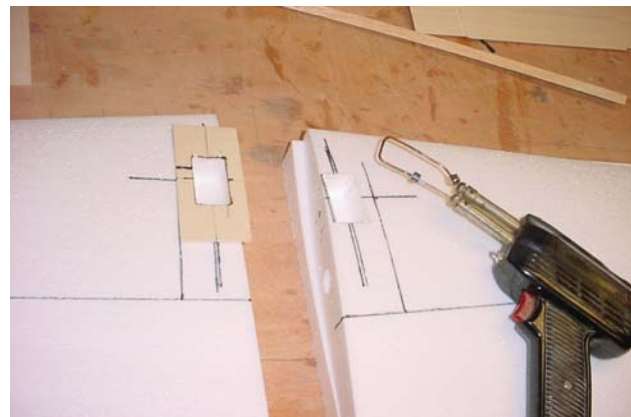


# PUTTING SERVO BAYS IN FOAM WINGS

**GENERAL --** The need to have servo bays in the wings has created many different methods to put them in, and it depends on the order of assembly you use. If the skin is already mated with the foam, then this tip will be of no use to you. If you have the foam cores, then this is the best way I have seen to put in the bay and the hard wood mounts. I have seen this many places and have adapted the application to fit my needs. I was reassured to see that John at Aero Protect arrived at essentially the same process that I did. This will get it done for you if you take the time to make some tools.

**THE TOOLS --** We are going to cut the foam with heat, and the best source of heat is an old Weller soldering gun. You likely have one or two of them around the shop. We use copper wire to form tools to do the cutting and a template to make sure we have cut everything just right.

The first tool is the one to cut the servo-shaped hole in the foam. Take a length of heavy gauge house wiring and strip the three conductors to get three copper wires. Bend the first one in a rectangle that is a little wider than the servo. When it is a good size, bend the wire so that it will fit in the tips of the gun as shown to the right. Cut a piece of 3/8 ply to be the guide for the cutter, and finish by putting a wheel collar on the wire to act as a depth gauge during cutting. The ply has index lines drawn on it, which will match up to the lines you will draw on the foam to indicate the center of the position of the hole.



The second tool is a wire made to cut the recesses for the hard mounts. Use the same wire size to make a small loop the size of your hardwood mounts. I like to use bass wood that is 1/4" by 3/8" with the wide side up. I bent the wire to 3/8 wide and about



one inch deep and added a wheel collar to act as a stop. I then cut a ply template that has the two mounts and has the same center marks.

Tool three is to cut the wire path back to the wing root. It is made by taking a third length of the copper wire and making a loop that is larger in diameter than one of your servo plugs. The shape is shown to the right and it allows the tool to be run along a straight edge and it will give a nice tunnel for the wires to run to the wing root.



Practice on some foam and you will get the tools tuned and the templates adjusted to work with incredible precision.



**FIRST** -- Lay out the location of the servo bay on the foam wing core making sure to

- A. Get on the correct side of the wing (no joke – I did this wrong once)
- B. Lay out the servo bay location perpendicular to the hinge line of the surface and
- C. the correct distance from the hinge line that gives enough foam to cut the well for the servo.

**SECOND** -- Draw a large center line vertically and horizontally with a felt tip pen. Extend the lines far enough to be seen outside the template.

**THIRD** -- Hold the first template over the center lines and match to those on the template.

**FOURTH** -- put the proper tool in the soldering gun ( make sure the nuts are real tight) and heat it up to max temperature

**FIFTH -- Plunge the tool into the foam and move it along the template then pull it straight up at the other end of the cut.**

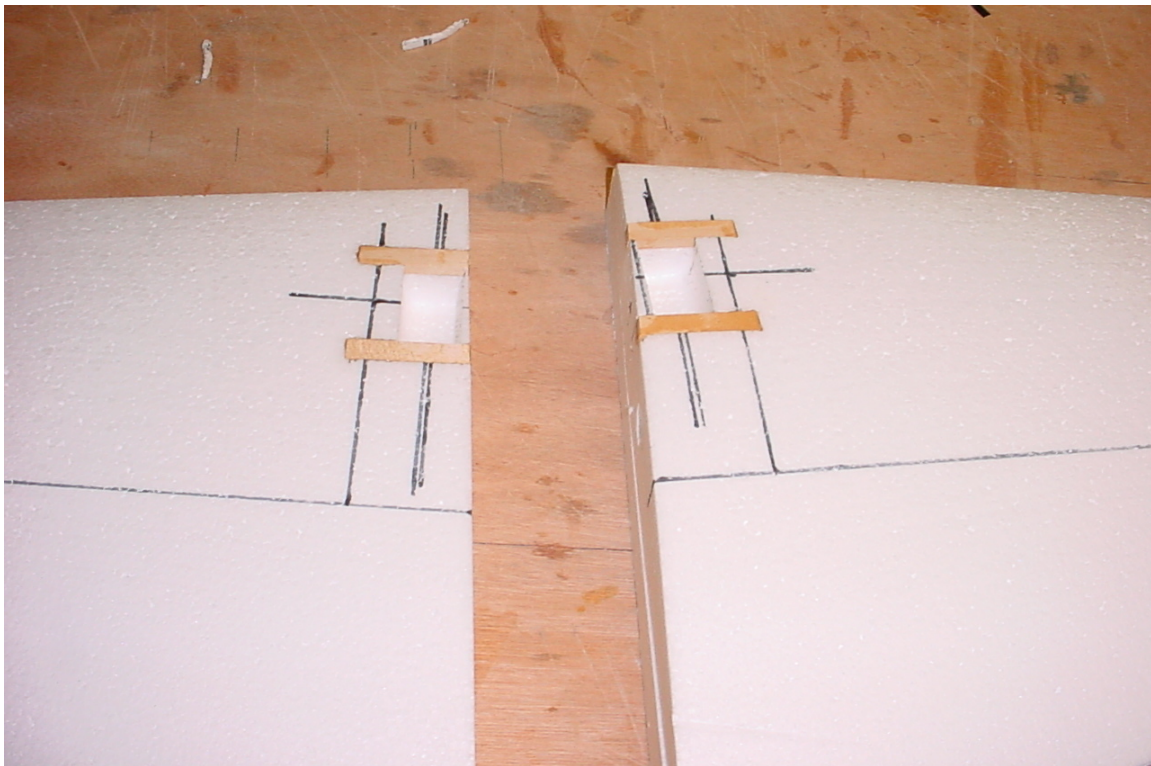
**SIXTH -- Do the same thing with the second template and tool to complete the servo area.**

**SEVENTH -- Lay out the line from the servo bay to the wing root being careful to consider where the wire will run and where it will come out on the root of the wing.**

**EIGHTH -- Lay a straight edge down on the line and cut with the third tool.**

**NINTH -- Epoxy the hard mounts in the cuts and allow them to dry.**

**TENTH -- Sand the area to be sure there are no high spots and that the hard mounts will be in contact with the skins when they are glued on the foam cores.**



**The shot above shows two of the completed mounts. The wire hole is not needed in these stabs for a 35% Carden Edge. Note the precision of the cuts and no nasty picking at the foam. This is one good way to make these setups, and I never take more than three minutes to do the whole thing.**

**So if you are going to do a few of these, it is worth the time to make the tools to do it right and fast.**

**END OF FILE**