

A WELCOME RETURN TO FLYING SCALE RUBBER

The DELANNE

Tandem Wing Fighter scaled to 25 ins. span

By

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Corporal in the R.A.F... Photographer by trade ... Aged 24 ... has been modelling since 1938 ... concentrates on flying scale and abhors controliners and pylon power models.



NOT since September, 1948, have we published a rubber driven flying scale model in these columns and we are glad to break the 44 months' gap with this reproduction of Corporal McHard's novel selection. Tandem wing monoplanes are unconventional whether flying scale or not. This one has proven itself an excellent flier and the prototype was actually built at Kai Tak airfield, Hong Kong.

The actual Delanne aircraft was constructed in France in 1938 as a two-seater fighter for probable use with the French L'Armée de L'Aire. Very little is known of the performance or production figures, so it may be presumed that the design did not progress further than the prototype stage.

The original models of the Delanne have been powered by both rubber and the KK CO₂ engine. Both versions fly equally successfully. The model shown on the plan is the rubber-powered job, it is particularly adaptable to this type of power, owing to the long fuselage and the C.G. position—about midway between front and rear motor hooks.

Construction of the fuselage is the first step, this being the trickiest unit and also the "foundation" for the mounting of the flying surfaces.

Start by cutting out two side keels of 1/16 in. sheet balsa and mark the former positions on them with a soft pencil at this stage so as to get them both identical. Cut out slots for rear wing tongues, which are made from 1/16 in. hard sheet balsa. Cut out top and bottom keels from 1/16 in. sheet balsa and mark former positions on these also. Next cut all formers Nos. F1-F12, noting carefully the material specified for each part, also grain direction. Former F4 should be built on top of the completed former F3 so as to ensure perfect dihedral and incidence settings for the wingstubs. Start assembly by cementing the two side keels

to former F12 on a flat surface, this will ensure the correct alignment of the fuselage. When completely dry fix former F1 in position and allow it to dry before proceeding further. When you are satisfied about this step, cement all the rest of the formers and keels in position, working from prop to "tail". If you have been careful with the job of cutting out these parts, they should just about fall together.

The undercarriage should be added now before putting any stringers in position. Use 16 S.W.G. wire, bend to shape, and bind and glue it to former F3. Add the undercarriage fairings after the wire is secure. The inside fairing is 1/16 in. sheet grain running across the strut, the outside one of 1/8 in. sheet, grain running lengthwise, the wire sandwiched between the two, the lower wheel hub fairings added, and the whole thing carved and sanded to a streamline shape. Stringers are added next of 1/16 in. square balsa. Fill in part of fuselage between formers F2 and F4 with 1/16 in. sheet between stringers, making sure the undercarriage moves smoothly and sand the whole unit. Add the wing ribs CS.1 and CS.2 and make sure they are in alignment, complete the stub wings by adding leading and trailing edge strips, wing boxes (make sure the angle is correct, and do not forget the 1/8 in. x 1/16 in. trimmings where the stub wing joins the fuselage). These are a great aid when covering. Take a pencil, wrap a piece of medium sandpaper around it, scallop all the formers between the stringers except those to which tissue will have to be stuck, such as formers F1 and F11 and top of former F6, etc. Nose and tail blocks should be added next. Slightly glue them in place for shaping. After this is done cut them free and add ply discs, bearings (incorporating 3° left side-thrust), spigots, etc. A simple freewheel may be used although a better one could be incorporated behind the airscrew, in the noseblock



itself as in the original, this way there is nothing to spoil the appearance of the spinner. The prop is carved of medium hard balsa and is extremely tough if assembled as per drawings.

Wings. Nothing difficult here, just lay spars on plan together with trailing edge, cement ribs in correct positions, add tips, tongues (1/16 in. hard-sheet or boxes in case of rear wings), also of 1/16 in. balsa. Leading edges are slotted into ribs after assembly. Sand the entire assembly smooth. Tip fins are made up of 1/16 in. balsa and sanded smooth.

There is nothing unusual in the covering of this model, in fact it is simpler than most scale models because of the almost complete absence of surfaces with a double curvature, requiring strip covering. Use the highest grade lightweight tissue obtainable. Cover cockpit with thin celluloid before covering the fuselage.

Flying. Before we start flying I must say once again *don't* test on *anything* but the calmest day, otherwise you will be without a model in short order. Make certain that the wings are both at

zero incidence, that the fins and rudders are perfectly aligned vertically and fore and aft and that there are NO WARPS. Support the model on the fingertips at the wing stub trailing edge where indicated C.G. is on the plan. Add ballast until the fuselage is horizontal, check the prop thrust line, there should be 1 (one) degree downthrust, and the original required 3 (three) degrees left side thrust. Check the glide by launching from the shoulder into breeze, from a kneeling position. Launch into long grass if possible. If nose drops correct as much as possible by bending the trim tabs up. However if the nose rises sharply then the model drops one wing and dives, *do not* bend the tabs down but add weight to the nose until a flat glide is achieved. Try about 50 turns on the motor, no more to start with. Launch as before and note very carefully what happens. (This model is rather critical on the thrust line and the aircraft must not turn sharply to the right under power—this is fatal!) If it shows any tendency to wallow and then dive in on one wing (probably starboard), which is a peculiarity with this design, add a *little* downthrust, about 1/64th to the top of the nose block and try again. Do not increase the turns over 100 until you are certain the model is not turning to starboard. When you are satisfied, *gradually* increase the turns and correct faults as they crop up. Power is 12 strands $\frac{1}{8}$ flat rubber, 24 ins. long. Average duration is 50 seconds. It will do 40 seconds to order any time at all. Best flight on record to date from any of these Delannes is 2 mins. 5.25 secs. with the rubber job—1 min. 10 secs with the CO₂ version. Remember—if it wallows, dips a wing and dives, it is actually stalling, although to a man used to orthodox layout aircraft, it may not seem to be, so add that downthrust right away. Treat it properly and the Delanne will give you hours of flying pleasure. Any queries on this model, I will gladly answer if you write to me, c/o the AEROMODELLER.

