A muscular, big-engine bipe for sport and exhibition control-line flying.

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NEARLY every airplane nut has a soft spot for biplanes. There is something nostalgic about a two-winger, the whistle of wind through rigging wires and all that stuff.

When our local model club began control-line exhibition flying to stimulate public interest and recruit new club members, I became enthusiastic about a bipe for that type of flying. It would be an attention-grabber, an extremely stunter and flashy aircraft. The ship I had in mind would be large; a small plane just doesn't get attention. The further I studied the bipline configuration, the more intriguing it became.

It appeared that the built-in head-wind high-drag characteristic to biplanes might be used to advantage. A large engine to turn a big low-pitch prop would give a very high static thrust. In combination with the high-lift high-drag layout this would result in a relatively slow-flying, extremely maneuverable craft — like a helicopter with its rotor facing forward! And that's the way it turned out.

A few additional design features improved performance, such as thick, blunt airfoil sections with full-span flaps on both wings to help eliminate the wobbling or staggering at low speeds common to biplanes during tight turns. A large elevator surface proved effective at low speeds. A large rudder with quite a bit of turn-out kept the lines tight at all times, since centrifugal force is not much of a factor at low speeds. There you have it.

The theory sounded good, but the proof came in building and flying the brute. Biceps is a spectacular performer, a real ball to fly. Although not a smooth, precision, contest-type ship, it should give a good account of itself in any contest in the hands of a competent pilot. For exhibition-flying, Biceps is superb, the hit of any show. It is not particularly difficult to build. Large size and straight lines contribute to simplicity. It does take a considerable amount of balsa.

Tail surfaces: Both the fin-rudder and the stabilizer-elevator assemblies are made from medium-weight sheet balsa; wood grain parallel to hinge lines. First glue balsa sheets together edgewise to obtain enough width for entire piece to be cut from. Then shape to a streamline section similar to that shown on the plan. I have found that sanding boards (sandpaper of various grits glued to a flat piece of 1 x 2" pine about 8 or 10" long) make excellent tools for rough-shaping balsa wood before final sanding, prior to painting and finishing.

After rough-shaping, thoroughly sand with progressively finer sandpaper until you are satisfied with the job. Then seal the wood grain with a couple of coats of clear dope. I use and recommend Aero Glass products. They cost a little more but the quality is worth it. A couple of coats of filler should be applied next, again lightly sanding between coats. Now cut the rudder and elevator apart from their respective assemblies and sand the cut edges, rounding them slightly and follow by doping to seal the wood grain.

Now glue the rudder to the fin with 1" Continued on page 69

High-lift, high-drag, with big prop, make the bipe fly like a 'copter with rotor facing forward.

Oodles and gobs of wing area, thick airfoils and full-span flaps add up to a precision in flight that must be seen to be believed. You'll look good!