KIT REVIEW

Mole Technology 'Flittermouse' reviewed by Ian Peacock

THERE ARE VERY FEW PEOPLE, either here or abroad, who have been brave enough to hang their hat firmly on the 'electric' fence, largely to the exclusion of other aspects of our hobby.

Just one such company is Mole Technology, based in Nottingham here in the jolly old U.K. For some time now Bridgette and Richard Smith have offered a range of electrical flight orientated items and have even dabbled in kits before.

The Flittermouse, however breaks new ground for the Moles (that's a pun — get it??) in as much as this is the first of what hopefully will become a new line in model kits that are solely of the Smiths' design and production. (Previous kits were of other people's models!).

Flittermouse also breaks new grounds for a British kit (of any discipline) in that it is produced to a standard much higher than normally associated with the almost 'cottage industry' approach of most of our home-grown manufacturers.

There is nothing particularly clever or innovative about the Flittermouse, it is just a good, straightforward, honest kit, leaving little, if anything, to the imagination.

Talking to the Moles during an earlier visit to their 'Burrow' it became clear that much concern was felt over the absence of a 'genuine' electric training aircraft and even I came in for some justified criticism for recommending too advanced models in my column. Therefore it will not be surprising to learn that much midnight oil was burnt ensuring that the final design of such a model would omit nothing of importance. Certainly from my point of view, having built and flown the kit, the Moles have achieved their objective and a few others along the way as well.

The Flittermouse adopts the high-wing cabin layout with a tail wheel U/C and very traditional structure. However, such a simple statement does little to bring out the subtleties of the kit. The prime market areas were two-fold, the existing radio flyer who wanted to break into electrics with no hassle and the two-function ex-buggy fellows, looking for a greater challenge than legalised stock-car racing!! Both of these groups should find sure-fire success with the Flittermouse.

Look out for it!

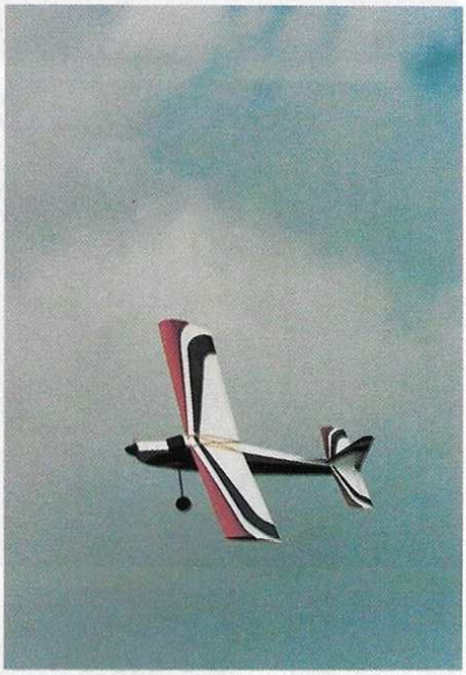
So, what about the kit itself? Well — like many British kits, it comes in an unpretentious plain brown box with a single colour label containing brief details of the model and a line drawing. It is of sufficiently low-key to almost pass unnoticed on the model shop shelves, which is a pity.

Inside the box, one is immediately struck by the lack of foam wings or glass-fibre fuselage. Indeed the structure of the model is very much in the traditional mould of built-up balsa wings and tail and a 'box' body.

Perhaps the most noticeable items though are the rolled plan and the *two*, no less, instruction books.

The drawing requires some comment, for rarely these days does one see such clarity, yet so much detail. Every part is numbered on the drawing (these numbers tie-up with the parts list in the instruction book!) and there are cross-sections shown wherever the information is of help. Design and draughting is

Solarspan was used for covering the 'Flittermouse' - standard Solarfilm would be lighter and more suitable. Although the review model weighed 3lb performance was on par with prototype - stable, responsive and moderately aerobatic.



credited to Dave Milbourn whose skills with a pencil are far above average. Any even half awake modeller should have no difficulty reading this drawing.

The accompanying instruction booklet contains 16 pages of close-typed information, which, in the interests of providing a somewhat 'bloody-minded' appraisal, was followed to the letter! Nothing is omitted and at no time was one forced to rely on experience to clarify otherwise vague areas. So detailed are these instructions that the reader is *four pages* into the booklet before he *actually* gets to start on the model.

There has, over the past decades, been levelled some criticism over the method by which kits have been reviewed and in an effort to promote greater professionalism I approached the review from a different angle. Certainly I could see all was well with the Flittermouse, but could it be handled by the sort of person for which it was designed? Well, why not give it to one of these persons and find out? I'll tell you why not!! First of all if such a person succeeds, then well and good. But supposing this person has limited experience. Not so limited as to stop him building the model successfully, but sufficiently limited so as not to recognise, say, the clever areas achieved by the designer. This is where only experience can tell. Furthermore, such a modeller may not see areas where query is needed — why is such and such a part made that shape??

Consequently, this review was overseen by me — *but* built and flown by the sort of chap that Richard envisaged right from the start.

How did he get on? Admirably! Regrettably, having limited experience of other kits, the person in question naturally assumed that all kits were like this and therefore could not understand why I was raving about this area and that area.

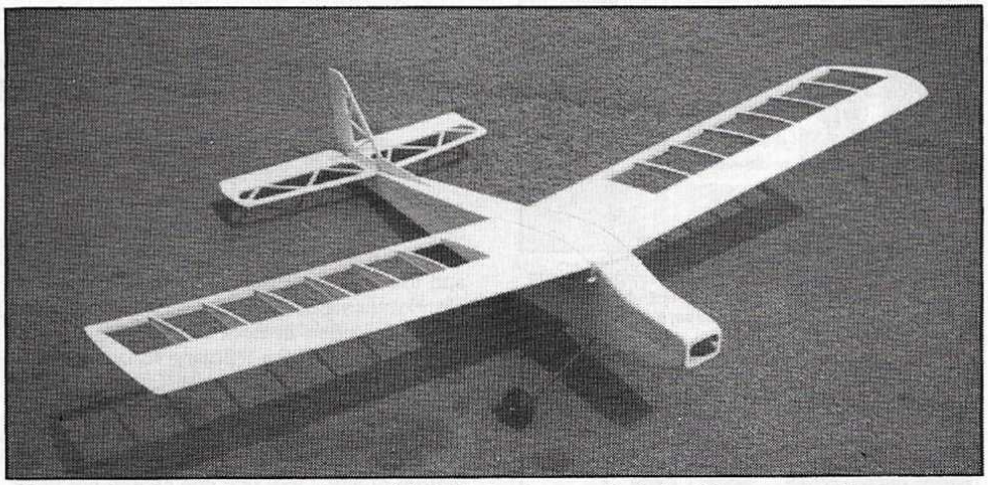
Steady the Buffs

First of all, I must say that the construction took far longer than I had anticipated. This is by no means a reflection on the kit — more that of slow, steady building borne out of inexperience coupled with the insistence that the instruction book be followed to the letter.

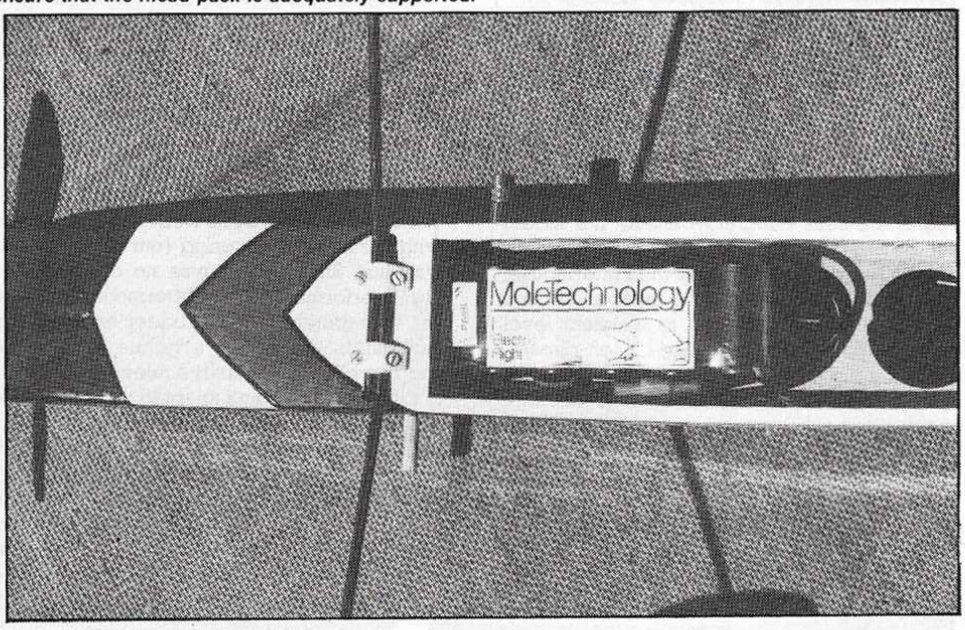
Absolutely no trouble was encountered during construction, for accompanying the excellent plan and instruction book is a step-by-step illustrated guide containing 35 beautifully drawn assembly diagrams. These start at the very beginning with the making up of a sanding block and finish with pictorial R/C installation diagrams and electric-flight battery/motor wiring diagrams. Once more the calibre and clarity of these drawings is the best I have seen, many being in perspective, with no 'doubt' areas omitted.

What was not so obvious to the builder, as it was to me, was the kit content. Every piece of wood is provided and much is cut to shape and size. Wood quality was excellent, much of the balsa being very light — a feature much sought after in electric models and one which appears to have all but disappeared in many glo-powered kits where 'power' is used to overcome excess weight!!

Structurally the fuselage is the well-known 'box' with ply doublers and formers. Many of these doublers and formers are cut away in the interests of weight-saving, despite which there is absolutely *no* lack of strength. Only one small niggle cropped up and that was the incorrect marking of the position of the holes for the undercarriage wires. This has now been amended on all current kit production. Fortunately this bloomer was noticed prior to the holes being drilled!



Uncovered airframe illustrates the sensibly light structure, particularly at the rear end. However, care should be taken when covering to prevent inducing warps. No hatch is fitted to the underside battery bay – ensure that the nicad pack is adequately supported.



Unusually for an electric model the front end is square and chunky (but not unattractive) and features engine bearers rather than the more usual 'motor-in-a-tube' system. The reason for this is that Mole supply a well moulded 'motor tube' with built-in lugs making it eminently suited to use in conventional bearer-equipped models and by utilising it within the Flittermouse design the front end can be adapted to take a .15 glo! (In fact full details of this conversion are given on the plan and in the instruction book — even listing the extra bits and pieces needed for completion!)

Flat-plate Lightness

Tail parts are flat-plate structures being built up from soft strip section rather than using sheet stock.

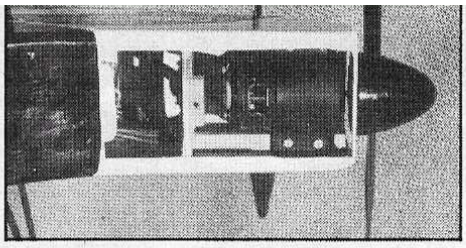
The wing is of simple and traditional structure, featuring top and bottom spars, split trailing edge and square section leading edge set on the diagonal. Internal webbing is employed between the spars (and also between the front of the T.E. strips) producing a very light but very rigid wing. Top of wing, only, features the spanwise sheeting from spar to L.E. Top and bottom are sheeted at the centre section. The remainder of the wing is cap-stripped over the ribs producing a very neat appearance to match the strength and lightness. One of the very few areas of criticism (albeit somewhat personal!) concerns the upper leading edge sheet which wraps over the diagonal leading edge rather than my personal taste of butting against its rear.

This method tends to produce a glue joint just where the L.E. needs to be sanded round. As P.V.A. is the recommended adhesive, the almost rubbery edge to the glue line makes the sanding of this radius difficult if not impossible. Surprisingly for a wing of 57in. span, there are no dihedral braces fitted, the wings being butt-joined and reinforced with P.V.A. and gauze 'bandage-type' tape. I personally would have preferred a brace, but as said earlier, kits *must* be built as designed to provide a proper appraisal. Some 30 or so flights in varying weathers have so far given absolutely no suggestion of potential wing failure! Maybe I'm just as guilty as the rest of the world in over strengthening structures when it isn't really necessary.

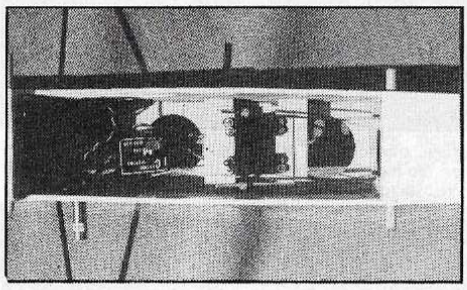
Enter the Electrics

Radio and electrics were installed before covering in case of any 'whoopsies'. There weren't any! All push-rod parts are included in the kit and by simply following the instructions everything just drops into place! There is ample room for almost any radio outfit, my Century Systems 'micro' outfit literally getting lost within the fuselage.

The flight battery pack is simply banded into the space allotted to it in the lower fuselage (again — all parts are supplied!) and there is ample room for those extroverts wishing to stuff eight or even 10-cell packs



Motor installation couldn't be more simple and the Century Systems Micro equipment, below, gets quite lost in the generous fuselage interior.



into the belly. There is no hatch under this battery area in the quest for a through draught of cooling air. (I might change this in retrospect for I had a battery become dislodged in flight, the cells dangling beneath the model for the duration of the flight! It says something for the forgiving handling of the Flittermouse, that despite the battery swinging to and fro, no trim change was needed to maintain level flight. However having nearly been decapitated by a nicad pack falling from someone else's model at the Chester electric meeting, maybe belt and braces *is* a good idea!)

So having got it all together, the entire model was film covered. Now I must be the first to admit to my own mistakes. Solarfilm is the order of the day for Flittermouse. I opted to test some of the newer colours of the heavier duty Solarspan. My excuse was that there are never enough models about to try out all of the new goodies that come up for testing!!!

In this instance, Solarspan proved too heavy and too strong for the job in hand. Excessive shrinking caused the wing to warp (it had to be straightened in front of the fire!) and the front and rear of the tailplane to bow.

Now I shouldn't really criticise here, for although the wood in the Flittermouse is of the light and soft variety, so much stick is levelled at other kits, whose balsa verges on the weight of oak, I feel that one should not bleat when one encounters some good, soft stuff. Sufficient to say that the soft wood does require a bit of careful handling, particularly from the less experienced among us!!

Mole above ground

Finally it was ready to fly. Now once again in the interests of professionalism I had already flown Mole's own demonstration model. Would our kit one fly as well? Certainly. Even with the heavier covering (our all-up weight was just 3lbs.) there was no difference in flight performance. The Flittermouse is stable, yet it responds well to rudder and elevator commands. Following a gentle dive, loops and barrel rolls are easily achieved. Moderate to strong winds don't seem to upset it either. Flights to date have used 6, 7 and 8 cell battery packs and a range of motors from the 'basic' Mabuchi RS540 up through the 'hot' buggy motors to Mole's Cobalt Motor. Obviously the better motors and battery packs make for better flying, but there is no lack of performance at the bottom end, and it should not be beyond the novice, or even the neanderthall ex-buggy brigade (Ian's comment — not mine. — Ed.) to get sensibly to grips with three-dimensional model operation via the Mole Flittermouse route!

So, then, to recap: The quality of the wood is excellent as is the provision of pre-cut parts. Every item needed for completion is furnished (the 'goodie' pack contains *every* nut, bolt and washer needed!). The plan and instructions are second to none, better than any I've seen from the U.K. and in some areas even better than the German and Japanese kits. In fact, virtually every British manufacturer could learn a lesson or two from the Flittermouse in this respect.

Everything fits — and if you follow the instructions one fails to comprehend how anyone could get it wrong. A joy to build and fun to fly, with only the merest of niggles that have already been mentioned. It only remains to be seen now, just what the Moles have deep in their Burrows for their next release!!

Availability: The Flittermouse kit should be available from the majority of better class model shops (a list of regular dealers appears in the back of the Mole catalogue — itself available from the manufacturers for a modest £1.30. It contains much useful information for the would-be electric flyer as well as listing all the available bits and pieces!)

Kit cost is remarkably good value at £34.95.

If experiencing any difficulty obtaining the Flittermouse contact Mole Technology at: 300 Queens Road, Beeston, Notts. NG9 1JA (enclose a SAE please) or phone 0602-255693).