

# STOL CH 801 WING SLATS ASSEMBLY

## SECTION 2

### “INSTALLING THE SLAT SKINS”

#### Compass Check

1. Drill and rivet the skin to the top side of the ribs and rear channel.
2. Make the assembly fixture which will set the proper curvature of the skin.
3. Drill and rivet the skin to the lower side of the rear channel.

# STOL CH 801 WING SLATS ASSEMBLY

## SECTION 2

### “INSTALLING THE SLAT SKINS”

#### Helpful Hints

1. The slats look deceptively simple but they are perhaps the most challenging part of the entire aircraft to assemble correctly. Don't be afraid of the task ahead, simply work with care and patience.
2. The jig needn't be pretty, but it must be sturdy and accurate. Take your time in constructing it. You will be making four slats in this jig, error in its construction will be transferred to the slats. If this sounds scary, don't worry, even if you are a first time builder you have by now, developed the skills required to meet this challenge. **Enjoy!**
3. Key words to remember when using the jig are “press firmly”. Hold the assembly firmly in position in the jig. Use Clecos generously.

## STOL CH 801 SLATS ASSEMBLY - SECTION 2 "INSTALLING THE SLAT SKINS"



file S-6

Photo S2-1

This stage of the assembly involves handling the skin of the slats in a rather forceful manner. Do not attempt to work these skins unless the board is clamped in place. Failure to do so will almost certainly result in damaged skins.

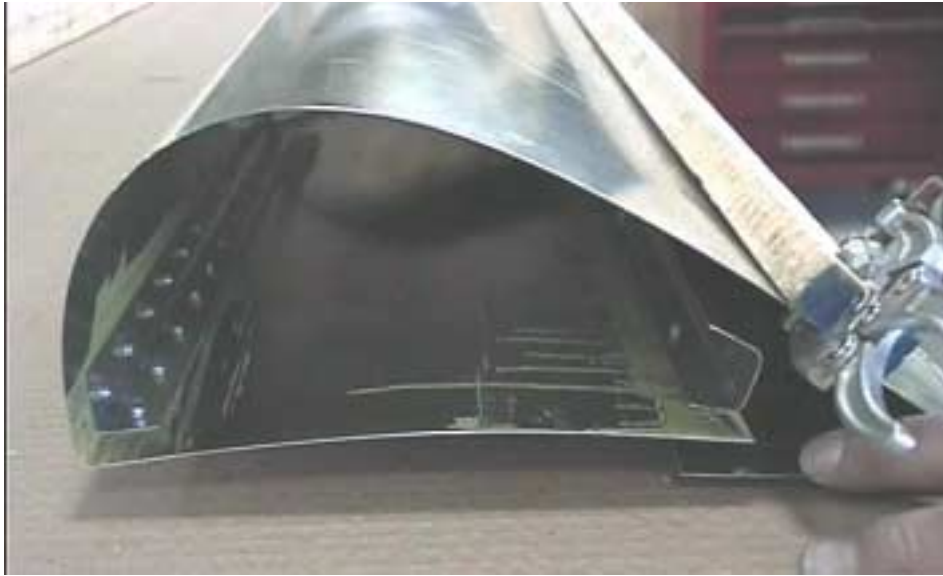
Clamp a piece of wood to the skin as shown.



file S-7

Photo S2-2

Twist the rear edge of the skin up while pressing down on the center portions. A second pair of hands will be of great help at this time.



file S-5

Photo S2-3

Slide the trailing edge under the lower skin as shown.



file S-28

Photo S2-4

Keep the straps as close to a rib as possible.  
Do not apply excessive force with the straps.

Place the assembly on top of two pieces of wood which have been fastened to the work table. Use flat, true wood.  
Apply straps over the assembly and around the table to secure the assembly to the table as shown.  
Make sure the assembly is sitting flat and true.



file S-29

Photo S2-5

Use a 3/32" drill. See photo.

Drill the rib holes starting at all the forward holes first. Work along the length of the slat, one hole at a time in each rib. Continue until all the rib holes have been drilled.



file S-30

Photo S2-6

As drilling progresses, pushing the wood forward will tighten the skin to the ribs.



file S-31

Photo S2-7

After the rib holes are all drilled and clecoed, drill the rear channel (spar) rivet line. Cleco generously as you go.

Check to be certain the slat is sitting flat and true on the table. After the spar has been drilled any distortion in the slat present before drilling will remain permanently. You will not be able to twist or bend the assembly into shape.

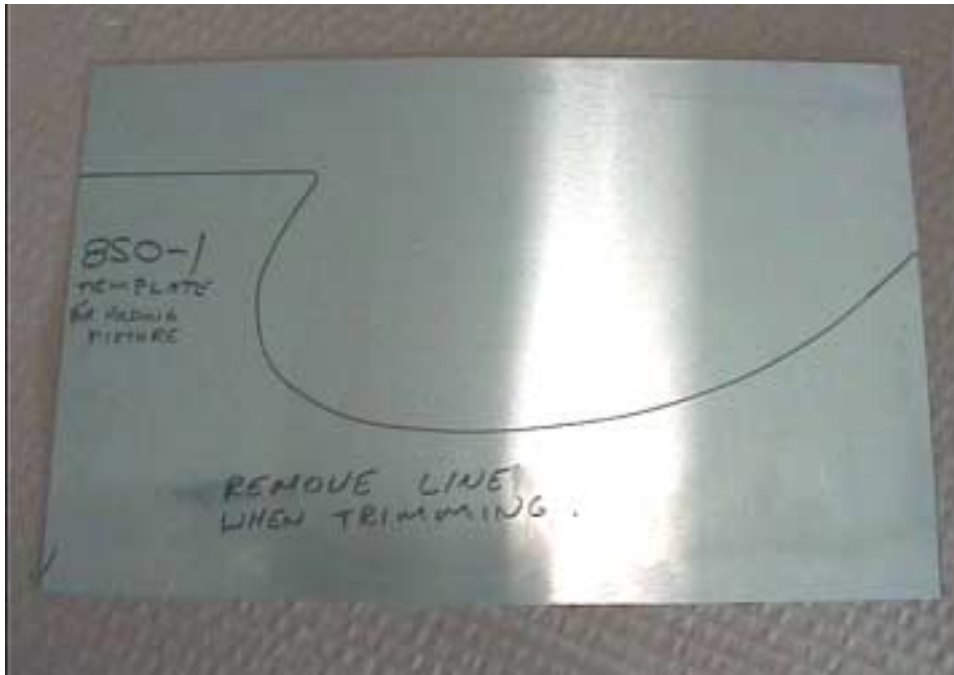


file S-8

Photo S2-8

Open all the holes drilled thus far with a #30 drill.  
Disassemble, deburr, reassemble and rivet.  
Remove clamp straps.





file S-32

Photo S2-8

This next part of the assembly requires the use of a simple jig. Included in the slat kit is a template to be used for constructing the jig.



file S-33

Photo S2-9

The lower portion of the template is the part you use.

Cut so as to just remove the line and you will have the correct shape. Trace the template profile onto five pieces of 3/8" (minimum thickness) plywood and carefully cut to size. File or sand the plywood to match the template shape.



file S-49

Photo S2-10

Material salvaged from the aircraft shipping crate is suitable for the construction of the jig.

Mount those five pieces on a piece of plywood five to six feet long. Add the other structural members to produce a jig which is similar to the one in the photo S2-9 and S2-10. Don't worry about making the jig pretty, make it accurate.



file S-47

Photo S2-11





file S-34

Photo S2-12

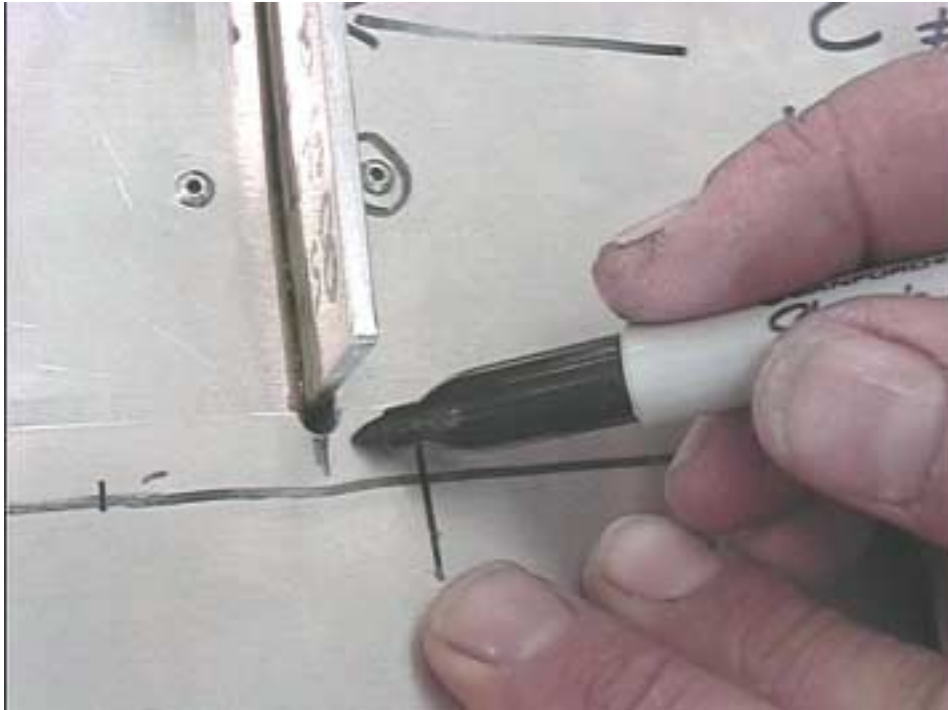
With the jig completed and fastened to the work table place the slat assembly in it.



file S-35

Photo S2-13

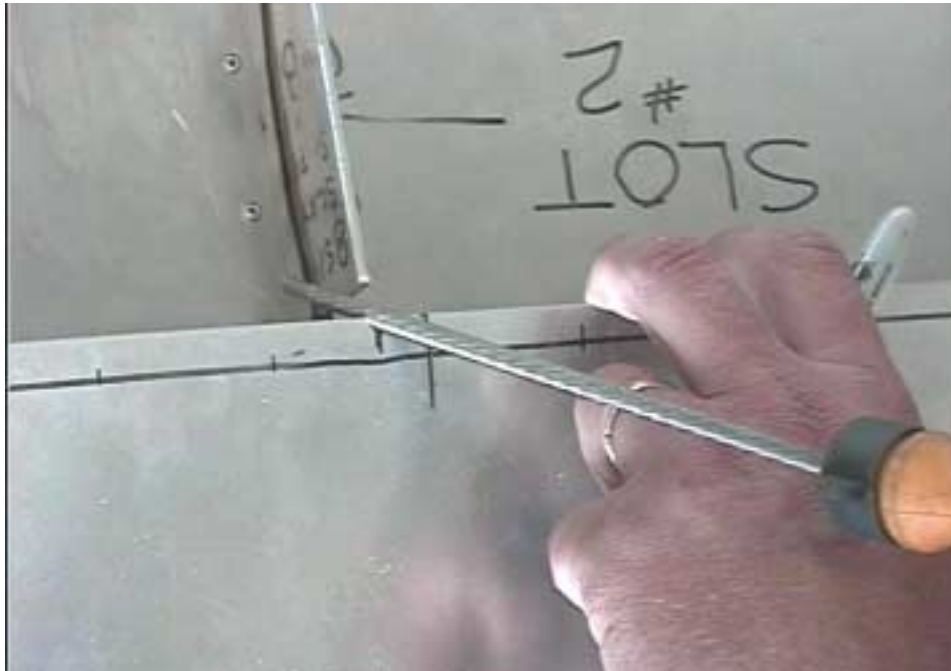
Ready for the next step.



file S-37

Photo S2-14

Mark the rivet line on the skin for the rear channel. See photo S2-17.  
Hold the slat firmly in the jig and mark edge for the cutout at pickup brackets.



file S-36

Photo S2-15

File clearance as required.

Remember, when filing the clearance use a minimum of 5 mm radius in the corners of the slot.



file S-40

Photo S2-16

Press firmly into the jig when confirming rivet line position.

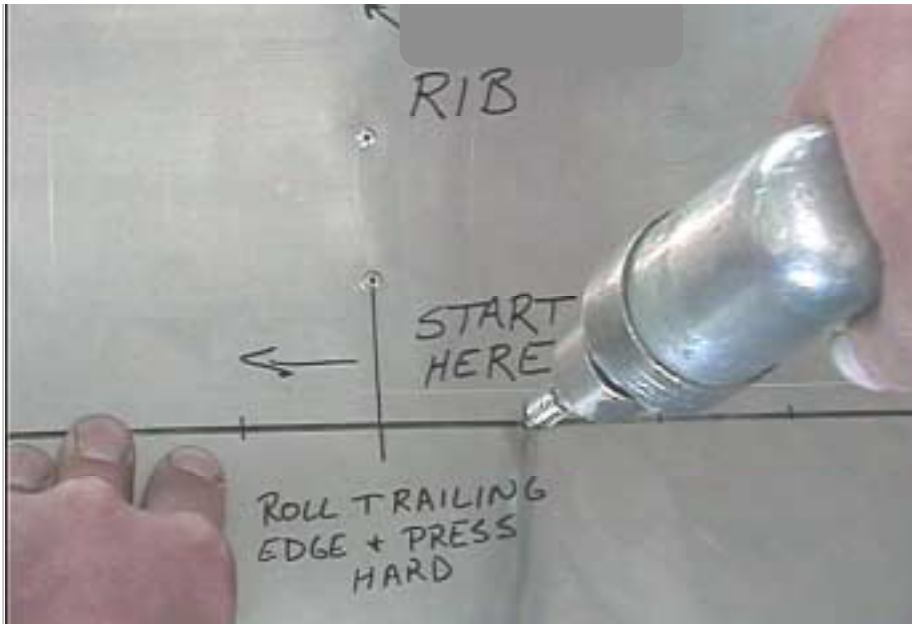
Check to make sure that the rivet line marked on the skin will align properly on the center of the rear channel.



file S-38

Photo S2-17

Extend the rivet pitch from the front edge to keep the front and rear pitch lined up back to the rear channel.

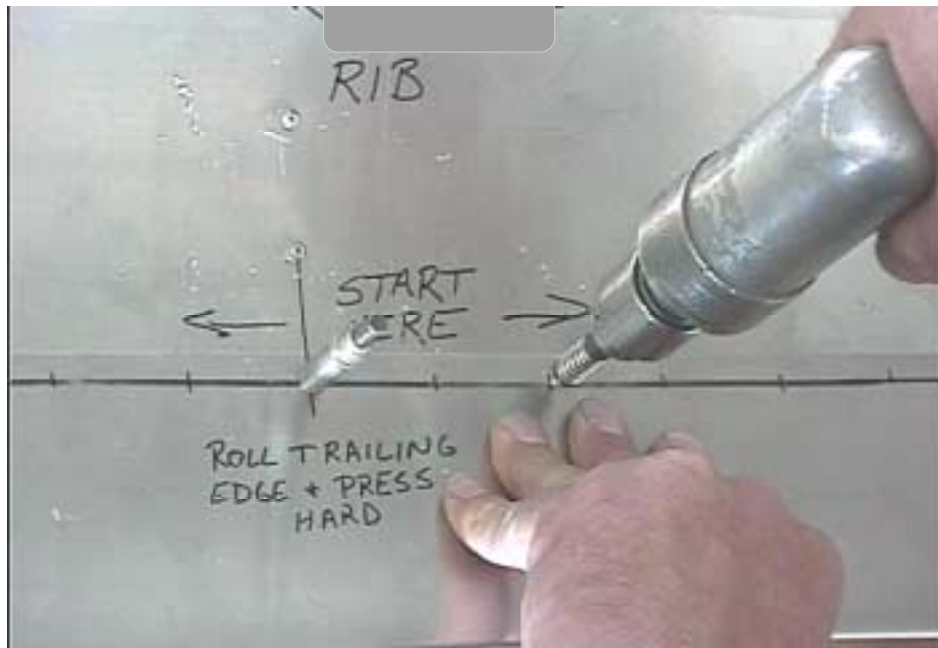


file S-39

Photo S2-18

For best results use a 3/32" drill then open up with a #30. Cleco generously as drilling progresses.

Just as the photo indicates roll and press hard into the fixture. Drill while holding the assembly in this position #30 drill. Drill starting at the center of the slat and work progressing to either end alternating one hole to left of center then one to right of center. Press tightly into fixture at all times. An extra pair of hands would be a valuable help during this portion of the assembly.



file S-41

Photo S2-19



file S-48

Photo S2-20

After drilling, deburr, re-cleco and rivet together.  
That's it for now. The balance of the assembly is completed when the leading-edge wing slats are installed on the aircraft.

**STOL CH 801 FLAPERON ASSEMBLY - SECTION 1**  
**"SKIN INSTALLATION"**

I have checked my work and parts list and confirm to myself, that all items listed in this portion of the elevator hinge have been installed.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_



