

Technique for getting stab incidence and trim tab incidence correct.

Many of you have been disappointed following the chapters on building the stabs then setting the stabs in place to the torque tube installed on the fuselage and the incidence of the two stabs is different and the trim tabs are worse.

My method is to use Chapter 4 to set only one stab TP4s and incidence, usually the starboard but not necessary. Then jump ahead to installing the stab tube per the manual in chapter 18 but only tack in your TP11 bearings.

I then set the other stab via the method below:

Install the stab you installed on the bench, let's say it was the starboard or right stab.

Holding the stab dead even with the other is tricky unless you remove the rudder on a completed airplane with the top on, so I normally do it before the top is installed.

By using sand or shot bags, and lumber, set the right stab dead level to the fuselage fillet. See Picture at the end of this verbiage.

Install the left stab and carefully mark where the stab is when level with the right. Block everything even. (I use clay on the stab rib and push the stab in until contact then the pins should mark where to drill in the stab to fit onto the TP12 pins.)

Now drill $\frac{1}{4}$ inch holes where marked and install and check the incidence. Do not be alarmed by the stab being off from the fillet on the fuselage. Sometimes the stab bearings are best to be knocked loose and reset slightly to get the two stabs even and still level with the wing pins and at zero sweep.

Refer to the drawing below:

Put a 2 meter or longer rigid angle on the trailing edge of the stabs and clamp it on to both stabs.

Block the left stab in place and mark your lumber position.

Check the level of the stabs when clamped again. Now this should assure that each stab is level to one another. However, I still get well behind the tail and look at the flat area of the lower stab surface and make sure each stab when moving my head up and down looking straight ahead and the lower surfaces are the same to the left and right. Trust your eye not some level moved from side to side. See my lateral trimming article for more drawings.

File the $\frac{1}{4}$ inch holes until the stabs finally set dead level with one another.

Open the holes up and install the TP13s and check again. Sometimes the TP13s are proud on the front and well short on the back. Countersink as required to get them relatively even. Do not countersink deep, just the thickness of the lip on the TP13. The gaps must be filled with a flox fillet.

When satisfied, remove the left stab, use Redux or Epoxy/Flox to the TP13s and rib holes and grease the TP12 pins and the flat metal section well. Install the Stab, carefully align the TP13s and push home. Reinstall the blocking and rigid angle as before. Check incidence and allow to cure.

Trim tabs without Fletner strips attached can now be set. Install the right trim tab TP16 per the manual.

Then install the left trim tab and clamp the stabs and tabs in place and check relative alignment.

Remove the left side clamps and temporarily install the TP16P in the trim slot and into the TS05. I use a AN960-4L as a spacer on the TP16 pin to get a bit of space against its TS06 bushing. Once all is aligned then remove and flox in the TP16 with the trim tab slot and block it all up and allow it to cure.

Trim Tabs with Fletner strips attached should not be fitted using the bar installed with the stab alignment. It is hard to get the rigid bar on top of that Fletner strip. With both stabs on and the T bar installed in the right trim tab, reinstall the left TP16P in flox into the left trim tab and again using lumber set the stabs solid with lumber and sand bags and clamp the left trim tab to the stab dead even with the right.

When cured, pull the stab and add glass on the trim tab TP16P as per the manual.

The stab will now be as aligned as it can be based on your build.

