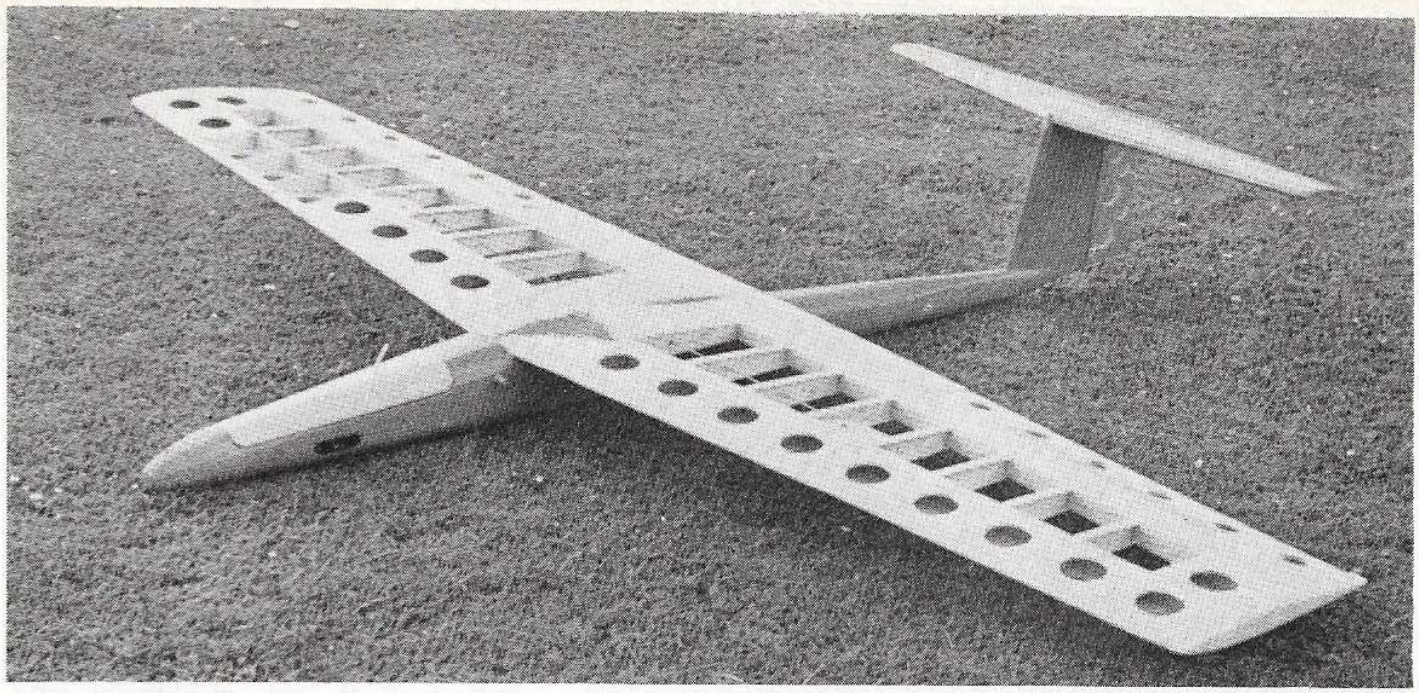


ANYMOUSE

by JOHN CHAPMAN

unusual 62" span 3-function slope soarer for racing and aerobatics

WHEN I FIRST became interested in slope soaring, I looked over the published designs but could not find what I felt was a good looking model. (*They all say that—and this'll be included by the next one that does!—Eds.*) This only goes to show that modellers have very individual tastes, of course. I therefore bought a kit for a fairly straightforward non-aerobatic glider on which to learn the basic skills of slope soaring. This model proved quite successful but, being non-aerobatic, I soon became bored just stooging to and fro along the slope, especially when the lift was good; after all, I had been flying aerobatic power models for the previous twelve months or so. Having learnt the basics of slope soaring, I decided that an aerobatic model would be a good thing to keep me amused and presented more of a challenge.

I decided, therefore, to design my own model, working on the well-tried aeromodelling rule that " if it looks right, it should fly. " There are those, of course, who question the " looks right " bit, but this is tied up with basic requirements as well as aesthetics. It had to have a large wing area to help cope with occasional marginal lift conditions, but not too large a span or it wouldn't go in my car—not to mention the question of roll-rate—so it had to have a large chord. It also had to have good penetration, as the wind speeds in Cornwall rarely drop below 15 knots and at times are very much more, so I decided on a 9 percent thickness/chord ratio. Also, as it was to be aerobatic, the aerofoil section had to be symmetrical.

I chose a high wing position in order to keep the ailerons as far as possible from the ground on landings, as some Cornish sites are rather on the rough side. The high tailplane was used for the same reason. I have a preference for slim fuselages as they do improve penetration—and the long nose was designed to increase the moment arm to the c.g. and therefore reduce the weight necessary to get this in the correct position. This, in turn, helps to keep the overall weight low, and I was aiming for around 2½lb. flying weight.

Enough of the theory, however—let's talk about putting it into practice and building the model. I don't intend to spend a great deal of space on detailed instructions, however, as I consider that anyone who builds this sort of model will have built others (or should, anyway, as slope soaring is very different from power flying), and everyone has his own building ideas, anyway (read any kit review!).

CONSTRUCTION

Fuselage

It is human nature to start with the fuselage, because it is the easiest part. I always do, anyway. The sides are cut from $\frac{3}{16}$ in. medium balsa and to these are added the triangular stock and $\frac{3}{16}$ in. wing seat doublers. I used white glue throughout construction as I believe it

Designer John Chapman about to launch *Anymouse* from his Cornish cliff site.

gives a better joint. When the glue has dried, taper the triangular stock to give the correct plan view when the sides are fitted together. The stock is then cut through, with a saw, just in front and just behind the second and third former positions respectively, to allow the fuselage sides to be bent to plan view. The formers are now fitted and, after checking the alignment, the assembly is clamped together (rubber bands, or some of those new moulded clamps now available) and allowed to dry thoroughly.

The soft balsa top and hard balsa bottom sheeting are next fitted, followed by the soft nose-block. When the completed assembly is thoroughly dry, it should be carved to section, after which the nose hatch is cut out, using a sharp knife.

Fin

The fin construction is simple but it should be noted that the $\frac{1}{2}$in.sq. leading edge and trailing edge pieces must be let through to the underside of the fuselage for adequate strength. Care should be taken to ensure a smooth route for the elevator control cable, which must be added before the fin sheeting is fitted. (You may notice a slight difference between the photographs and the plan, as the rudder area has since been increased to give really positive stall turns and spins).

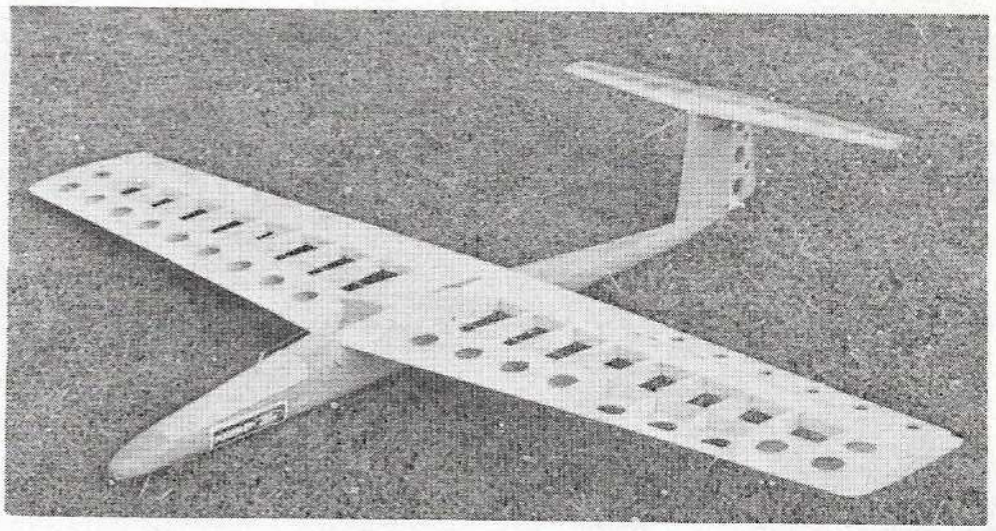
Tailplane

Again construction is simple, but care must be taken to ensure that the structure is warp-free. It is best to add the packing pieces under the leading and trailing edges of the ribs to ensure that they are correctly positioned. The top sheeting should be added with the assembly still fixed to the building board; when it is thoroughly dry, remove it and add the bottom sheeting, plus the capping strips to both sides. Carve and sand the tailplane to the section shown, and fit the fin. Be very careful with the alignment here, as an out-of-line tailplane will make the model wander in some manoeuvres. It will probably be found best to cover the tailplane and fit the elevator, before gluing tailplane permanently in place.

Wing

Build the wing in two halves and join them after the top sheeting has been added. The ribs are cut out using the " sandwich " method (they slot into the main spar egg-box style) and the leading and trailing edge strips are then added.

When this assembly is dry, the top sheeting can be added, while the wing panel is still fixed on the board. The other wing half is, of course, built in the same way, and the two halves joined together. The centre rib between the main spars is then removed and the $\frac{1}{16}$in. ply wing braces fitted, bent to follow the line of the spars. The servo box is made up separately and fitted into the wing, after which the underside is sheeted, capping strips added and the whole assembly allowed to dry thoroughly.



The ailerons are next marked out on the wood, then cut out, using a small hacksaw blade. Do not forget to cut each aileron's front face at an angle, to allow downward movement when it is fitted back to the wing. The lightening holes may be cut at this stage. I put these holes in the flying surfaces because I think they improve the appearance of the model without reducing the strength to any extent—but they do actually reduce the weight. Finally, the soft block tips are added and the wing given a final sanding to prepare it for covering.

Finishing

I will leave the choice of covering materials and their methods of application to the individual builder, as we all have our own favourite methods here. Do try to keep the weight down, however, as *Anymouse* flies better when lightly loaded. Mine weighs 2lb.9oz. ready to go; I covered it completely with iron-on film and it has proved adequately strong.

Flying

Choose a good day for the first flights, with a steady wind directly onto the face of the slope. It's safer to have plenty of breeze rather than " marginal " conditions—you'll get height quicker and be able to feel out the model's responses better.

My own first flight with this model was made from St. Agnes Beacon, with the wind straight in from the sea and dead smooth. I chose this site because it produces good lift and has a nice flat field behind the slope for landings.

On the first flight, *Anymouse* needed only a slight touch of down elevator to keep it flying. As the lift was excellent I spent half an hour getting used to the model, and only tried a couple of loops to liven things up a little. I was pleas-

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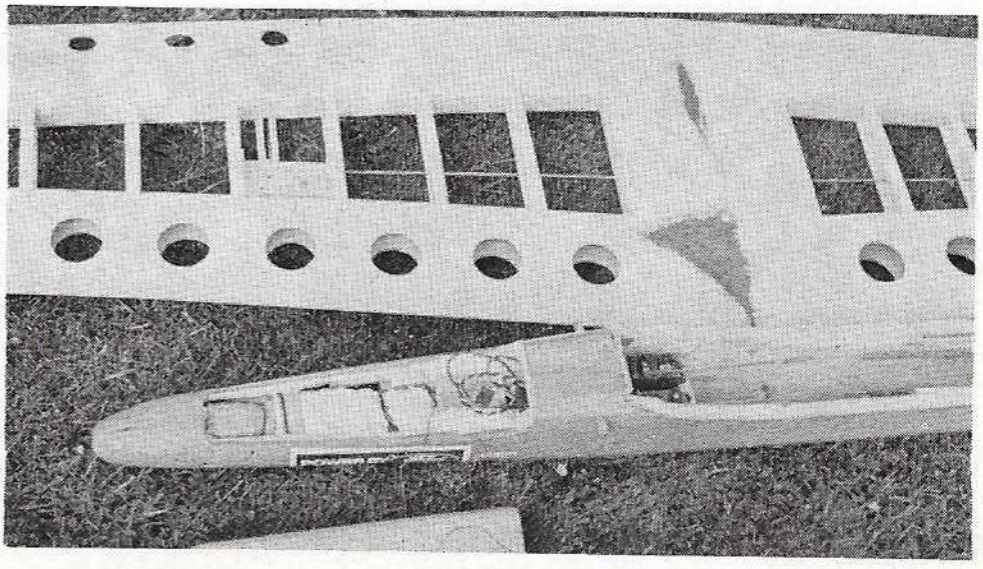
Holes are ostensibly for lightness, but make a pretty pattern when covered, anyway! Radio installation visible in this shot, also.



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antly surprised at its stability—even with the very slight amount of dihedral. It doesn't need any more, even if you use it as a trainer. The stall was very predictable, and easy to correct. It only dropped its nose, the wings staying level and, when the speed built up again, a touch of up elevator would bring it back level.

I then got ambitious and tried a few more difficult manoeuvres, *Anymouse* performing every one easily. In the hands of an experienced pilot it will perform every stunt in "the book." The main thing is to remember to keep the speed up, as it flies quite fast. In fact, it should make a good pylon racer, especially in marginal lift. It will fly in wind speeds of between 7 and 35 knots (*the lower end of this range depends on the angle of your slope, of course—Eds.*) being especially nice to fly in high winds as penetration is so good. Turbulance doesn't bother it much, either.

Finally, I would like to thank Peter Cole for allowing me to photograph his replica of my prototype *Anymouse*. This was under repair after an argument with a rock (common in Cornwall!) and enabled the constructional features to be shown. If you build *Anymouse*, I think you will find it an interestingly different model, with pleasant handling characteristics, which will afford you many hours of satisfying soaring.