SLEEKER 32

A 32 in. span single channel sports model for rudder only or rudder/elevator controls

BY PETER COOK & MAURICE ASHBY

SLEEKER originally started life three years ago and spanned 24 inches, the necessary inspiration for this model came after reading an article about miniature R/C models in an early edition of R.C.M.& E. Powered by the *Cox Pee Wee* the little 'Sleeker' flew straight off the board and was capable of the usual single channel range of aerobatics, plus our own particular favourite of flying the model in a tight circle around ourselves (control line fashion) until we were either very giddy, or the model ran out of fuel. Whilst on the subject of single channel aerobatics we feel a word about escapements won't go amiss. Contrary to most other single channel flyers' beliefs, we definitely prefer the compound type particularly the 'Elmic Compact', which we feel to be far superior to any sequential type.

When flying fast and low it's nice to know that two presses will get you out of trouble when in a tight right bank and vice versa one press in a left bank. Imagine using a sequential escapement in the same circumstances and you've forgotten what your last signal was. Well most flyers know the answer to that one, you don't get a second chance. As for the view that compound escapements are no good for aerobatics because of their slower response, this may be true, but it certainly doesn't show in the flying.

It was the introduction of the silencer rule that killed any ideas of progressing with the 24 inch 'Sleeker'. The Pee Wee refused to run well enough with any metal object strapped to the cylinder, so instead of installing a bigger engine we decided to build a bigger model.

About this time single channel competitions (spot landing) were popular in the South Eastern Area, with some pretty stiff opposition from clubs like the Sevenoaks M.F.C. who under the direction of chairman David Bishop have done a lot, competition-wise for single channel flyers in this area.

Getting back to 'Sleeker', a 32 inch span version was soon drawn up, and we come up against the question of what engine to use. The answer was pretty obvious. The Cox Quiet Zone was just becoming available in this country and with its integral fuel tank and really efficient silencer, what more could we ask for. Three 32 inch and one 30 inch version of 'Sleeker' have so far been built using this engine, and all have flown straight off the board

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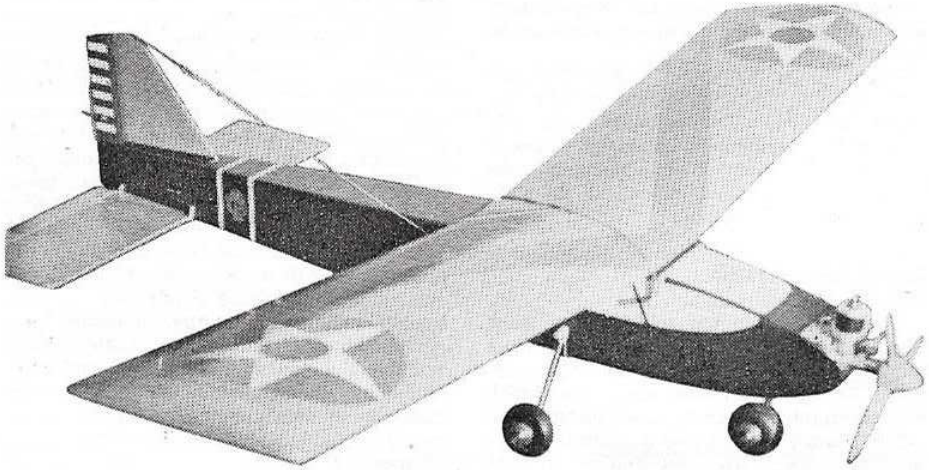


Left and right: simplicity of line is the most prominent feature of Peter Cook and Maurice Ashby's little R/C fun machine. Model is designed for .049 engines, but designers are considering use of 1.5 c.c. motor—brave men!

with identical trim. It was whilst flying these that we decided here was the perfect model for the spot landing comps. that were becoming all the go, for instance 'Sleeker' is very quick and easy to build, very crashproof, easy to cart about and turns without dropping its nose (this is a definite advantage when making that final turn towards the spot).

While on the subject of the flying characteristics of 'Sleeker', you may be interested to hear of a friendly comp., we of the Tunbridge Wells M.A.C. had with the Sevenoaks Club. It turned out to be a beautiful day as forecast by their local weather expert, and we arrived in full force with a selection of 'Sleekers', 'Pal Joey's' and 'Mini Concord', etc. Sevenoaks led on the first round beating our best by about six inches. In the second round 'Sleeker' got away in its usual straight climb (no corrective signals needed here) but at the end of the flight we were coming in too high and were obviously going to overshoot. Not to be outdone three quick presses for kick up elevator produced a beautiful stall on to the spot and a win. As you will appreciate, since then we've been confirmed kick up elevator fans and all 'Sleekers' so far built have this added control.

One of the club members has increased the power on his model to 1½ c.c. (A.M.15) and with 9 degrees of downthrust, the model dives towards the ground from launch, three quick presses reverse the procedure and the model just pokes its nose up and keeps going. In fact although this version of 'Sleeker' is very fast it's also very easy to fly, and on application of rudder, holds a steady turn for a full 360° opposite rudder being necessary to straighten up. Seeing this model fly and flying it ourselves has made the fitting of a 1½ c.c. engine in our new 1968 'Sleeker' a must, so if you feel that way inclined have a go yourselves. However, we must admit the 049 version is much more relaxing.

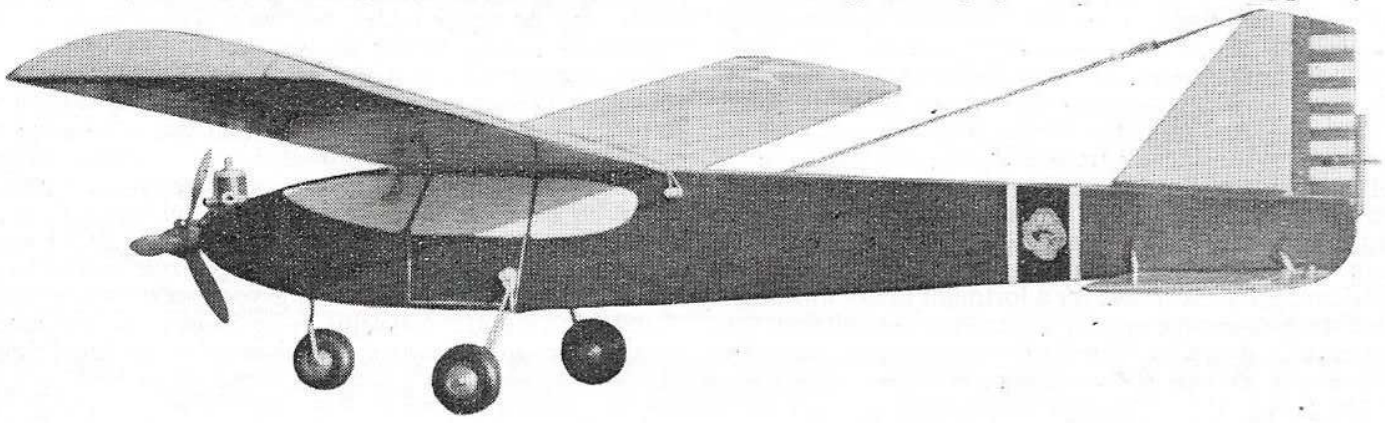
If by now we've managed to talk you into building a 'Sleeker' here's how to go about it.

For the entire construction of the model use P.V.A. white glue (Evo-Stik Resin W.).

Wings

Select very light straight grained 1/16 in. sheet and after cutting to the required length butt join the two bottom sheets for each wing panel, make sure you use a straight and flat building board. When the two wing bottom panels have been butt joined and pinned down, add the ¼ sq. hard balsa leading edge and all the 3/32 sheet ribs, including the ¼ sheet root ribs which should be set to give 7° dihedral under each wing. The wing top sheeting can now be added, this can be done by either butt joining the two sheets for each wing panel or by adding the sheets separately, add wing tips ¼ in. sheet.

When dry, thoroughly sand down each wing panel, and



butt join (note no dihedral braces) reinforce centre section with nylon or terylene doped on; this helps to stop rubber bands from denting leading and trailing edges.

The whole wing is now given one coat of clear dope allowed to dry, rubbed lightly down with fine sandpaper and covered with lightweight tissue in the colour of your choice doped on. Actually we prefer a coloured tissue finished with either enamel or a different colour tissue for trim as it keeps things nice and light. Finally fuel proof the whole wing.

Fuselage

Cut out the fuselage sides and doublers from 3/32 in. medium soft sheet. After cementing the doublers and the $\frac{1}{8}$ sq. reinforcing strips to sides, join the two fuselage sides with the formers at wing leading and trailing edges. When dry, pull in the fuselage at the nose and add $\frac{1}{4}$ in. ply engine bulkhead. Then pull in at rear and add $\frac{1}{4}$ in. sq. tail post. The fuselage should now have the correct plan view.

Bind nose wheel undercarriage leg to 3/32 in. ply and cement between fuselage sides at nose. Add bottom sheeting including 3/32 in. ply undercarriage mount for the main wheels. Cement in the dowels for wing and undercart fixing, also Araldite on the small hooks for fixing the tail plane at the rear. We prefer using this type of hook to dowels at the rear end of the fuselage so as to avoid restricting movement of the torque rods. Install the escapement and torque rods making sure that nothing binds, especially the kick up elevator rod which should flop back to neutral quite freely. This is the reason for using 18 s.w.g. wire instead of 16 gauge that the escapement is drilled for. Sheet in the top of fuselage and after sanding smooth add the fin and rudder, give the whole assembly one coat of clear dope then add the nylon or terylene at the nose. The fuselage fin and rudder are then finished exactly as the wing.

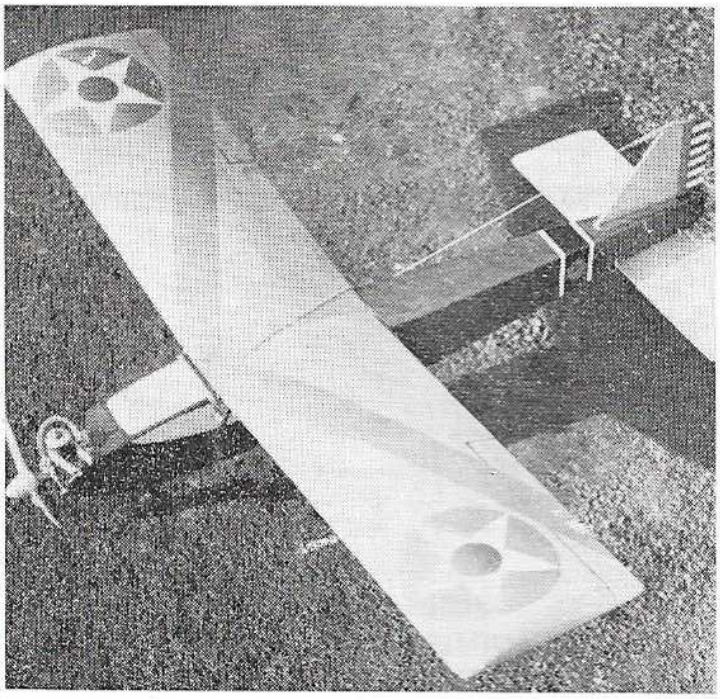
Tailplane

Select medium soft quarter grain sheet, cut out and sand to shape, then sew on the elevator using nylon or terylene thread. Remember when sewing on the elevator not to pull too tightly on the thread or the elevator won't flop under its own weight. Give tailplane and elevator one coat of clear dope and finish as for wing. The weight of the finished model should be around 19 oz. all up. If yours is lighter than this, so much the better, we've tried but without success.

Finishing

The finish on all our models so far as I mentioned earlier has been of coloured tissue. This we feel gives a beautiful clean look to the model, without that gummed up look you sometimes get with enamel or coloured dope.

The last two 'Sleekers' built were given a scale type finish, one in pre-war U.S. Army colours and the other in post war U.S. Navy colours. You cannot of course buy tissue in these colours so we dyed our own, midnight blue for the Navy version, and khaki green fuselage, yellow wings and tailplane for the Army version. All the markings and insignia were done using *Humbrol Enamel* and a ruling pen. For the cabin windows use a contrasting colour to fuselage, i.e. white for midnight blue, khaki, etc., light grey or black for white, yellow fuselages, etc. Fuel proof the model with *Humbrol Hot Fuel Proofer*, then if you can, leave the model for a fortnight to dry thoroughly before running the engine. After this you will find that with careful flying and good maintenance your 'Sleeker' will last not just one or two seasons but indefinitely.



The simple lines of "Sleeker" can be improved by finishing the model in an attractive colour scheme as shown above. Prototype model made use of coloured tissue, dyed to requisite tones. Effective and light.

Flying

If using the *Cox Quiet Zone* engine use a Top Flite 6 x 3 or a KeilKraft 5 x 3 blader, we have used both of these props with good results. The three blade props looks good on the model if you have used a semi-scale colour scheme as we did.

Make sure that the model balances correctly and then try some test glides, give the model a fairly hard throw, or as we prefer, run with the model at shoulder height until it lifts out of your hand.

If you have built the model as per plan you will find that like all of our models you shouldn't need any packing under the wing or tailplane. If there is a tendency to turn to the left or right check first that there are no warps then correct by adding a trim tab to the wing, or by bending the torque rod wire to give slight rudder bias.

Before attempting any power flights make sure that your radio gear is working 100 per cent. Don't make your first flight with the engine throttled back, the engine must be running flat out, this way you'll get well clear of the ground quickly giving yourself time to sort out the flying at a safe height. As we have said earlier 'Sleeker' should get away in a nice straight climb.

When commencing a turn in either direction do so by giving quick blips of rudder rather than any held on signals, this model only needs to be banked into a turn and it will continue in this direction until you give opposite rudder. When you have got the feel of the model try a few stunts, first get the model flying into wind at a safe height, then apply left or right rudder, but only long enough to get the model round facing downwind. Following this you should get a mild zoom and when in this zoom, apply the opposite rudder to previous, and the result should be a nice barrel roll. You may think that this is all unnecessary just for a barrel roll, but we think that single channel stunts look much better if they are started from the same position each time otherwise the model appears to be cavorting all over the sky and out of control. So when you have finished your barrel roll get your model flying into wind again before starting your next manoeuvres. Well that's it and if you want to see 'Sleeker' performances than you are used to in single channel flying come South East in '68.