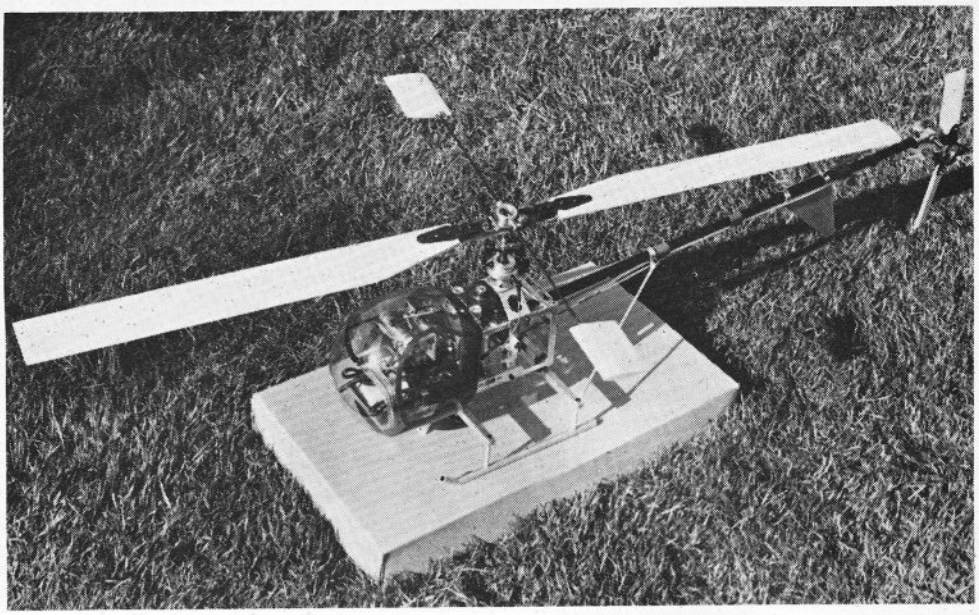
Jack Barnard builds and flies a very interesting little model from Japan - the

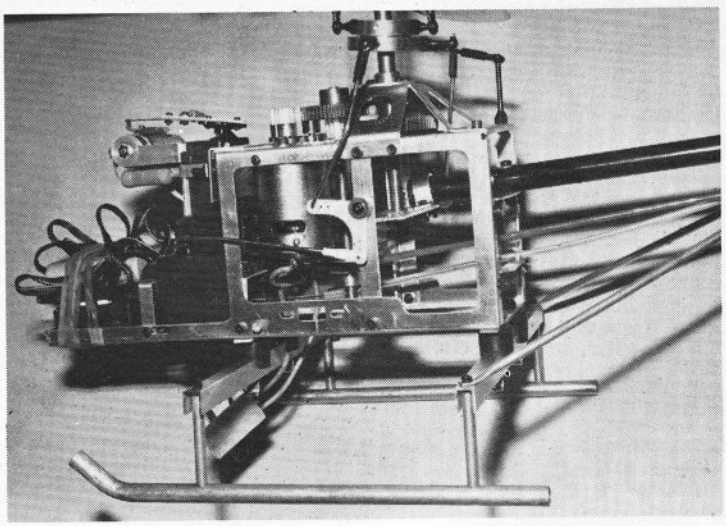
ISHIMASA



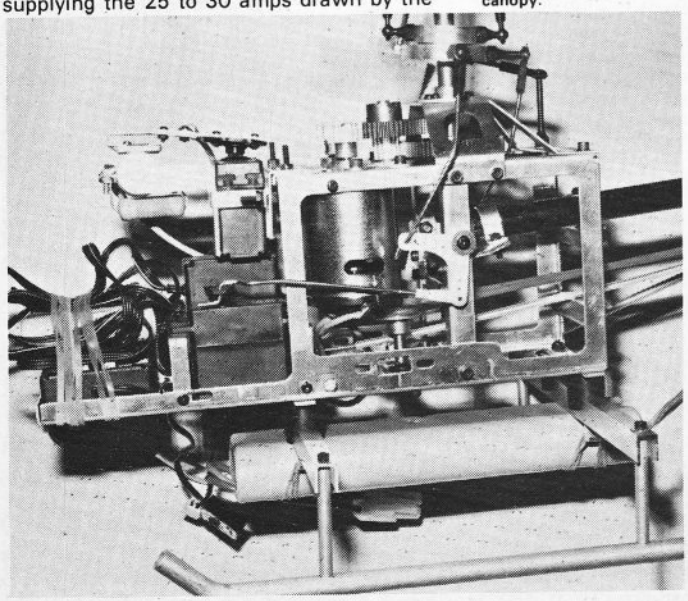
Sky Lark EH-1

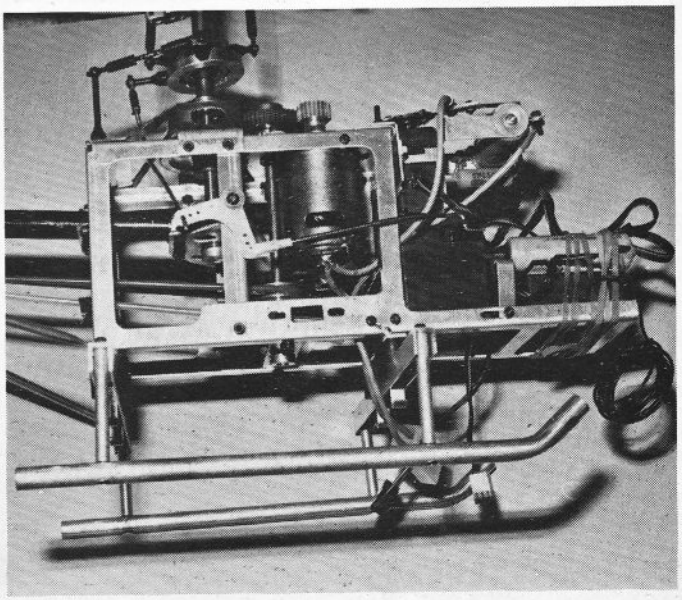
ELECTRIC POWER RADIO CONTROL HELICOPTER

MY FIRST introduction to this diminutive electric powered model R/C helicopter was at the Sandown 1980 show, where it was displayed on the MacGregor stand. My immediate reaction was, 'if it works well it could be the ideal trainer!' Having now built and tested one I am satisfied on both counts — it does work — very well in fact and, in my opinion, it is an ideal training model. One outstanding advantage is that it can be flown, quietly, within the confined space of a small back garden, connected to a 12 volt car battery via a long lead. My first flight test was in fact inside my house, in the lounge to be exact! True, I only allowed it to climb a couple of inches or so to check the control response, a little foolhardy perhaps, but it was raining outside and I was over anxious to 'have-a-go'! It can be operated using a 9.6 volt 8 cell 1.2 Ah Ni-cad pack fitted between the landing skid struts but, as a fully charged pack will only give a 3 to 4 minute flight, the 12 volt car battery is the obvious choice when using the model as a trainer, but it must be capable of supplying the 25 to 30 amps drawn by the



Right and bottom: views of the 'works' and radio section taken from various angles. Note in the view at right the power plug which connects either to a 12 volt car battery via a seven metre long resistor lead or a 9.6 volt airborne pack which is shown fitted at bottom left. Adhesive servo tape is used to fix the speed controller to its servo and the combined unit is held in place using a metal strap. The on/off switch of the R/C system was much too large to fit in the position provided, so was not used, the power pack being plugged direct to the Rx and the leads pushed loosely into the base of the cockpit canopy.





two motors at maximum power. Before continuing further, for the benefit of those readers who have not actually seen this model, a few measurements etc. may be of interest. Rotor diameter is 992mm, overall length 846mm, weight (fully loaded) 1.560g. Motors (2) RS 540S, Radio system 4-function lightweight. Note that the R/C system must be a reasonably up-to-date set using the smaller size servos. I fitted my Sanwa F.M. and the servos were only just small enough to suit the servo mounts.

Construction

Absolute simplicity just about sums it up. The centre frame holding the motors, reduction gearing and main rotor shaft is factory assembled. All that is required to be done here is to check that all gears are correctly in mesh before tightening and locking the nuts and bolts.

The rear rotor unit is also pre-assembled. The few parts which are left to the builder fit perfectly and one evening, or at most for the slow builder or beginner — two, the model is ready for its test flight.

Before flight check

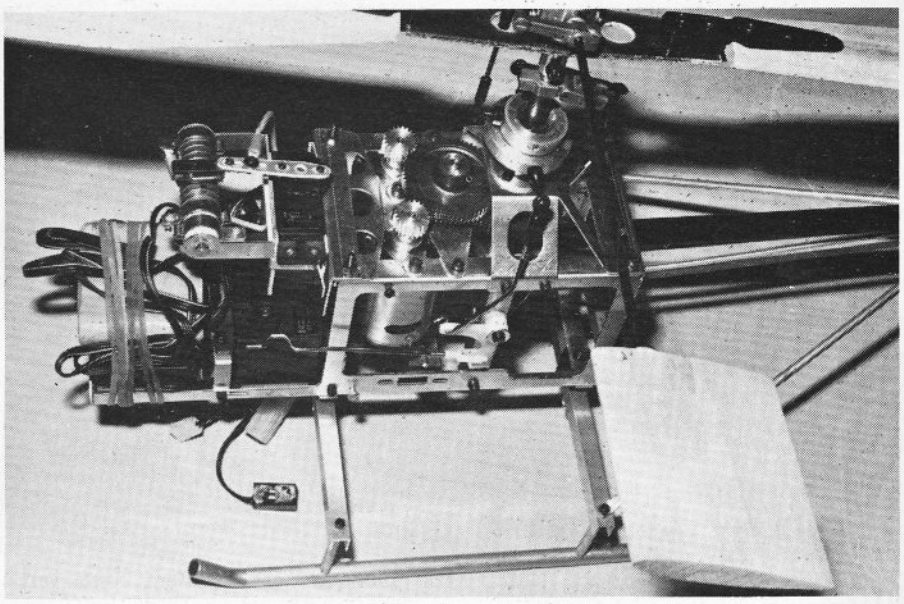
Balancing and alignment of the fly-bar and rotor blades must be carefully checked, in common with all helicopters. Control connections, for correct function and freedom of movement, have also to be checked, plus the rear rotor drive belt tension, and, one must not overlook the need for lubrication of the moving parts.

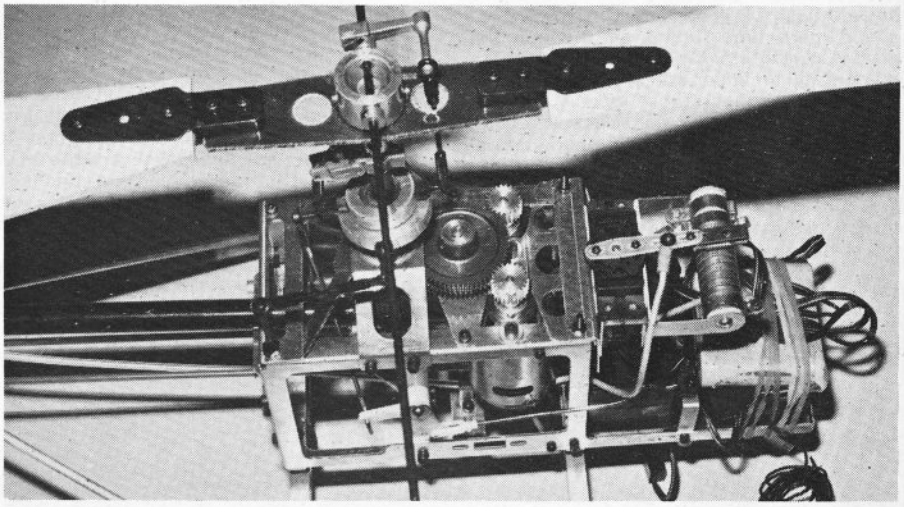
A word of warning; switch on the R/C system, throttle closed (speed control off), connect the 7 metre long lead to the plug on the model and make absolutely certain that the rotors will not foul the lead or any other object if they start to turn when the power source is connected. Mine did! They should not of course, but I had not set up the speed controller arm correctly — a small adjustment and all was well.

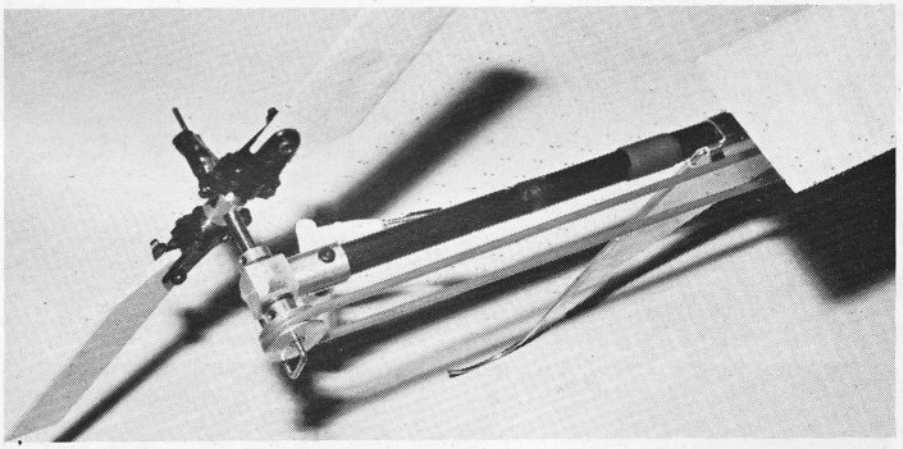
Flying

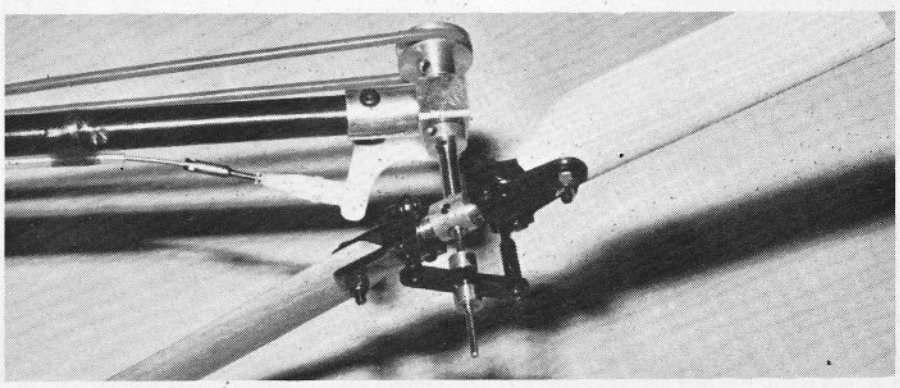
Do not, for one moment, imagine that this little model is any easier to operate than larger i/c powered models — it is just as difficult to set-up correctly and control. So, if this is your first helicopter and you can't get an experienced pilot to test fly it for you, read the flying instructions very carefully and *take-it-easy*. Do not push that power control fully open before you have mastered the controls or your neighbours could be treated to the sight of a low flying aircraft trailing a 12 volt battery coming at them over the garden wall!

Distributed by MacGregor. Kit price £99.50.









Top right: this view from above shows the main drive gears. The tail rotor drive belt fits around a pulley which is positioned at the base of the main gear shaft. Centre right: this second view from above shows the rotor blade connections to the head and the fly-bar control arm. Right and bottom right: two views of the tail rotor unit and its control rod, this unit is factory assembled, as indeed are most parts of this little model. Below: the Skylark in flight using the airborne power pack.