

# ROBIN Gyrocopter

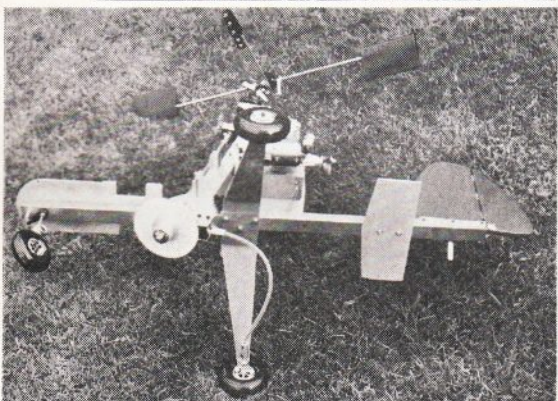
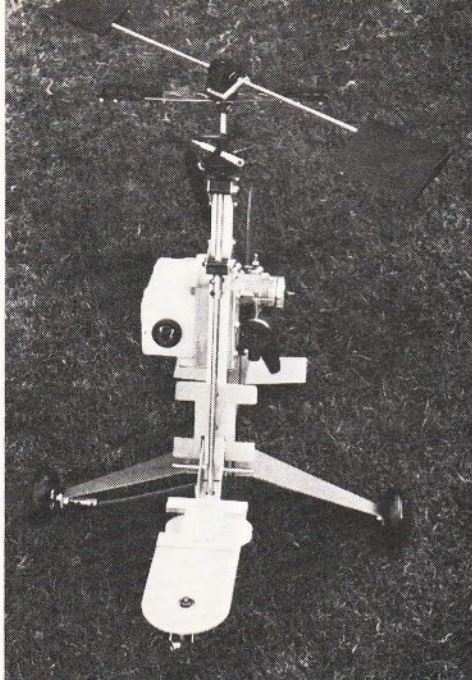
*Jack Barnard takes a look at the Kalt autogyro and reports on progress to-date in Part 1 of this two-part review*

**W**E have long awaited the arrival of the single rotor R/C autogyro and quite expected it to be a direct 'follow-on' to the helicopter. Several designers have experimented with models based on the famous *Wallis autogyro*, the most familiar of which to modellers in this country is probably the model built by Roy Sturman, seen at various shows over the past two years.

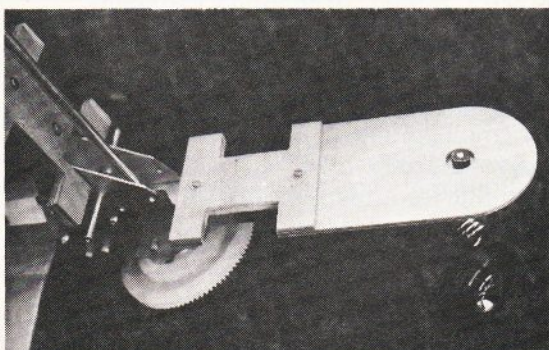
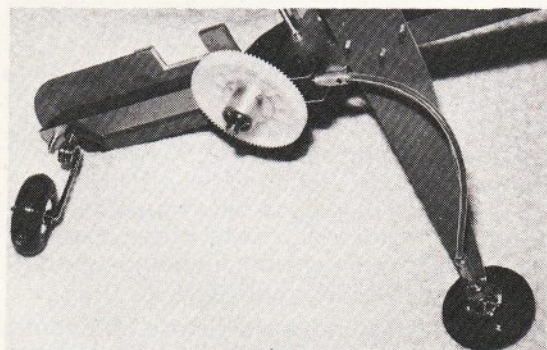
I had always believed that a kit for a really successful scale 'Wallis' would be a 'best seller' and had expected a 'race' to be first in the field by the major manufacturers. It was not until I had discussed the design features with various experimenters that I fully realised the problems involved.

One of the major problems is that of 'spinning' the rotor up to take-off R.P.M. I was lucky enough to get a short flight in a full size autogyro in 1944, I forget the type, but I remember that the pilot engaged the rotor with the engine and then, when the rotor had reached approximately 1000 R.P.M., it was disconnected from the engine, the brakes were released, and off we went after a very short take-off run.

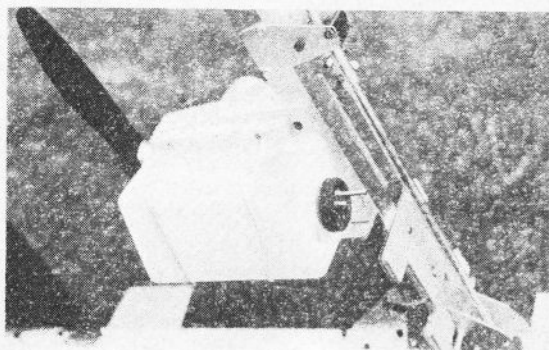
Twin rotor model designs, such as the D.B. Autogyro, use free spinning rotors, which turn easily at a low



Top; no, not the completed model; this was the stage of construction reached at time of going to press. Above; underside view of partly completed model showing rotor drive from the starboard wheel, steerable nose leg plus method of fixing undercarriage, etc. Bottom left; close-up of rotor drive and its large gearwheel which has a freewheel unit in its base. The bevel gear drive is out of sight on top of gearwheel (the gear teeth on the edge of the gearwheel are not used — helicopter unit?). Below; the radio Rx and its power pack will be positioned on the top front of the plywood plate — the rudder and throttle servos fit inverted in the cut-outs. The cut-outs in the ply plate at left are for the cyclic pitch servos. The bevel gear for the rotor drive can be seen round centre top of gearwheel.







take-off speed, but the single rotor model has the friction of the swash plate to overcome and, unless its rotor is 'spun up' before the model is released would need a very long, very fast, take-off run. Kalt has overcome this particular problem by using a free-wheel unit connected via gearing and a flexible drive to a mainwheel. This spins up the rotor quickly during the take-off run and, as speed increases and the air flow takes over, the free-wheel allows the rotor R.P.M. to 'overtake' the mechanical drive. On reading what I have so far written I realise that I am getting rather ahead of myself as far as a building review is concerned. Perhaps a completely separate article covering the differences between a helicopter and an autogyro is required, but, for this kit review I must assume the reader is at least aware of the basic differences.

## The Kit

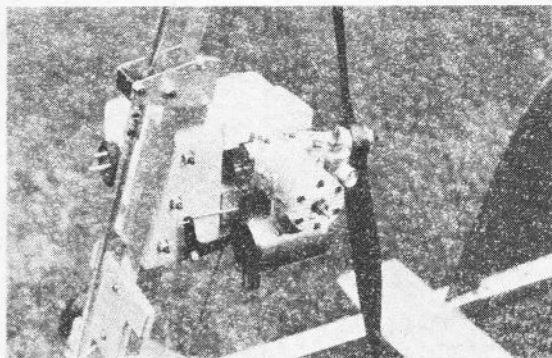
All parts of this kit, which is quite definitely a quick-build one, are extremely well made. I have not yet had the opportunity to examine closely a Kalt helicopter but I believe I can safely say that quite a number of the parts used in this model were originally intended for a helicopter. That, however, is by-the-way, not an adverse comment; any saving of tooling costs by the manufacturers must be to the buyer's advantage eventually.

## Construction

Despite the fact that the instruction book is in Japanese (if you can read Japanese ignore that remark!), building is comparatively simple. Kalt is to be congratulated in that everything, and I mean everything, fits perfectly. What a refreshing change to find that every bolt hole lines up perfectly — takes me back to my old meccano building days — ah well!

Construction is helped by a very nice plan where parts are shown in position (a side view) and are noted in English. Construction of our model has reached the almost finished stage — only the main rotors, control connections and radio gear have to be fitted before we try our hand at putting the finished model into the air. I am cutting the text of this review to a minimum in order to give you as many constructional photographs with explanatory captions as possible. I will proceed to the fitting of the radio gear, fitting and setting up of the rotors and flying test in a future issue. My only comments so far are — it goes together simply and easily — building this one won't bother your blood pressure.

Distributor Slough R/C Models  
Price £79.95



Above left, the fuel tank is held in position by rubber bands — quite secure on its well designed seat. Above, HP .40 helicopter motor fitted nicely into the ready formed mount. The 'pusher' propeller is provided in the kit. Note the join in the rotor drive shaft and the very neat housing just above the join which contains a good quality ballrace. Below, another ballrace bearing for the rotor drive shaft is positioned just below the swashplate. Bottom, view from above of the fly-bar bearings and the attachment points for the rotor blades. Note that the swashplate and its fittings plus the rotor head components are all styled on standard helicopter units.

