against the Sub-Floor. Secure the Keels now.



Now add the Keel Cap Strip to the Keel. Please notice that the Keel has tabs that will fit into half-etched slots on the Cap Strip. Secure the center section of the Cap Strip to the Keel ensuring the tabs are in the slots. One side at a time, bend the Cap Strip to conform to the Keel and secure



Add the two Bolster Plates and the two Rib Caps as shown. Study the photo below showing the location of the brake details. Use the provided .010" wire for both piping and rods. Add your Trucks and Couplers.



#### Step #4 – Final Details

The Ladders require the sides to be bent away from the bend line causing the rungs to “pop” out. The longer Ladder is mounted directly above the Stirrups. The shorter Ladder is mounted to the car Ends.

Secure the Doors to the sides and then secure the Brake Wheel Platform to the proper End. Once secure, bend the Support Brackets down and secure them to the End. Secure the Brake Wheel to a length of the supplied wire and mount the Wheel through the Platform and through the hole in the Floor end. Secure the Brake Rod.

Install and secure the four Grabs to the Strike Plate attached to the Floor. DO NOT bend the Strike Plates yet. Trim the excess Grabs. Secure the Sub-Floor to the Floor. Now the builder can bend the Strike Plate down and conform the Plate to the curvature of the Floor end. Secure the Plates to the Floor.

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