

Full size and model views show the closeness to scale of David Garrett's rubber model. Note that spacious cabin, cantilever undercarriage leg and strutless wing. The Do. 27 is a "natural" scale subject and our plans have added gen for use of a Cox Pee-Wee. At right Model and full-size in action.

Dornier Do 27

by D. Garrett



IT IS A long time indeed since AEROMODELLER featured a plan for a rubber powered scale model. Actually the demand for such a model is limited with so many excellent small (.3—.75 c.c.) engines readily available, but enthusiasts for this type are usually painstaking modellers who take a great pride in the precise workmanship which goes into their models. David Garrett's little Dornier 27 will, we feel, fulfil such an enthusiast's requirements. It is not complicated, but the less experienced would need to have constructed at least two previous models to competently execute the Dornier's fuselage.

The full size Dornier Do 27 is a STOL Multi-Purpose high wing monoplane seating 6 to 8 persons. It uses a 270 H.P. Lycoming engine and Hartzell constant speed propeller. The wing incorporates a full span leading edge slat, the full span landing flaps and ailerons are double-slotted for excellent slow flying characteristics and outstanding abilities for short take-off and landing (STOL), making the aircraft particularly adaptable for operation from the smallest of landing strips. Add to this the possible use of the Do 27 for Cargo Transport, Aerial Advertising, Crop Spraying, Aerial Photography, Ambulance and Rescue Work, Glider Towing, and Shorthaul Traffic, one begins to understand the potential of this aircraft. It is the only one of our acquaintance that has the airspeed indicator reading to *minus* figures!

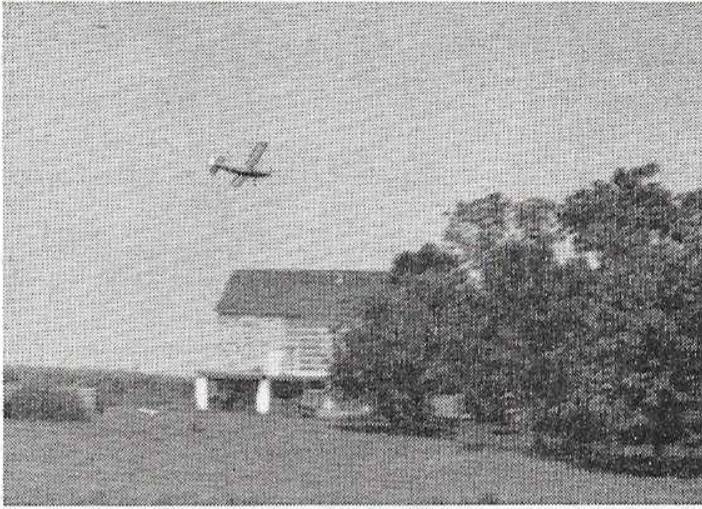
Start construction with the wing, built in three pieces—left and right panels and centre section. Of these the left and right panels are built first. Notch the $\frac{1}{8} \times \frac{1}{2}$ inch trailing edge, pin down over the plan and pack up to meet the section. Pin down the $\frac{1}{8} \times \frac{3}{8}$ inch main spar over the plan and cement the wing ribs in position, followed by $\frac{1}{16}$ inch $\times \frac{1}{8}$ inch upper surface spar. Wing tip will depend on the section preferred, either from $\frac{3}{8}$ inch sheet or soft block. The leading edge, built up of two $\frac{1}{8} \times \frac{1}{4}$ inch laminations is not fitted until the wing panels are assembled. Build the centre section around D1 cut from $\frac{1}{8}$ inch sheet and cement an $\frac{1}{8} \times \frac{3}{8}$ inch doubler on its rear face to form a continuation of the main spar. Pin C3 over the plan, cut out C4 from $\frac{1}{2}$ inch sheet, carve and sand to section, and pin in position, cementing to the rear face of C3. Position both C1's, impose the C2's and top these with the two top spars $\frac{1}{16}$ in. $\times \frac{1}{8}$ in. and C5. Add the rear lamination of the leading edge, and when set remove the centre section from plan. Cement the $\frac{1}{8}$ in. $\times \frac{1}{4}$ in. front bottom spar

in place, and $\frac{3}{8} \times \frac{1}{4}$ in. leading edge stiffener. Assemble the centre section to the left and right wing panels using D1 and C3 guides to correct dihedral angle. Add inner leading edge lamination to outer panels butting up to C1 on either side of centre panel. Front laminations meet at the centre line of the wing. Fuselage is constructed in the stages shown on the plan. Complete stage one by pinning the backbone over the plan and adding half formers as shown in the sketches. Then proceed to stage two. Remove from plan and repeat for the other side of the fuselage and add stringers alternately to either side. Fabricate noseblock (alternative construction shown for those wishing for a Pee Wee power version) and see that it fits correctly.

Build the tailplane around its mainspar, packing up the leading and trailing edges to suit after the ribs are in position adding the tips last. Do not forget the gussets.



27" span for Rubber or Pee-Wee



Cement the tailblock in position and carve and sand to shape. Impose the fin spar and R1 to R4. Add the fin outline, first the leading edge, followed by the trailing edge and the top. Add the finishing touches to the airframe by sanding down any irregularities and cover with Lightweight tissue. If the builder does not intend to colour the model, two coats of thinned clear dope should be applied. The Dornier colour scheme shown on the A.P.S. plan is standard and when colouring the model only one coat of thinned clear dope is required.



This model is fast and stable, and once at altitude is not greatly affected by wind gusts. When balanced properly the landing approach is very good. Lubricate the eight strands of $\frac{1}{8}$ in. rubber motor 24 in. long, with a mixture of Glycerine and green soap or standard lubricant, and test glide with a fairly fast hand launch, slightly nose down. The original model flew with $\frac{1}{32}$ in. incidence under the tailplane leading edge, and an 8 inch prop clipped to $7\frac{3}{8}$ in. diameter.