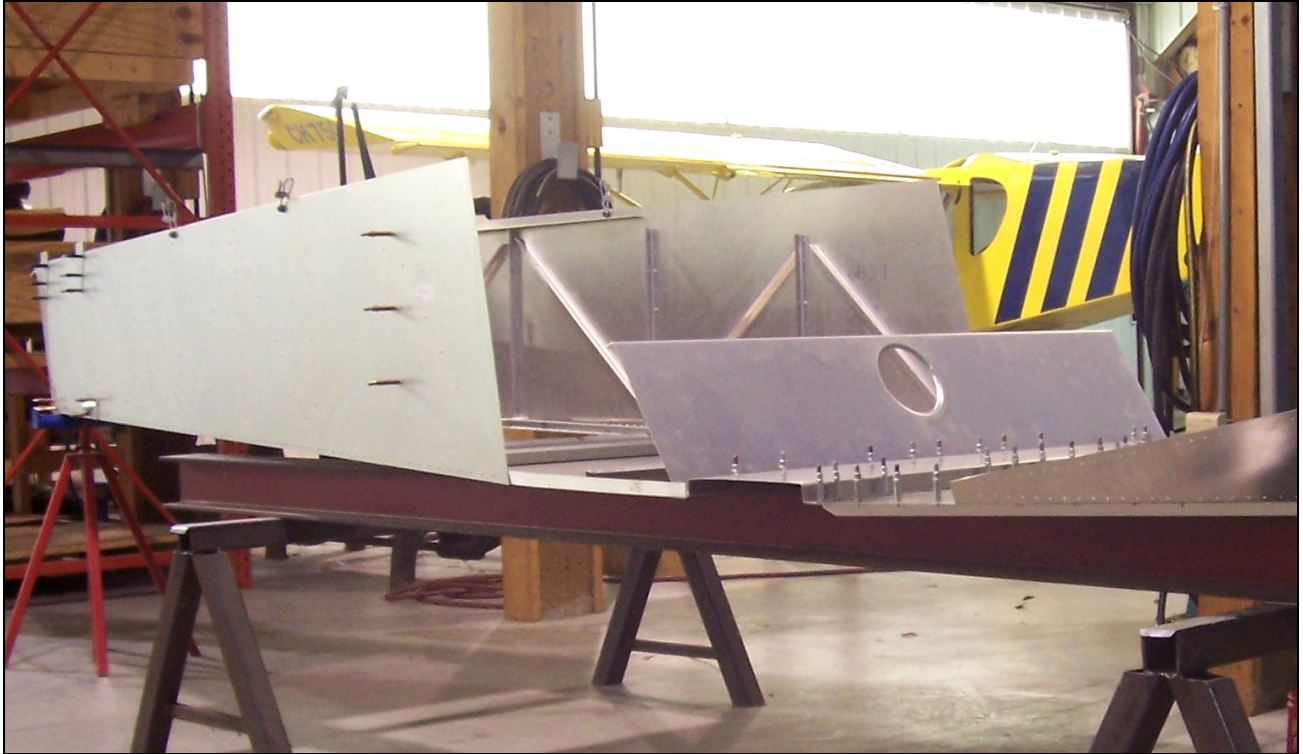


## Section 6-B-5 Rear Frame Assembly Gear Channel



This manual has been prepared for assembly of the rear fuselage. This photo assembly manual is intended as a supplement to the drawings. If there is any discrepancy between this manual and the drawings, the drawings supersede this manual. For more information on building standards and allowable tolerances see "Construction Standards for Zenair Light Aircraft" available from Zenith Aircraft Co.



**P/N: 6B5-1**  
Rear Seat Panel

Slide the Rear Fuselage to over hang the end of the work bench. Position the Rear Seat Panel bottom flange flush with the front edge of the Bottom Skin and clamp the Rear Seat Panel to the Bottom Skin. With a #40 drill bit, back drill and Cleco the Rear Seat Panel to the Bottom Skin. Joggle the ends of the bottom flange of the Rear Seat Panel to make room for the Longerons.

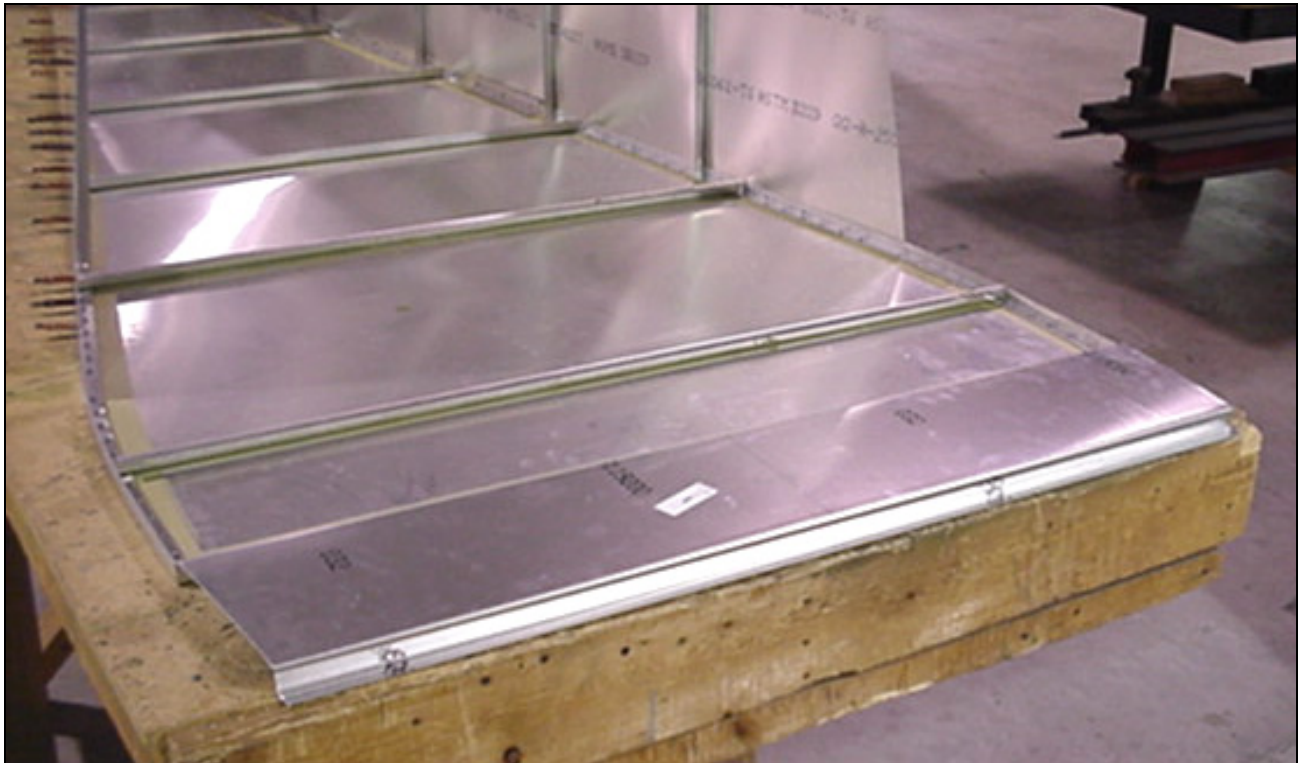


**P/N: 6B5-5**  
Gear Channel

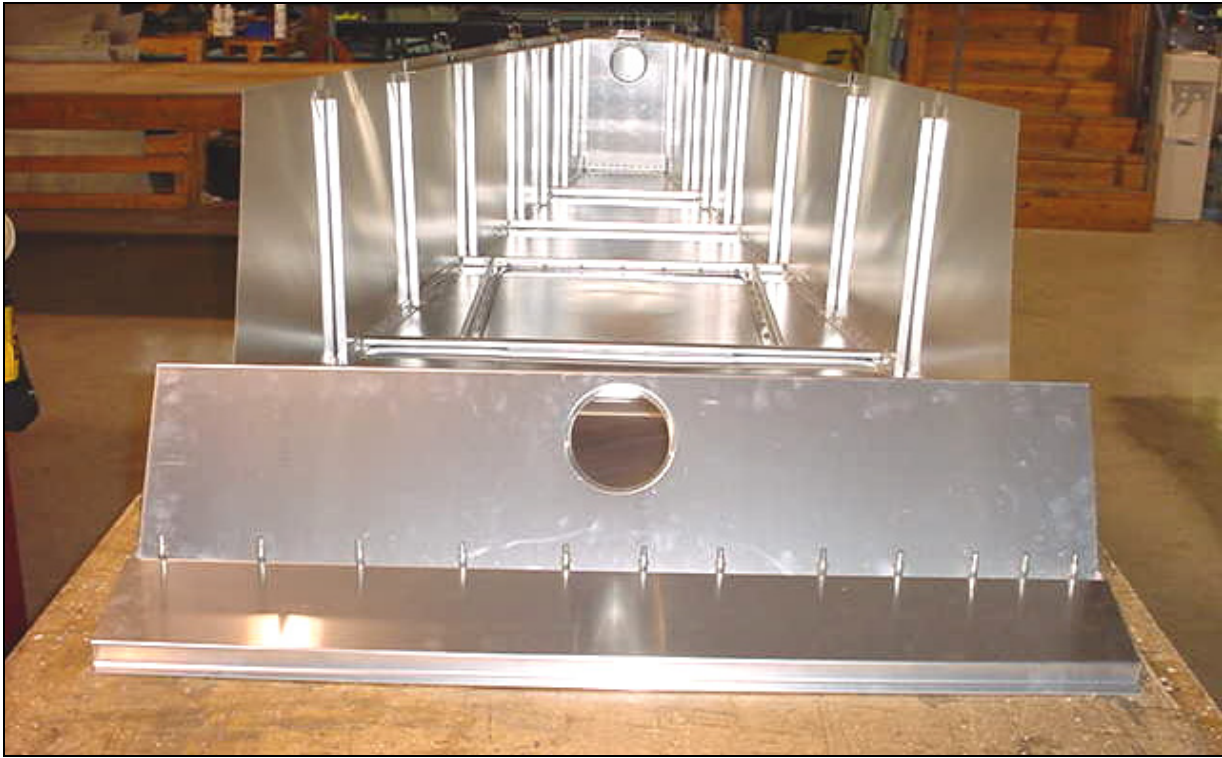
Put a mark 27mm from the edge of the Gear Channel on the front side. Draw a line from the back corner of the Gear Channel to the mark. Trim the Gear Channel along the line. The back flange does not need to be trimmed.



Draw the aircraft center line on the Gear Channel. Then mark the rear flange center line.



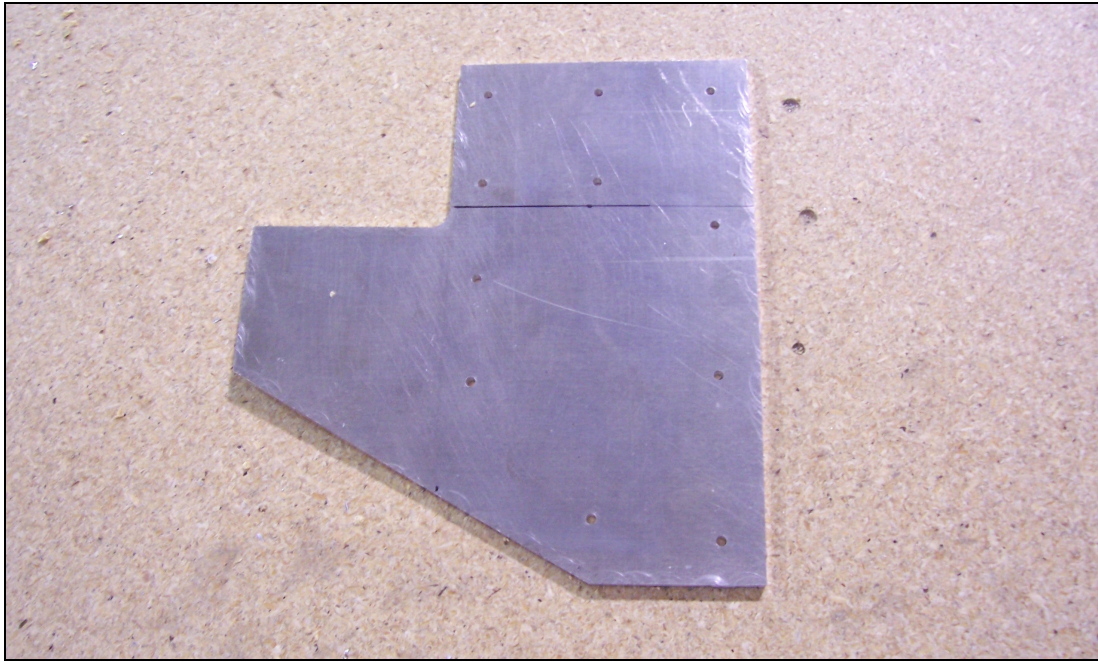
Remove the Rear Seat Panel. Slide the aft flange of the Gear Channel under the front edge of the Bottom Skin. Align the aircraft center line on the Gear Channel with the center line of the Bottom Skin. With the flange center line visible through the predrilled holes, clamp and back drill through the Bottom Skin into the Gear Channel with a #40 drill bit then Cleco.



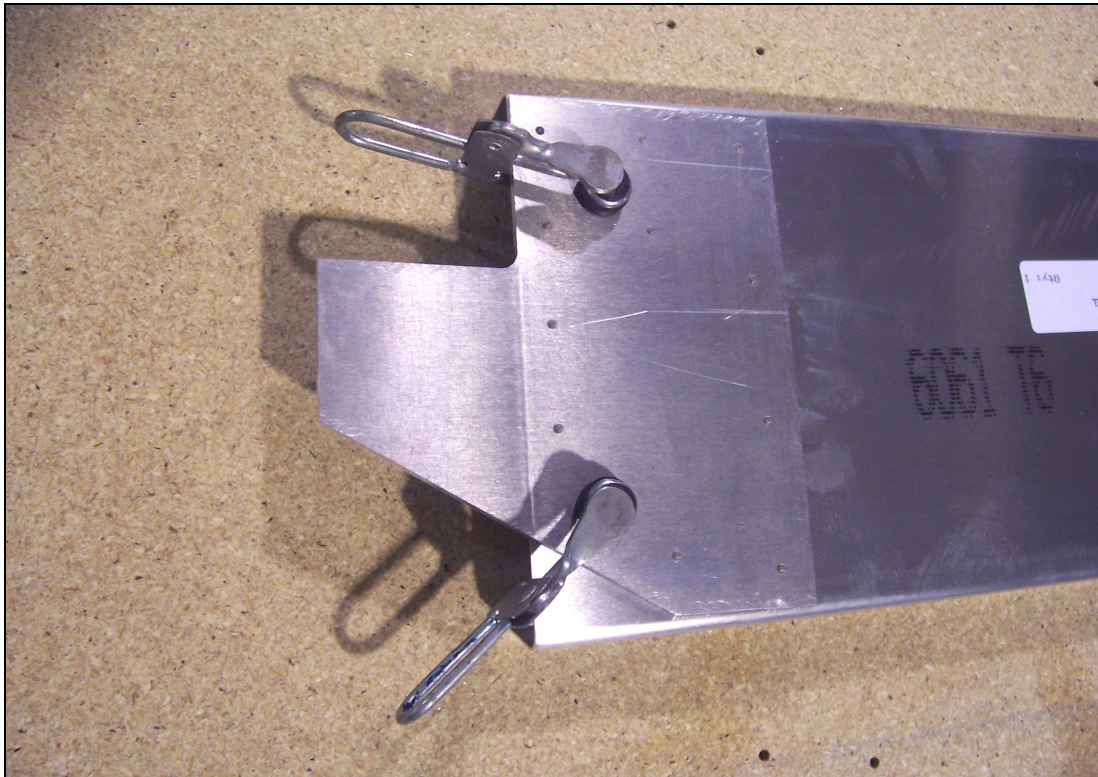
Cleco the Rear Seat Panel back on the Bottom Skin. With a #20 drill bit, expand the holes through the Rear Seat Panel into the Bottom Skin and the Gear Channel and Cleco.



P/N: 65B5-2  
Rear Frame Channel



**P/N: 65B5-4**  
**Attach Plate**



Clamp the Attach Plate to the Rear Frame Channel. The top of the outboard side should be flush with the edge of the Rear Frame Channel and centered vertically on the Rear Frame Channel. With a #40 drill bit, back drill and Cleco the Attach Plate to the Rear Frame Channel. Remove the Attach Plate from the Rear Frame Channel.

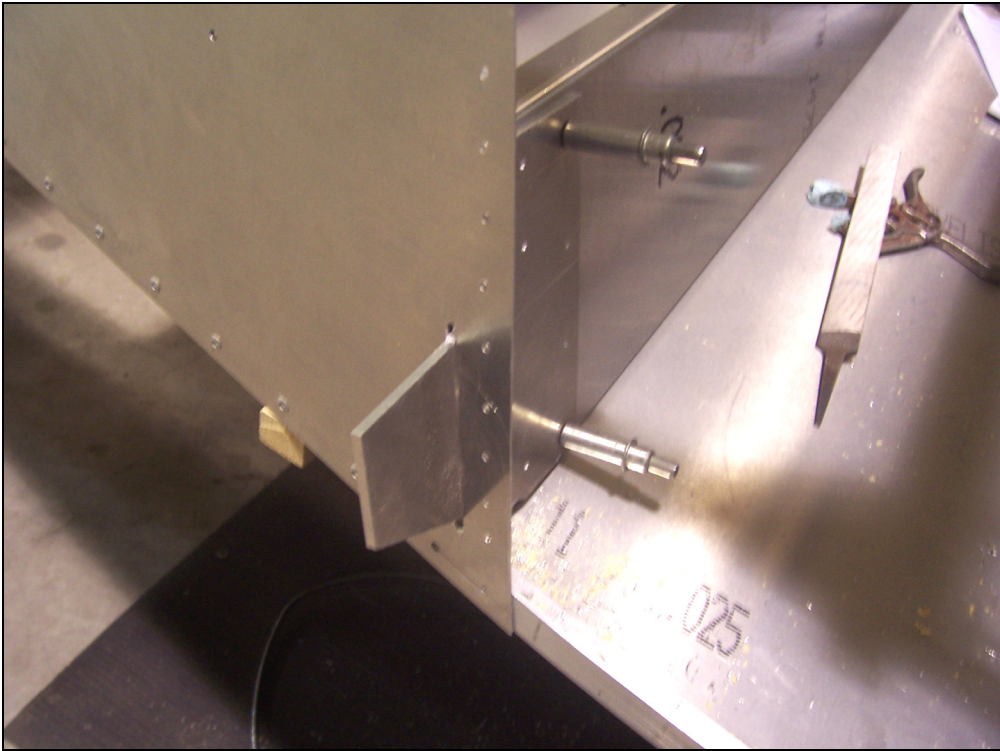


Draw a center line on the bottom flange of the Rear Frame Channel.

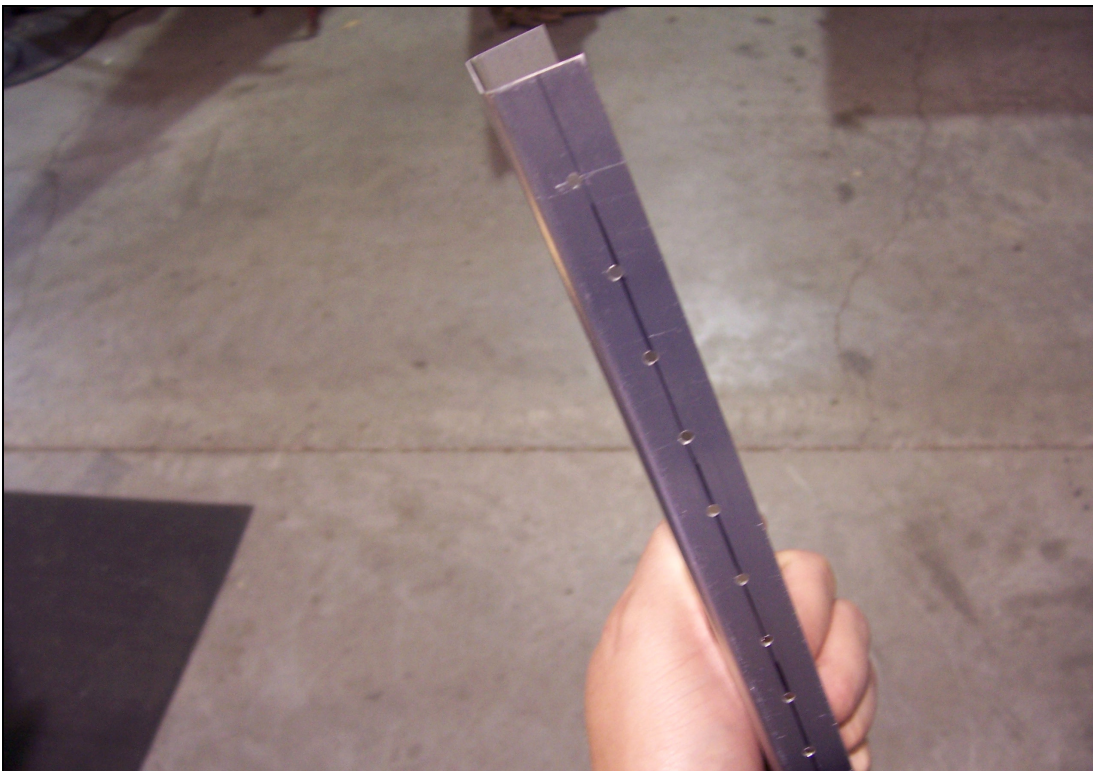
**Orientation:** The  $\frac{3}{4}$ " holes are located closer to the top of the Rear Frame Channel.



Position the Rear Frame Channel on the Bottom Skin. The Rear Frame Channel is located 475mm from the front of the Bottom Skin. With the flange center line visible through the predrilled holes in the Bottom Skin, drill and Cleco the Rear Frame Channel to the Bottom Skin. Remove the Rear Frame Channel and joggle the bottom flange for the Longerons.

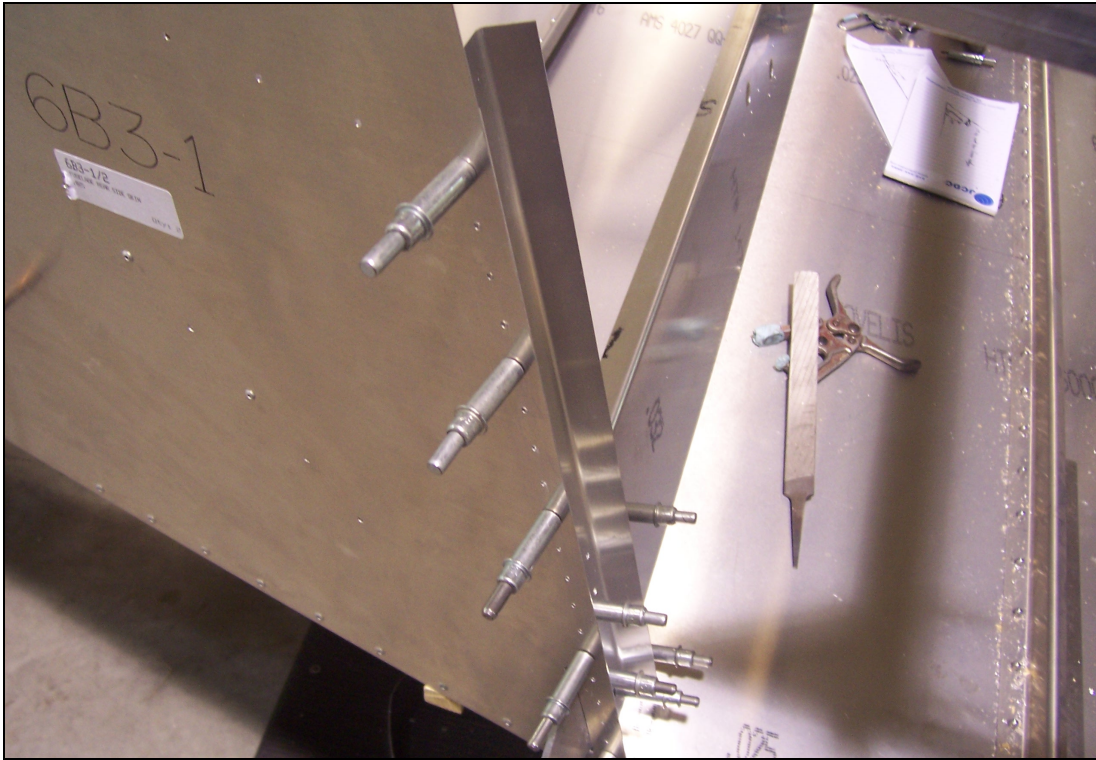


Slip the Attach Plate through the slot in the Side Skin and Cleco it to the Rear Frame Channel on the inboard set of holes.

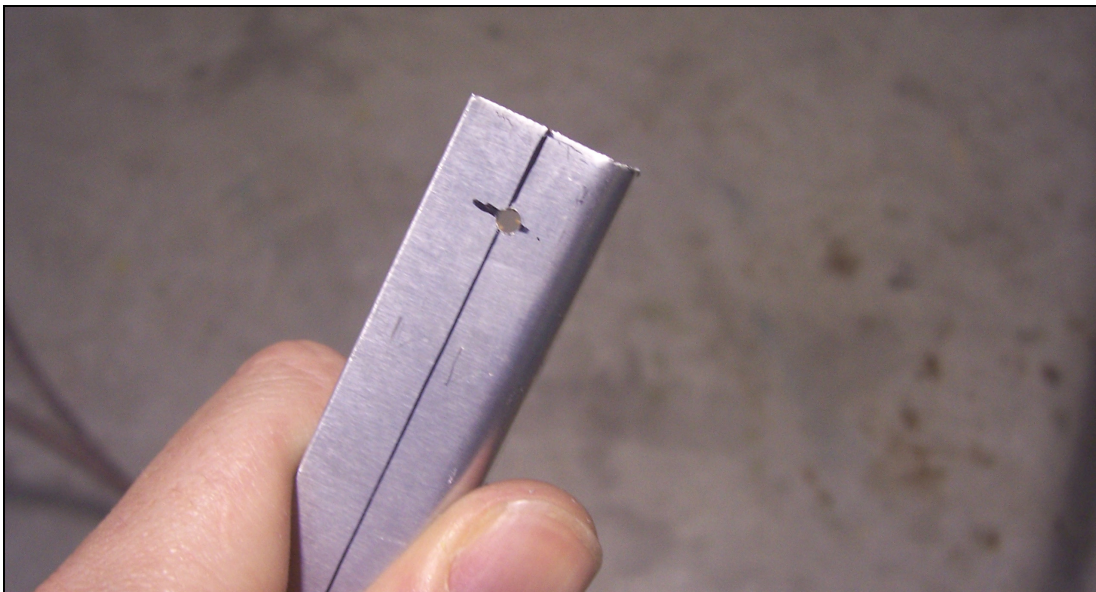


**P/N: 6B5-6**  
Upright Channel

Draw a center line on the outboard flange of the Upright Channel (the flange that has been joggled to clear the Longeron). Upright Channel in the above picture has already been drilled from the next step.



Set the Upright Channel against the Attach Plate and Clamp the Upright Channel to the Attach Plate. Rotate the Upright Channel until the center line is visible through the predrilled holes in the Side Skin and clamp the Upright Channel to the Side Skin. Back drill with a #40 drill bit and Cleco the Upright Channel to the Side Skin. Then back drill through the Attach Plate into the Upright Channel and Cleco. Remove the Upright Channel and trim the top 10mm from the center of the hole, then replace it on the Side Skin.



Mark the flange center line on an L Angle. Then mark and drill a hole 10mm from the end with a #40 drill bit to Cleco on to the Side Skin to support the Baggage Floor.

**Reference:** See drawing 6-B-16 for position and orientation of the L Angle before drilling.





Cleco the L Angle to the Side Skin at the aft most hole (the top hole on the second vertical L Angle from the front of the Side Skin). Use the L Angle to mark the angle to trim the top of the Upright Channel. Trim the Upright Channel flanges along the line.



Position the L Angle so the flange center line is visible through the predrilled holes in the Side Skin. Clamp the L Angle to the Side Skin and back drill through the Side Skin into the L Angle and Cleco.

**Note:** The Upper Front Longeron has been installed in the photo above; this is done in a later step.

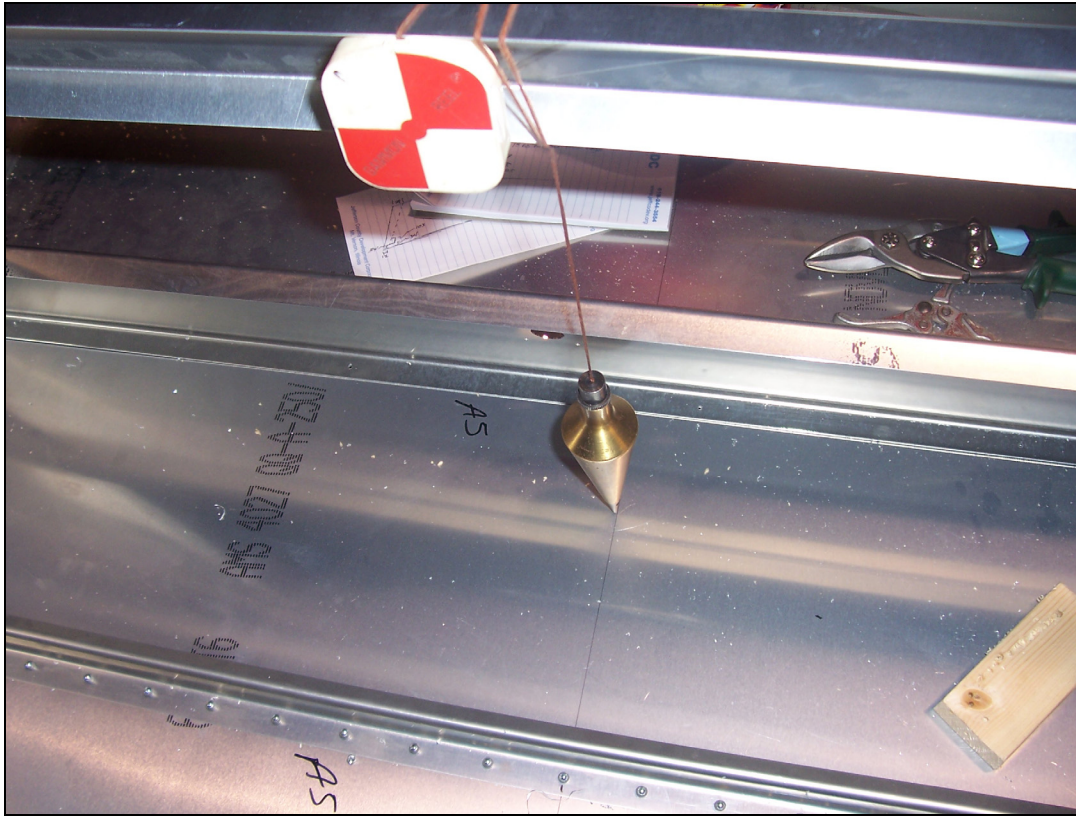


**P/N: 6B5-3**  
Upper Channel

Mark the center of the Upper Channel. This will be used to ensure the fuselage isn't twisted.



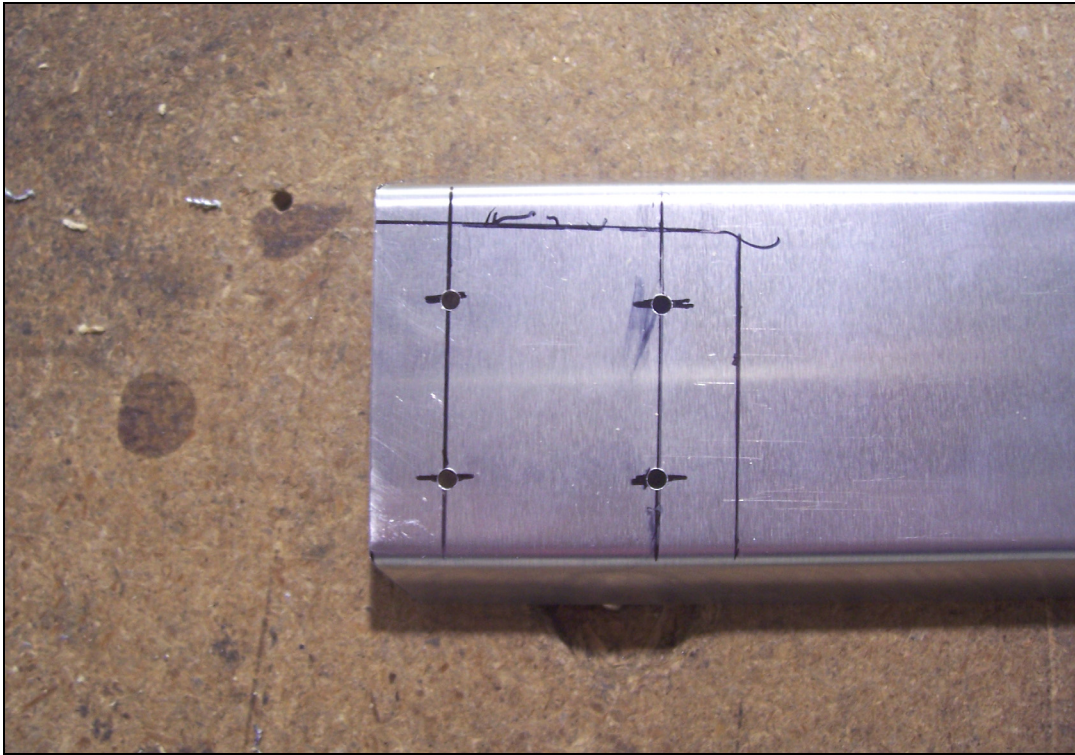
Clamp the Upper Channel to the L Angle and the Upright Channel on each side of the fuselage. The flanges of the Upper Channel will need to be trimmed to match the angle of the Side Skins to fit properly.



Use a plumb bob to check the Upper Channel is centered on the aircraft center line.



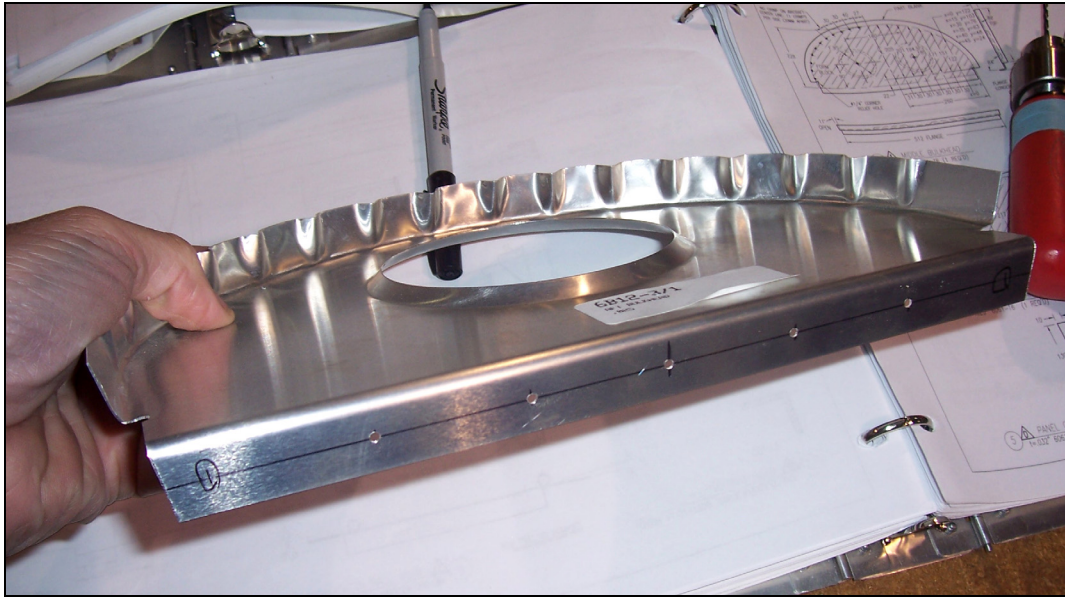
Mark the inboard edge and the top of the Upright Channel on the Upper Channel.



Layout 4 rivet locations 10mm from the edges of the Upper Channel and the edges of the Upright Channels. With a #40 drill bit, drill the rivet locations.



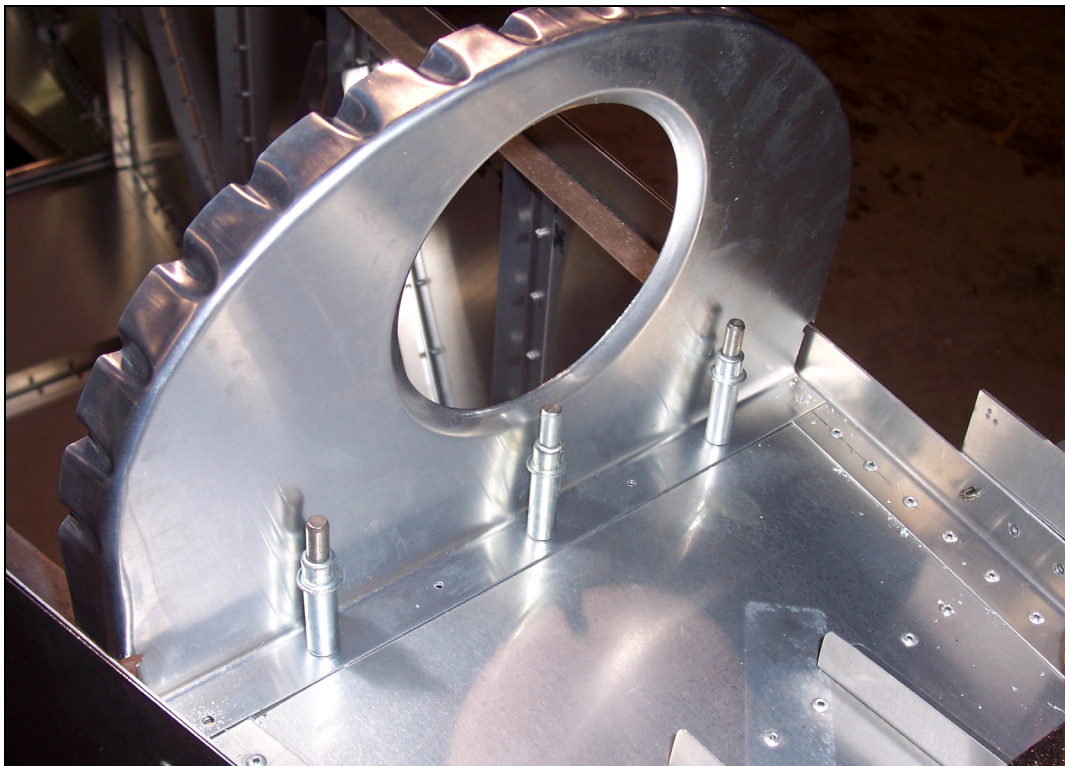
Reposition the Upper Channel on the Upright Channels and clamp it in place. Back drill through the Upper Channel into the Upright Channels and Cleco. Expand the holes with a #20 drill bit and Cleco.



**P/N: 6B12-3**  
**Aft Bulkhead**

Draw a center line on the bottom of the flange on the Aft Bulkhead.

**Note:** The Aft Bulkhead has already been drilled in the photo above; this is done in the next step.

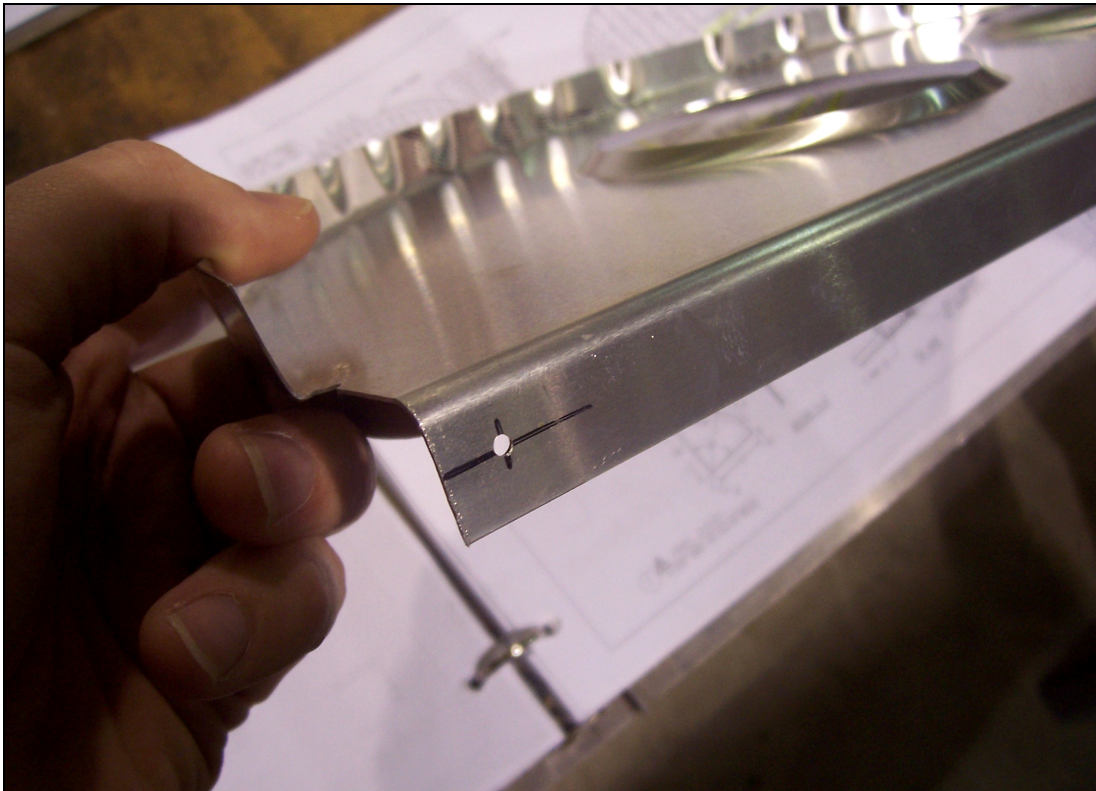


Position the Aft Bulkhead on the Top Panel. Be sure the Aft Bulkhead is centered on the fuselage. With the flange center line visible through the predrilled holes in the Top Panel, tape the bottom flange of the Aft Bulkhead to the Top Panel. Back drill through the Top Panel into the Aft Bulkhead with a #40 drill bit and Cleco. Expand the holes with a #30 drill bit.



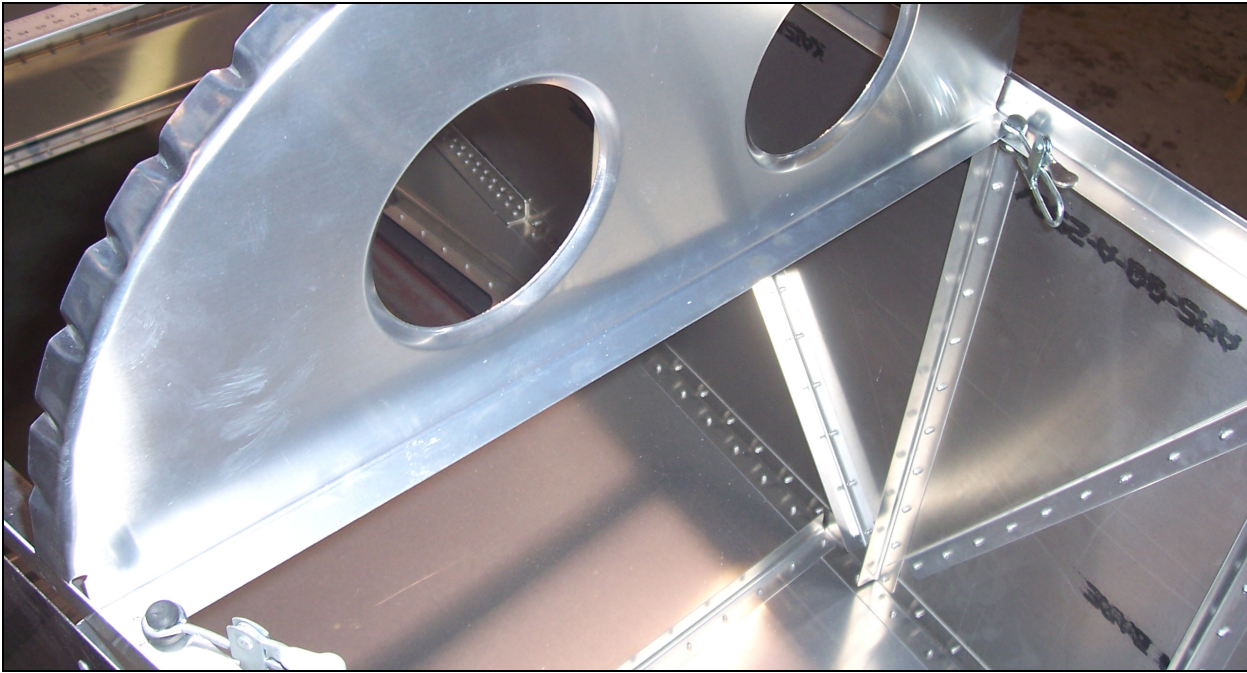
Place a mark on the Side Skin 650mm from the center of the top flange of the Aft Bulkhead.

**Reference:** See drawing 6-B-12 for detailed information.

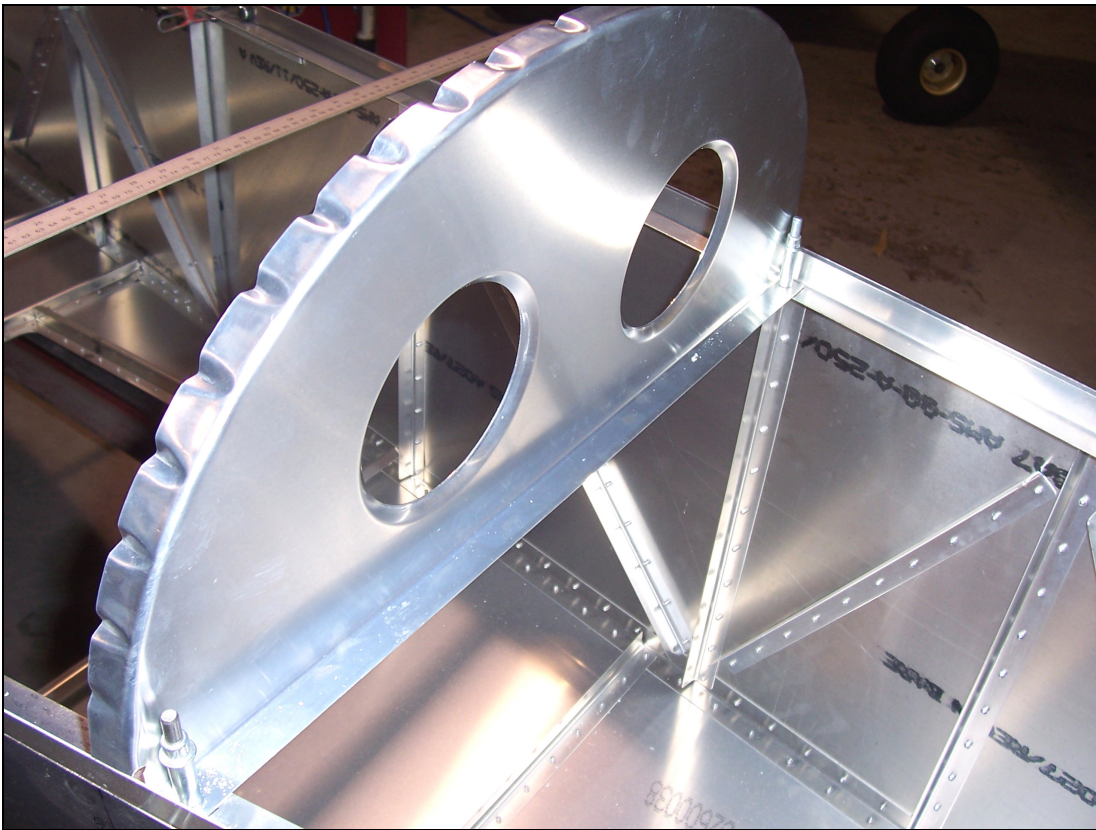


**P/N:** 6B12-1  
Middle Bulkhead

Mark a rivet location 10mm from each edge of the bottom flange on the Middle Bulkhead. With a #40 drill bit, drill a hole on each end of the bottom flange.



Position the Middle Bulkhead on the Longeron. The center of the top flange of the Middle Bulkhead should be in line with the 650mm mark. Check the Side Skins are flush with the top flange of the Middle Bulkhead and clamp the Middle Bulkhead to the Longeron.



With a #40 drill bit, back drill through the Middle Bulkhead into the Longeron and Cleco. Expand the holes with a #30 drill bit and Cleco.