

Rocket

Terry Anderson describes the building of his five function aerobatic design.

I wonder how many flyers realise how much easier aerobatics are with a decent aerobatic aircraft rather than their "Sport" model. Not this one in particular, I hasten to add, but any good design that's built true, correctly balanced and with a correct thrustline.

The Rocket was actually conceived shortly after the turnaround schedule came in. I had built a large new design after all the talk of geared units, built up wings and other hysteria. Most of us were wrong and the competitive models were still going like the clappers.

The fuselage is as low profile as I could practically make it, and still get some packing around the receiver. The fin/rudder area is just adequate. This adds up to an excellent crosswind performance. The model will still climb on knife edge, presuming you have enough power. My model has the Webra long stroke with a Super Tigre carb and Mk II x 7¾in +2 prop. This gives adequate power and is 103 db at one metre. Whether you fly competitively or not, if your site is noise sensitive, these long stroke engines with high pitch propellers are an easy way of reducing noise considerably.

The first two Rockets were built with fixed undercarriage and they are certainly less bother, but I intended to start using retracts again on the next pair.

To check on any change in flight characteristics I removed the undercart and had it hand launched — that turned out a little hairy but airborne it was. You would think that after two years of seeing the wheels hanging down it would look strange without them, wrong, it looked instantly better. The model "appeared" to fly faster but nothing else changed enough to warrant modification.

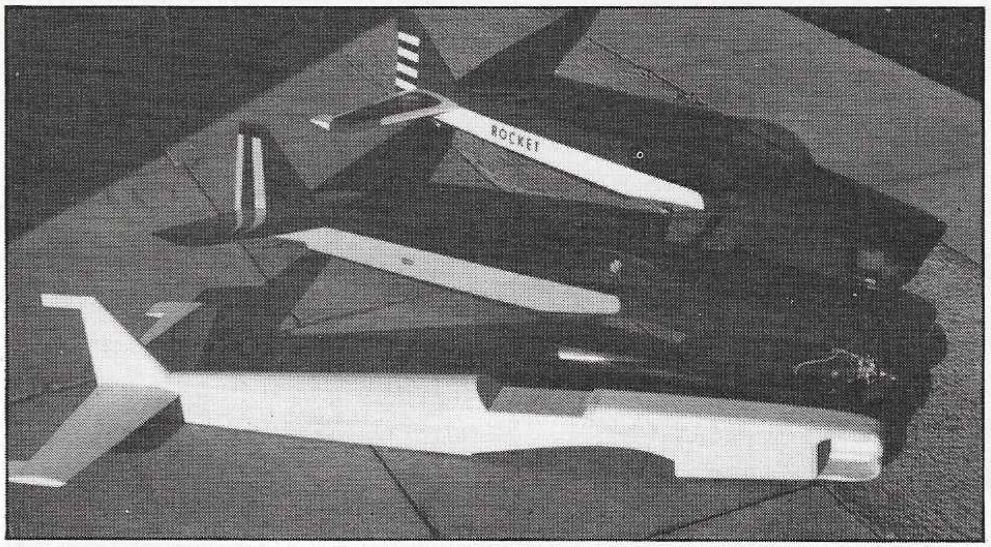
Building

The correct dihedral for this model is obtained by joining the wings flat upside down with the aerofoil centre lines parallel to the building board. This will ensure that no roll is induced when rudder is applied. Firstly, add the ⅜in. tips to the separate wing panels and mark their centre lines. Now pin the panels together and check both tips with a spirit level, adjust the centre joint if necessary and mark across the join at trailing and leading edges, part, then reassemble with epoxy round the inside edge — this will stop any fibreglass resin seeping into the join and destroying the foam. The joining of the tailplane can be checked with a square vertically. Due to the close coupling of the engine, wing and tailplane centre lines, no tailplane anhedral is necessary.

Fuselage

After Evo-stiking the ply doublers to the sides, epoxy all three formers square to the left hand side then assemble upside down over a centre line. Glue only B and C, then when the bulkhead is pulled in this gives about 1° sidethrust.

Mark a line one inch below the tailplane centreline. This enables you to check the tailplane position accurately as the rear cen-



treline will be missing at this stage. The wing has a 3/16in. incidence in the chord length. This gives the correct lift for an 8lb. model (paint finish with retracts). If you intend to Solarfilm with fixed undercarriage (approx. 7lbs.) 1/8in. incidence is sufficient.

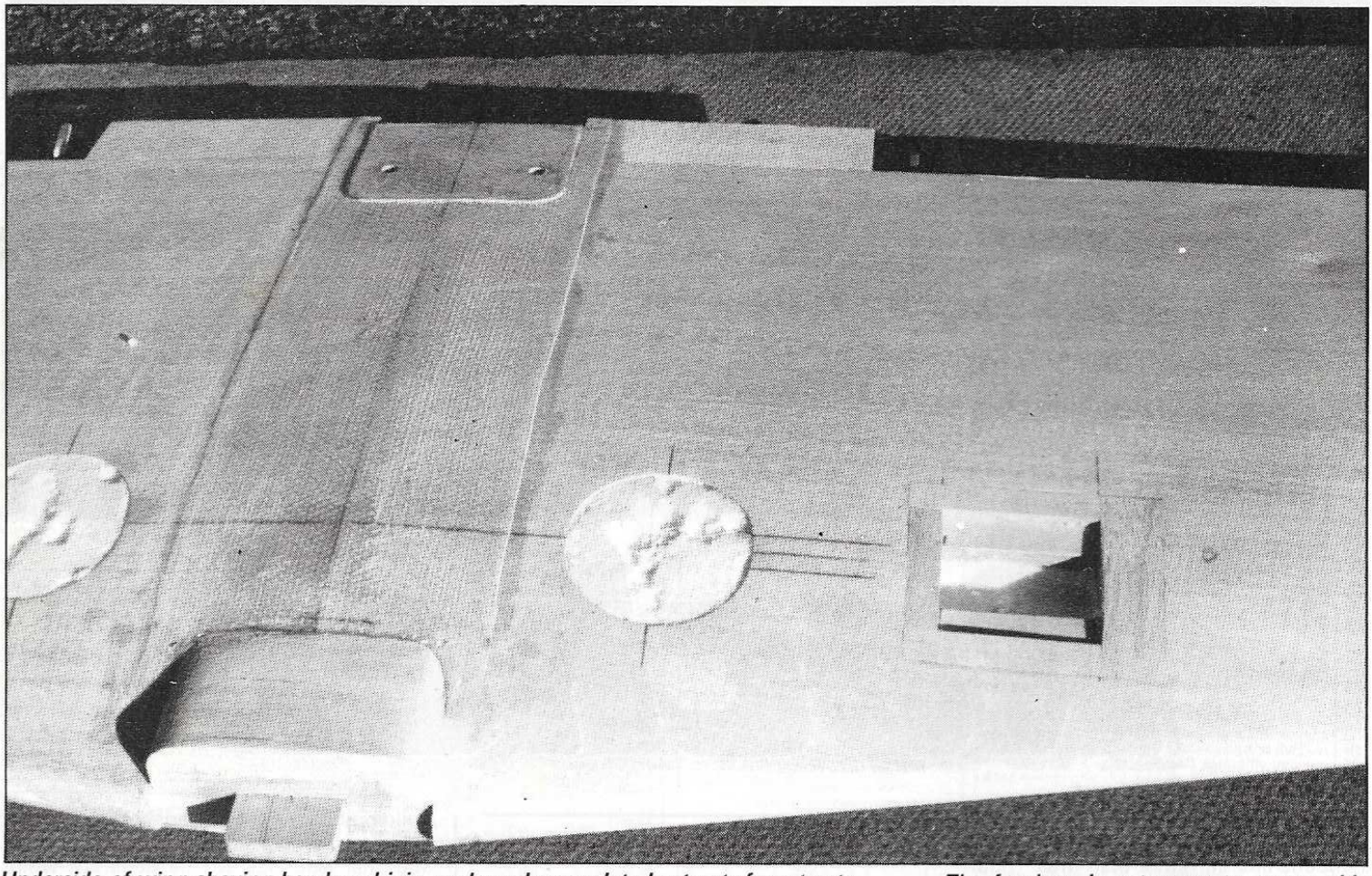
These points guarantee the model will fly with all control surfaces at neutral. The wing tongue is simple to adjust if you make a mistake and should be a tight fit. This along with an accurate wing cut-out will ensure that vibration from the side mounted engine is transmitted soundly throughout the airframe. At all stages check everything is square, use plenty of centre lines.

Check fin is square to tailplane.

Check tailplane is square to fuselage.

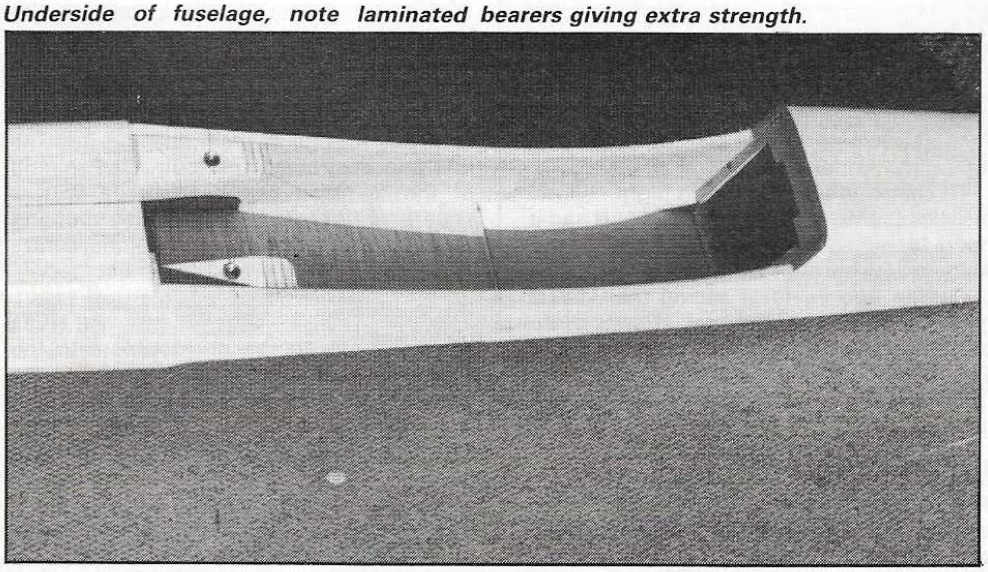
Check wing by measuring tipe to bottom

Rocket one, two and yet to be completed three.

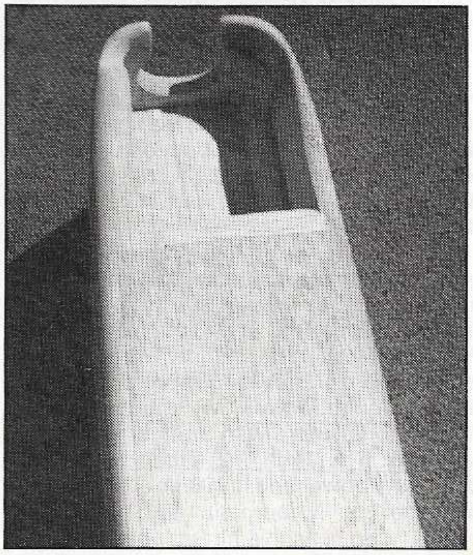


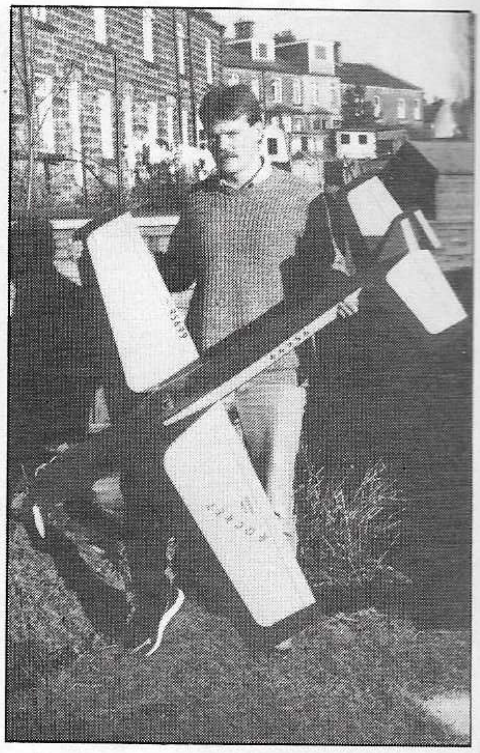
Underside of wing shaving bandaged join and nearly completed cut outs for retracts.

Underside of fuselage, note laminated bearers giving extra strength.



The fuselage is cut away to accept side mounted engine.





Designer Terry Anderson with a completed rocket.

of fin.

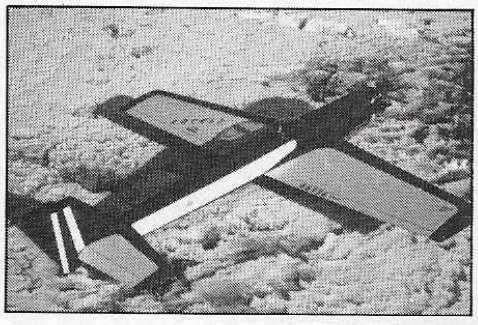
Check wing and tail parallel when viewed from rear.

Finishing

The original was glass clothed completely but the last three had just the fuselage and control surfaces done for durability, plus it makes the ailerons nice and still. The veneered wings and tail I give one coat of sanding sealer, then coat them entirely with polyfiller. This is then completely sanded away so it only remains in the grain of the obechi, one more coat of sanding sealer and then lightweight tissue doped on. One more coat of dope and you have a perfect surface on which to spray your primer.

Flying

With the C of G, control throws and thrustline as per plan also some wing weight to counter balance the engine, there should be no problems. The sidethrust needed will vary slightly according to the prop/engine combinations. Check this first by putting the model in a perfect vertical climb against the wind, if the model yaws either way adjust accordingly. Adjust loops with wing weight. Downthrust is less critical, 1° should be fit and forget.



If you are interested in aerobatics the Great Britain R/C Aerobatic Association is a superb body to join with regular newsletters containing competition reports and technical information or perhaps you might like to become a judge The Pro is John Palmer on 01 845 6337 give him a ring and he will be glad to help.