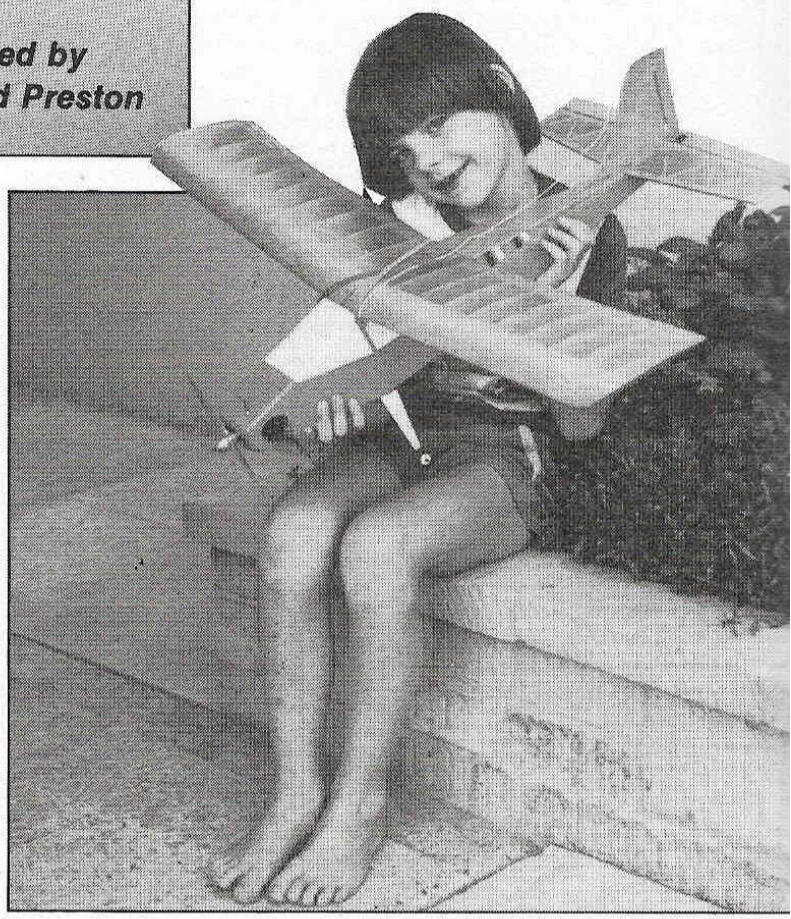
Jiffy

36in span, two function radio sports model for .8 to 1.0cc engines. LOW COST FUN

Designed by Richard Preston

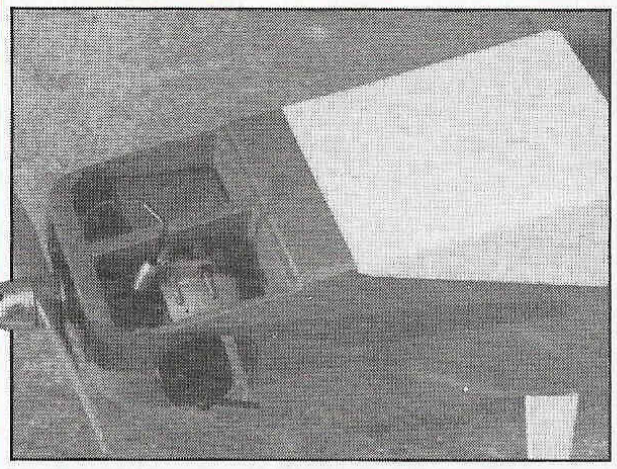
ABOUT 15 YEARS AGO I built a David Boddington designed Quest for a DC Merlin and single channel radio. Due to my inexperience the typical life of one of my small radio models in those days seemed to be just a couple of weeks so the poor little Quest didn't stand a fair chance to prove itself. Now that I am once again interested in the more 'back to basics' type of model, I decided to design a simple two channel model using the very same DC Merlin that I used all those years ago, so the Quest style was obviously going to form the basis of the design. The model features conventional building methods and should not present any problems to anyone who has built a normal free flight model. The main ingredient for good performance is low weight so make sure that all the materials are carefully selected. The prototype weighed only 16oz complete with radio gear using standard size servos and 225 Nicads. With the little Merlin turning a 6in × 4in propeller at full song a very respectable rate of climb is possible together with some basic aerobatics. basic aerobatics.

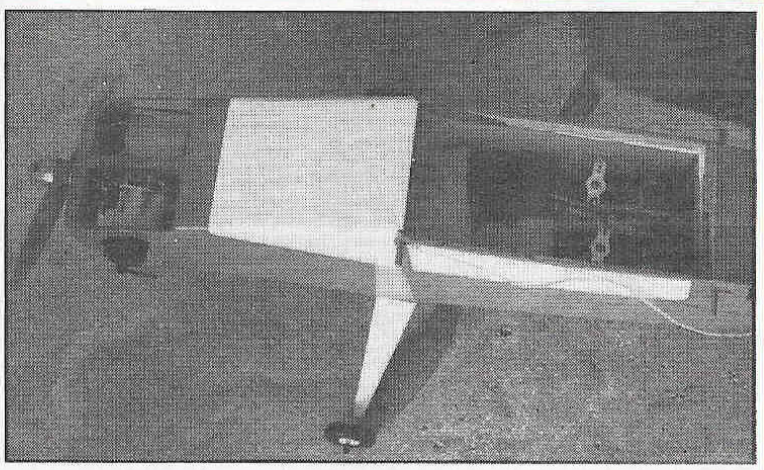
Construction starts by cutting out all the fuselage formers, fuselage sides and doublers. Cut the wing dowel holes in the ply doublers before cementing them to the left and right hand fuselage sides. Bind and epoxy the undercarriage wire to former F3 and allow to dry. Cement formers F2 and F4 onto one fuselage side making sure that they are both square. When they are dry cement the other fuselage side directly onto the formers, once again checking for squareness. The ⅛in ply engine plate should now be eased into position through former F2 and epoxied. Former 2A can now be cemented into position against the rear face of the engine plate. Cement former F3 into position noting the angle. The false floor that forms the top of the battery compartment can now be positioned and cemented between formers F2 and F3 over the top of F2A. Bring together the tailend and cement, holding it with a peg until dry. Carefully position and cement formers F5 and F6 between the two fuselage sides. Nose former F1 can now be cemented into position followed by the vertical fillets. Carefully cut out the left hand side engine cowling to suit whichever engine is to be fitted. The 1/16in ply undercarriage brace should now be cemented into position between the undercarriage wires followed by the rest of the top and bottom fuselage sheeting. Leave the underside of the engine compartment clear as this helps cooling, aids priming and allows the oily exhaust film to drain away. The smaller items such as tail skid, top cowling, control snakes and wing dowels can now be added. Don't cement the wing dowels into position at this stage as the fuselage is easier to cover with them removed.



Son, David, holds Dad's 'Jiffy' in the heading illustration and daughter Julie, not to be left our, makes a charming picture above. Lightweight, simple construction, low cost of materials and economic fuel consumption all add up to FUN with the 'Jiffy'.

Make up a wing rib template from 1/32in ply and use it to cut out all the ribs noting that the root end ribs have a wider spar slot to allow for the diheral brace. Carefully cut out the main spars from good straight grained medium to hard balsa. Pin the right hand spar and trailing edge into position directly over the plan. Cement all the wing ribs into position noting that the root end rib is angled inwards towards the spar. Cement the leading edge into position and allow to dry. The wing tip sheeting can now be added. Carefully remove the wing from the plan. The left hand wing can now be built





directly over the plan in the same manner. When complete, the two wing halves can be joined at the centre by cementing the inboard ribs together complete with the ply dihedral brace in position. The leading and trailing edges can now be trimmed and sanded to shape.

Tailplane construction is straightforward as it is built directly over the plan. When the tailplane and fin have been made the elevators and rudder can now be fitted making sure that they are free to move easily.

The prototype was covered with good old fashioned tissue but an iron-on film could be used. Whichever method is preferred the fuselage should be covered before cementing the wing dowels into position. When the tailplane has been covered it can be cemented into position, followed by the fin.

Carry out a trial fitting of the engine and fuel tank to check that all goes in. When satisfied that all the front end kit can be installed with ease, remove it all and give the engine bay and fuel tank bay a good coat of fuel proofer. If the model is being covered with tissue then the whole airframe should be fuel proofed.

Carefully install the radio gear in the main cabin area and battery compartment making sure that the centre of gravity remains where shown on the plan. When the radio gear is in position and linked up, carry out a check for correct movement of the control surfaces as follows: range of movement should be ¼in either way for both rudder and elevators, the control runs should be free to move easily with no binding and they should move in the right direction.

Choose a nice calm day or one with a gentle breeze for the first flights. Check that everything is secure and that the flying surfaces are not warped. Test glide the model with the radio switched on, because of its light weight it will have a nice gentle glide angle so small trim corrections can be carried out.

Test run the engine to check that it will continue to run when the model is held in the usual flying attitudes. The prototype was test flown with a 7in × 4in propeller fitted and the tank filled to give an engine run of about 30 seconds. If it is possible to obtain an old plastic syringe or some other measuring device the fuel level for the first flights can be judged quite quickly after a bit of practice.

Get the engine running at max revs and after having checked that the radio is switched on and working, launch the model directly into wind. Keep the model heading straight until a reasonable altitude has been reached (about 50ft) before gently turning the model. Trim out any tendencies to turn either way and also note if the model has developed a power stall. Try to make a mental note of the flying characteristics so that the necessary adjustments can be carried out after the flight. With the engine stopped the model glides beautifully and remains controllable. If more exciting flying is required then fit a 6in × 4in propeller but beware, it can soon travel a long way on a full tank so start with short flights again. Finally, how about fitting a throttle equipped PAW80 and a third servo, there should be enough room to squeeze one in and the model would be even more fun to fly.