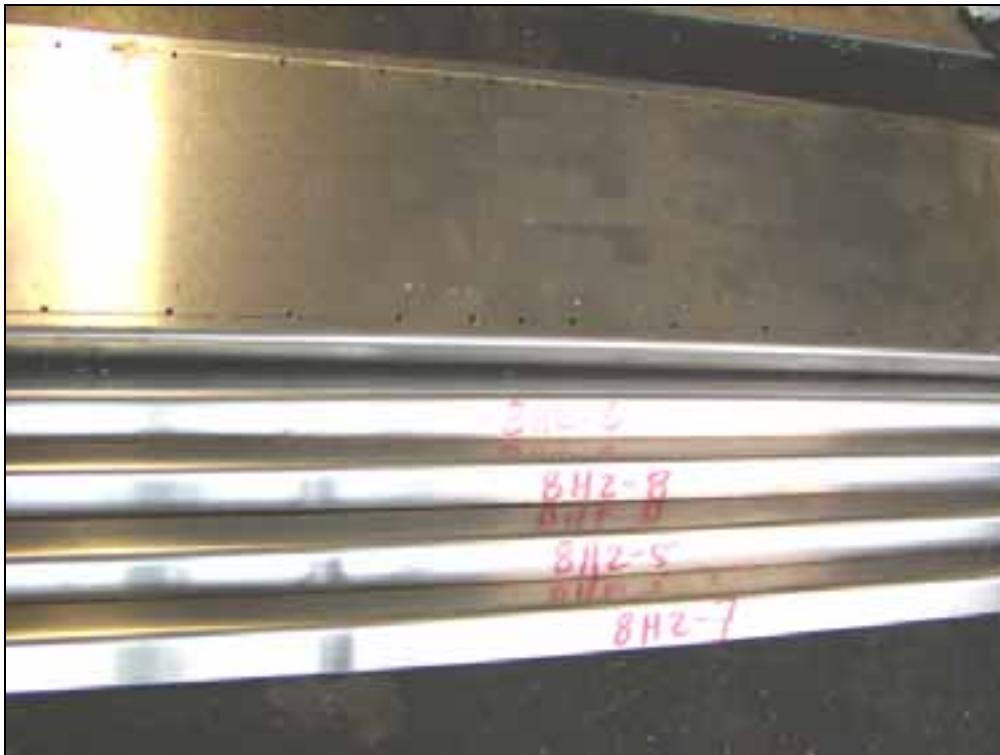


**STOL CH 801 STABILIZER ASSEMBLY - SECTION 1
"SKELETON"**



The front spar has the lightening hole in the center. It's also the shorter of the two spars.

The horizontal tail skeleton parts.



Short and long doublers for rear spar 8H2-6



tip ribs 8H1-1

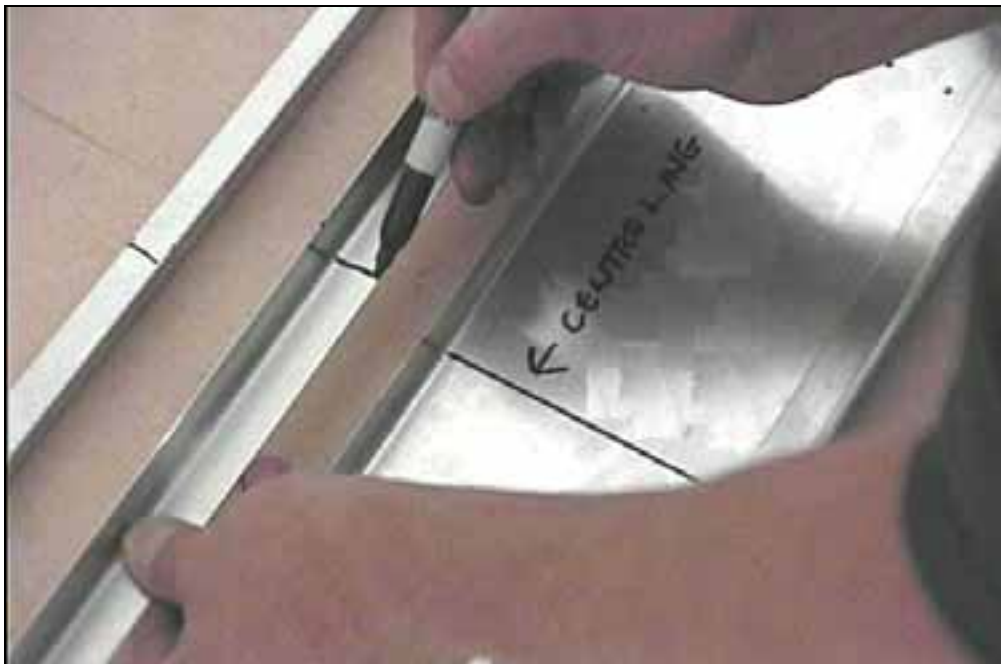


The full ribs 8H1-2 are identical to the tip ribs 8H1-1 except for the lightening holes in the full ribs 8H1-2.



ORIENTATION: The curvature of the stabilizer is on the bottom (top side is the straight flange)

Close up of left and right rear ribs.



Start by assembling the doublers to the rear spar.

The rear spar requires two layers of doublers on both the top and bottom spar flange as detailed in the chart below.

Mark the centerline on the rear doublers. Mark the centerline on the rear spar.

Doubler specs. Rear spar.

	<u>Top</u>	<u>Bottom</u>
1st layer 1,790 mm. long	8H2-7	8H2-5
2nd layer 800 mm. long	8H2-8	8H2-6



LONG DOUBLERS

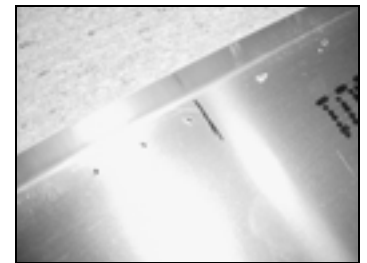
8H2-5 qty=1

8H2-7 qty=1

length = 1790

Long doublers overlap on rear spar 8H3-6

Position the long doublers 8H2-5 and 8H2-7 in place prior to placing 8H2-6 and 8H2-8.



CHECK: Mark the end of the Doublers on the spar web to check edge distance to the last hole.



SHORT DOUBLERS

8H2-3 qty=1

8H2-4 qty=1

length=800

The short doublers 8H2-6 and 8H2-8 overlap on top of 8H2-5 and 8H2-7.

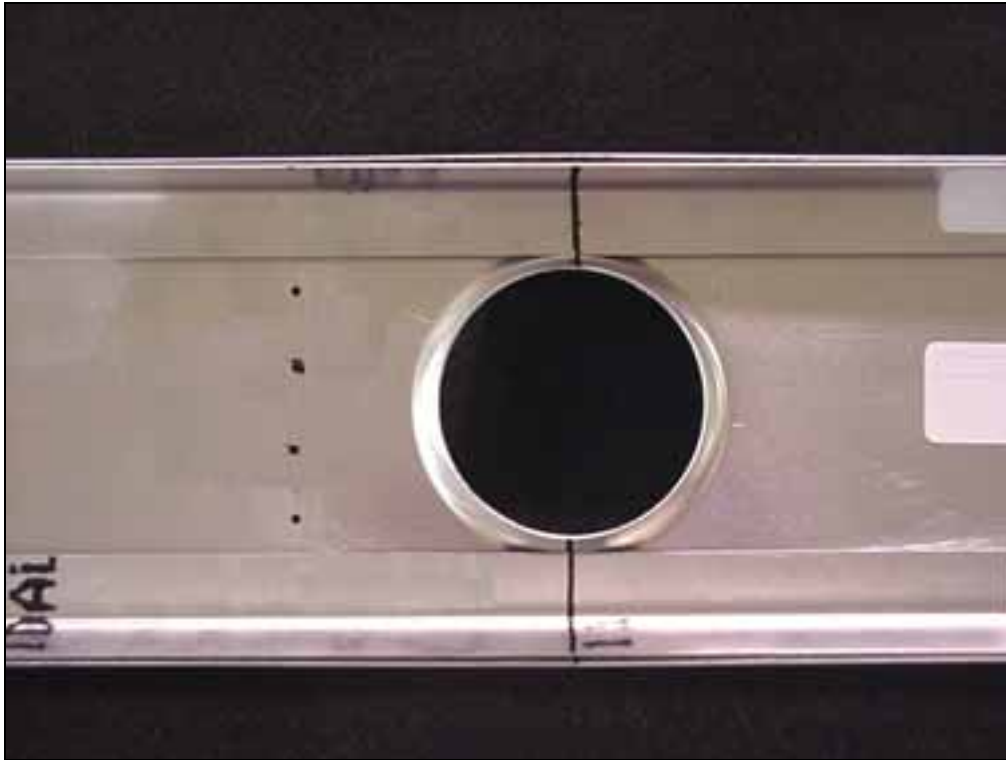
There is a section in the center of the rear spar 8H2-2 which does not have predrilled holes. Do not drill in that area.



Place both layers of doublers on the spar and align center line. Now proceed to drill the doublers, through the predrilled holes in the spar. Use a #20 drill bit. Cleco well as drilling proceeds. Deburr, re-cleco and rivet the doublers to the spar from the outside of the spar

A5 PITCH 40

3 end holes Pitch 20



**FRONT REAR
DOUBLER
8H3-8 qty=1**

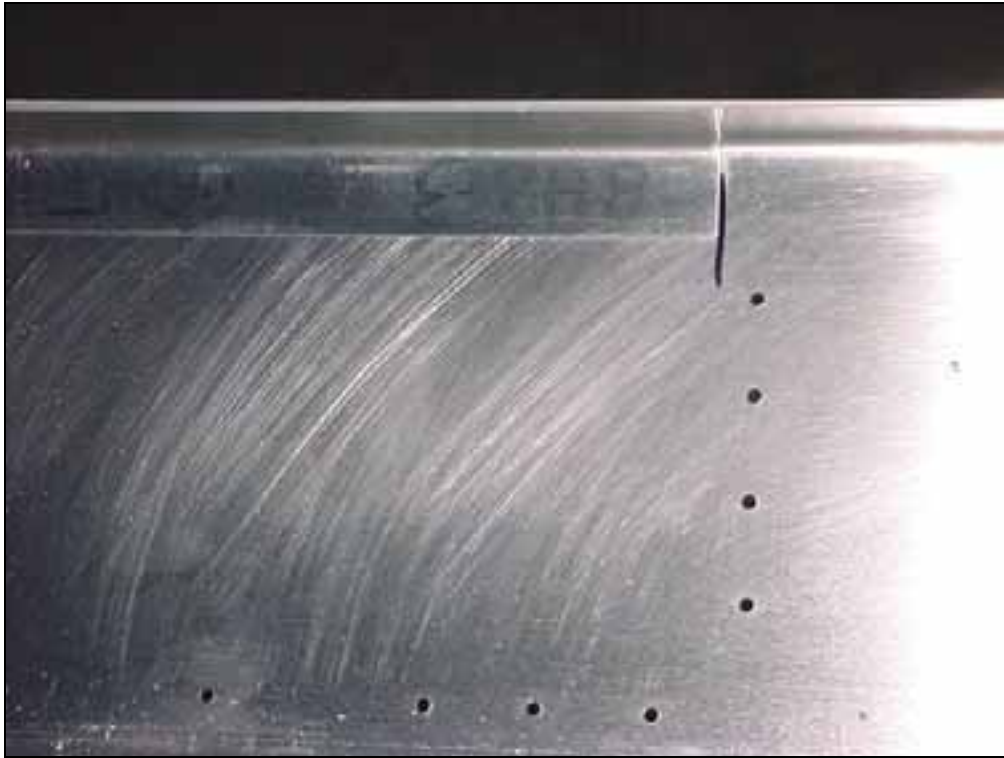
**FRONT UPPER
DOUBLER
8H3-9 qty=1**

File the flange that overlaps with the spar web to provide clearance around the lightening hole.
There is only one layer of doublers on each spar of the front spar.



Front Spar Doublers.	
<u>Top</u>	<u>Bottom</u>
8H3-8	8H3-9

To Install the doublers in the forward spar. Repeat the process used for the rear spar.



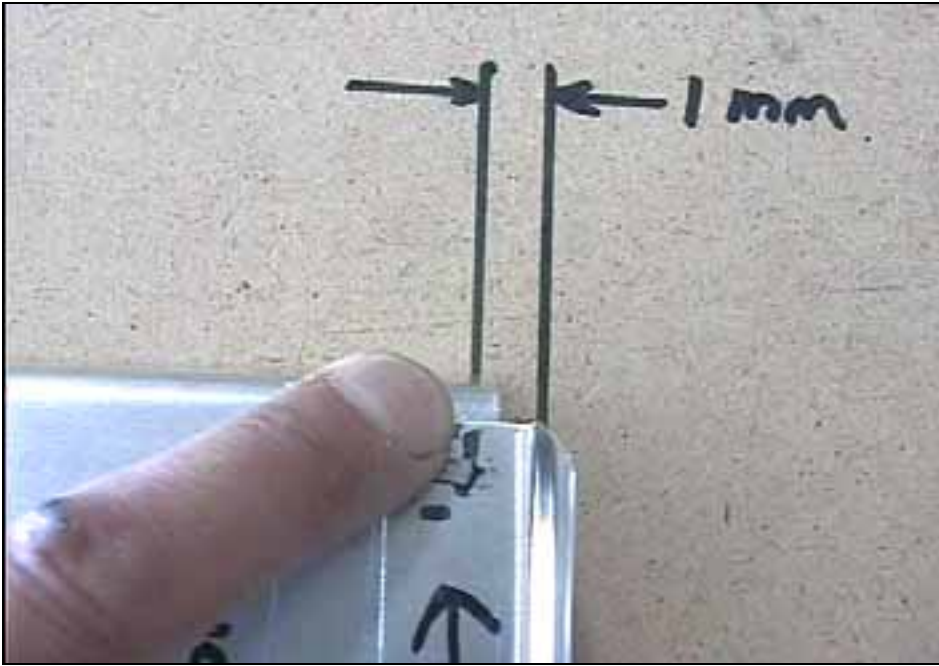
The doubler should terminate 11-12 mm from the rib rivet hole centerline.

Check the placement of the doubler.



A5 PITCH 40

Drill the spar doublers through the predrilled holes in the forward spar. Drill size is #20. Deburr and rivet.



Locating the std "L" on each end of the front spar.

Std "L" will be used to attach the ends of the front spar.
Two are required, 112mm long.

Trim open edges of flange 10mm, as shown above.

4 RIVETS A5
L angle into spar 8H1-2

NOTE: L angle to attach spar to side of full rib 8H1-2



Install the Std "L" with four evenly spaced PILOT HOLES: Predrill the other four holes in each "L" with a 3/32" drill bit.

CLAMP: Clamp L angle to spar web, drill and Cleco with #20



REAR RIBS
8H1-4 qty= 2R + 2L

Clamp the ribs to the rear spar:

CHECK: The top and bottom flanges of the ribs are flush with the spar flanges. This will result in a smooth skin fit.

RIVET LINE:

First mark the rivet line on all 4 rib flanges at approximately 10mm to the edge (10mm edge distance) Clamp the rib when the flange rivet line is visible through the pre-drilled pilot holes in the spar.

The fore/aft orientation of rear ribs 8H1-4 can be determined by examining the crimps in the ribs curved flange. The longest area of un-crimped flange is the rear of the rib.

Both spars have one flange that is bent at 90 degree's. When installed in the horizontal tail and mounted on the aircraft that will be the top side of the spar. The skeleton is built in an inverted position; therefore, the ribs are placed on the table with the flat (straight) flange down. The rear spar is to be located behind the ribs sitting on its 90-degree flange.

Rib flanges 8H1-4 all face outboard from centerline.



Proceed by drilling and riveting all the ribs to the rear spar 8H3-6, drill size is #20, rivets are A5. Take care to keep the flanges of the spar and ribs flush, and the ribs at right angle to the spar flanges.

CHECK: The side of the rib is square to the spar flange.

4 RIVETS A5
 rear flange of 8H1-4
 to rear spar 8H3-6



4 RIVETS A5

rear flange of 8H1-4 to
front spar 8H3-7

Most of the work on this assembly is done with it upside down. Taking the time to mark the correct orientation on the parts will avoid confusion during assembly.

With all the rear ribs riveted in place, it is now time to attach the front spar 8H3-7.
Place the front spar on it's 90 degree flange on the workbench.



Don't be concerned about squareness in this direction: rib web to spar web.



Rather concentrate on keeping the ribs parallel to each other and square when measured from the surface of the worktable.

Proceed to drill all rib attachment holes through the front spar predrilled holes. Use a #20 drill for A5 rivets. Drill the full ribs 8H1-2 to the end of the front spar. Locate and drill the nose rib rivet holes. Make sure it is installed the correct side up. Compare it to the tip ribs for correct orientation. Deburr all rivet holes. All the ribs except for the rear ribs located immediately either side of the horizontal tail centerline may now be riveted in place. Leave the un-riveted ends of the two rear ribs clecoed.



Clamp the front spar to the rear ribs 8h1-4

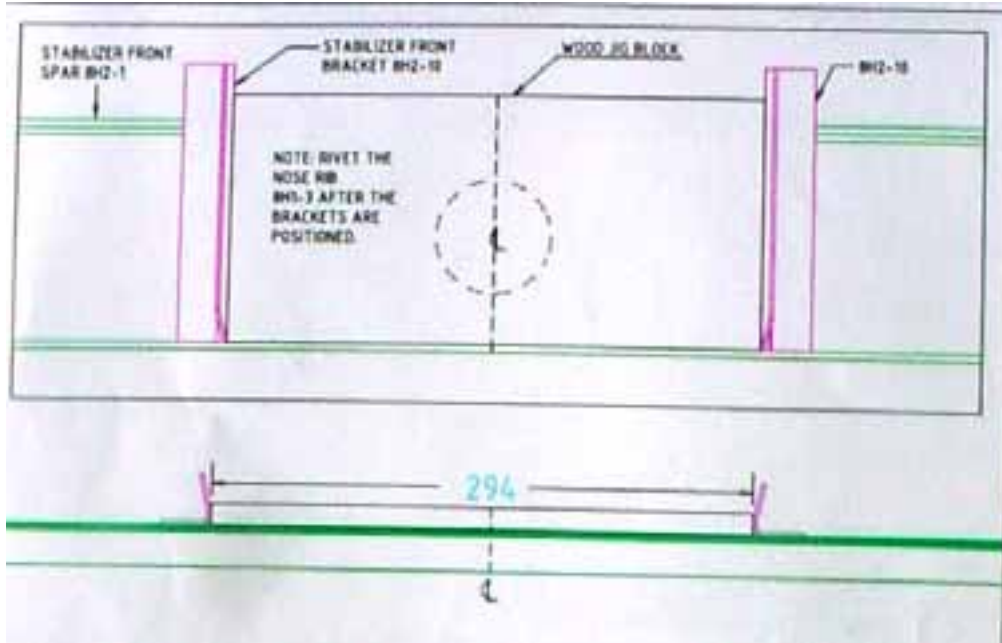


CHECK: The side of the ribs are square to the top flange of the spar.



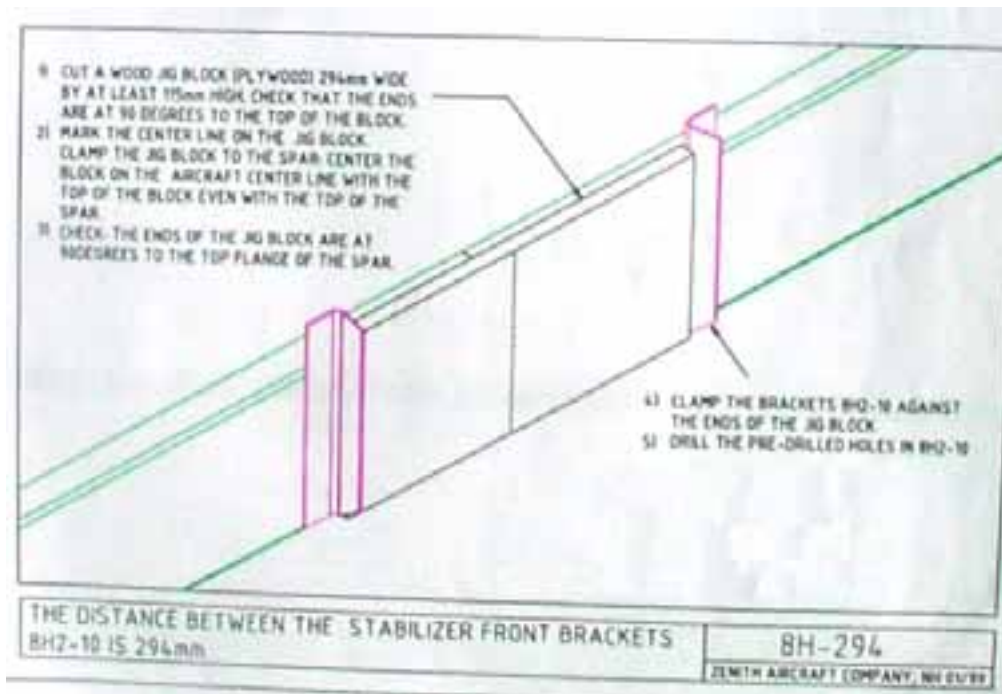
5 RIVETS A5
L angle in rib 8H1-1

Drill the L angle at the end of the front spar 8H3-7 into the side of the full rib 8H1-1



Wood jib block

294mm long with square ends





**FRONT BRACKET
8H2-10 qty=2**

ORIENTATION:
Tapered flange is top
inboard.

Time to install the
fuselage attach brackets

Un-cleco the rear rib from the front spar.

Now clamp the bracket 8H2-10 tight beside the block. Drill the six holes in each bracket as shown in the photo - #30 drill, deburr. Do not rivet



Center line to rivet line is
165mm

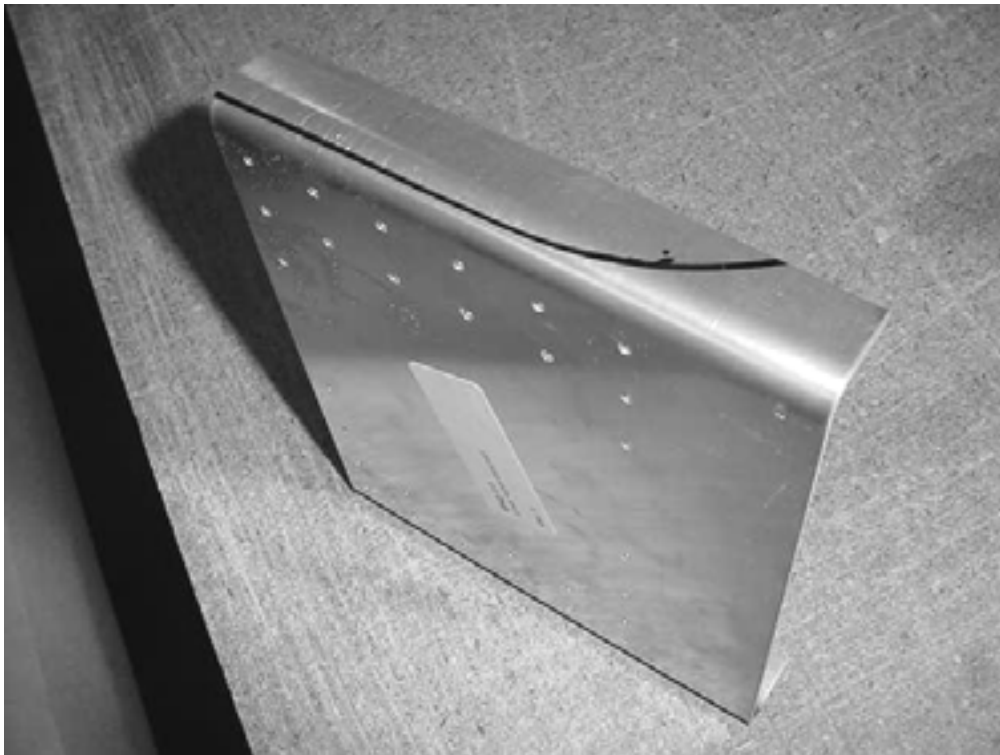
Locate the forward mounting brackets as shown. Keep them square to the spar.

The brackets extend beyond the spar on the curved bottom side of the stabilizer. See photo H1-21 before starting this work.



6 RIVETS A5
(end rivets are in the doubler, 4 middle rivets through rib flange 8H1-4)

Move the rear ribs back into location and cleco the rib and bracket in position. Open the holes with #20 drill. Deburr and re-cleco, rivet with six A5 rivets.



**STABILIZER REAR
BRACKET
8H2-11**

Part supplied with the cut-line marked on the side flange.



Trim the side flanges
(photo of bracket after it is
trimmed).

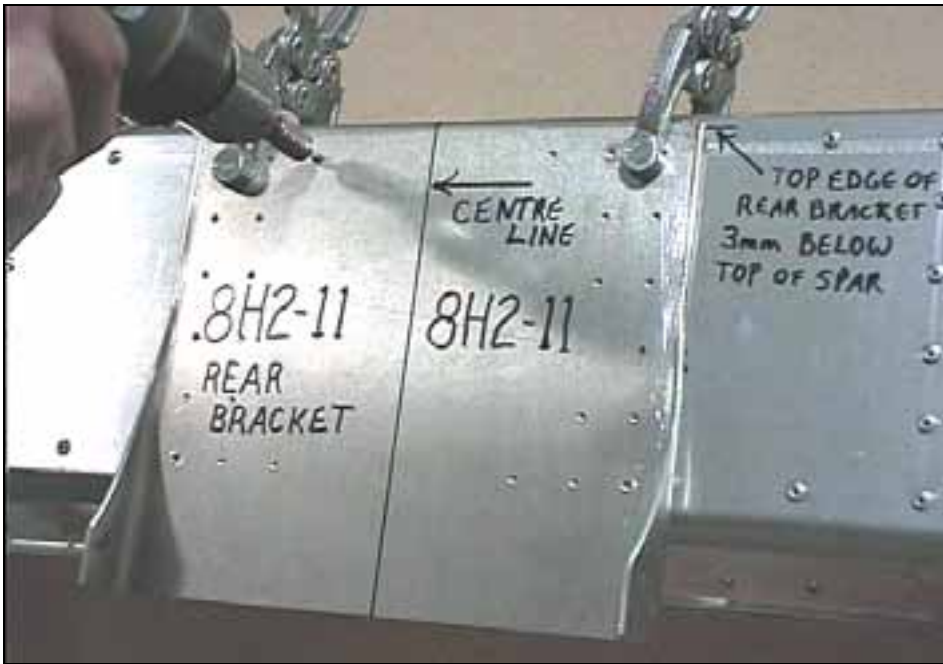
The .063" material can be cut using the hand snips: avoid leaving snip marks
behind or slivers.

FILE: After cutting, file the edge smooth: check there are not cut-marks or
slivers.



The next job is to install the
rear bracket.

Mark the centerline on rear spar and part 8H2-11.
Position as indicated in photo above.



The top edge of 8H2-11 is 3mm below the top of the spar.
The brackets extend past the lower edge of spar.

Clamp and drill #20 drill.
Rivet with A5



29 RIVETS A5
Bracket 8H2-11 to spar web



The assembly should look like this. The flat side sitting on the table is actually the top when installed on the aircraft.

That's it. The horizontal tail skeleton is complete.