



*mike
birch's*

moonglow

THE first thing I invariably turn to, on the arrival of the latest issue of *R.M.*, is the write-up on the featured multi or scale model, because I probably derive more pleasure from reading the story of such models' development, than from any other aspect of r/c modelling. Now, as I suspect I am not unique in this, I'm going to give you some background on "The Moonglow story" . . .

If we go back about two years—and seven or eight models—we reach the Birch pre-Moonglow era, and find ourselves with a *Thor*, which was really the very start of the line, as it was the first low-wing r/c model I ever flew. ("Snap!"—Eds.). This was powered with a Super Tigre S.T.56, steered with an ancient set of reed gear—and weighed 8½ lb. After something like a dozen flights, I planted it in about a foot of very firm Mother Earth.

As the balsa in the fuselage had not sprouted any new shoots by the time I reached the scene, the remains were taken home and stripped down. The wing, which was covered with nylon and painted with cellulose, now had a finish reminiscent of rather fine crazy paving, but was, nevertheless, practically intact. A battered old *Falcon 56* tailplane was recovered and pressed into service on a new fuselage, together with a *Tauran*-type fin and rubber.

This then, was the first *Moonglow*. It lasted comparatively well, flying for about three months, with newly purchased F & M proportional. Performance was, perhaps, not quite all that it might have been and, on reflection, I have a sneaking feeling that the 3 lb. wing may just possibly have been a contributory factor in this. . . .

The next four *Moonglows* were all built with the *Thor* wing plan-form, but with a symmetrical section—which was actually two "top halves" of the original *Thor* semi-symmetrical section—and, apart from thinning it somewhat, modifying the entry and the maximum-thickness position, this is the section I still use.

Mk. VI characteristics

The Mk. VI *Moonglow* I am currently flying, has now evolved further, so as to have a different wing plan-form and a much longer fuselage, as well as an entirely new tail unit. All of which has hidden the *Thor* points, completely! The section used on the "VI" is the modded one I mentioned, with the maximum depth



point at the tip brought forward from about 45 per cent to around the 25 per cent mark, which allows the wing tips to stall after the root. This being so, the model may be throttled back and flown on full up-elevator and, unless rudder is applied, it simply will not drop a wing tip. However, when rudder is pushed in, the model will spin easily and reliably, and all that's required to stop it is to neutralise the rudder.

The wing which, at 15 per cent,

is quite thick, prevents the model being a "bomb" but, because it can be built at 5¼ to 5½ lb., its rate of climb is very good. The long moment arm gives really smoo-o-othe manoeuvres and, of course, the rather massive rudder makes the double stall-turn one of the easier ones! The "VI" performs virtually identically upright or inverted. The ailerons are hinged at the centre, with no differential, and rolls are pleasingly axial. In fact, as one comes to

a really 'winning' design!—

**"—performance limited only by
the ability of the pilot"**



The lightweight, simple, but pleasing and effective plain wood and colour trim finish, shows up clearly here and in the photos on the previous page. Note the accessibility of all controls, also tank hatch—the practical contest flier's approach! Neat plastic tank filler is the new type available from Mercury. Merco 61 Mk. III has old type silencer—test shows more power with newer "Peak Power Muffler".



FULL-SIZE P

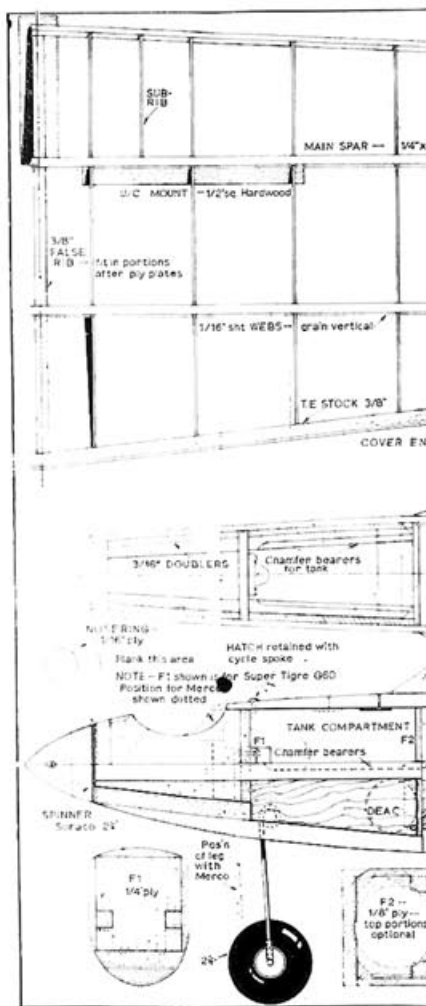
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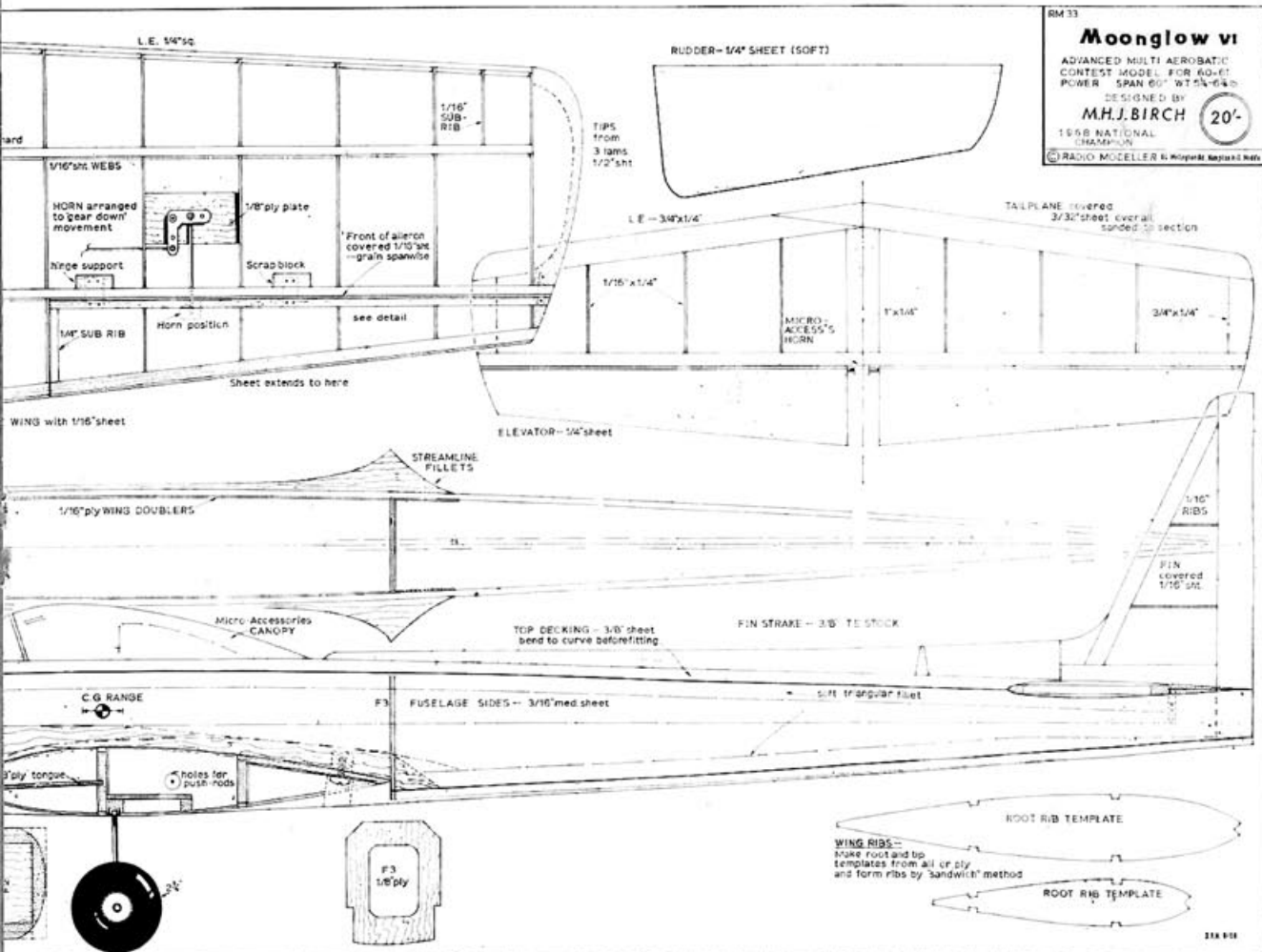
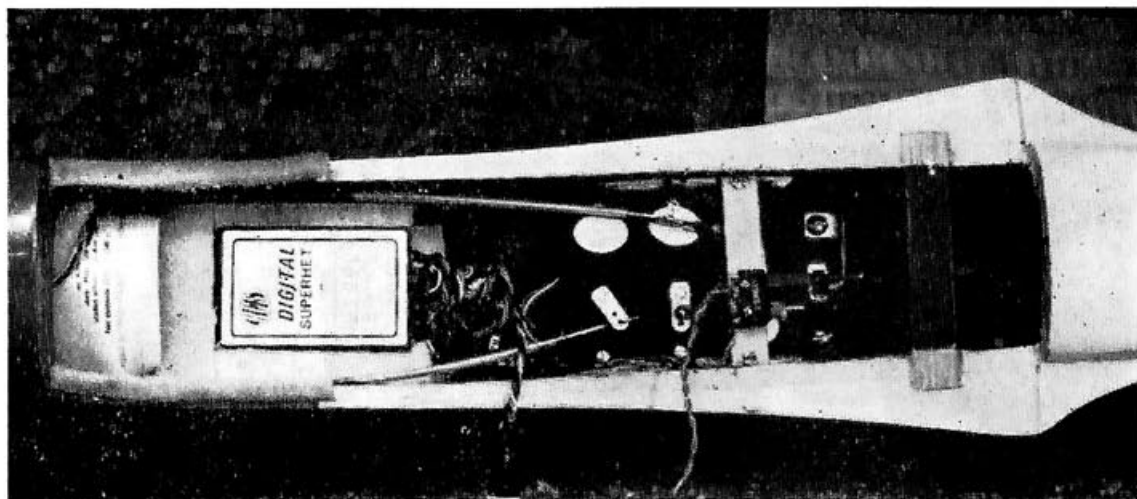
RADIO MODELLER PLAN
64 WELLINGTON ROAD, HA
MIDDLESEX — ENG

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most important part of any model and must be as accurate, symmetrical and true as is humanly possible, because the whole performance of the model depends upon this!

Fuselage. After fitting the doublers, bearers and triangular fillet strips, glue formers 2 and 3 in place and, when dry, pull in the rear fuselage sides and pin or clamp together at the tail. Fit the nosewheel fixing to the front former and fix this in place, checking for engine width. Mark off the centre of each former at the top and push modelling pins into them so that, by lining up the pin-heads, it is easy to check the alignment of your fuselage.

You will observe that the top of the fuselage is not a straight line, but a gentle curve, so the $\frac{1}{2}$ in. sheet "top block" decking should be pre-bent to conform with the curve of the top of the fuselage sides. (I lean it against the wall, under pressure, for a few days!)

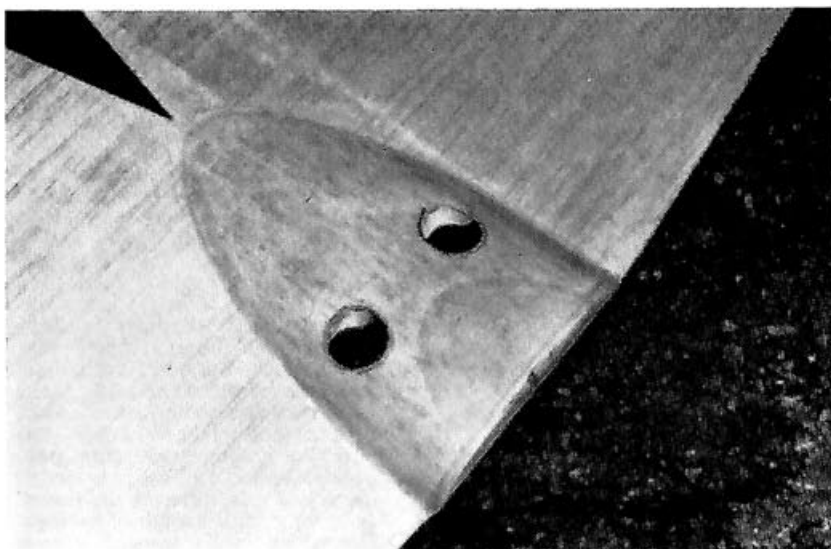
The engine should now be fitted, then the ply nose-ring, and the space between the bearers filled with block in the time-honoured manner, before finally fitting the lower front block.

Check the wing seating fit, particularly in respect of the rear bolting block and the slot for the leading-edge "tongue". Wing fillets are from triangular stock and sanded to shape with the wing in place. Make the lower wing fairings from soft $\frac{1}{2}$ in. sheet and fit the wing bolts. Now make and fit the tail unit—the construction of which is self-explanatory from the plan.

Covering and finishing

Everyone, of course, has his own ideas and pet methods on this subject. Mine is to use heavy-weight tissue (white), clear doped, with just a little colour trim. This system really keeps the weight to an absolute minimum—as well as having that "real modelling" look that the more opaque, or "instant" finishes lack. But, whatever your particular choice of finish—*keep it light!*

Of the two *VI*'s built so far, the first (with G.60 and 20 oz. gear) weighed 6lb. 2oz. and the second (with Merco Mk. III and 15oz. gear) came out at 5lb. 3oz. The first, incidentally, after about 350 flights and one major repair, finally scaled some 6 $\frac{1}{2}$ lb. and, although it still performed well, you should try to keep the weight to 6lb. or under for best results.



Above: Close-up of the centre section fairing showing recesses to accept wing retaining fasteners. Below: Aileron servo installation detail being additional wires, for electric wheel brakes.

Trimming and flying

The c.g. range is shown on the plan. When the model is placed on a level surface, with the tank empty, it should not *quite* be able to sit its tail down, of its own accord.

I find that an 11x8 Rev-Up wooden prop gives the best all-round performance with *Moon-glow*, as a 12x6 tends to over-rev a little. Other fliers sometimes ask me why I still mount the engine upright. Well, this is a strictly *competition* model, and I feel that,

on the starting line, the easier one makes it for oneself, the better one's chances. This is also why I still fit a hatch above the fuel tank—you can check your "plumbing" easily, without pulling out the radio gear first!

Finally, after a session's flying, wipe the model down well, and *keep it really clean*. It doesn't take long—you'd be surprised—to soak up 4 or 5 ounces of castor oil, and when it does, it's mostly on the tail unit, which is a long way from the c.g.!

