7/8"

Flat

Wing root

Rounded

.010" radius

Wing tip

Enlarged 2X

The most recent flat bottom Stan foil

Begin by rough tapering the top of the rectangular blank from 33% to the trailing edge (TE). Now rough taper the tip thickness (Top) to about 3/32" for catapult gliders or over 1/8" for tip launched gliders. Next arrange the pattern as shown and cut it out. The TE will get thicker as it progresses from root to tip. Attach the basswood leading edge (LE). To get the best washout effect sand the bottom of the wing in a twist with zero twist at the root and the most twist at the tip. The twist is produced by not sanding near the LE while sanding so that the TE is about 1/16" thick at the tip. Use a large FLAT sanding block for this. Sanding this washout twist is much easier than it sounds. A good technique is to make marker lines, 1" apart, TE to LE (chord direction). As you sand you can see the marker lines disappearing.

Now shape the top of the wing. For catapult gliders leave the LE about 1/16" thick at the root and .045" at the tips, a very gradual LE thickness taper. These sizes are approximate, don't worry if yours is not quite exact, the model will still fly well. For tip launch gliders leave the LE 3/32" thick at the root and .070" at the tip. Re-glue the top of the LE with CA, this prevents it from popping loose when sanding the bottom up-sweep or making the dihedral joints.

Now for the bottom up-sweep. This is just a gentle rounding to leave the LE about .020" (just over 1/64"). It should blend into the flat bottom about an inch from the LE. With this up-sweep the model will launch higher. An added benefit for catapults is that it will make it easier for the model to get past your fingers with the RR forward grip. Again re-glue the LE with thin instant glue.

Finally, a well-defined flat is better than a rounded one. It is not a bad idea to go over it one last time, using a light touch with a small flat sanding block. It will be okay if the flat's surface is not all that smooth.

STABS AND FINS: Nothing fancy, they should be flat plate airfoils. Just a flat taper LE to TE and root to tip.