

#### 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.*

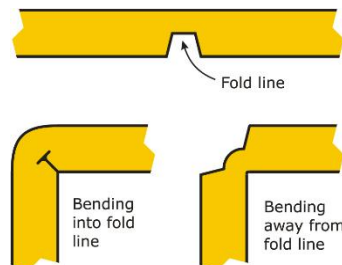
**GLUING BRASS** Instant super glues, Cyanoacrylate, CA for short, are very prominent in model building today. They will work perfectly with brass, and they are instant. We recommend a thick CA glue such as "Zap-A-Gap" from Pacer Technology. As I have also been building R/C airplanes for over 33 years,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

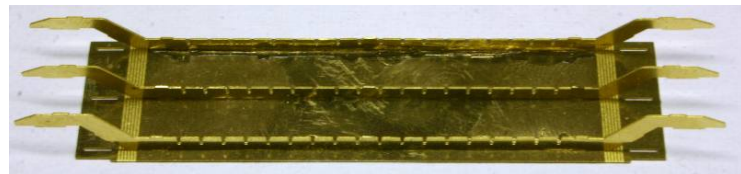
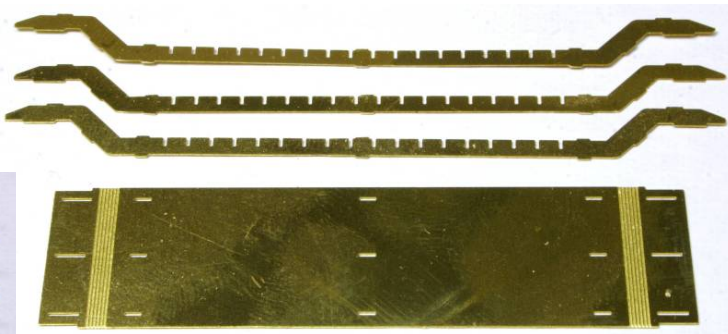
To control where a fold will be, we have put a Fold or Bend line into the design. This line is a small slot that has been etched half-way through the brass sheet at the point of the bend. Normally, you fold into a bend line when the bend is less than 135 degrees. Notice how bend into the line creates 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 Car Frame

Place the Bottom Frame Sheet on the building surface with the half-etched bend lines facing upward. Starting with the center Keel, secure the Keel's to the middle portion of the Bottom Frame Sheet ensuring the tabs on the Keel's are fully in the slots of the Bottom Sheet.



Install the 18 Ribs onto the three Keels. Each Keel and Rib have slots where the Ribs are placed into the Keel.

Work two at a time starting at the center and working outward securing the Ribs to the Keels and Bottom Sheet as you go.

Attach the End Frames to the bottom of the Keels at the ends. Each Keel has a tab for the slot in the End Frame. Ensure the End Frame is straight with the Main Frame. Repeat for the opposite End Frame.

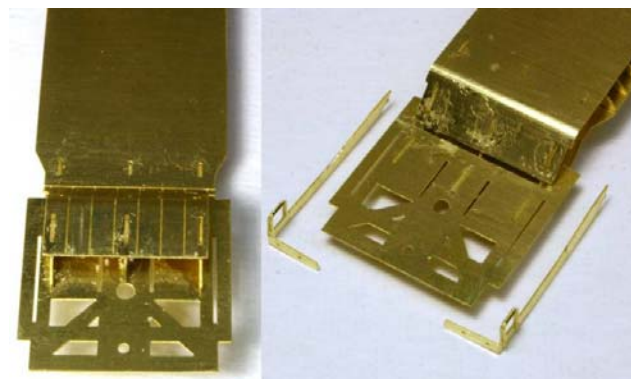
Bend the Top Frame Sheet as shown to the approximate angle of the Keels. Place the center portion of the Top Sheet onto the Main Frame engaging the tabs on the top of the Keels into the slots on the Top Sheet. Secure the Top Sheet to the Main Frame.

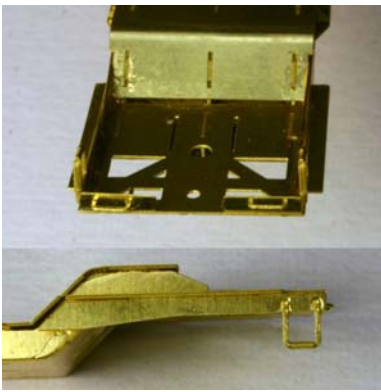


Bend the Top Frame Sheet over the ends of the Keel ensuring the tabs on the Keel engage the slots on the ends of the Top Sheet. Repeat for the opposite end.

Turn the assembly over. Bend the Bottom Frame Sheet up the slope of the Keel ensuring the tabs on the Keel engage the slots on the ends of the Bottom Sheet. Repeat for the opposite end.

The Stirrups on the End Sill require bending AWAY from the bend line and folded over itself to double the Stirrup. Secure. Bend the End Sill 90 degrees INTO the bend line as shown. Secure the End Sill to the End Frame.



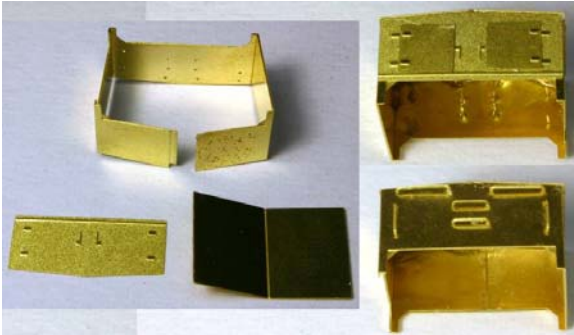
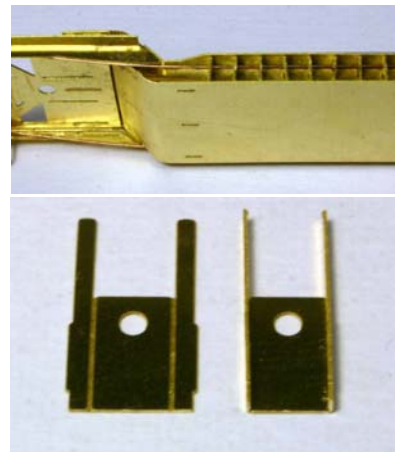


Each End Sill has a tab that goes into the log slot on the side of the End Sill. Secure the End Sill to the End Frame. Add the Grab Iron to End Sill after securing.

Study these two images to see two different views of the End sill, End Grabs and Stirrups.

Thread the .010in bronze wire through the holes in the Ribs for the Brake Lines. Route the lines behind the End Sills and secure. Do this for both sides.

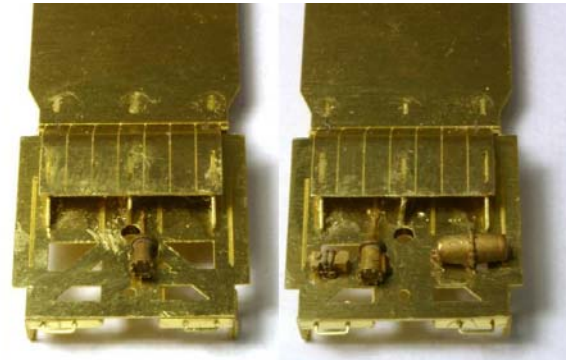
Bend the sides of the Coupler Pocket 90 degrees INTO the bend lines. Secure the tabs on the Coupler Pocket sides into the slots in the center of the End Frame.



Clean-up all of the components required to assemble the Large Cabinet. Bend the Sides at the four corners and secure the Front together.

Attach and secure the Front Detail Cover over the splice. Install both Doors on top of the Front Detail. See image to the left.

The back of the Large Cabinet has six Grab Irons, two Large Grabs and four Medium Grabs. Refer to the image on the left.



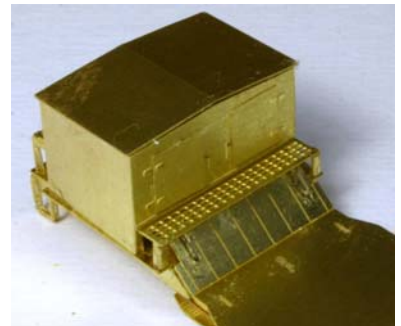
Add the Brake detail to the tops of the End Frames. One End will get one Brake Actuator. The other End will get one of each; Selector Valve, Actuator and Reservoir. Study the image to the right for placement.



The Large Cabinet has two elevated Grated Walkways. Carefully remove them from the kit sprue. The smaller of the two Grated Walkways has legs at two corners. These legs are first bent into a "L" and then bent 90 degrees to the grated floor INTO the bend lines. Once bent, set the Grated Walkway aside.

The larger Grated Walkway has ends and one side. Install the Grab Irons onto each end first. Two Grabs are needed for each end. Bend the side and then both ends 90 degrees to the grated floor INTO the bend lines.

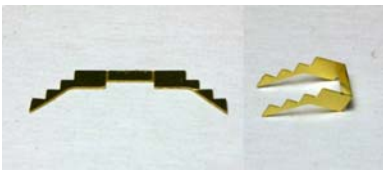
Attach the Large Cabinet to the End Frame that has the one Brake Actuator. The builder should note that the Cabinet side with the Grab Irons goes towards the end of the car. The larger Grated Walkway is then secured to the end of the car under the Grab Irons. Refer to the images.



The following series of images shows how the two Small Cabinets are folded. Begin with the individual parts as shown ensuring that all tie remnants are removed before assembly. The Main Body has two bend lines and should be bent INTO the bend lines. Add the Center Support ensuring its tabs are completely set into the half-etched slots of the Main Body. Secure the Front into the open area of the Main Body. The Front has tabs while the ends of the Main Body have slots. If using CA glue, wait 30 min before proceeding to ensure the joint is solid. Using needle-nosed pliers to hold the Front, bend the Front to fit the slope of the Main Body. Secure when satisfied. In the images, the Small Cabinet appears to be leaning. It is! One of the three legs is shorter than the other. The short Leg will be on the inside of the Cabinet when secured to the Flatcar. Add the Top to the Small Cabinet with the etched details on the inside. Add two Medium Grabs to the Cabinet back.





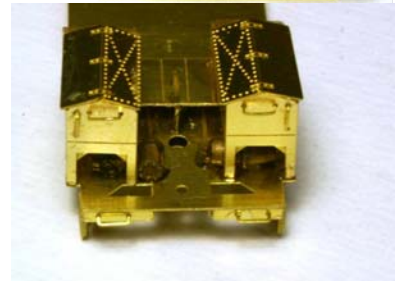
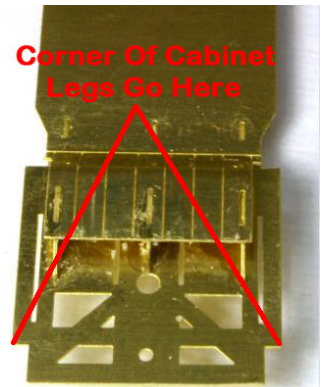


Bend the Stair Support bracket INTO the bend line as shown.

Use the Stair Support to help in the spacing of the Small Cabinets when attaching them to the Flatcar. The two main things for locating the Small Cabinet are the corners of the End Frame and the outer side of the End Frame.

Place the Stair Support bracket on the Deck Slope (do not secure) to help in getting the Small Cabinets lined up. The short leg of the Cabinet goes on top of the Deck Slope. When satisfied, secure both Small Cabinets and then secure the Stair Support bracket to the Deck Slope.

Add the Grated Stair Treads to the Stair Support bracket. Add the Grated Deck between the two Small Cabinets and add the rear Safety Fence. The final item in this area is the Grated Deck Landing on the end of the End Frame behind the Small Cabinets.



Secure the laser-cut Wood Flooring to the Depressed Deck.



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