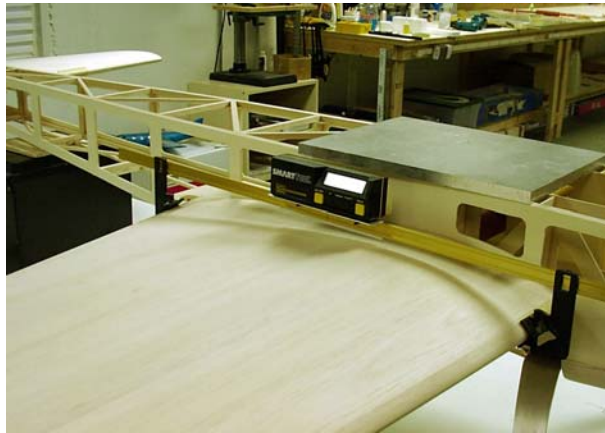
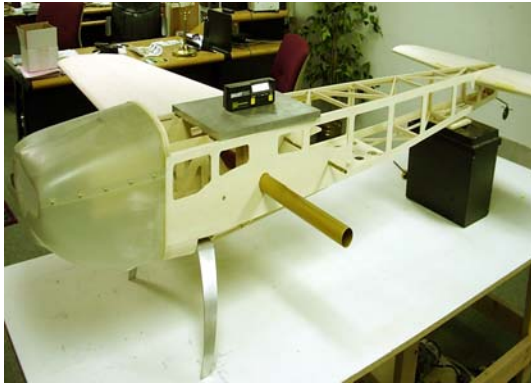


Setting Incidence

The wings and stabs are square and level to the fuselage (trammed) and the tube sockets are set, glued, and trimmed so now it's time to set incidence. First we put a block under the rear of the fuselage and set the top line to level using a Smarttool digital meter. The Smarttool is accurate to 1/10 of a degree and, when building a competition aircraft, we insist that all our final settings are within that tolerance. Incidence was measured with a Robart tool utilizing the optional long bar and modified with a piece of one-inch aluminum angle as a platform for the digital meter.



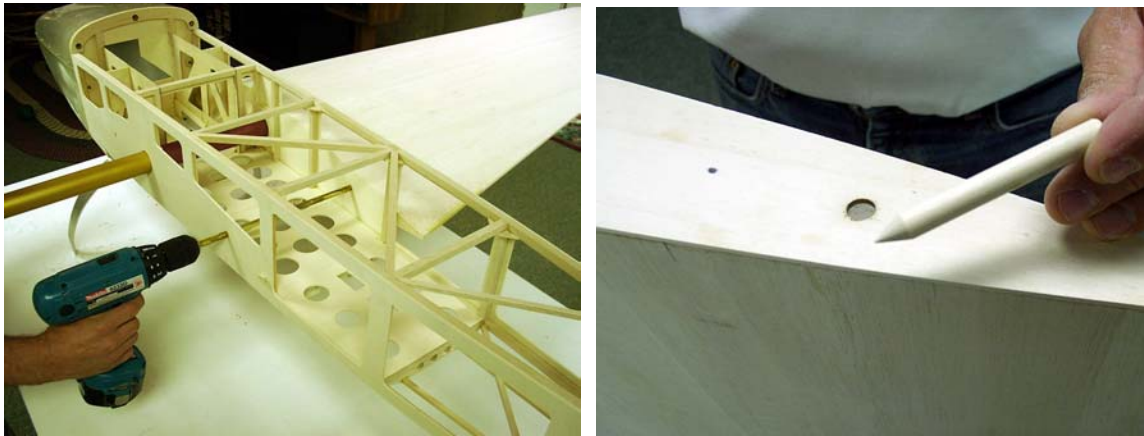
As a starting point, use a short piece of 1/4-inch square balsa glued to the outside of the fuselage as an alignment guide. Set the incidence for each panel to zero, then CyA the block to the fuselage side. After the dowels are in and the incidences are set we will remove the blocks.



Trace the outline of each wing panel to the fuselage side then mark your dowel points as indicated on the plans making sure to center the points vertically using the outline. With a 12-inch length of sharpened 5/16-inch brass tubing, drill the alignment pin holes in the fuselage sides.

Be sure to back up the inside of the fuselage with a scrap piece of ply so the tubing doesn't shred the grain as it bores through the wood. Install one wing panel at a time and, using the fuselage holes as a guide, drill the alignment pin holes into the wing

from the opposite side of the fuselage. After the first hole is done insert a dowel to hold the alignment before you drill the second hole.



Cut six (two for each wing panel and one for each stabilizer half) three-inch sections of 5/16-inch hardwood dowel to use as alignment pins. Sharpen one end of each dowel and lightly bevel the edges of the other. Epoxy the dowels into the root leaving approximately 5/8 inch extended from the root.

The sharpened end of the dowel should slide right into the foam giving a nice snug fit. *The plan incorrectly shows the dowel pins at 90 degrees to the root of the wing.* Remember that you should orient the pins so that they are *parallel to the wing tube* and thus slide into the fuselage locations at the correct angle with no binding. If you drilled your dowel pins as we show here, the pilot hole should already have the correct orientation.



Once the pins are glued in place it's time to do the final incidence adjustment. As before, make sure the fuselage is zeroed (level) then fit the wings in place with the dowels inserted into the holes and the root flush against the fuselage side.

With a file or sandpaper, adjust the holes to obtain a zero reading on the Smarttool on both wings and the stabs. It's okay to open up the holes quite a bit if necessary, but try to keep the fit so that you can hold the wing tight against one stop up or down with the meter at zero.

Cut four 1-1/2-inch diameter light ply "doughnuts" with a 5/16-inch center hole that fits the dowels snugly to use as the final alignment setting. We used scrap left over from cutting the fuselage lightening holes for our doughnuts. With the wing held at "zero," glue the doughnuts in place inside the fuselage over the pins being careful not to get any glue on the dowels. Do the same for the stab pins but the doughnuts can be smaller at about one inch in diameter.

