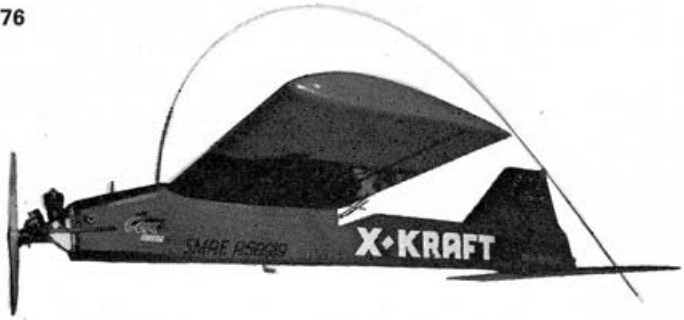


Your FREE full size plan!

X-KRAFT

By Ron Fuller

X-CRAFT with aileron control has a performance similar to a combat or stunt control line model without the lines. It will stunt continuously and can be kept 'in close'. This is an advantage if you fly (as I do near Sevenoaks) in small tree-lined fields. Aileron control makes turns and manoeuvres smooth without the jerkiness sometimes apparent in rudder controlled models. Perhaps the most interesting thing about X-CRAFT is its ability to roll – the fuselage being the centre point of rotation. X-CRAFT will roll anywhere – halfway through a loop, in a climb or dive, even just after launching. This, of course, only applies if the engine performance is up to scratch. The model will do its stuff with a Cox Babe Bee or muffled QZ but a Cox TD 049/051 or D.C. Merlin makes for more exciting flying. On a worn Babe Bee X-CRAFT becomes a docile 'trainer' type model.

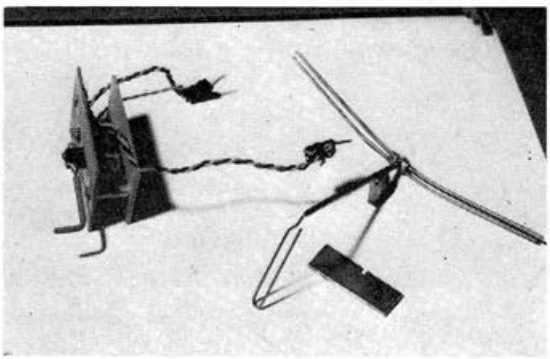
Construction is conventional with the emphasis on strength. However using wing fixing bolts means that the model will not stand excessive cartwheeling or crashes where the wing hits the ground first. To avoid this means good radio contact (no glitches) and pilot ability. If you are unsure of either then mount the wing using dowels and rubber bands – details are included in the plan for this. The engine is mounted on sheet aluminium which is attached to the fuselage with rubber bands. This is a convenient form of mounting because it means that the engine can be easily removed for cleaning, also if using a P.V.C. foam anti-vibration strip the sidethrust can be adjusted by tightening up the rubber bands on one side and loosening the other. It is recommended that the building sequence is followed as this makes for easier and quicker construction.

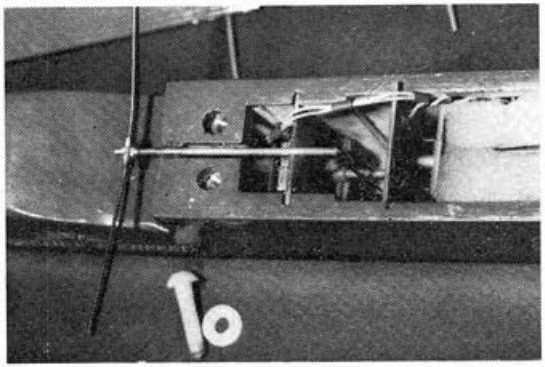
Wing

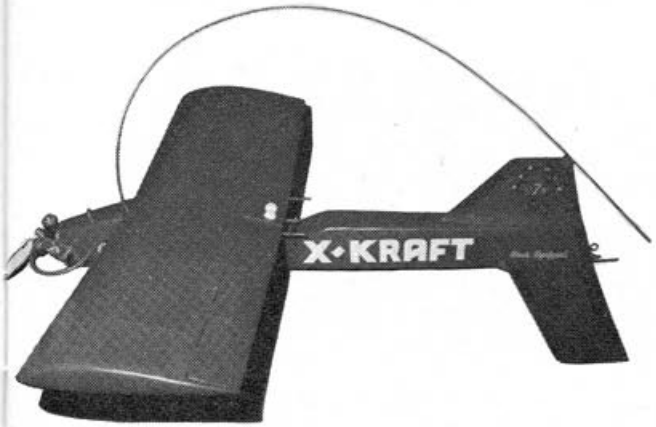
Start with the wing. This is built conventionally over the plan on a building board. Ignore the aileron construction – the ailerons are cut out after the wing is finished. Pin down the bottom 1/16 in. sheet trailing edge and bottom 1/16 in. mainspar putting pieces of 1/16 in. sheet packing underneath to bring it level with the trailing edge. Glue the 1/16 in. sheet wing ribs in place and angle the two centre ribs going by the dihedral angle. Glue the ½ in. square leading edge and 1/16 in. sheet webbing pieces in the centre of the mainspar and trailing edge. Glue the 1/16 in. top mainspar in place. When dry remove the wing from the board and sand down the leading edge. Cut the 1/16 in. sheet top and bottom leading edge sheets to size. Use Evostick Impact glue on the mainspar and leading edge and in the corresponding places on the leading edge sheets. When the impact glue is touch-dry, position and stick the leading edge sheet to the mainspar. Don't stick it down to the leading edge yet but put balsa cement on the wing ribs where they will touch the leading edge sheet. Stick the leading edge sheet to the leading edge. Glue the 1/8 in. square spruce strip on the trailing edge. With Evostik Impact glue the 1/16 in. sheet, 1/16 in. ply, and 1/4 in. sheet on the wing tips. Glue the 3/16 in. x 1/16 in. capping strips on the wing ribs top and bottom. Give the wing a preliminary sanding, Cut the wing in half. Cut slots in the relevant wing ribs, slot in and glue the 1/16 in. ply dihedral brace. Use glue around the centre wing ribs to make a strong join. Check that the wing isn't warped and leave to dry. Sheet centre section top and bottom. Cut out the ailerons, referring to the aileron construction sequence on the plan. Glue the 1/16 in. capping pieces on the ailerons and wing. Give the wing and ailerons their final sanding. Use Evostick Impact and glue the 1/16 in. ply over the wing fixing bolt holes. Use P.V.A. glue and glue in the 3/16 in. diameter wing fixing dowels.

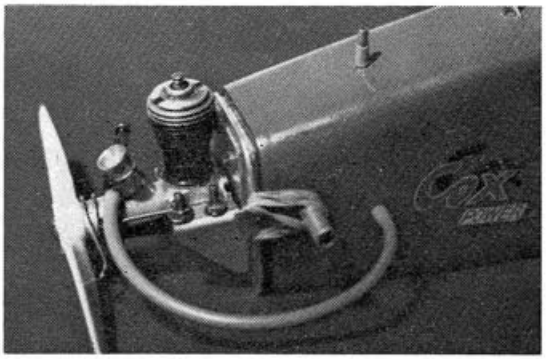
Fuselage

Cut out the 1/16 in. sheet fuselage sides going by the heavy line on the plan. Using the sides as templates draw









out the 1/16 in. ply doublers and glue them in position on the sides with Evostick Impact. Glue the 1/8 in. sheet doubler with Evostick Impact noting that this doubler includes slots for bulkheads 1-4, the sliding bulkhead switch, and escapement. Care is required here to make sure that the slots are in the same position relevant to each other on the fuselage sides. Failure to do this properly will result in a warped or out-of-line fuselage. Glue the 1/8 in. square strengthening pieces in place.

Cut out the bulkheads from 1/16 in. ply and 1/8 in. sheet. Use Evostick Impact and make bulkhead sandwiches. Cut out holes in B3 and B4 for deac and escapement rubber. Drill two 3/16 in. diameter holes in B3 for the wing fixing dowels. Use the wing fixing dowels already glued in place as the measurement guide. Drill the holes for the engine dowel, tailplane dowels, and wing fixing dowels (if using rubber bands to fix wing) in the fuselage sides – put the two fuselage halves together and drill through both halves – this will ensure that the dowels line up properly. Make the paper tube for the deac and glue in hole in B3. Make tank from tinplate and 14g. brass tube. Glue bulkheads B 1, 2, 3 and 4 in place and position the tank at the same time with the outlet coming through the left fuselage side. Make sure that the fuselage lines up properly and that there are no warps in it. Glue bulkhead B5 in place at rear of fuselage, again check that fuselage lines up properly. Glue in the 1/8 in. square strengthening pieces top and bottom. Glue the 1/8 in. sheet and 1/16 in. sheet fuselage top in position making a hole in the 1/8 in. sheet for the tank filler tube. Don't glue the fuselage bottom yet – if this is left out it makes it easier to fix the wing fixing blind nuts in place. Using P.V.A. glue, glue in the hardwood blocks that hold the wing fixing blind nuts. When dry slot the wing in place with the 3/16 in. wing fixing dowels. Check that it is seated properly and drill the 1/4 in. diameter holes to take the nylon wing fixing bolts. Care is needed here to make sure they are in the right place. Secure the blind nuts by tightening up the bolts so that the sharp points on the nuts sink into the hardwood blocks. Further secure the blind nuts with Araldite. When satisfied that the wing is seated properly glue in the 1/8 in. sheet and 1/16 in. sheet fuselage bottom, making a hole in the 1/8 in. sheet to take the tank vent tube. Cut the fin from 1/8 in. sheet and shape the 1/4 in. triangular gussets. Make a tongue in the fin and a slot for the tongue in the 1/16 in. sheet top rear fuselage. Glue the fin and gussets in position. Cut a hole in the bottom of the rear fuselage under the tailplane for escapement rubber access. Cut out and glue in place with Evostick Impact the 1/8 in. ply engine bearing plate, and 1/16 in. ply facing plate at fuselage rear. Sand the fuselage to shape referring to typical section on plan.

Finishing

Cut tailplane to shape from 1/8 in. sheet and sand. Make switch bulkhead and escapement spacers as shown on plan. Cut a slot in the bottom of the fuselage to take the switch extension. Construct the escapement to aileron linkage from 18g. piano wire and 18g. brass tube. Solder the clamp which goes over B4 in place on the brass tube. The original had three coats of sanding sealer and two coats of Humbrol enamel on the fuselage, tailplane, fin, wing centre section and tips, and ailerons. The wing was covered in Solarfilm with Araldite smeared round the edges to prevent lift-off. Make the aileron hinge from Solarfilm. Refer to plan for hinge position and smear the hinge area thinly with Araldite, then put the Solarfilm hinge on and iron in place. Try to keep the Araldite away from the actual hinge point. Excess Araldite can be re-

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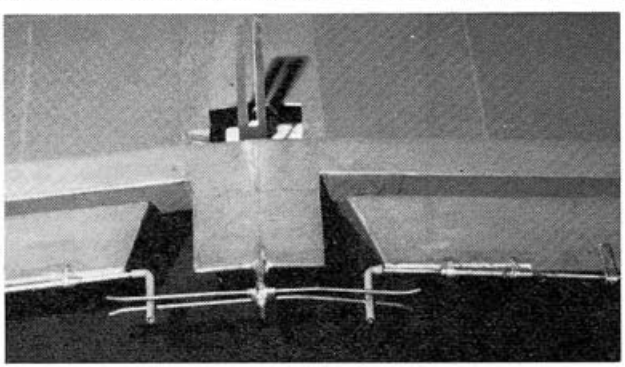
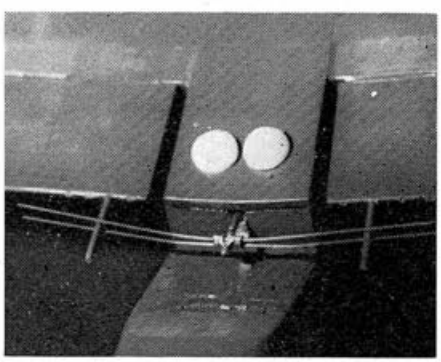
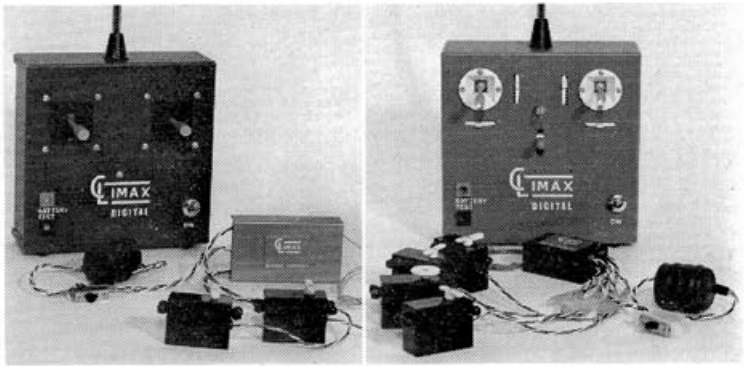




Far left: escapement and aileron crank system prepared ready for installation in fuselage. Second left: escapement and aileron crank installed in the fuselage. Near left: alternative method of crank linkage installation shown fitted into wing. Below: fuselage mounted linkage system installed with wing in place. Above right: power plant installation showing engine mounted on removable bulkhead, held in position by rubber bands.



Two new proportional systems from C & L Developments, at far left the Climax two-function system for R/C boats employs Horizon servos, and uses plug-in crystals. At near left: the latest Climax Digital 5 systems also features Horizon servos and has a new miniature receiver.

Also available is the aileron servo mount consisting simply of two moulded foot-type mounting brackets which grommet mount the servo in the wing and allow easy removal as and when necessary.

Price of servo tray and aileron brackets as a set is £1 8s. 0d.

New system from Flight Link

Flight Link Controls Ltd. (Bristow Works, Bristow Road, Hounslow, Middlesex) are repackaging their popular five-function proportional control system, to provide a smaller airborne package. Electronically, the system remains unaltered, but the airborne system comes in for a complete rearrangement, which includes a much miniaturised yet more powerful set of servo units. The new F.L.C. servo is in fact tiny, weighing only 1.8 oz., yet provides 3½ lb. pull over a ½ in. total travel. Servo speed is 0.6 seconds stop-to-stop and the unit is waterproof for marine application.

The receiver is also smaller, now shrunk to 2¼ in. by 2 in. by 1⅛ in. for its moulded plastic case. F.L.C. have come up with a neat module arrangement for this whereby the receiver, decoder and five separate servo amplifiers (F.L.C. have always put the servo amplifiers inside the Rx. box) are each contained on separate P.C. board modules which slot neatly into runners provided inside the Rx. case. This results in swift and easy servicing (F.L.C. have always been known for their quick turn round on servicing jobs) in which modules with not-so-readily-traceable faults which are time-consuming for the manufacturer and expensive for the customer will simply be discarded and replaced with new ones.

F.L.C.'s repackaged system results in a very light airborne installation weight. The airborne system has a very low current drain which makes a 250 mAH power pack entirely practical and allows a low installation weight of only 12 oz. With a 500 mAH pack, the weight is 15 oz. Either way, the weight is low.

Flight Link transmitters remain entirely unaltered, offering the choice of a two-stick version with Horizon stick assemblies, or the single stick unit. Price of the new Flight Link 5 system is £181 1s 4d

R.C.M. & E. Digital P.C. board

Trio Instruments sent us a sample of the P.C. board they are offering for the R.C.M.&E. Digital receiver. This is very nicely executed in glass epoxy board, ready drilled and with the component placement silk screened on the component side. The two R.F. coils are also in position, and the coil ready wound.

Price is £1 10s. 0d.

New systems C & L Developments

There's just time to slip in photos and a stop press announcement about C & L Developments' latest range of Climax digital proportional systems. To begin with, Climax have re-developed their 5-function digital proportional system. The transmitter remains virtually unaltered. Featuring a red vinyl clad case, and O.S. stick assemblies. However, the receiver is now very much smaller, and the system now employs Horizon mini servos which, together with receiver operate on a 4.8 v. power supply to provide a very light installation weight.

Second new Climax system is their latest two-function digital proportional boat system which also features Horizon servos. In this case, the servos are water proof, and the amplifiers enclosed within the receiver case. A plug-in receiver crystal is employed to allow quick change at frequencies. More news of the boat system in 'Wave Lengths' soon, we hope.

X-KRAFT

Continued from page 277

moved with a damp rag and Vim. This makes an unobtrusive, free, and very strong hinge. Drill 1/16 in. diameter holes in the ailerons for the link pins. Dip the 18g. piano wire link pins in Evostick Impact glue and push them into the holes. The glue will prevent them from working loose but they can be withdrawn and re-positioned if required. Make engine mount from 18g. aluminium. The plan shows a mount for a Cox Baby Bee or QZ and Cox TD 049/051, if using the latter, then bolt and Araldite the two mounts together.

Flying

No adjustments should be necessary but if so, then pack the tailplane in the usual way. X-CRAFT should show a straight flat glide. Get used to its flight characteristics with short engine runs. For the first flights I use a Mercury metered F.F. tank fixed to the fuselage side with just enough fuel to give, say, a 15 sec. engine run. When I am satisfied that everything is working properly I change to the integral tank. From a hand launch X-KRAFT should fly away level, then climb fairly steeply. Control at low speeds is slow but very positive as speed builds up. X-KRAFT is responsive and manoeuvres can be accurately timed. The aileron link pins can be re-positioned further out for tighter rolls. The glide is long and flat giving ample time for positioning tor spot landings.