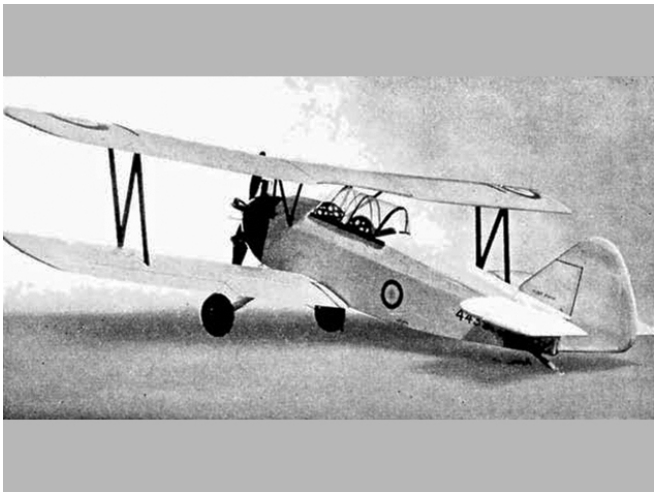
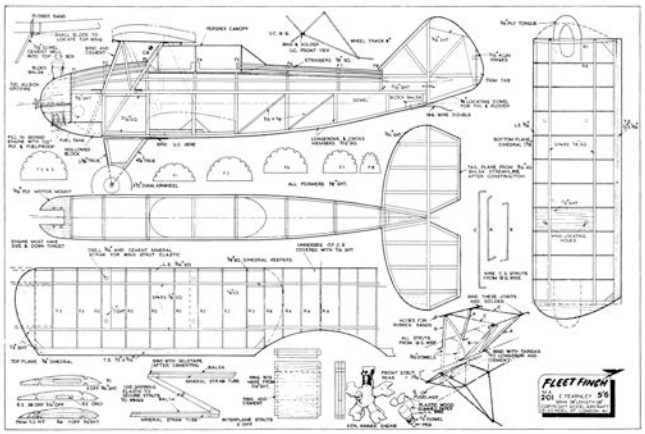
Fleet Finch





Build this sturdy flying scale model biplane.
Designed for .75 - 1 c.c. engines
by E. Fearnley.

In previous World War II scale models presented. I have paid tribute to the fighting aircraft of Britain and U.S.A., but this model represents a war effort which often goes unsung, though just as vital to a nation's life blood the difficult job of turning rookies into front line pilots in a never ending stream.

Canada undertook this far from glamorous job in the last war, as part of the Commonwealth air training scheme, and apart from the training of thousands of pilots, they even made the training aircraft as well. While de Havillands of Canada made the famous Tiger Moths (complete with greenhouse over the cockpits) the Fleet organisation went into mass production of this Finch primary trainer. The aircraft's history goes back to an American Navy trainer first designed by the Consolidated organisation. Fleets built about boo of them, presumably under licence.

As a model, the Finch took my eye. Primary trainers are usually pretty stable designs, and also very tough, they have to be able to fly either with, or in spite of, the efforts of a novice pilot a fate worse than that suffered by many a model, which at least has no dead-handed human to mess things up ! As far as toughness goes, it is doubtful if any design has been presented in MODEL AIRCRAFT with more severe testing behind it than this. We have all heard of the model that " flies off the drawing board." This one did, but it was flown right back on again, when I redesigned the top wing (originally a two-piece effort) and strengthened up one or two parts that didn't seem to like down wind landings in a gale ! As it is now presented on the plans, it should stand considerable rough treatment.

Fuselage: This is a simple box, with formers added in the usual way. Keep the top longeron true to make it easy to study the wing and tail relationship when testing.

The undercarriage is of piano wire, faired with balsa. Note that the fastening is on the torsion bar principle to avoid moving parts, but it may need a rubber band or two at the front if the wire gives after a hard landing or two.

Engine Mount: This is plywood, as this material is easy to work and different engines can be fitted. If fuel proofed, it will stand years of wear, and in a bad crash will save your crankcase. Note that the amount of down and side thrust is quite large, this is exactly correct for the original model and although yours may vary slightly, the amount indicated is a safe basis to start with.

Tail: This is very simple, but take care to get it true for good flying. Stream line it carefully, as biplanes have " built in " drag anyway.

Wings: These are straightforward. Hard balsa is recommended for the main- spars. The top wing is made flat, and the necessary dihedral built in later by propping up the tips and cementing. The bottom wings have plywood tongues fitted into a box in the fuselage. It is advisable to have the tongues tapered slightly so that in a bad crash they can " give " upwards as they pull outwards. Be sure the bottom

Fleet Finch

wings are dead true for incidence. Note that the top wings do most of the lifting at a large angle of attack. Thus, when the model stalls, the top wing stalls first, and the bottom wing, still installed at its zero angle, then pulls the tail up as a second tailplane. Unless this state of trim is carefully built-in, it will be more difficult to get stability in the model.

Interplane Struts: These appear a little flimsy, but are adequate, as when threaded through the wings with shirring elastic, they do no real work at all, each wing being " self contained " Without them.

Flying: The " Spitfire " engine gives more than enough power for the Finch and requires throttling down with a nylon 8 X 5 in. prop. A Mills .75 or similar should fly it easily. Before doing any flying, check up on the wing and tail angles—they must be right. Balance on the spot indicated with shot or plasticine. Remove any warps from the wings over a radiator, and then wait for a calm evening. Test gliding will reveal the trim. It should touch down softly but without stalling at all. If it turns, check for washout or rudder trueness, and when satisfied, apply power sparingly. The result should be a straight power glide. If the turn is not severe, more power can be given. If a stall develops, add a washer under the back motor bolts, if it doesn't climb when a fair speed develops, remove a little down thrust. A sharp turn on power indicates an increase or decrease in the side thrust built in. One last word don't let a biplane frighten you it's no more difficult to fly, in fact it flies much slower than a monoplane, and roller landings are the order of the day if properly trimmed. When it is in the air, you will lose interest in your other models.

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