

## Jo di Giorgio's sport aerobatic 'sleekie'

56" SPAN for .30 to .40 motors, full-house radio

I TAXIED the model onto the mowed strip of grass and presented the nose to the wind. It stood there like a stallion ready for the start of a race; the nose slightly up, the tail almost touching the ground and the engine ticking over just a bit too fast. I checked the controls—elevator, ailerons, rudder and engine. *Dorado* started to roll in front of me and I pushed the throttle stick all the

way up, and the elevator stick back a tiny bit. After ten yards or so it lifted off the ground in a beautifully smooth way, and headed for the sky.

At about thirty feet I started a left hand circuit and, by the time the circuit was completed, the model had risen by about another thirty feet—so I flew it up wind and adjusted the trims. It needed a slight touch of down-elevator and left ail-

eron, to keep it straight and level. I felt confident enough to start putting *Dorado* through its paces, and found that I needed the full power of the HP 40 only when attempting torque rolls, otherwise  $\frac{2}{3}$  throttle was adequate for most of the flying, so it could easily fly with a .30 engine. That was the first flight and I went on flying until the engine cut out and realised that even on the glide the model seemed to be guided by rails as it was so smooth. I know I must sound very enthusiastic about it but you should hear other people!

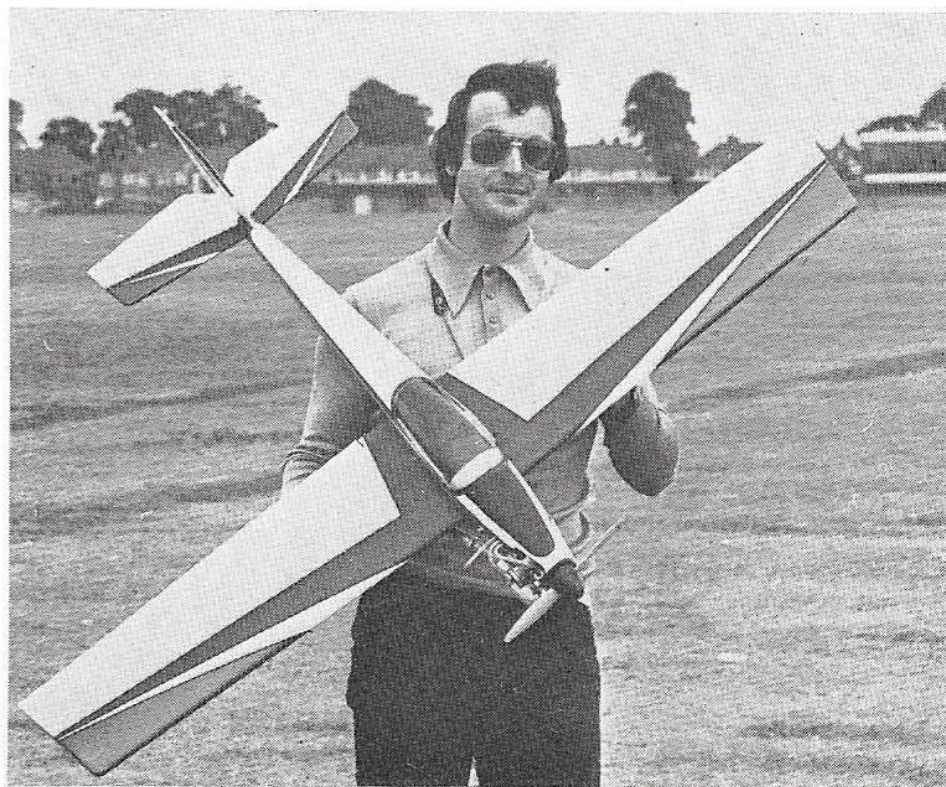
### CONSTRUCTION

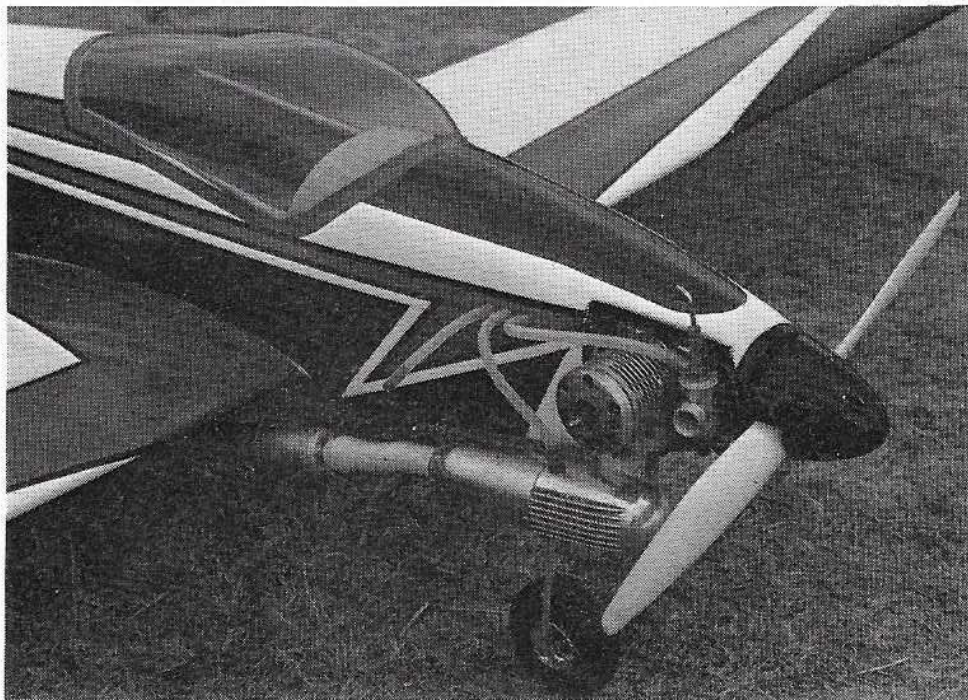
It is a straightforward proposition for modellers with some experience, and "should not present any problems"—as they say in all the best plan features!

#### Fuselage

Cut the sides from  $\frac{1}{8}$  in. medium balsa, add the  $\frac{1}{16}$  in. plywood doublers, the  $\frac{1}{8}$  in. balsa wing doublers, the  $\frac{1}{8}$  in. doublers at the tail section and the balsa strips ( $\frac{1}{4}$  in.  $\times$   $\frac{1}{4}$  in. and at the front,  $\frac{1}{2}$  in.  $\times$   $\frac{1}{4}$  in.). Mark the positions of formers A1, A2 and A3. When the sides are dry, make sure they match, apart from the front end where the right-hand side should be slightly shorter. (Former A1 is tilted

You can see the size of this .40 powered model, when held by its designer, Jo di Giorgio,





to give down and right thrust). Cut formers A2 and A3 from  $\frac{1}{8}$  in. ply and A1 from  $\frac{1}{4}$  in. ply.

Glue formers A2 and A3 as prime joining formers. When this is secure, former A1 in place, taking care to maintain the shape of the fuselage. Glue the  $\frac{1}{2}$  in. sq. balsa between formers A1 and A2 and sand to shape. You have now the choice of filling the gap underneath with  $\frac{1}{8}$  in. balsa or installing some supports for a trap door for easy access to the tank and nose-wheel attachment. Then join the tail section and add the cross members. Cut formers F1, F2, F3, F4, F5, F6, from  $\frac{1}{8}$  in. balsa and glue them in position; build up with the stringers and then cover with  $\frac{1}{16}$  in. balsa sheet, wrapped round.

Glue balsa block at the top front, but do not shape until after having made the engine compartment. Plank the canopy area with  $\frac{1}{16}$  in. balsa and add  $\frac{1}{8}$  in. balsa fairings

on the sides. Install the engine mount and build up the cowling, around the engine you intend to use, with  $\frac{3}{8}$  in. balsa and  $\frac{1}{8}$  in. the plywood nose-plate. (The engine shown on the plan is an HP40, the engine mount is SLEC and the steerable nose wheel is a Micro-Mold single leg unit. Hole positions shown on section A-A are for these items.) The canopy used on the prototype is a Micro-Mold one which was trimmed to fit.

Plank underneath the fuselage with  $\frac{1}{16}$  in. balsa cross grain from T.E. of wing to tail tip.

### Wings

Cut the ribs using the "sandwich" method. W1 to W5 are  $\frac{1}{8}$  in. balsa, and the rest are  $\frac{3}{32}$  in. balsa. After shaping the ribs, work up the locations of the spars and

*Above: close-up of the motor/silencer installation and, below, the radio installation in Dorado.*

undercarriage rail before cutting them to size. You'll have to use some packing to build the panels accurately, so do take care to check as often as possible, while building, that everything is in line. Add L.E. and T.E. before covering the whole wing with  $\frac{1}{16}$  in. sheet—but don't forget to install the bellcranks inside the wing if you decide to use this method of control. (I used torque rods on the original). The wing-tip is designed to be as simple as possible as it is there, really, only to protect the tip of the aileron.

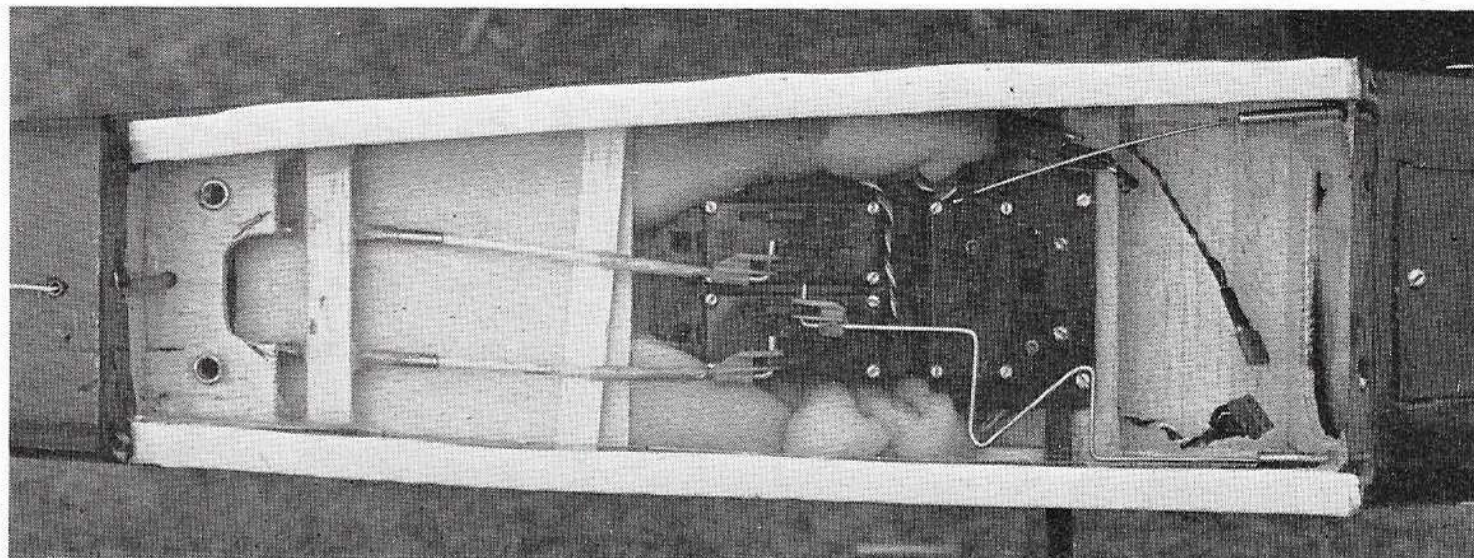
When both panels are finished, join them with some fibreglass and tape. Add the balsa underneath to match the lines of the fuselage, and locate the dowels. Position your finished wing on the fuselage and locate the fixing bolts.

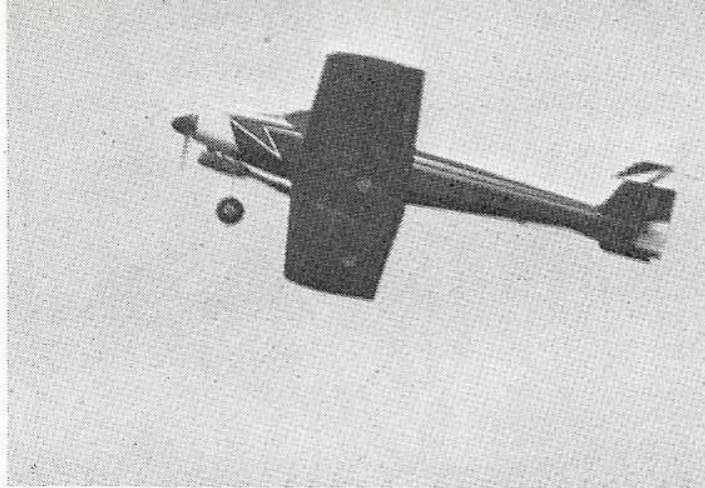
### Tailplane and fin

These can either be simply cut out of  $\frac{1}{4}$  in. balsa sheet (medium) or built up from  $\frac{1}{8} \times \frac{1}{2}$  in. frame, laminated with  $\frac{1}{16}$  in. sheet. Note that the elevator and rudder are made of  $\frac{3}{16}$  in. balsa, so shape the fin and tailplane to match. The under-fin is supposed to help flying while inverted. . . I must confess I don't know whether it helps or not, but at least it looks nice! The rudder is big enough for any of the manoeuvres you might want to attempt, and so is the elevator.

### Finishing

The original was covered with iron-on film. There is plenty of room for the radio and you can really afford to move it forward or backward inside the fuselage when establishing the centre of gravity. The tank compartment is designed





so that even a 10 oz. tank would find its place right through former A2 and be in line with the engine's carburettor.

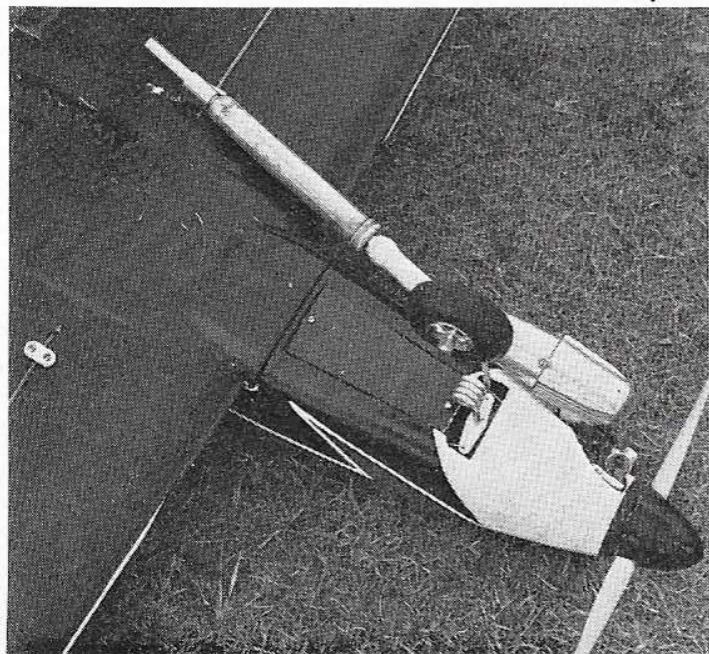
Secure all the moving surfaces well, as you don't want them to come off while flying!

### Flying

As mentioned before *Dorado* first flew with an HP 40 driving a  $10 \times 6$  propeller but it is light enough to fly with a .30 engine (the original weighs just under 5 lb.). The combination of  $1^\circ$  incidence on the wing and  $1^\circ$  downthrust is really to help towards a smooth flight, so don't alter it. Also do keep the  $2^\circ$  righthrust. Do note that the tail-plane is set at  $0^\circ$  and this is important.

Inverted flying will need a little down-elevator but this is usual with most planes. You will need to use more movement on the controls if landing "dead-stick." Spins are pretty fast, and will definitely need elevator, rudder and ailerons to start as, when trimmed and balanced properly, the model is not really prone to stall for any reason.

All that is now left for me to do, I think, is to wish you many smooth flights . . .



Above are some typical take-off and flight attitudes. Below (left): an underside detail shot and, at right, Jo starts up *Dorado* for another flight.

