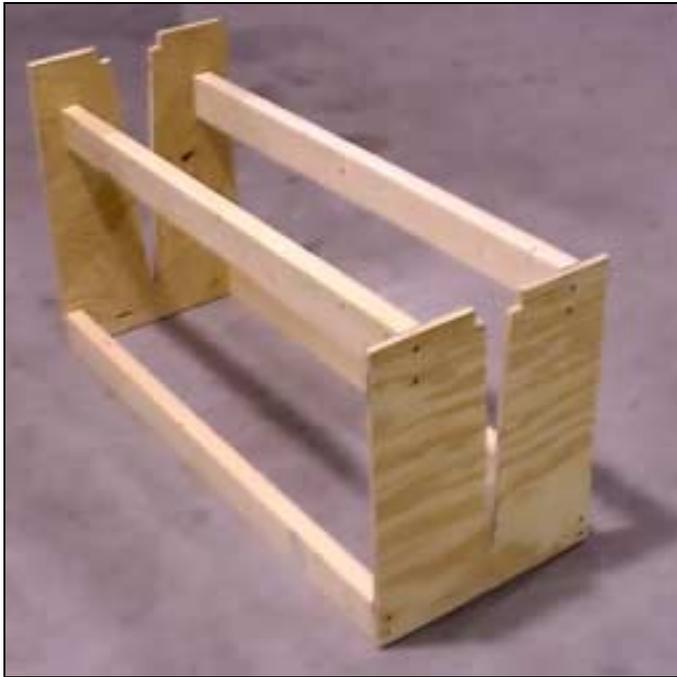
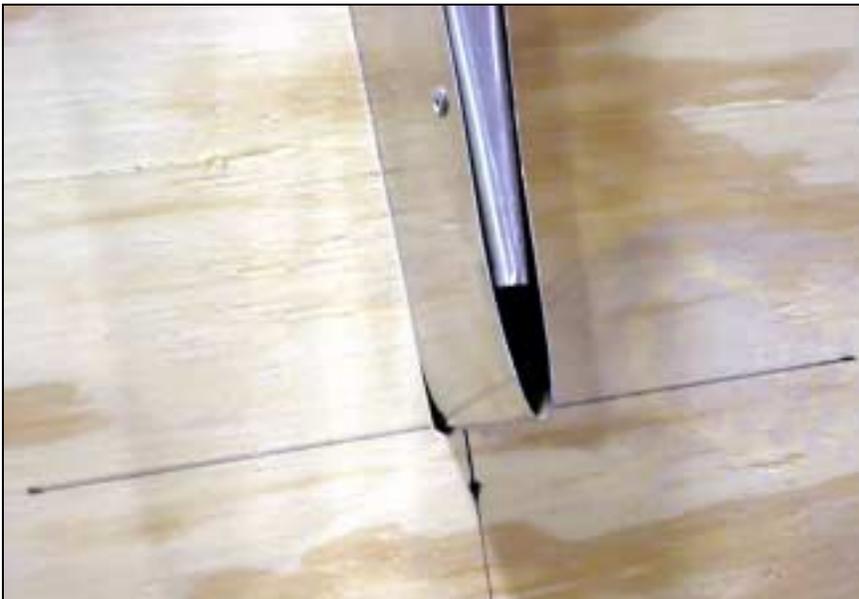


SECTION 4:



V shape Jig to support the rear skin. The jig will align the trailing edge of the skin in line with the center line of the spar.

Recommended plywood jig, see bottom left diagrams on drawing 8RU-8



Place the jig on the floor and insert the trailing edge of the rudder in the V cutouts.

For the best fit, keep the tip rib close the jig.

Make sure the "V" cutout in the jig does not come to a sharp point at the bottom as it will pinch and deform the radius on the rear skin.



NOSE SKIN 8R3-2

There are only 2 pre-drilled pilot holes in the Nose skin (approximately where the drilled is show in the photo)

Before installing the nose skin, check that the rivet line is clearly marked on the rib flange).

Hold the rib spar to the spar, and mark the flange rivet line on the rear skin for future reference.

The holes in the nose skin will line up with the rivet line on the nose rib.

Remove any cleco from the ribs that are less than 2 inches from the spar.



For positioning purposes, slide the ends of the nose skin between the spar and the rear skin. When riveting the nose skin in place, it is positioned on the outside (over the rear skin).

Start at the bottom; insert the left and bottom corners and work to push the skin on both sides as you make your way to the tip.

Add the 1x2 boards along the top of the rudder jib to help support the side skins.

Using a square, verify that the nose rib is 90-degrees to the spar assembly. Adjust the position of the nose skin (up or down on the rudder) until the flange rivet line on the nose rib is visible through the 2 pilot holes in the nose skin.



Push the skin down on the nose rib. Make sure that there is not a gap between the nose rib and the nose skin at the leading edge.

CHECK: the leading edge of the nose rib lines up with the center of the bend on the nose skin.

Drill and Cleco, #30



At the tip, also push the nose skin down to close the gap between the leading edge of the tip rib and the skin.

CHECK: the leading edge of the nose rib lines up with the center of the bend on the nose skin.

Install ratchet strap by the tip rib. Make sure the strap is next to a rib, and don't pull too tightly or you will damage the rear skin.

If a strap is not available, use a long piece of duct tape to hold the skin in place.



Ref. Drawing 8RU-2

The rudder assembly in the wood jig with the strap.



#30 drill bit
A4 PITCH 40

NOTE: The maximum distance between rivets is 40mm; check that there are no missing holes!

Start in the center and drill land cleco outwards along the spar rivet line (pre-drilled holes in the rear skin).
Drill every third hole and cleco.



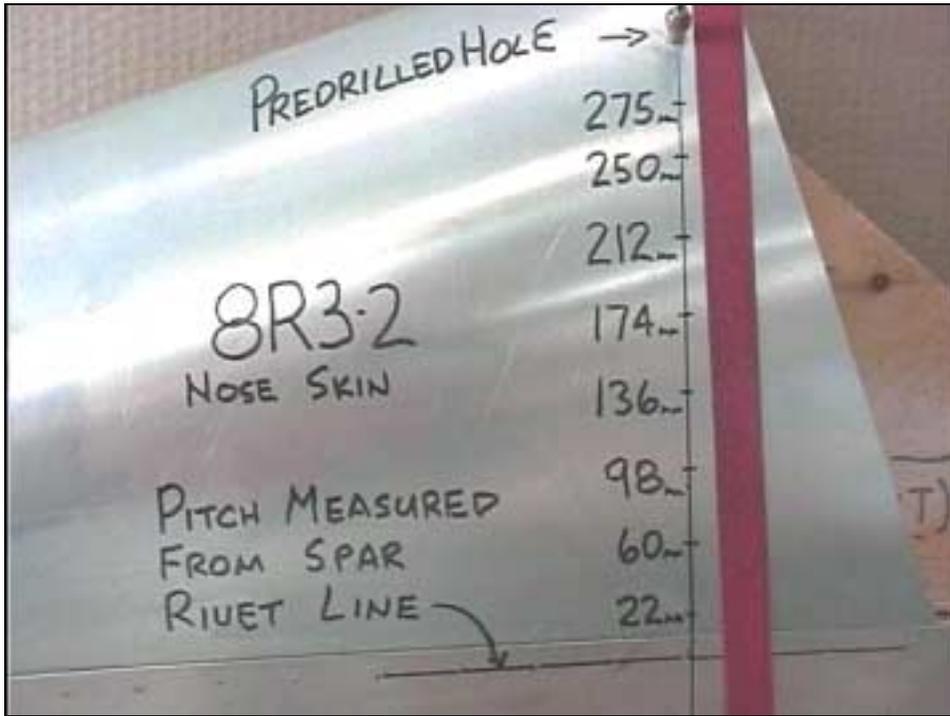
The overhand will be trimmed later along the marked line when the nose skin is removed for deburring.

Trace the tip rib on the inside along the edge of the tip rib.



Use the side of a sheared aluminum strip for a straight edge.

Layout the nose rib centerline on the outside of the skin. Earlier, the nose rib centerline was extended down onto the rear skin. Now extend this line back up into the nose skin so that is in line with the predrilled hole in the skin.

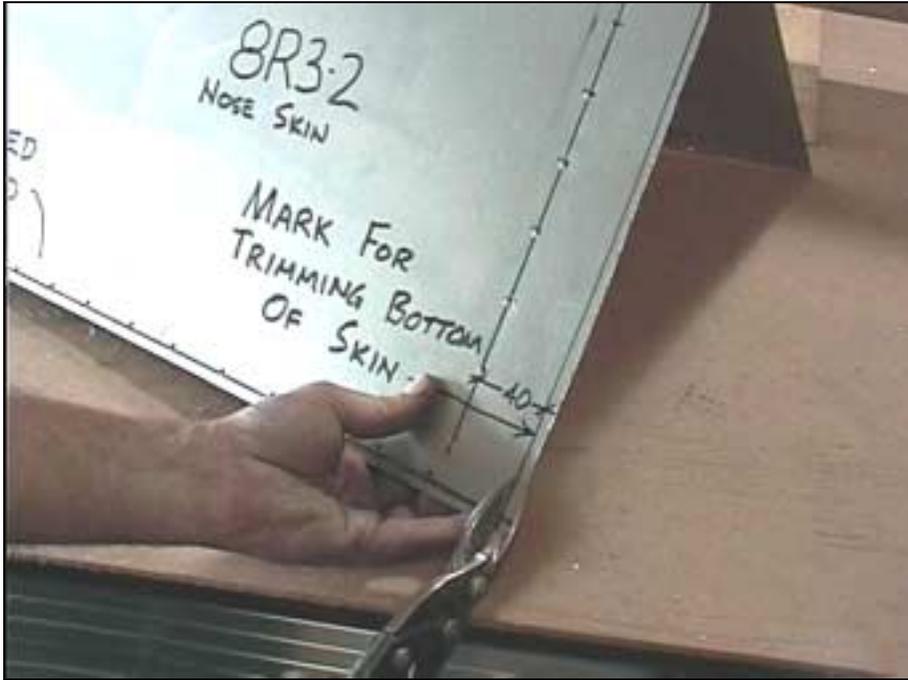


When positioning the holes make sure that they do not go through to the 'crimps', the rivets are drilled on the flat intervals between the crimps.

Now layout the rib pitch. All dimensions are from the spar centerline. Repeat on the other side.



- Mark the cutoff portion on 8R3-2
- 40 mm. from the nose rib rivet line.



Trim top and bottom.

Photo of Green snips.

TIP: To follow the line drawing on the inside of the skin (tip rib) hold the snips upside down (the cutout will curl down instead of up!)

Remove the skin and trim.



LAYOUT: mark an offset line 10mm from the center of the holes towards the edge of the skin (parallel line to the rivet line) on both sides of the skin.

TRIM: Trim the sides of the skin on the line.

FILE: File the trimmed edge smooth to remove any slivers or sharp corner.

Photo of green snips, cutting right side of nose skin starting at the top.

Un-cleco the rear skin. Take the skeleton out of the rear skin to deburr. Lay the rear skin flat on the work bench to deburr. Deburr all holes.



That's it. The main rudder assembly is finished.

In Section 3, we proceed to install the fairings.

With the skin on the workbench, insert the skeleton inside the rear skin. Cleco every third hole. Rivets the rear ribs. Turn over and rivet the other side. Still use the blocks and beams the same as before.

Install the rudder in the Jig. Install the nose skin to overlap on the outside of the rear skin. Cleco every third hole. Insert the rivets between the clecos as shown in photo and rivet (start at the middle and work outwards alternating between the top and bottom).