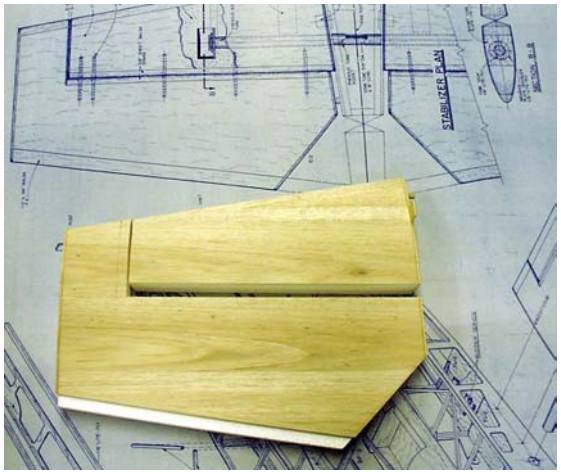
Control Surfaces

With the airframe squared up and the incidences set it's now time to cut out the control surfaces for hinging and final preparation. Mark the lines you'll use from the plan or from your original template that you made when setting up the foam cores.

Tape the control surface into the foam shuck to keep it level. This ensures that all of the cuts are made on a vertical plane. A good bandsaw is the best tool. (When cutting foam, always remember to turn the saw off if you have to back the blade out of a slot.)

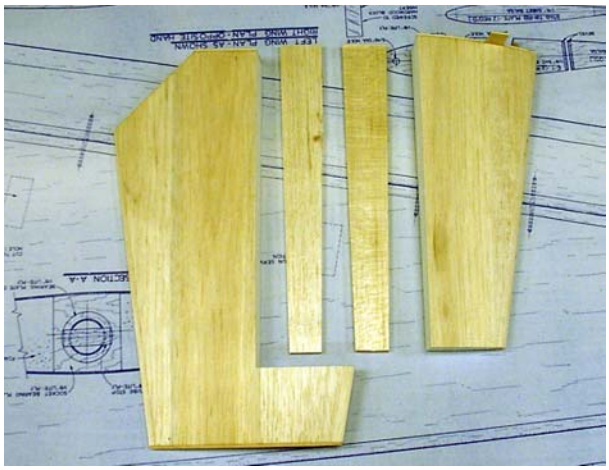
You will remove a center section from each core for the trailing and leading edges of the hinge lines. Refer to the plans. (Hint: when cutting the ailerons from the wings, set one wing half into the bottom shuck so that the bandsaw fence follows the cut, then you must set the other wing in the top shuck with the opposite side up.)



From sheet stock, cut and epoxy glue hinge line sections of trailing and leading edges. The wings and vertical stab are 1/2-inch thick and the horizontal stab uses 3/8-inch

stock. (Note: if you want more than 45 degrees of elevator throw, you can use 1/2-inch stock for the elevators too.)

After the glue has set, finish sand the hinge line stock to fit flush to the flying surfaces. Don't bevel anything yet, we'll drill and do a trial install of the hinges before we bevel.



End Caps

After all of the hinge stock is in place and sanded, it's time to install end caps for all of the open foam areas. For wing and stabilizer tips we used 1/8-inch balsa. You can get away with 1/16-inch for further weight savings but the pieces become a little more susceptible to hangar rash. If you are very careful when you handle your airplane, it should not be a problem.

Cut 3/16 inch off the inside of each aileron to create space for two end caps and a 1/16-inch gap. Don't install the tip cap until the hinging is done. That way, if the aileron is not perfectly aligned, you can block sand it flush before you install the end cap.