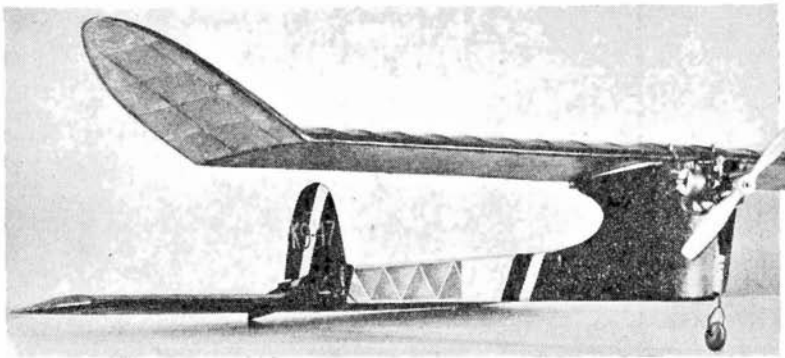

ELF-AXE

"F.A.I. MODEL" FOR 1·5 c.c.

By JOHN LAMBLE

About the designer . . . aged 25 . . . Wayfarers Club . . . Accountant by profession . . . won Thurston Cup 1951 . . . believes in flying for fun . . . also a mountaineer.

DURING the 1949 Nationals at Fairlop the writer stood (*me too ! Ed.*) watching one pylon job after another bite the dust as they tried to cope with the tricky breeze. More careful observation showed three main ways in which disaster overtook the unfortunate.

1. Straight over loop into the deck.
2. Attempted loop with turn, skewing into a spiral dive.
3. Straight forward spiral dive for no very apparent reason.

A loop appeared to start two out of three prangs, and my answer was to adopt a high-thrust layout. A high-thrust line, 200 sq. ins. model was built, powered by an Amco ·87. It became known as " Lamble's Folly " and looped perfectly. However, we flew the answer out of it and a twice size version was built for the Amco 3·5 ; named " Battle-axe " and with a wing area of 600 sq. ins. It is now over two years old and still going strong.

Subsequent models were fairly small and highly powered. They were trimmed to a fast, shallow climb by using downthrust ; but they proved inconsistent and eventually the penny dropped, that in this layout at least, downthrust is an unstabilising force.

Thus, latest in the line comes the " Elf-axe ", it appears to combine the tolerance of trim and the steady yet deceptively fast climb of the earlier " Battle-axe " with a much improved glide, and a size that fits in the average model box.

It is designed for any good 1·5 c.c. engine, capable of between 12,000 and 13,000 r.p.m. with a 7 in. × 4 in. prop. If your engine is more powerful, then build something bigger or check your rev. counter ! If contests are not your main object, then any motor from 1 to 1·5 c.c. should do.

Flying. Try offsetting the rudder tab about $\frac{1}{8}$ in. for a left glide and embark on low power tests. These should show a steady left turn under power and a similar pattern on the glide. Increase power gradually and the model should perform a climbing turn in a practically unbanked attitude with the nose held high. If the angle of bank is appreciable try adding some right sidethrust (the original used 5°). If the climb is " wallowy " and the pull out bad, add some more rudder offset. Lastly, do remember the D.T. for you never know, your last adjustment may have been the right one.

Wing and Tailplane are conventional in all except the following points. Dihedral braces are of $\frac{1}{8}$ in. sheet plugged between the birch spars. Note particularly that the wash-in is incorporated by adjusting the angle of the rear brace on the left wing. Centre section joiners are 3 strips of 1/32nd ply each, not stuck together.

Fuselage. Follow sequence in perspective drawings. (1) Lay down bottom longeron, add vertical bulkheads and tailend sides (2) Add to longeron. Slot in keel and reinforce front. Slot in fin and add rear wing supports and diagonal bracing. (3) Glue in engine bearers, pre-cementing well. Commence sheeting as shown. Add wing platform (4) Complete sheeting. Fill in round engine mount. Add dowels, hooks, etc. Add tailplane platforms and fill in undercamber of the wing, making sure wing and tail seat firmly.

Full size copies of the $\frac{1}{4}$ scale reproduction opposite are obtainable at 4/6 post free from A.P.S. Note new address, on page 257.

Close up of the engine mount and neoprene tube fuel 'tank', also displays the wing attachment and way in which the elastic band holds wing halves together.