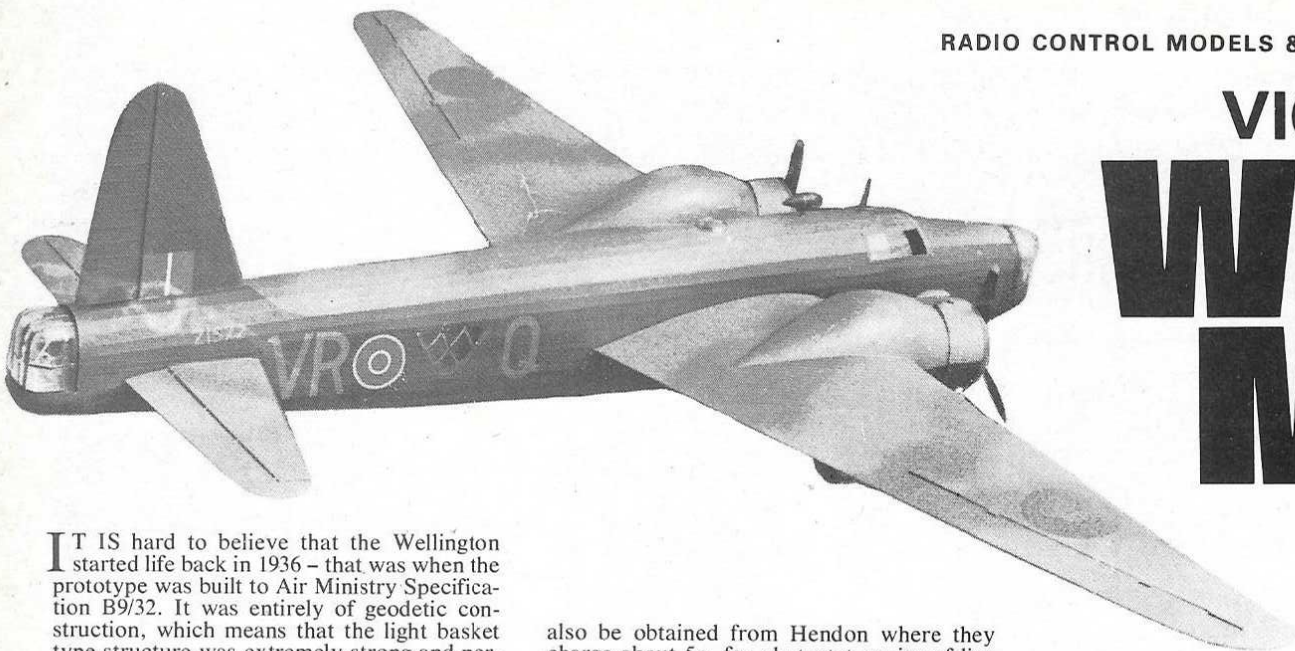


VICKERS WELLINGTON MK.X MODELL FOR TV BY



IT IS hard to believe that the Wellington started life back in 1936 – that was when the prototype was built to Air Ministry Specification B9/32. It was entirely of geodetic construction, which means that the light basket type structure was extremely strong and permitted excellent aerodynamics.

The specification asked for a bomb load of 1000 lbs and a range of 720 miles. The Wellington exceeded this four times. Its range was 2,800 miles and its bomb carrying capacity was 4,500 lbs. The first production Wellington was delivered to No. 9 Squadron at Mildenhall in October 1938, and at the outbreak of war in September 1939, Wellingtons took part in the first ever raid, attacking German warships off the Danish coast.

In all, 11,461 were built covering 18 marks, most of them being medium bombers but they were put to a variety of uses before the last one went out of service in 1953.

Deciding on which one to build left little choice. All except the Mk.III and some Mk.X's had a long window in the fuselage at the wing root which makes it difficult to build in sufficient strength at this point.

The first Wellington I built was a Mk.III, the second one, and the published plan, a Mk.X. There is very little difference between the two and a Mk.III could be built from the plan with only minor changes.

The construction of the model is designed to simulate the covered structure of the full size, that is to say the geodetics are visible only on the wing, part of the tailplane and part of the fin. The geodetic structure of the fuselage was covered by stringers and this is very convenient for the model maker since balsa long-erons can be used.

Unfortunately, there is only one Wellington left in existence. This is a Mk.XT which was used for training bomber crews. It has no front turret and in consequence loses some of its appeal. Anyone wishing to see it can take a trip to the RAF Museum at Hendon where it has been faithfully restored. Documentation can

also be obtained from Hendon where they charge about 5p. for photostat copies of line drawings, etc. For further information, there are two plastic kits produced, one is a Mk.III and the other a Mk.X.

There is an excellent publication called 'Wellington Special' by Alec Lumsden, with lots of photographs and a coloured three view and last but by no means least, 'Scale Models' magazine, November 1974, featured a line drawing showing the accurate camouflage details on the Hendon Mk.XT.

The construction of the model should present no difficulty to anyone who has built several models before. The cowlings and nacelles, together with the clear mouldings can be purchased from Alpha Models, Whitby Road, Ellesmere Port. The clear mouldings consist of the front and rear turret, cockpit canopy and observation dome.

Engine nacelles

Using a fine saw, carefully cut out the wheel wells, commencing at a point where the wheel protrudes from the nacelle, in this way you will not damage the area used as the wheel well doors. Fit the two ply bulkheads and if any cut-outs are required in the No.2 bulkhead I would advise doing them before glassing. The cut-outs are to facilitate the fitting of the retract gear and may vary depending on which gear is used.

Wing construction

In order to build the wing, it is necessary to construct a simple jig. This consists of two boards approximately 27 ins. x 15 ins. hinged at the centre. Along the length, 2 in. standoffs are positioned across the width of the board, which is then set up to the correct dihedral of the lower main spar.

Construction commences by building the main spar complete with dihedral brace and the two ply braces that lie within the nacelles. Check this against your jig to see that the nacelles will rest between the standoffs and clear of the board. Next, make slots in the nacelles so that it is possible to slide them onto the mainspar. Do not glue them into position as adjustment will be required at a later stage.

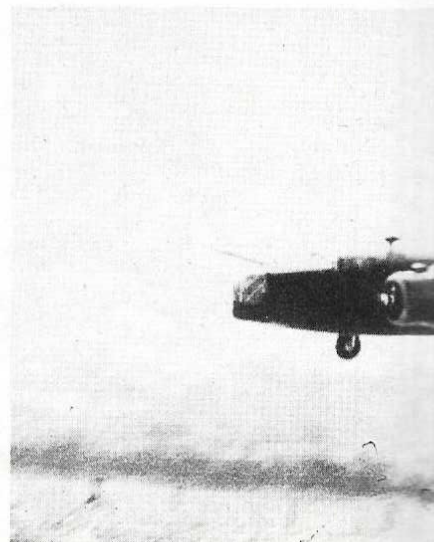
Fit all ribs and lower rear spar and file rear of the nacelle to form a snug fit between the rear spars. Thereafter, fit the upper rear spar, and be sure to check the alignment of the nacelles throughout the operation. Cut slots in the nacelle to take $\frac{1}{16}$ in. ply leading edge doubler. You will notice that the inner doubler is glued to the front of No. 2 bulkhead and the outer doubler glued to the rear of No. 2.

The rest of the wing is fairly conventional. Simulation of the geodetic structure looks a bit foreboding, but it is surprising just how quickly it can be done. Use hard $\frac{3}{32}$ in. sq. balsa in one direction and in the other I used thin Plastikard which will adhere to the nylon when doped. However, ordinary thin cardboard can be used. The wing becomes rigid when finished and will withstand all flying stresses. The ailerons are cut out before the wing is covered, faced on the leading edge and hinged.

Construction of the tail surfaces can easily be followed from the plan. However the finished model has a tendency to be tail heavy. Care taken in selecting a light grade of balsa for these areas should mean that no additional weight need be added to the nose.

Fuselage

Cut out all formers and face with 1mm ply. Transfer the horizontal and vertical reference



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BOMBER
TO 1/12th SCALE
5 CC MOTORS
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lines on to the formers and carefully cut out the slots for the inner fuselage sides.

Select three similar sheets of balsa for the fuselage sides (two if you can get sheets long enough) which are then joined at the ply doubler. Mark the position of all the formers on the sides and slide the formers into position.

At this stage, I set the fuselage up in a jig, alignment can be ascertained by looking down the centre of the fuselage at the reference lines drawn on the formers.

Next, add the outer fuselage sides at the wing root and tailplane, and all longerons. 1mm ply is used to edge the turrets and cockpit area, but before applying this, check the fit of the clear mouldings and sand the fuselage where necessary. Drill holes for the wing dowels and fit the wing fastenings. Any discrepancies in the wing seating can be made good when fitting the 1/8 in. doublers over the wing root. Draw the centre-line of the tailplane. Do not glue into position yet, but double check the wing and tailplane angles. The positive angle on the tailplane is deceiving and accurate measurements must be taken since these cannot be altered when the model has been finished without major surgery.

Fit the fin and rudder but again do not glue in position. The nose and tail sections of the fuselage which support the turrets can now be fitted and sanded to shape but remember to use softwood at the rear. Cut out and line the two windows and fit the tailwheel.

Covering

The whole model is covered in nylon. The fuselage, tailplane and fin can be covered separately and then glued into position, with join lines made good before painting. Cockpit detail

and the fitting of the canopy should be done before painting, but the turrets are made and fitted to the completed model. It is best to have the turrets removable to give access to the linkages and battery which are certain to go wrong if inaccessible. To this end, I found it sufficient to spot glue them into position as in this way they can be easily removed.

Engines

Two fairly well matched 5 cc motors will provide sufficient power to fly the Wellington, although larger engines can be used if you do not intend to use it in competition. Ensure however that your insurance coverage is sufficient. It is important that both engines should be well run-in and by that I mean that peak revs can be maintained for extended periods without the engines overheating and hardening off. Use clean fuel with a filter in the feed line. Whether you decide to throttle each engine separately is a matter of choice. I use one servo and throttle both engines together. My reason for this is that I do not intend to fly on one engine and should I need to throttle back quickly my natural reaction would be to use the throttle stick and not the auxiliary levers. It is a good idea to have a session running your engines (once installed in the wing) finding out their starting characteristics and carburettor settings. This can save a lot of time and frustration on the field.

Flying

You will appreciate that my earlier remarks regarding the engines are designed to make you conscious of the fact that care should be taken to see that both engines are kept running during

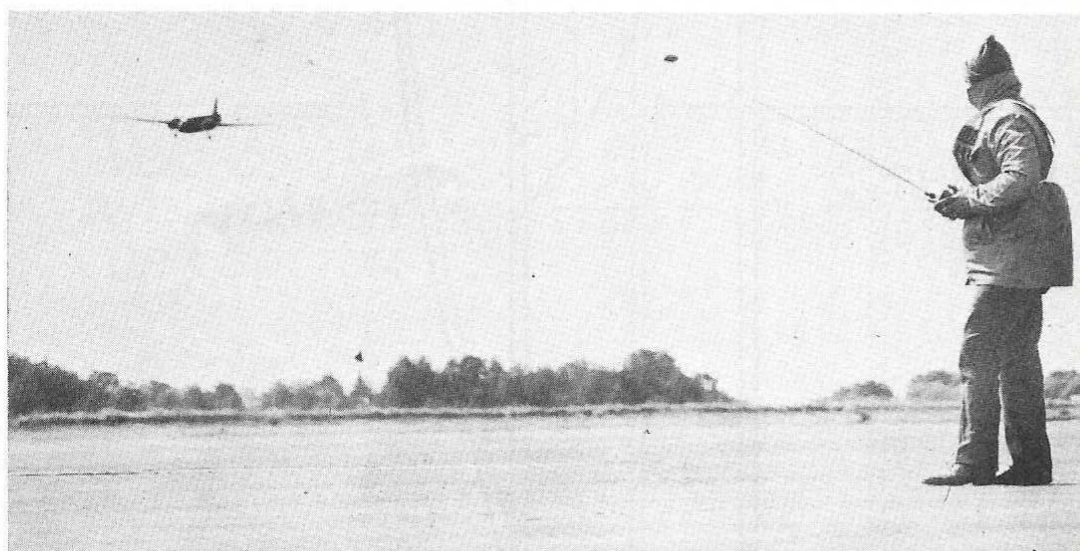
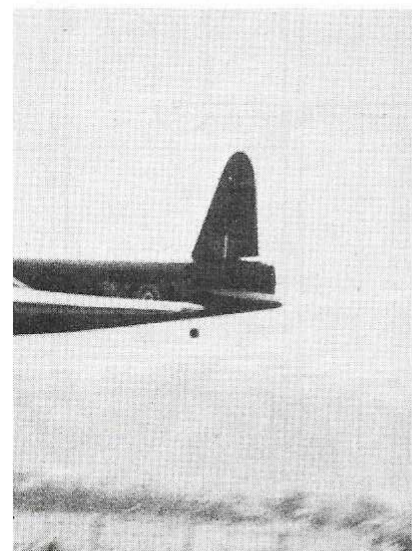
flight. I think it is fair to say that most mishaps with twin engined models are caused by one engine cutting and if the model is at some distance it is not always obvious that this has happened until you initiate a turn. The simple answer in the case of an engine failure is to throttle back. Even with one engine ticking over the model can be brought in on the glide. Having got that off my chest I must say that the Wellington has proved to be a very stable machine as those who have seen it fly will agree.

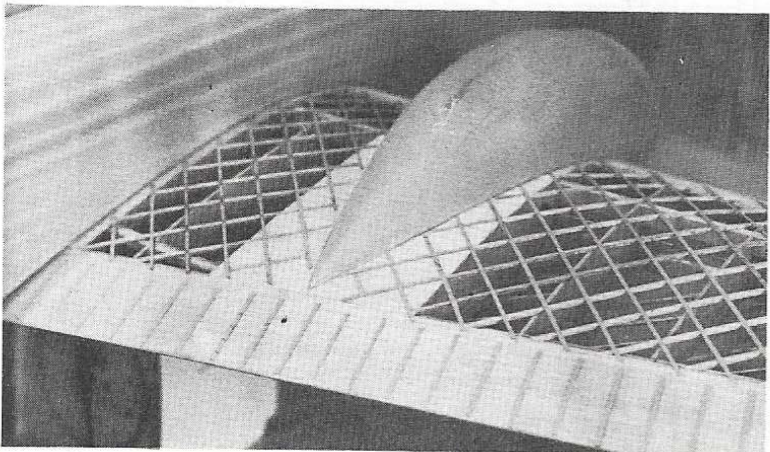
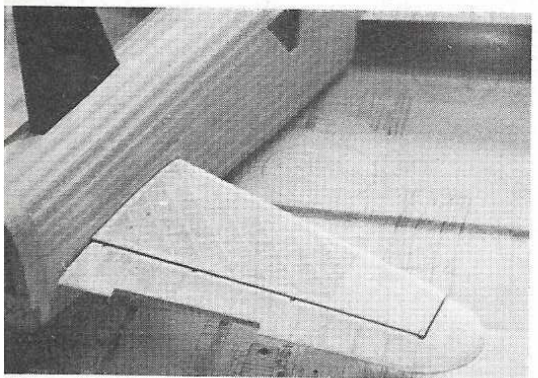
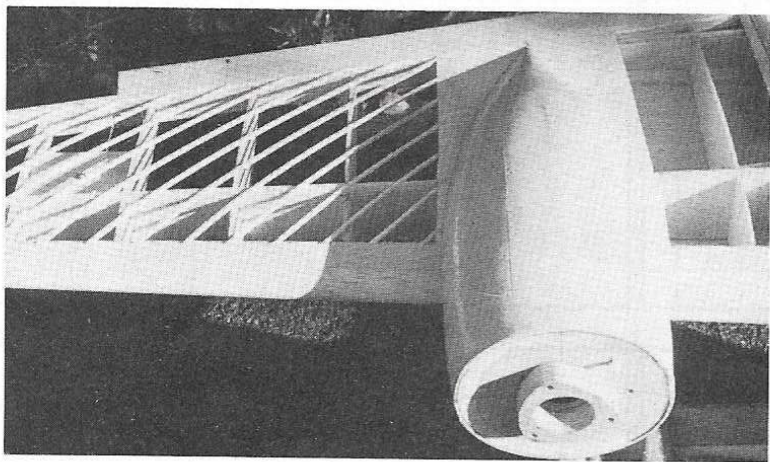
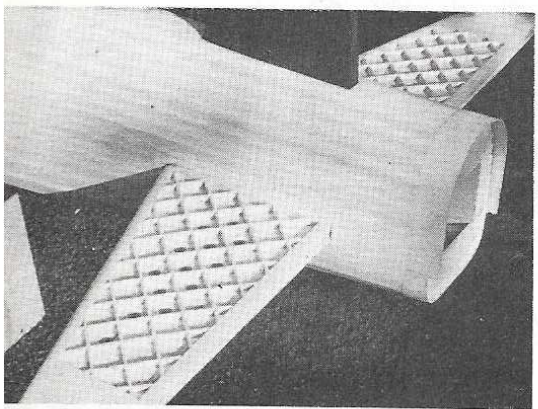
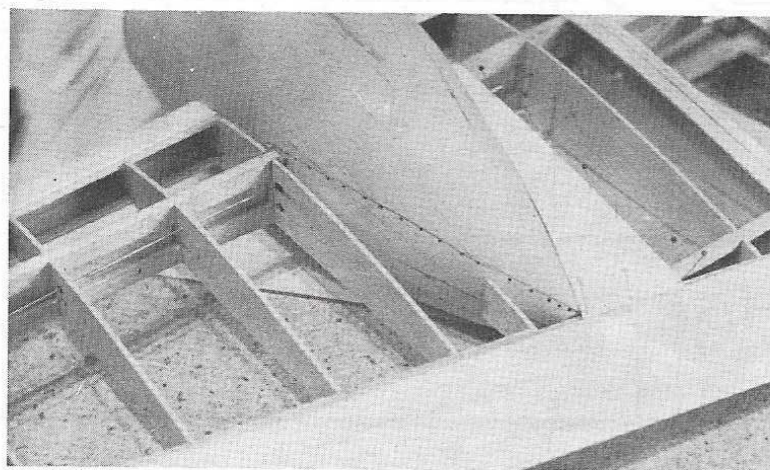
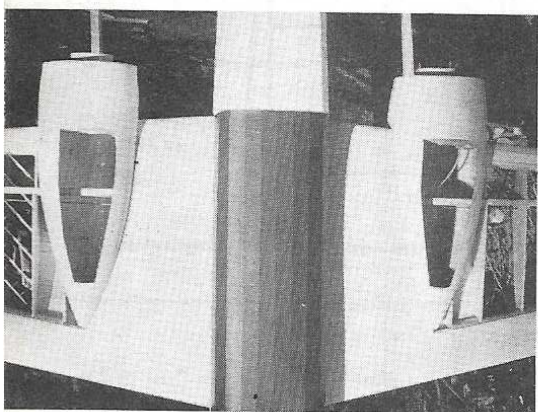
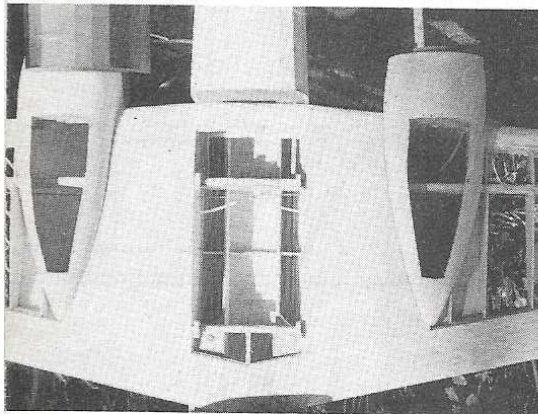
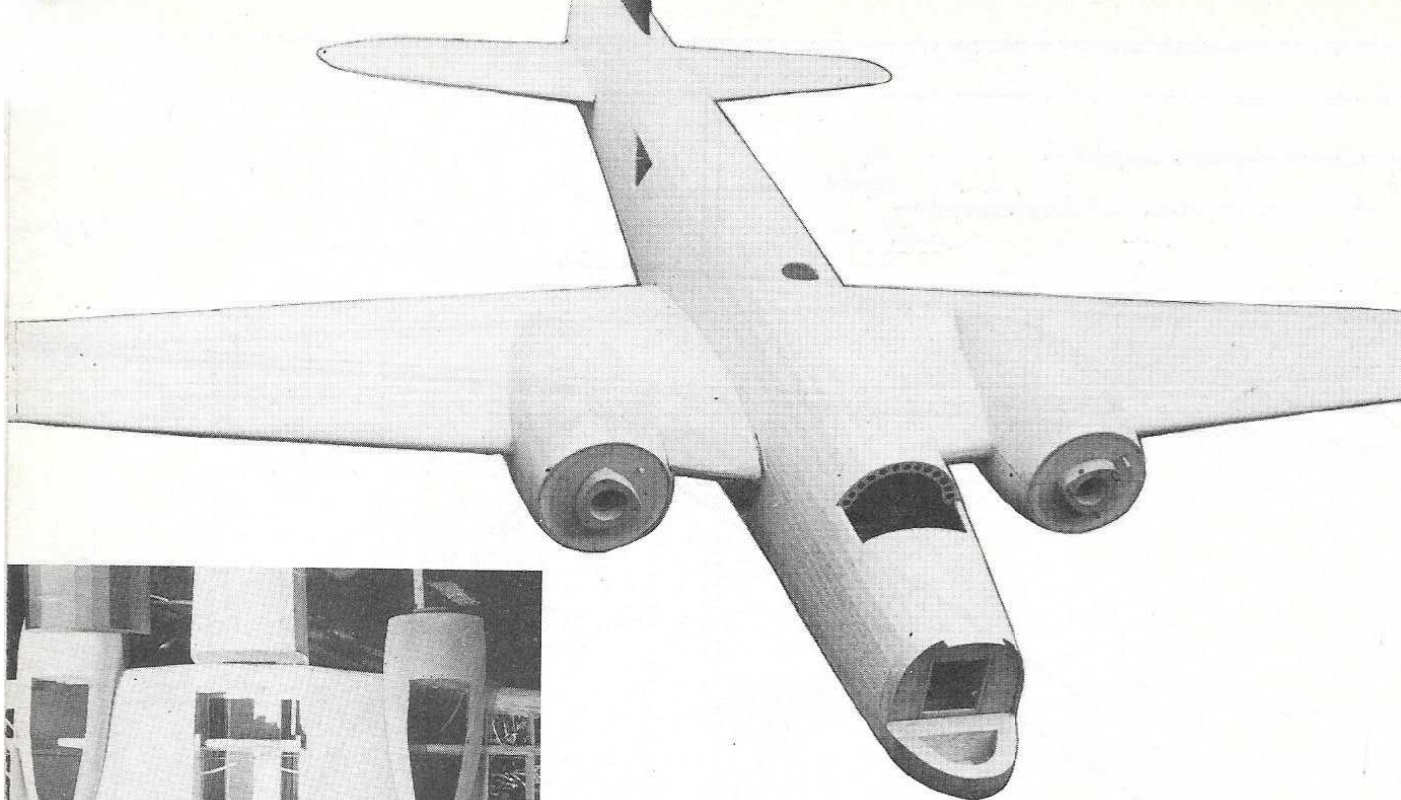
Since it is not aerobatic, aileron and elevator movements can be kept to a minimum and this makes for smooth flying even if you are a bit heavy on the sticks. (Do not however reduce this at the expense of adequate control in all attitudes though - ED).

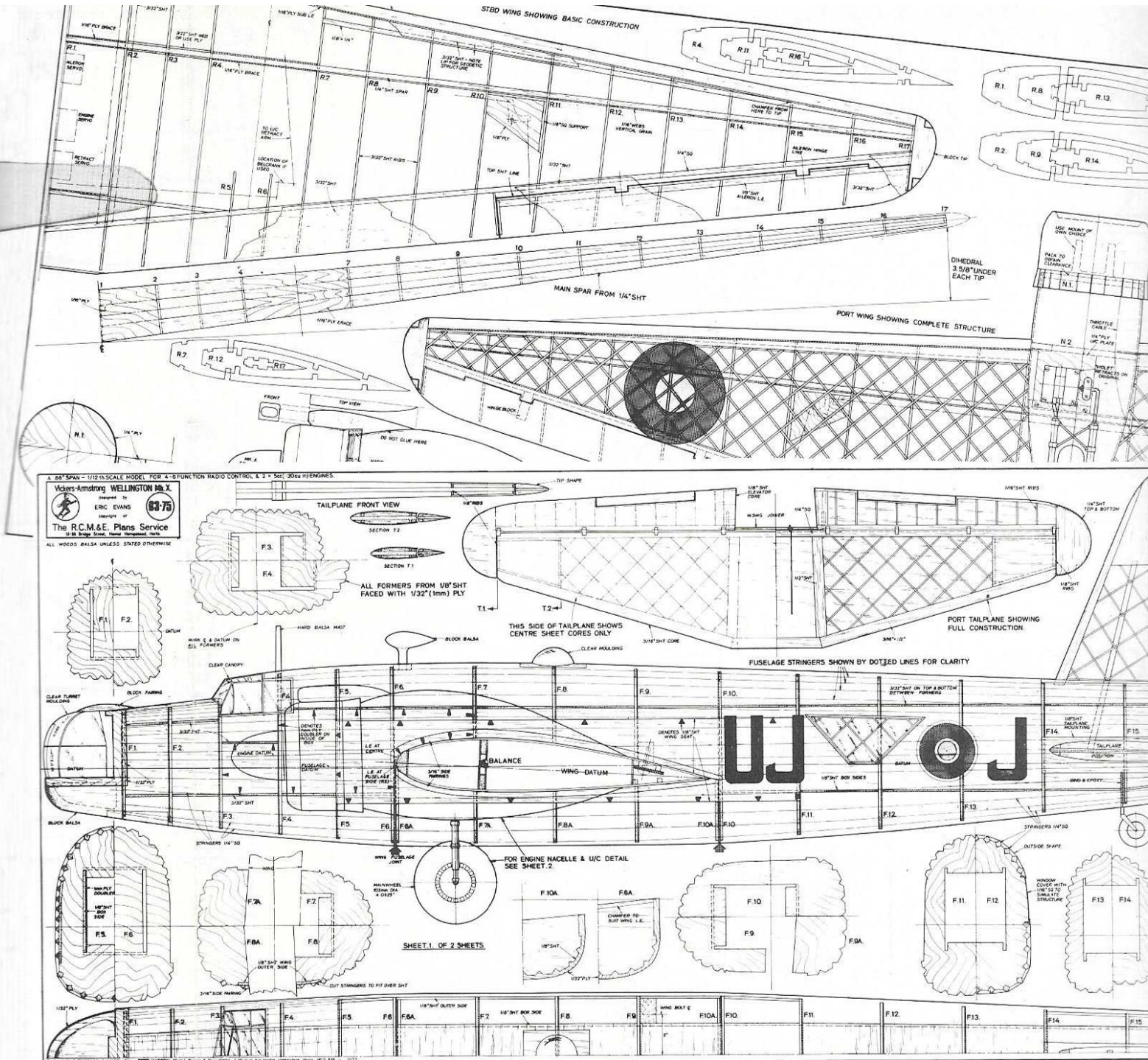
Due to its configuration, there is little chance of the model tipping on its nose when taking off or landing. However, a little up elevator at the start of the take off run, or when taxiing will keep the tail on the ground. Once on the move, returning the elevator stick to neutral will allow the tail to lift. In a breeze, the model will leave the ground of its own accord but in calm air elevator is needed to make it unstuck. In shallow turns there is little or no tendency for the nose to drop, which makes for relaxing flying so that compulsory manoeuvres, like the figure eight and procedure turn, can be made to look very smooth.

Finally, let me say that those of you who have flown large twins will know the fascination, the sense of power and remoteness that one feels. Indeed it is an experience you should not miss.

May I wish you every success with the project and many happy hours of flying.







Although by no means the simplest scale model ever, designer Eric Evans considers construction to be fairly straightforward – it's just that there's rather more of it. Pictures here show general areas of constructional detail. Simulated geodetic structure on wings and tailplane require patience rather than great modelling skill. Twin Enya 29 motors used on one of the prototype models featured mufflers entirely enclosed in cowls. Glass fibre moulded engine nacelles and cowls plus vacuum formed cockpit canopy, astro-dome and turrets are available to order from Alpha Models, Whitby Road, Ellesmere Port.

Construction pictures depict the second prototype model, the Mk X. Both Eric Evans' models featured retracting undercarriage. Violet retracts were used on the Mk III and Kraft units on the Mk X.

