

# BEGINNER COURSE



Keith Laumer's  
latest in his series  
caters for the controliner

# SHARPOON

THE MODELLER WHO limits himself to free-flight is missing half the fun of modelling; you'll discover what the other half is all about when you've built Sharpoan and seen her performing smoothly at the end of the lines, responsive to every touch of the controls. Control-line flying gives you the opportunity to use bigger engines and long motor runs and without any chasing downwind at the end of the flight. You'll discover that there's more to C/L piloting than merely holding onto the handle! (The Control-line Manual tells you more.)

Start by cutting out the plywood bulkheads (parts F1, F2 and F3). Cut holes for motor bearers (be sure to match them to your engine), and drill undercart lacing holes. Bend nose and main undercarriage legs from 12 S.W.G. wire, and lace in position with thread; then coat lacing with cement, forcing it through holes for rigidity.

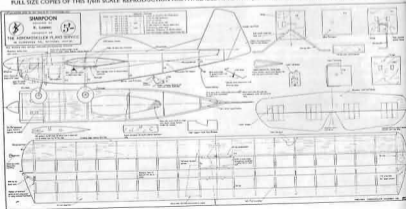
Next, cut and drill motor bearers and attach to engine;

fit the bearers into bulkheads F1 and F2, positioning carefully, and cement. A polyphenyl resin glue such as LePage's white glue (P.V.A.) is recommended for this use.

Cut the remaining balsa bulkheads, and fuselage sides, and sand edges; add  $\frac{1}{4} \times \frac{1}{4}$  reinforcing pieces at tail, and bevel rear ends of sides as shown. Then join sides on motor mount assembly, and align carefully. Add bulkhead F4. When dry, bring rear ends together and hold with spring clothes pegs until dry. Bend and attach tailskid to F6, and install remaining bulkheads, except F3; this is installed after wing is in place.

Install tank and fuel line; then cut top slabs from soft  $\frac{1}{4}$  in. balsa and cement in place; cut and add cowd sides and bottom pieces. (The engine should be removed for this operation, and holes cut later. Engine should be reinstalled and spinner fitted before final shaping, to insure smooth lines). Sand sides and top of fuselage

FULL SIZE COPIES OF THIS 1/48th SCALE REPRODUCTION ARE AVAILABLE AS PLAN C4896. PRICE 5/- PLUS 6/- POST FROM PLANS SERVICE



A 36-inch span aerobatic trainer for  
-8 to 1.3 c.c. engines (larger sizes can  
be used by experienced fliers)  
that combines good looks with  
simplicity

Some idea of the size of the designer's prototype can be gauged from view helper holding model. Light wing loading makes it a fine stunt trainer for calm days.



smooth, and shape as shown on plan to proper cross-section. Do not sand bottom edge until bottom planking is installed.

Cut balsa tail assembly parts, assemble rudder and tailplane and sand to streamline cross-section. Clear-dope and sand again; then bend and fit elevator horn/connector, joining elevators. Attach elevators to tailplane with line hinges. Bend push-rod, engage in elevator horn, and install tailplane. Be sure to trim away enough of tail reinforcement to allow free movement of controls.

Add the rudder, aligning it carefully. Note that an off-set tab may be used if desired to increase line tension; this is advisable if you plan to fly in high winds. Weight may be added to the outboard wing-tip for the same purpose.

Cut the double wing spar from the straightest, hardest balsa you can find. Coat both pieces with cement and allow to dry; then re-cement and join under pressure (put the assembly under the work-board and sit on it, if you can't think of a better method).

Notch the spar carefully after it is fully dry, allow at least a couple of hours. Be sure not to cut notches too deep or you will weaken the wing. Cut 18,  $\frac{1}{4}$  in. x 6 in. rib blanks, pin together, and shape all ribs as a unit, using a rib template at each end of the stack. Separate, and bore lead-out holes in half the ribs, for left panel. Next, cement all ribs to spar, settling in notches so that both top and bottom surfaces are flush. Add leading-edge reinforcing strip to align ribs; mark positions of ribs on this strip, using actual spar as guide; this will ensure that ribs are parallel. Cut trailing edge strips from hard balsa; add lower strip, and, when dry, bevel to follow line of top of rib. Then add top strip, and trim to knife-edge.

Add leading edge and tips, bend and install leadouts, then add top and bottom leading-edge planking. Cut

slot for front lead-out in centre section. Cut and install cap strips, and plank upper sides of tips. Use a sanding block to shape the entire wing structure to a smooth airfoil shape, as shown on side view. Drill a small hole for the bell-crank mounting bolt, and cut slot for F3 and rear lead-out.

Install the wing now, and cement thoroughly. Slide bulkhead F3 in place from the bottom, and add bell-crank, engaging it with lead-outs and push-rod before installing bolt.

Add fuselage bottom planking and sand to shape. Check over entire structure for rough spots, and touch up as necessary. Extra care at this stage will pay dividends in looks and performance later.

Cover wing with heavyweight Modelspan. For an extra-fine finish, entire model may be covered; this also adds to strength. Water shrink the tissue and allow to dry. Then clear-dope and sand lightly with fine paper. Spray or brush three coats of pigmented dope over entire model. White is recommended, with trim in colours to suit individual taste. Mark position of canopy on top of fuselage, and cut a black paper panel to size and cement in place, then add canopy. Tape off all of canopy and spray to match fuselage. Add transfer numerals, colour trim, etc. Spinner may be painted to match trim. Solder wheels in place, and you are ready for testing.

Try to make your first flights on a calm day, over a smooth surface. Be sure the model balances well forward. Fuel up with about 2 c.c. in the tank for a fifteen second run; this will be long enough to see how the ship handles, and in case of trouble, it's a short flight. Try only modest control movements at first, until you get the feel of the model. Don't try that first loop until you're sure!

Larger engines may be installed in SHARPOON for more zip, after the training phase is over.

Tricycle undercarriage and shoulder wing make Sharpoon a pleasing and worthwhile deviation from the normal run of control line models. Take-offs and landings over prepared surfaces can be really smooth. Lead-out wires may be fitted externally under the wing, entering the fuselage under the wing root if the builder so requires. Original model was coloured white overall with strip transfer decorations.

