

After deciding on the airfoil shape, this is drawn on paper. I prefer to draw one half only, then fold along the center line and cut out. That way the airfoil is truly symmetrical. Glue on plywood and cut out (I use this template for drawing the final plan and for working on the fuselage). Do the same with the rib template.

All ribs are made in one rib stack. After completion all ribs are numbered (a great help when the whole stack falls down !). Those ribs with odd numbers go to the left wing panel, those with even numbers to the right. Since the odd ribs are a little longer than the even ones, they go into a new stack and worked to the same shape as the "right" ribs. The two ribs close to the center are cut smaller by the thickness of the wing sheeting, glued on balsa and cut out again. That way their thickness is increased. The center rib is sawn out separately. It consists of front and rear part to make installation possible. The line guide is made and glued to the inboard rib before beginning wing construction. Now the control system is prepared: bellcrank, bellcrank pivot, bellcrank bearer, leadouts, pushrod(s), control horns. I build my horns from brass sheet and piano wire, silver soldered ! RC type plastic horns are sufficient for this size airplane, but they should be of the heavy duty type. I recommend using horns which allow adjusting the control throw and thus trimming.

My wing building jig is very traditional. I use what I call "negative ribs"; two for the center and two for the tips, plus a lot of little blocks shaped to support the leading and trailing edge. For trapeze wings we also need a trapeze shaped rod to support the main spar during construction. All is arranged on the plan and covered with transparent foil. Now wing construction follows. After the bellcrank platform is glued in, the control system can be installed.

Take care when bending the wheel struts. I use a precise side and front drawing to do this plus a good wire bender. Landing gear platforms are shaped to fit now; landing gear is sewn to plates. I take great care when aligning the struts. Some wooden "jigs" are very helpful here. Before finally gluing in the platforms (including wire legs) I fix a long piano wire to the "axle" part of the strut in order to keep them perfectly aligned in front view and top view. Now the half ribs are added to support the strut platforms. The wing bottom is sheeted first since placing the strut holes takes some special attention. A small stripe of surplus balsa is used to pin down the planking to the leading edge in order to protect the balsa sheeting. The flap pushrod is adjusted to keep the flaps at "Zero" when the bellcrank is at Zero. If barrel type hinges are used, check carefully for real free movement. If not, modify hinges.

Since fuselage height is bigger than sheet width we need to make it from two parts. There are two plywood stiffeners plus one balsa tripler. This strengthens the front fuselage, especially at the fuselage to wing connection; also it makes for better looks. Shape the beveled part before gluing to the fuselage ; it's much more difficult to do this later. At the front two hardwood blocks including blind nuts are needed to mount the radial cowl.

Constructing the cowl is time consuming but fun. We need four thick formers (two of them joined crosswise) glued to a beech dowel; one former can be a ring. The fourth former is only needed for construction; most of it will be removed later. Put the whole unit into an electric drill. With medium sandpaper shape the formers to the required diameter. Remember - the cowl is conical, so work carefully and measure constantly to get the correct shape. To make the mantle some stiff drawing paper is wrapped around the formers. If your electric drill can run slowly, just hold a marker to the outside and let it run. Otherwise draw the outline by hand and cut out the paper which is the pattern for the plywood mantle. Glue the plywood to

the formers, DON'T overlap at the bottom ! Little hardwood blocks will be glued in later inside the cowl, one at the top and one at the bottom. They stiffen the cowl, serve to mount the cowl rigidly, hide the mounting bolts, and stiffen the bottom joint. After the plywood mantle is glued to the formers, shape the cowl while the drill is running. Also shape the front opening. Be very careful! Hold the knife very tightly in both hands and in a way that the blade points in the same direction as the turning wood; means: the wood is turning away from the blade! Wear safety glasses. Shape the opening as far as possible, but without cutting through. Also cut a groove at the rear former to make removal easier. When finished, remove all unnecessary stuff, install mounting blocks, prepare cutouts for engine and muffler, and cover with glass cloth. Finally mount engine and cowl and precisely work out all openings and mounting holes. Remember that the cowl has to have the same "side thrust" as the engine.

I prefer to cover the open bays of the wing with silk PLUS lightweight tissue over it. Everything else is covered with lightweight tissue. This helps to keep the proverbial screwdriver puncturing my wing. The tissue makes for a better base for a good finish and also stiffens fuselage and tailplane. The Internet is a big help to find an appropriate paint scheme.