

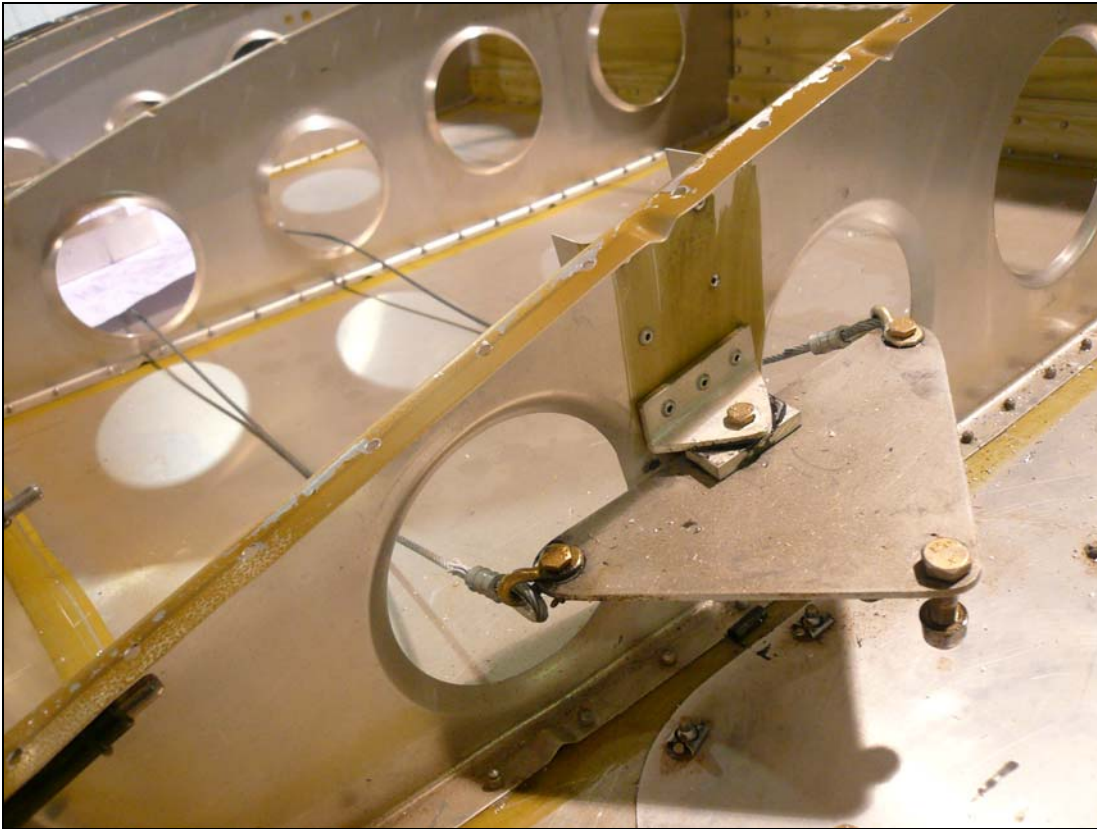
## Section 6-ZU-3a Zodiac CH 601 XL Upgrade Package

### Bellcrank Channel & Doublers (Wing Section)



This Photo Assembly Guide was prepared by Zenith Aircraft Co. to guide builders through the process of installing the Upgrade Package kit to an existing (completed) Zodiac CH 601 XL aircraft. For details and background information on the Upgrade Package kit, See <http://www.zenithair.com/news/ntsb-astm-4-09a.html>

This photo assembly manual is a supplement to the issued Drawings (6-ZU-1 to 6-ZU-4). 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.

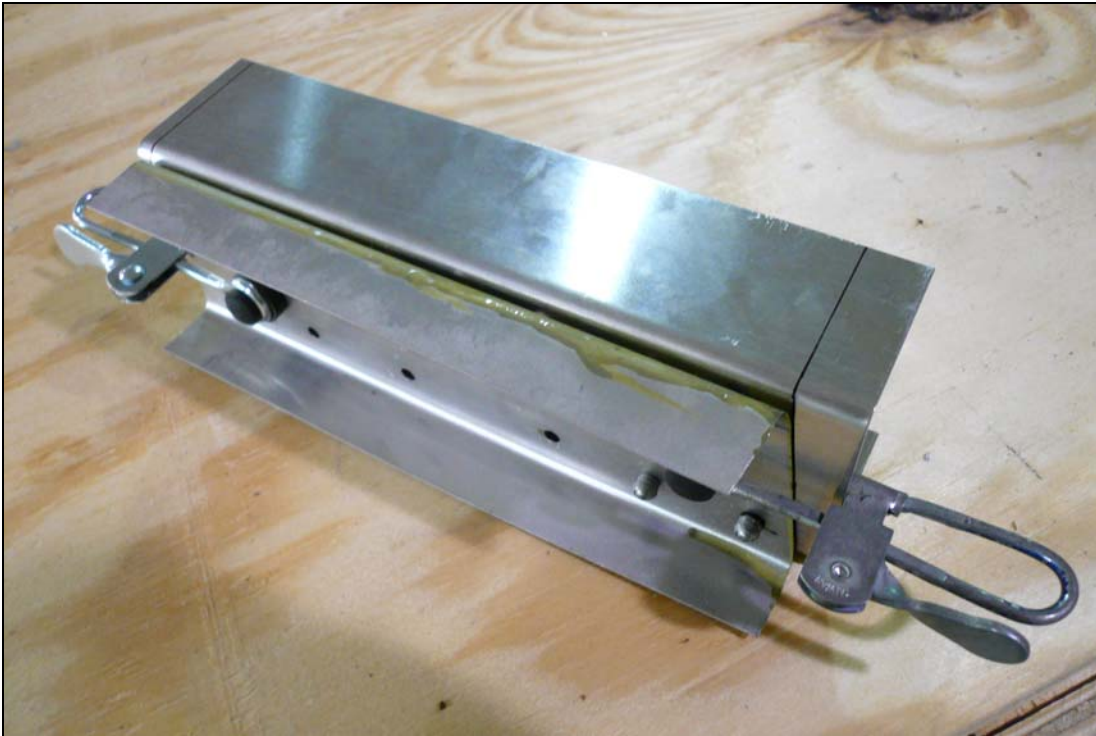


Remove the Aileron Bellcrank and drill out the rivets attaching the Aileron Bellcrank Supports and Bellcrank Support Channel to the Rear Rib.

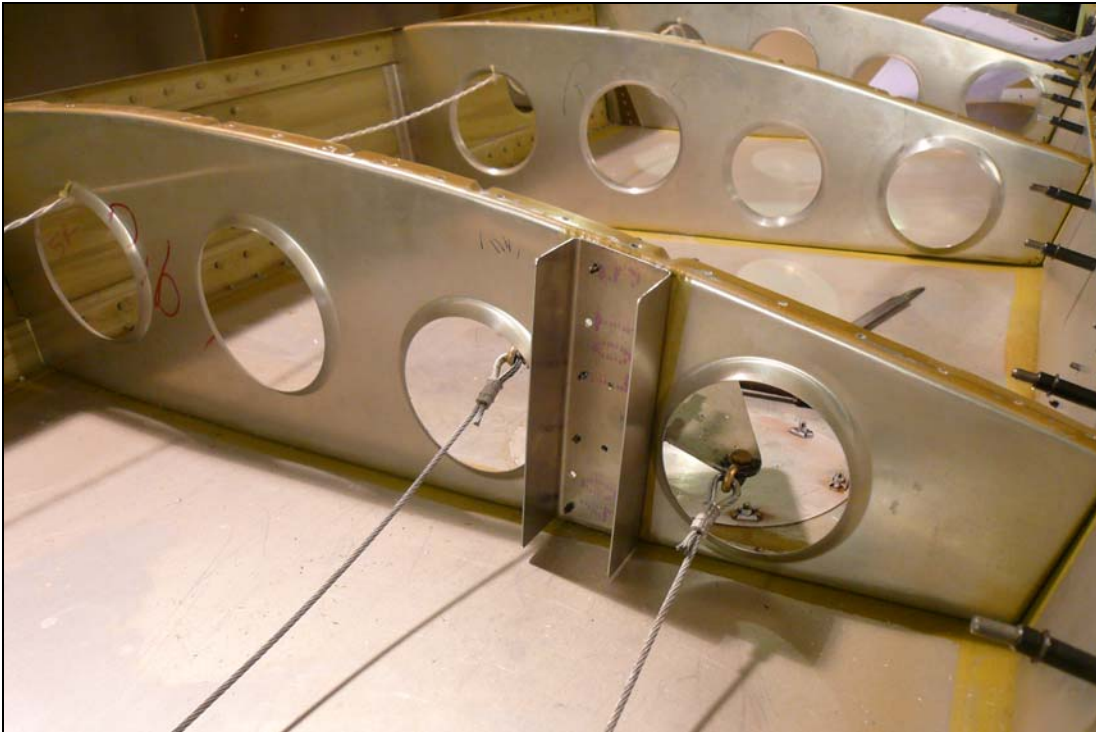


**P/N: 6ZU3-1**  
Bellcrank Support  
Channel

Draw a line 10mm from each side of the Bellcrank Support Channel.



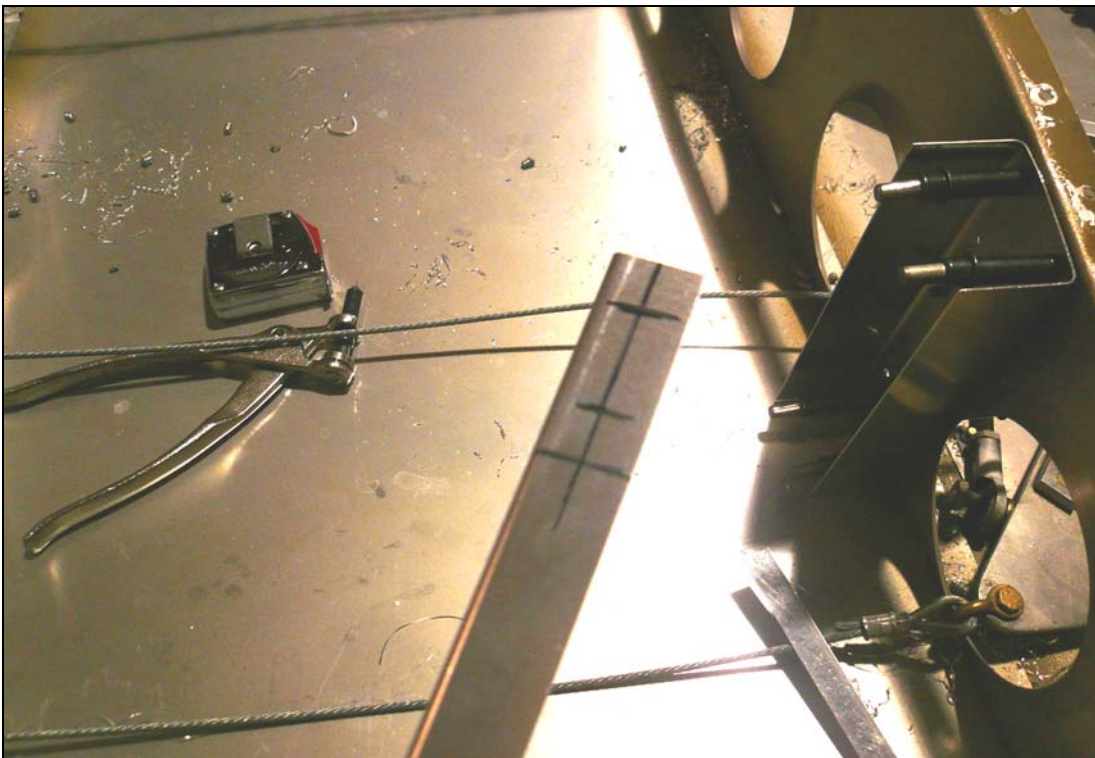
Clamp the old Bellcrank Support Channel to the new Bellcrank Support Channel. Mark the ends of the old Channel on the new Channel. Trim the new Channel to match the old Channel.



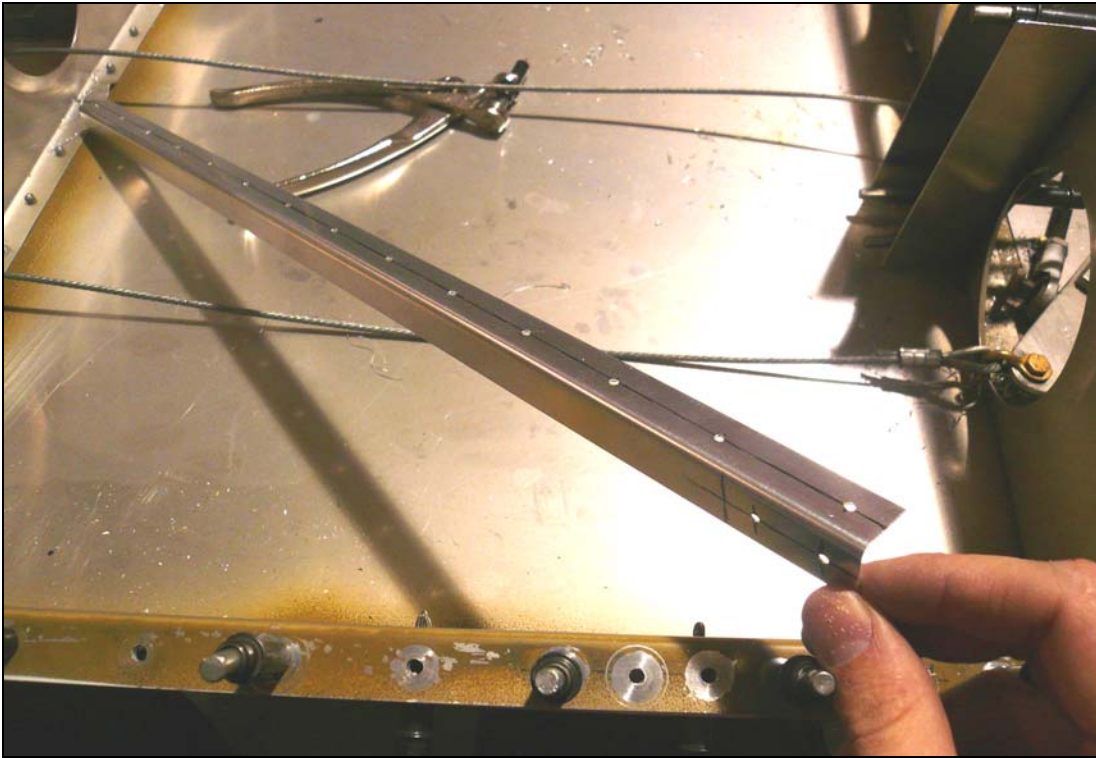
Position the Support Channel on the Rear Rib. With the lines visible through the holes in the Rear Rib, back drill through the Rear Rib into the Support Channel and Cleco.



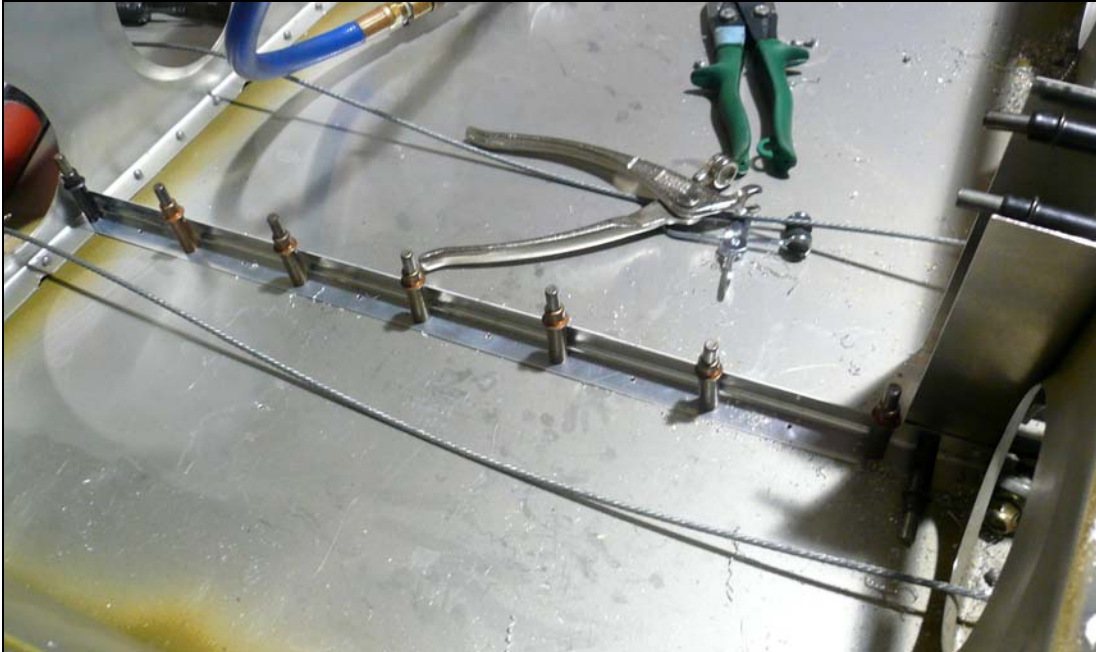
Cut four pieces of L Angle to fit between the Rear Ribs. Position the L Angle at the bottom of the Support Channel on the Bottom Skin. Clamp the L Angle in place. Mark the edge of the Support Channel on the L Angle.



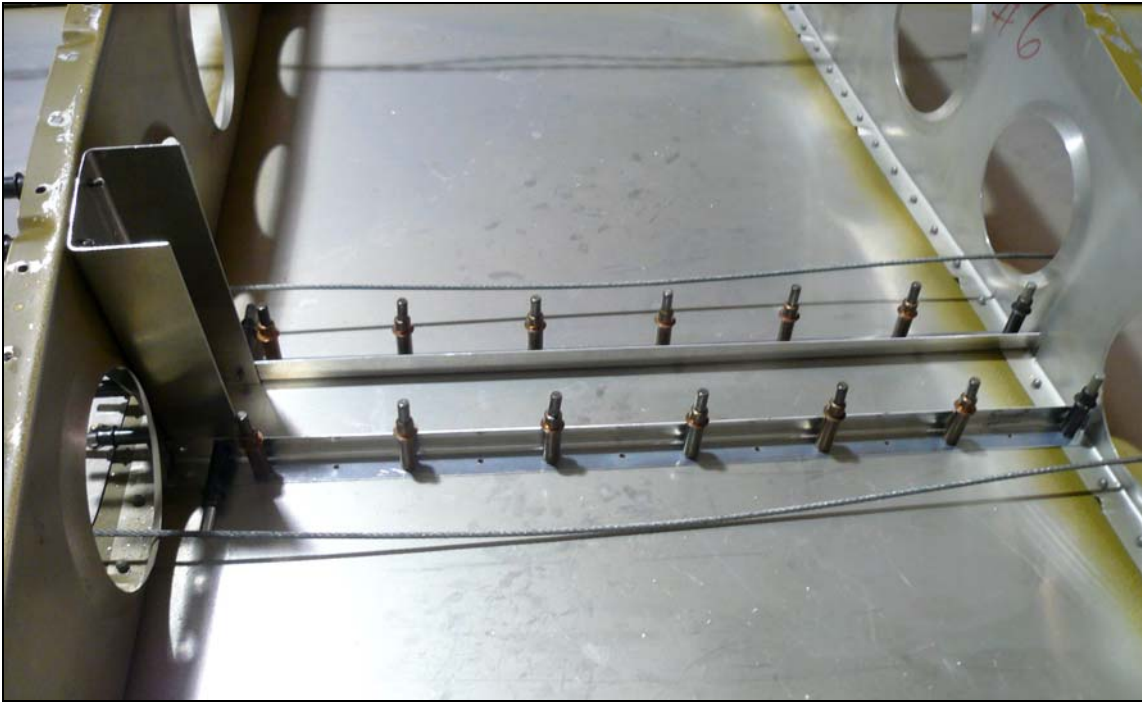
Draw a center line at the end of the L Angle. Layout a rivet location 10mm from the end of the L Angle and 10mm from the end of the Support Channel. With a #40 drill bit, drill the rivet locations in the L Angle.



On the bottom flange of the L Angle, mark a center line and layout rivets locations at a pitch 40. With a #40 drill bit, drill the rivet locations on the bottom flange of the L Angle. Don't drill the final rivet on the end away from the Support Channel.



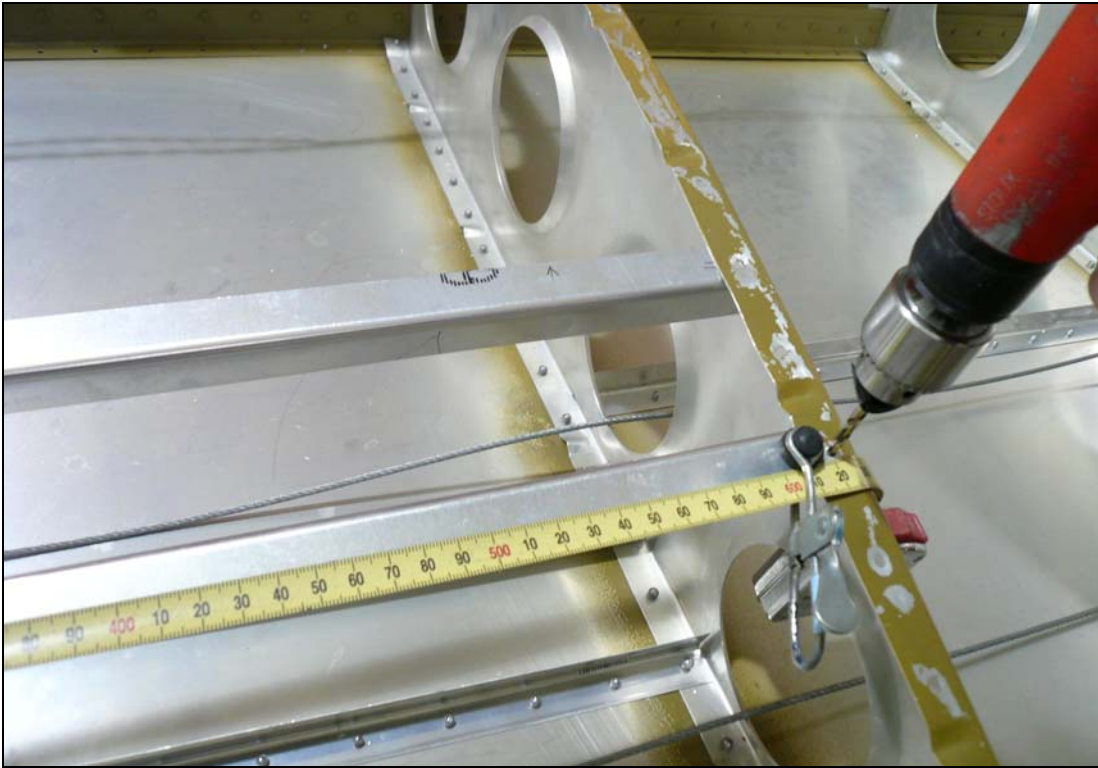
Position the L Angle back in the Wing. Back drill through the L Angle into the Support Channel and Cleco. Expand the 2 holes with a #20 drill bit. It is likely that an Angle Drill will be required to drill these holes. Find the nearest hole in the Rear Rib where the L Angle overlaps and drill out that rivet. Position the L Angle so the center line is visible through the hole and drill the L Angle to the Skin. Expand the holes with a #30 drill bit and Cleco.



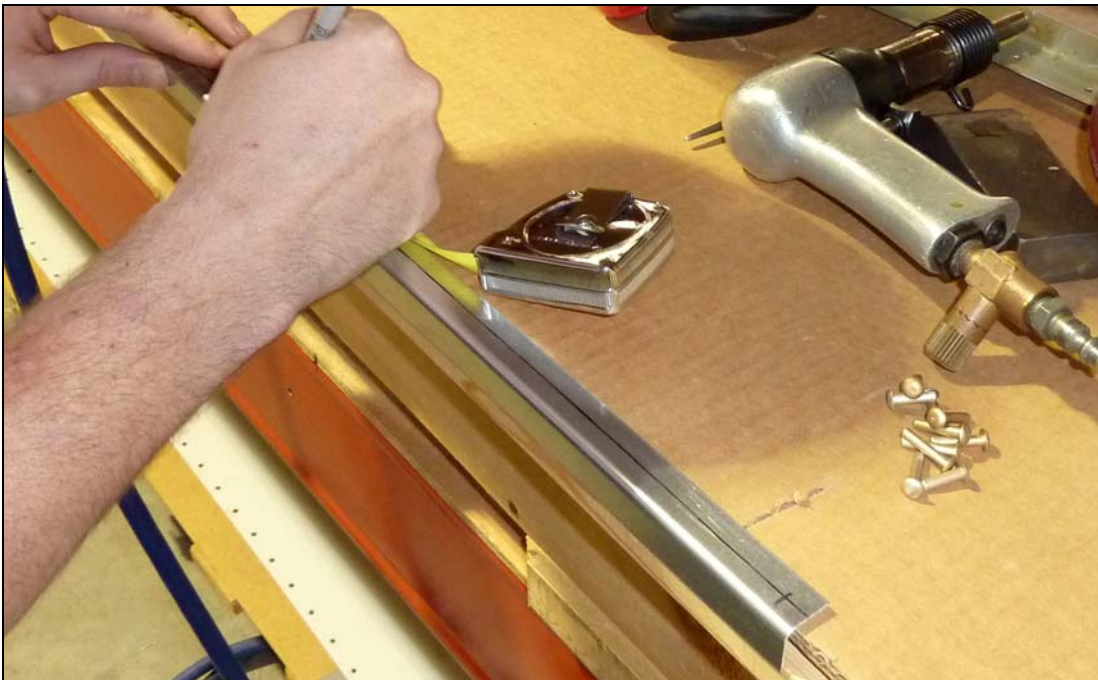
Follow the same procedure to install the second L Angle on the Bottom Skin.



Position the L Angles on flush with the top of the Rear Rib next to the Support Channel and clamp the other end of the L Angle to the Rear Rib top flange. Mark the edge of the Support Channel and layout 2 rivet locations as before. Back drill through the L Angles into the Support Channel and Cleco. Expand the holes with a #20 drill bit.



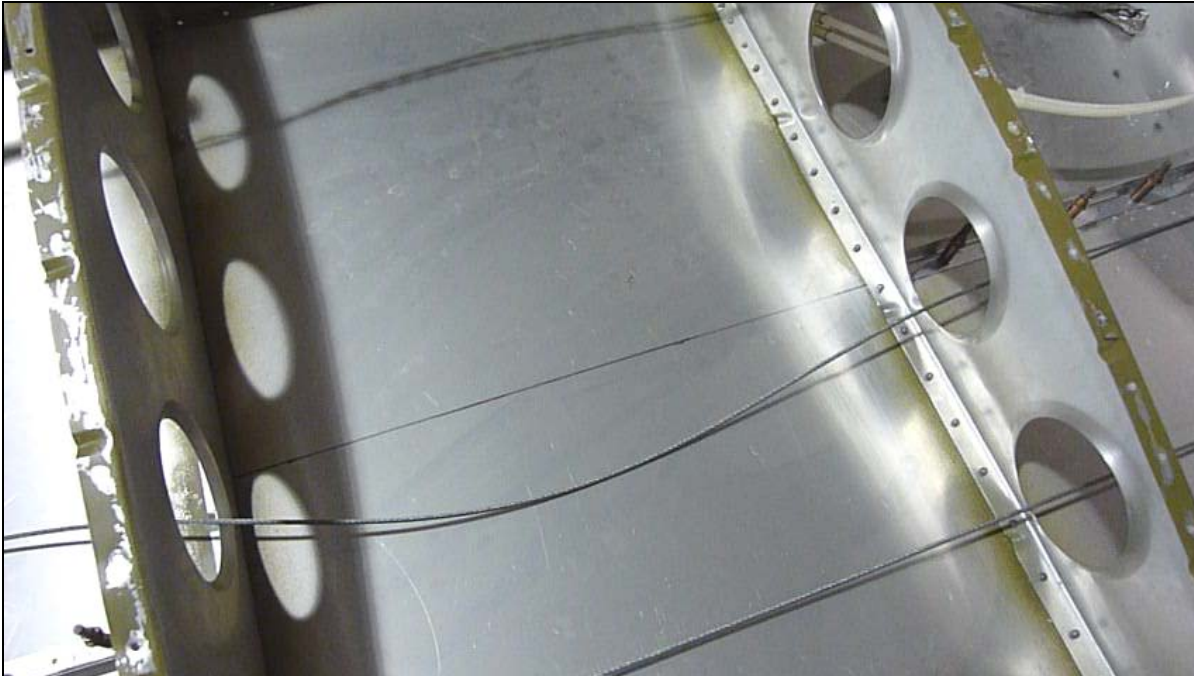
Set the spacing between Rear Rib #6 and Rear Rib #7 to match the Top Wing Skin. Use a #20 drill bit to back drill through Rear Rib #6 into the L Angle and Cleco. (The above photo was taken on the Left Wing as the rest were of the Right Wing.) The top flanges will be drilled when the Top Skin is reinstalled.



Cut an L Angle to fit between the Rear Rib #4 and Rear Rib #5. If the Wing Locker Option is installed, move on to Rear Ribs #5 and Rear Rib #6. Draw a center line on one flange of the L Angle. Mark a rivet location 10mm from each end and evenly space rivets at approximately pitch 100mm. Use a #40 drill bit to drill the rivet locations.

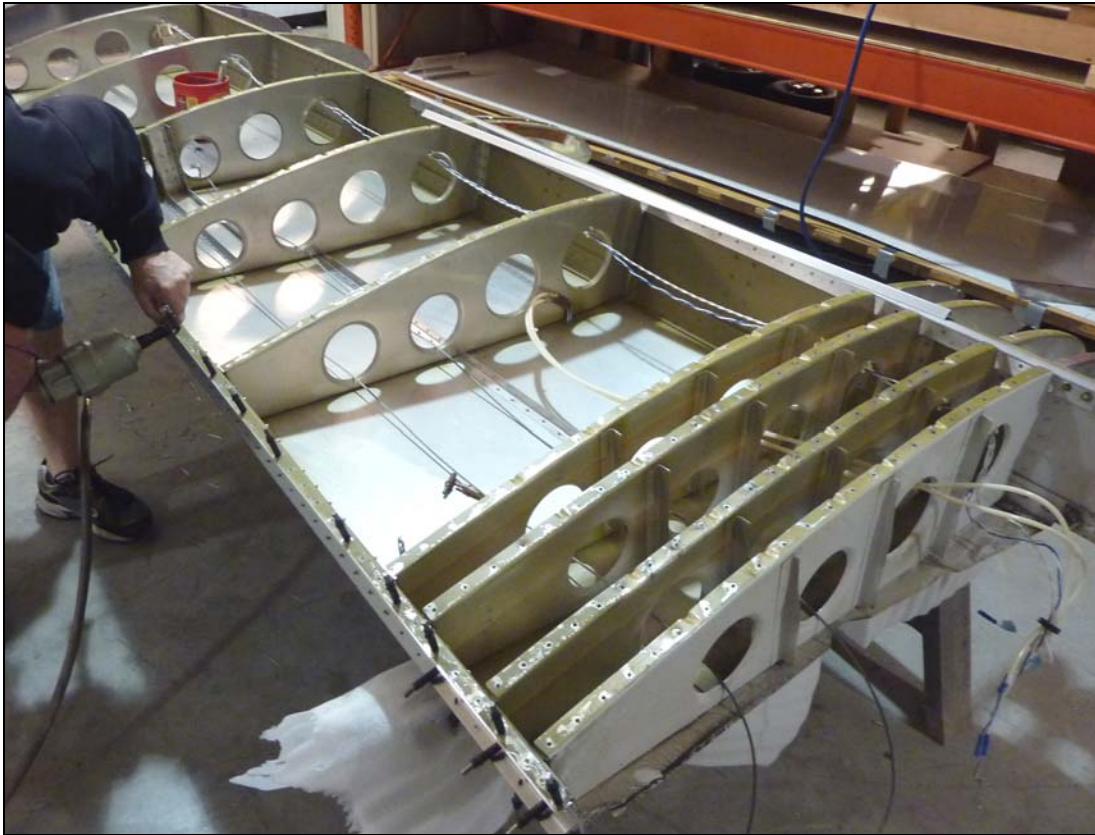


The L Angles installed on the Skins are positioned half way between the Spar and Rear Channel. Measure from the Spar rivet line aft 435mm next to Rear Rib #4 and place a mark on the skin. At Rear Rib #5 measure from the Spar rivet line aft 422mm and place a mark. Draw a line on the Skin at the marks. Position the L Angle with the line visible through the holes in the L Angle. Back drill through the L Angle into the Skin and Cleco. (The L Angle was installed with pitch 40mm in the above photo.)

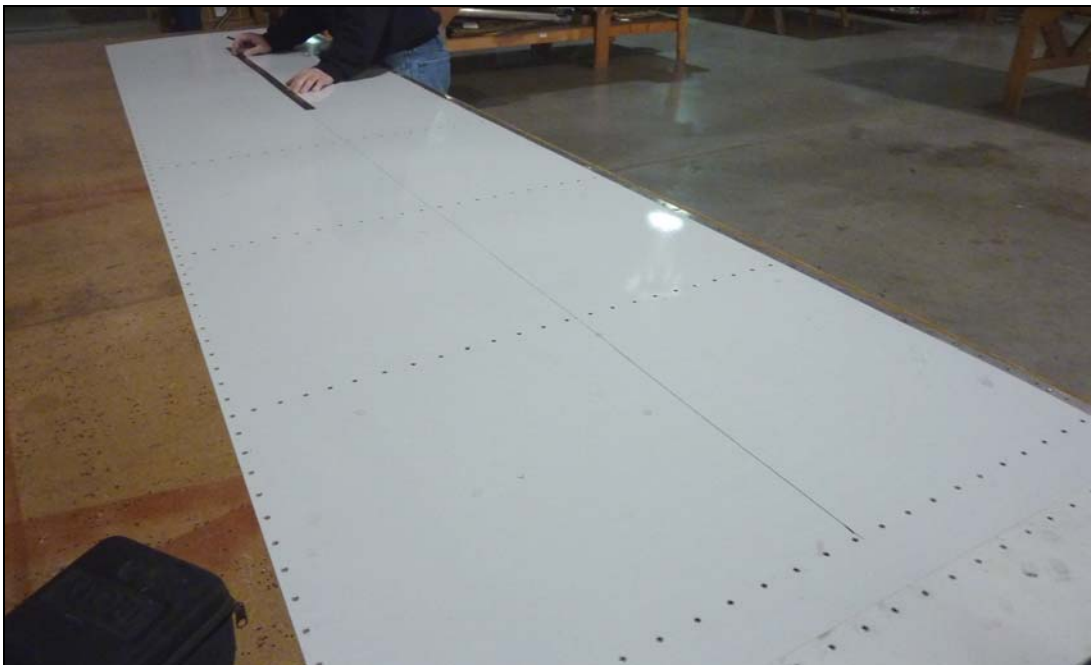


Extend the 422mm line at Rear Rib #5 and mark a line half way between the Spar and Rear Channel. Connect the marks and follow the same procedures to install the L Angle between Rear Rib #5 and Rear Rib #6.

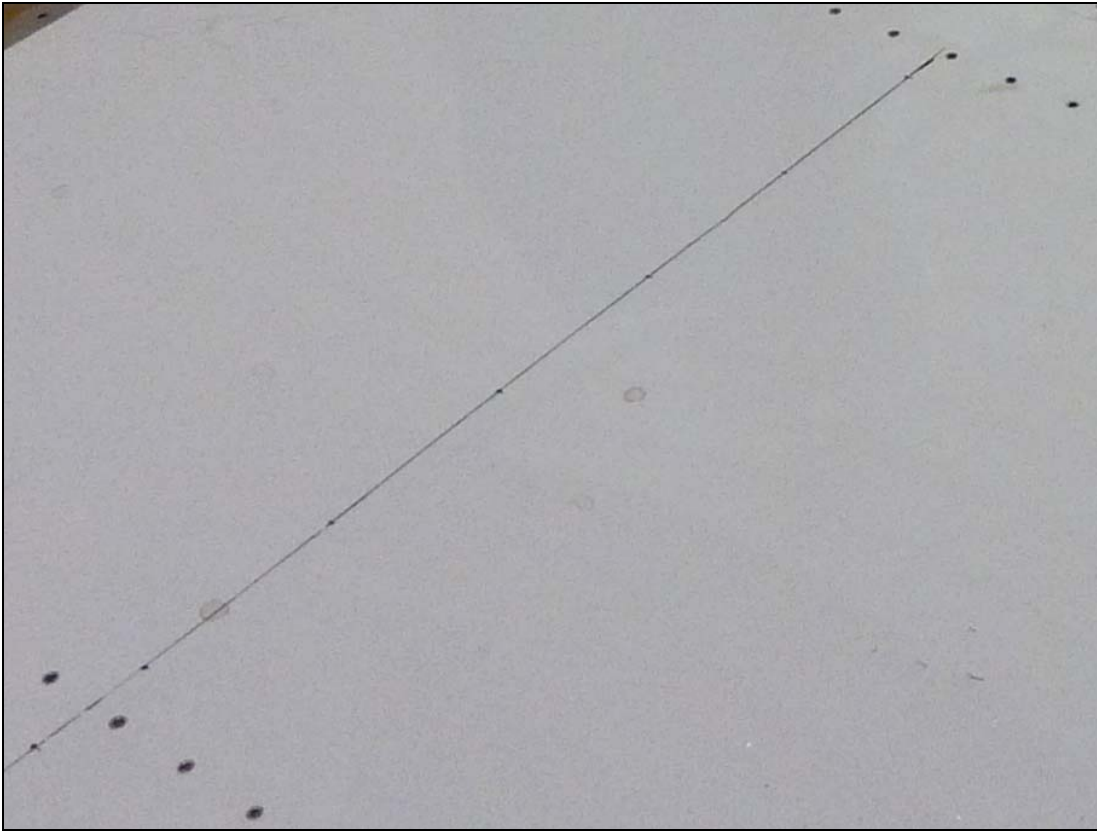




Follow the same procedures to install the L Angles to the Bottom Skin in the remaining bays.



Lay the Top Wing Skin on a workbench. At the rivet line for Rear Rib #4, measure aft 425mm and place a mark. At the Wing tip, place a mark 370mm aft of the Spar rivet line. Draw a line on the Top Wing Skin connecting the marks. (A laser was used to mark the intersection of the marks and Rear Rib rivet lines and then the marks were connected.)



Place a mark 20mm from the intersection of the line and the Rear Rib rivet lines. Layout rivet locations evenly spaced approximately 100mm apart. With a #40 drill bit, drill the rivet locations.



Measure the distance between the Rear Rib rivet lines. Cut L Angles 20mm shorter than the distance measured. Draw a center line down the flange of the L Angles. With a #40 drill bit drill a hole 10mm from one end of the L Angles. Cleco the end hole to the end hole in the Top Wing Skin. Position the L Angle so the center line is visible through the holes in the Skin. Back drill through the Skin into the L Angles and Cleco.