

top pieces from $\frac{1}{16}$ in. medium-hard, stiff sheet; F1 is from $\frac{1}{8}$ in. ply, F1a, F2 and F3 from $\frac{1}{8}$ in. balsa, the sternpost is scrap $\frac{1}{4}$ in. sq., and the doublers and U/C seat from 1 mm. ply. Lightly sand all sheet parts *before* assembly, and use P.V.A. glue throughout the fuselage construction. Make a 'sandwich' from F1 and F1a – the difference in their height is to make adjustments of the needle valve easier – and put aside to dry. Lay one fuselage side on the bench, and add F2 and F3, making sure that they are 'square'. Put a slight chamfer on the edge of the F1-F1a sandwich (to give the correct side-thrust angle), and glue this to the fuselage side. When dry, add the other fuselage side and doublers, using plenty of pins. Next, the fuselage bottom is fitted, by simply gluing it on to the bottoms of the formers and in the space between the fuselage sides – but only back to F3. The front top sheeting is fitted in a similar manner, and the wing seat is recessed into the space between the fuselage sides and F2 and F3 (again using plenty of pins all round). You should now have a parallel-sided structure, and a piece of unattached fuselage bottom two feet long, flapping about! Apply some glue to the edges of this piece, then pull the fuselage sides together, insert the sternpost, and clamp the rear with a clothes peg. The rear fuselage top sheeting is now added – be careful to keep it flush with the top of the fuselage sides – it bends easily, so there should be no problem. Use a few pins to hold the assembly together, then wrap plenty of masking tape all round the rear fuselage – this keeps the sides, top and bottom sheeting nicely together. (Do not use clear adhesive tape of the Sello-tape variety – it is too tacky and tears off the wood when removing it.) When the whole assembly is dry, remove the pins and the masking tape, and give another light sanding overall – but don't round off the edges since this will weaken the structure without en-



The designer seen with his model at the '71 British Nationals, where 'Sundowner' lived up to its name with many 'sorties' over the airfield. Note the use of black tissue trim to achieve the scalloped effect and the canopy outline.

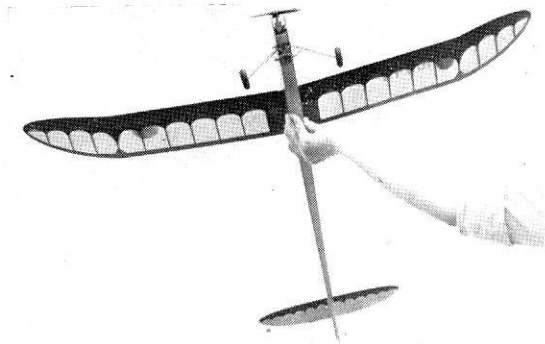
hancing appearance. The wing dowels are now added – they are a push-fit, i.e. not glued – if they break, they're easier to replace that way. Use an undersize drill, or a rat-tail file to make the holes. Do not add the U/C retaining dowels or the ply plate: the U/C is positioned last of all to correctly balance the model.

The fin, subfin and tailplane are made from $\frac{1}{8}$ in. medium balsa; round off the L.E. of the fin or subfin, and sand the tailplane to a streamlined section. Cut a slot in the fin to accept the tailplane, glue the two together making sure that they are at right-angles, and let the assembly dry. Fix the wing to the fuselage, temporarily, then glue the fin/tailplane assembly to the fuselage, checking that the fin is vertical and

the tailplane horizontal by a simple 'eyeball' alignment on the wing, as viewed from the tail end. Glue the subfin to the bottom of the fuselage, and when everything is dry, fit the trim tabs and skid, securing each with a little epoxy resin. Remove the wing, and give the fuselage and tail assembly two light coats of sanding sealer, sanding gently after each coat has dried. This will produce a smooth surface finish, which will not require tissue covering for either strength or appearance – unless a coloured fuselage is desired. The 'windows' are black heavyweight tissue doped on to the fuselage; coloured tissue cut in the same pattern as that applied to the wing can be doped on to the tail if desired. Give the complete fuselage and tail a coat of fuel proofer, two around the engine bay.

The undercarriage is made out of four pieces of wire – the assembly may seem unduly complicated but is both practical and helps to lend a touch of 'authenticity'. Use some fine tinned copper wire to bind the components together before soldering them – L2 to L1, L3 to L1, then the L4 pieces to L1 and L3. The pieces of electrical insulation sleeving pushed over L1 and L3 before making the final bends are worthwhile, to prevent undue marking of the bottom of the fuselage. Use $1\frac{1}{2}$ in. diameter soft rubber wheels.

Screw the engine to F1 in the positions shown, using four short ($\frac{1}{4}$ in. to $\frac{3}{8}$ in.) wood screws. Attach the wing to the fuselage, hold the U/C in place temporarily with masking tape, and test for balance by supporting the wing tips under the spar. The U/C position may be altered from that shown on the plan without affecting ground stability or appearance, and by using the U/C to balance the model rather than, say, lead weights or plasticine, the overall weight can be kept down. When satisfied that the model balances horizontally (and if a *small* amount of balast has to be added to the nose or tail to achieve this, no matter), remove the U/C, drill the holes for the dowels (which are again a 'push-fit'), and finally glue on the U/C plate, which extends across the width of the fuselage. Remember to give these items a dab of



The high aspect ratio wing and long fuselage are evident in this picture. Very good glide available from this lightly-loaded design.

fuel proofer before test flying. The completed model should weigh not more than about 7 oz.

Flying

If you are blessed with a pet 'met-man' and a friendly local farmer, choose a calm day and long grass for testing. Adjust the glide trim with packing under the L.E. or T.E. of the wing (to cure a dive or stall respectively). Fill the tank with the model turned on its side, through the 'top' vent until fuel runs out through the 'bottom' one – this will give about $\frac{1}{3}$ rd of a tankful of fuel, which should give an adequate engine run. Any of the standard Cox props as supplied for the Pee Wee are suitable, although the 4 in. x $2\frac{1}{2}$ in. has been found to give the best results. Use the trib tab to give a left-left flight pattern (about $\frac{1}{8}$ in. to the left is enough for this, assuring there are no built-in warps and the sidethrust angle is as shown). Take-offs and landings on smooth grass are a pleasure, and the low wing loading gives a good glide. Please remember to add a name and address label; most people are honest – if you lose your model and it's found, you stand a better chance of getting it back that way.