



SNARK

FOR SOME TIME I had had it in mind to design a model that was not too cumbersome for transportation, simple to build, fast but docile, easy to fly—and that would handle well in gusty weather as well as in calm air. After sweating over the proverbial hot drawing board for several evenings, I came up with something that satisfied my aesthetic sense—and looked as though it might do the other things as well. Here was *Snark*.

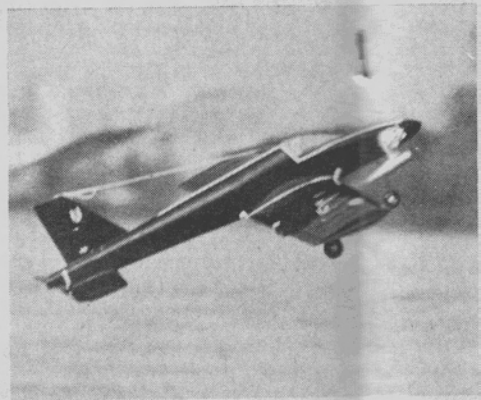
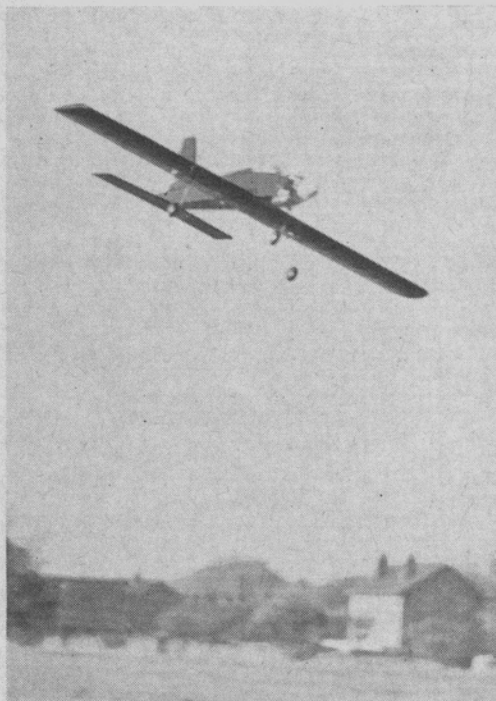
My "design" technique is not to use actual *drawing* paper—or even wall paper—but to delineate the main profiles, and so on, directly onto the building board. (After three models, believe me, life starts becoming complicated—trying to follow and decipher the various lines !)

Snark is quite light, at around 4½ lb. and a .40 size engine will easily pull it through manoeuvres that require brute power, such as vertical eights, four point vertical rolls, and the like. The three prototypes built to date will actually climb in knife edge, from take off !

My O.S. .40P powered prototype has flown regularly for the past two years and has been joined, in

recent months, by an H.P. .40-powered version, built by Mike Young (of Model World, Camberley), and a well built O.S. .40P type constructed by my good friend Bob Struder—who translated my drawing board into a meaningful plan, with the aid of a mammoth pair of calipers and some actual measurements from the prototype.

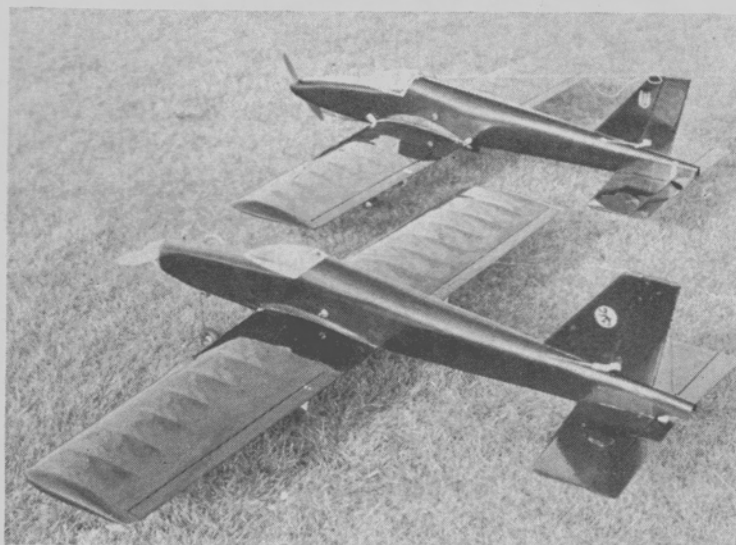
On Mike's model, which is fitted with the heavier motor, the fuselage has been increased in width at former B-B, to accommodate three



BOB BOWMAN'S

“hot” aerobatic sport model—a real thrill!

Span 48" for .35-.40
power and miniature equipment



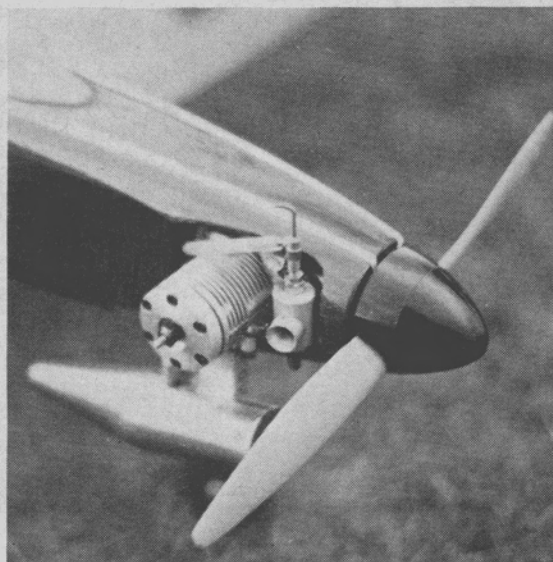
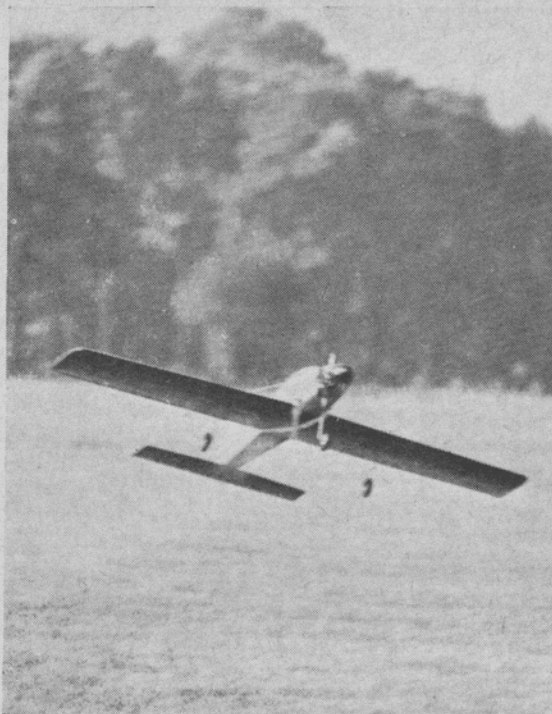
The photos on this page give a good impression of the sleek, aggressive lines of this highly responsive little aeroplane. Below: designer Bob Bowman (right) is the enthusiastic proprietor of Modelcraft of Fleet. Flying buddy, Mike Young, ditto Model World, Camberley!

servos side-by-side, and thicker decking used aft of the cockpit to achieve the correct c.g. position. It is also fitted with an experimental diamond-section tailplane. This latter was found to make the model *very* touchy on elevator control, and is an experiment not likely to be repeated. (Perhaps the theoreticians of the modelling world will have some explanations for this—without the *whole* Greek alphabet, please, as I only know up to *Gamma* !)

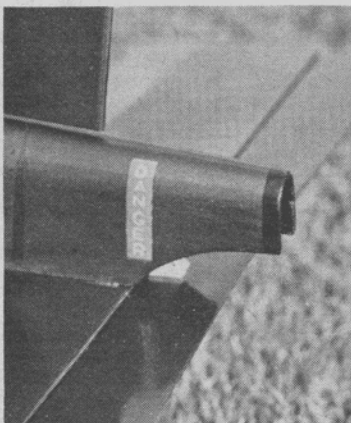
General constructional notes

The wing is unusual in that 0.8 mm. *plywood* is used for leading-edge sheeting, rather than the more usual $\frac{1}{16}$ in. sheet balsa. This makes for greater strength to stand up to the stresses of both positive and negative “G.” (Inside and outside loops, and so on). The extra strength is also useful when Solarfilm covering is used, since this material gives little or no strength-increase to open-framework structures. The tapered wing, incidentally, acts as a substitute for dihedral (which is not used) and gives stability both in normal and inverted flight. The wing depth is kept constant, in order





Above: Mike Young's version sports new H.P. .40 motor. Left: the Snark doesn't hang about even on the grass—as this take-off shot shows. Below, left: attractive "jet-pipe" tail end details. Below: side by side servos—see text.



to increase the percentage-thickness at the tips, to eliminate any flick-roll tendencies at low speed.

The wing ribs are made by the "sandwich" method; cutting the root and tip rib templates from aluminium sheet, placing the required number of rectangular pieces of sheet balsa between them, with two bolts through the whole "block," shaping with a razor-plane and cutting the notches for spars and so on, before removing the bolts and separating the ribs.

The fuselage construction is quite conventional, though, on some of the prototypes, an expanded polystyrene in-fill was used between the formers aft of the cockpit, and covered with $\frac{1}{16}$ in. sheet balsa, using contact adhesive. Note that the battery pack is placed above the thrust-line, to counteract the weight of the

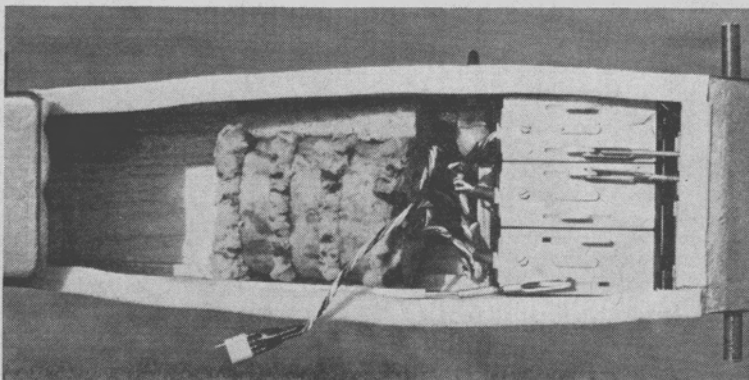
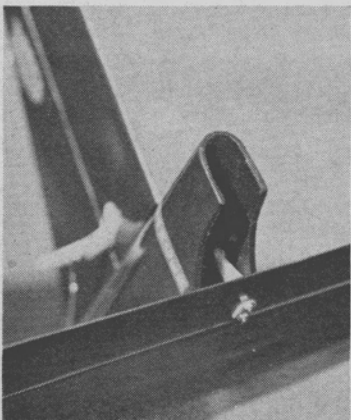
landing gear, which is well below the line. To lessen vibration from the engine, a cast aluminium mount is advisable. The engine and tank bay should both be liberally coated with fibreglass resin, to fuel-proof and stiffen the structure.

Fin, rudder, tailplane and elevator are built up, as shown on the plan, to obtain a lightweight, rigid structure. (Note direction of wood grain, on the plan). The use of $\frac{3}{16}$ in. balsa is not recommended for these surfaces.

Flying characteristics

The three *Snarks* built to date have all flown straight off the drawing board, to "corn" a phrase, so follow the plan carefully, and yours will do the same. Control-surface movement shown on the

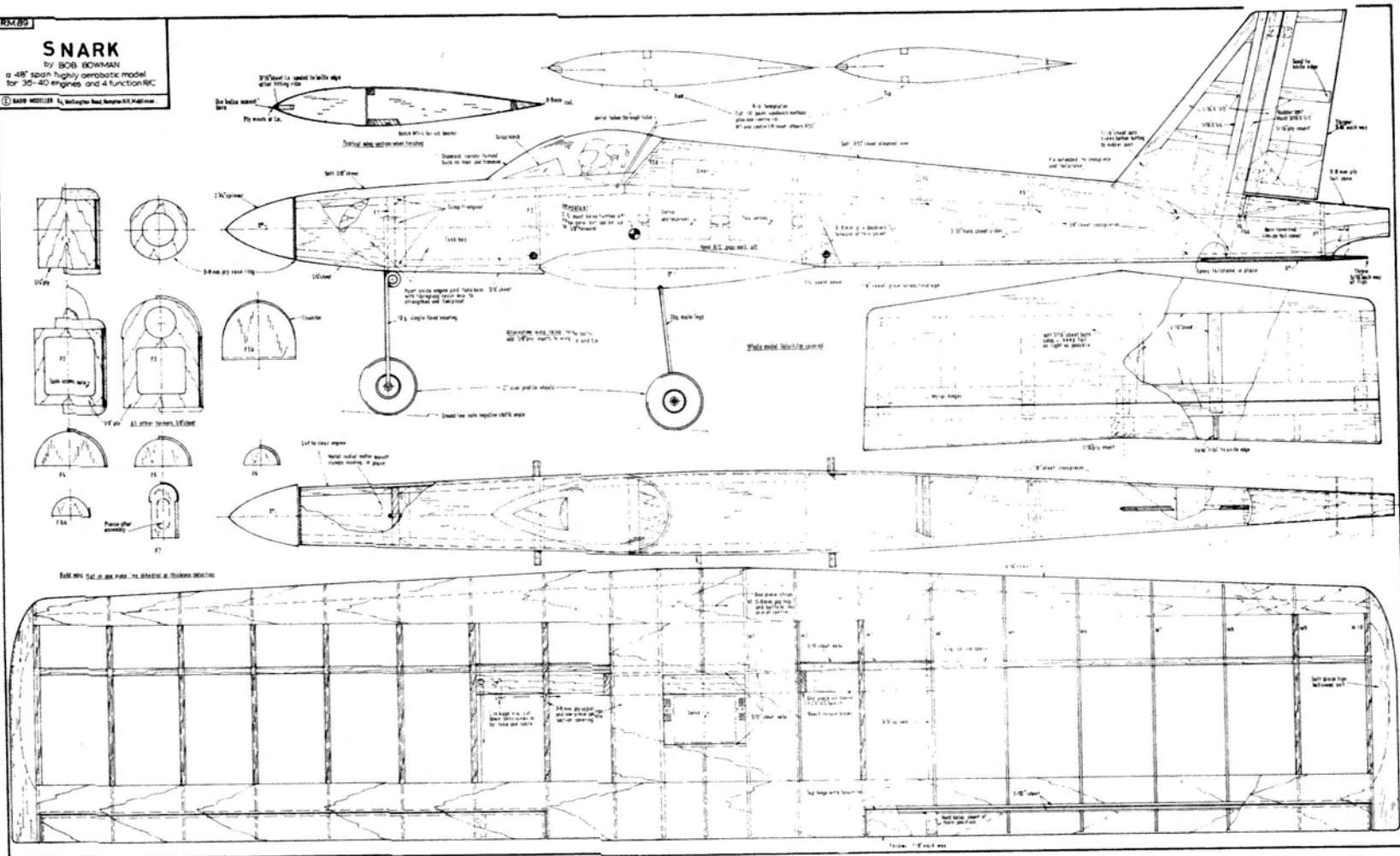
—Continued on page 40



SNARK

by BOB ROWSON
a 48" span highly aerobatic model
for 35-40 engines and 4 function RC

© 1988 MODELLER by Wellington Road, Hampton Hill, Middlesex



FULL SIZE PLANS—AVAILABLE, PRICE £1—plus postage from **RADIO MODELLER PLANS DEPARTMENT,**
64 WELLINGTON ROAD, HAMPTON HILL, MIDDLESEX (see handy order form on page 55).

plan is the *absolute maximum*, and anything more than this will make for a very wild ride. To be on the safe side, use just a little *less* than shown, for initial flights, until you have got the feel of the model, and are prepared for its lightning response.

The large rudder is very effective, and makes knife-edge flight, stall-turns and so on, a real "piece-of-cake." Recovery from an inverted spin is instantaneous upon releasing your death-grip on the sticks!

Smooth, slow landings on the main wheels are easy to accomplish, as the model will not drop out of the sky like a boulder when flying at reduced throttle. In fact, its slow-flying characteristics are quite impressive, especially as models of this size and type are usually not well behaved at low airspeeds. Throttled right back, and with gently fed-in up-elevator, the *Snark* develops a slight undulating motion, as though hunting for a "slot" to sit in. (Well,

you've heard of the "Hunting of the Snark" !—Eds.) But it does not stall, or drop a wing; just pobbles along doing this "nodding" act. Open the throttle then, and—*zzzappppp* !—the acceleration is incredible, coupled with smooth, light response to your slightest command. (Pardon me, I'm getting too poetical, the Editors will be sending this script on to Oz—or somewhere).

If flying from smooth surfaces, the wheel diameter may be reduced to 1 $\frac{3}{4}$ in. Take-offs can be timed exactly, as the model will not "rotate" on the main wheels until you ease gently back on the elevator

stick. The best prop size for .40 motors seems to be a 9 x 7 in.

Snark is neutrally stable. In other words, it goes where you aim it, stays where you leave it—and does everything you ask of it, without any argument. I hope you enjoy flying your *Snark* as much as those who have built the prototypes. The ones built exactly to the plan have the same flying characteristics, and have flown well in weather which has grounded many .60-powered machines. To put it simply; the design has achieved all my original requirements, so any deviation from the plan and you are on your own.

