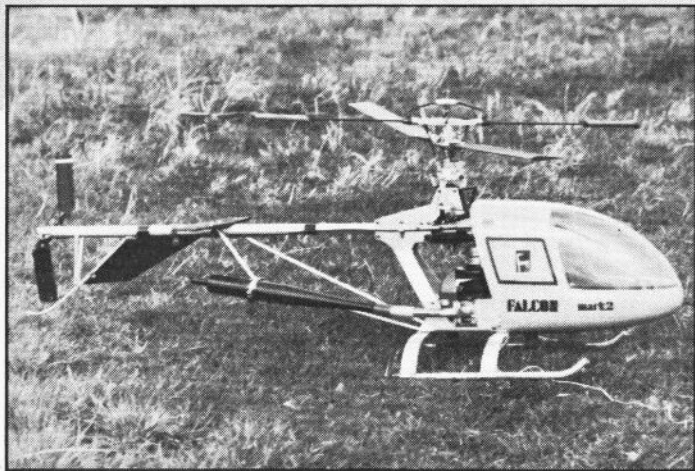


Japanese Helicopter Kits

Reader Roy Foster has recently completed not just one, but two Hirobo Falcon helicopters; the MkI, an orthodox collective pitch head model, and the MkII a refined version with free-wheel main rotor. As the products of this Japanese manufacturer are now becoming more widely available in the UK it seems opportune to include his comments and experience with the Falcon in the form of a mini *Hovering About* Review. Roy writes:



Left and right: Roy Foster's Hirobo Falcon MkII on the ground and in the air. High quality mechanics and good flying performance from this model.



driven by helical gears which reduce wear and risk of stripping teeth in a crash.

Clutch, flywheel and cooling fan slip straight onto the *Webra 40* without problems, the whole assembly fits easily without any alteration to the chassis. The slots provided allow for various size crank-cases and for the engine to be moved up or down to align with the clutch housing.

The tail and head blades are made of excellent quality wood, pre-drilled and shaped, no covering is provided so I used the standard sticky backed plastic material and balanced the blades in the usual manner. Installing the radio is a straight-forward operation, it was however, necessary to raise the cyclic servo to allow the mixing bar for the tail rotor to travel its full extent, this is easily achieved by using two blocks of 1/2 in. sq. wood.

The only deviation from the plan I made, was to mount the swash plate stabilising rod onto a strip of aluminium to the rear of the chassis, as opposed to the glass-fibre cabin. This achieves two things, firstly more rigidity, and secondly it would not be necessary to remove it every time I wanted to take off the cabin.

Painting is easy, there being only the fin, tail and the glass-fibre cabin to paint. The CG came out according to plan, about 1/2 in. in front of the main shaft. So off to the flying field. At this stage I had two worries, firstly that the undercarriage was too narrow, and secondly the size of the model and power available — but in for a penny as the saying goes.

On an early September day, with quite a breeze, the Falcon was started, a nudge of the throttle and the blades started rotating. At a healthy distance I waited for bits to drop off. After a tank full of fuel nothing did, so scratching my head in disbelief I checked grub screws and nuts. Refilled and started, I

placed the *Falcon* in front of me, on applying more throttle the *Falcon* left the ground; following this, trimming was undertaken. In the hover the *Falcon* is stable, the tail response to throttle changes were docile and predictable.

My worries about the narrow undercarriage were unfounded as the *Falcon* is a very controllable helicopter. The *Webra 40* provided plenty of power for normal flying. The maximum pitch angle was kept to within the limits on the plan so as not to load the engine excessively and cause it to overheat. The overall response of the *Falcon* is excellent, she goes where you point her. The kit is comprehensive and provides unparalleled value for money, and should prove to be the ideal helicopter for the beginner (famous last words) the more experienced pilot would get many hours of fun.

Falcon MkII

Following the success of the MkI *Falcon* the manufacturer decided to offer an aerobatic version of this model helicopter and at the same time incorporate further developments. The model had the same design layout, the only differences are: (a) free-wheel main gear; (b) wash-out system for stabilizer bar; (c) stronger undercarriage; (d) lighter and larger stabilizer blades; (e) ready-painted G.R.P. canopy with clear windshield part.

Flying

An *Enya 0.40 XF* engine was fitted to the model with *Graupner* tuned pipe. This meant that some lead weight had to be added to the nose. There was no let up in the weather for several weekends and finally when the opportunity arose I rushed to the field to rest fly this latest model.

One tank full of fuel was used to break in

Helicopter kits never cease to amaze, how do they pack such big models into small boxes. The *Hirobo Falcon*, a collective pitch machine with a 52-inch rotor disc, for use with a 40/45 engine and four function R/C, is no exception.

The Bell type rotor head is made of a cast alloy and goes together with ease, the direct control provides a very responsive model.

The tail rotor comes complete with only the blade holders and pitch control mechanism to assemble. The tail rotor blades are pivoted with the aid of thrust bearings to take up the centrifugal force which, while offering smooth control of the pitch angle, also provides a valuable safety factor. The tail rotor is

the engine with main blades removed and the engine set very rich. After that the helicopter was checked, blades fitted, and engine adjusted slightly, leaner but still fairly rich. The extra weight of nose ballast and the tuned pipe meant that lift-off took place at near max engine R.P.M. (still running rich). Immediately after lift-off it was realised this machine was very responsive and the movements of all cyclic and tail pitch controls were halved by throwing in all the rate switches.

After the tail rotor pitch was adjusted and the right mixing was introduced between throttle and tail the MkII was in its element. The stabilizer with its variable control wash-out made response very smooth and infinitely precise. The positive controls enabled me to perform several circuits in strong wind conditions with a touch of tail control when turning into the wind.

Conclusion

The *Falcon* MkII is not the model for a novice but should provide unlimited excitement for the average pilot and those wishing to attempt aerobatics. As for me I shall be practising aerobatic manoeuvres, now that I have a model at a price that I can afford with reasonably priced spare parts.

Washout Control

Thanks to the introduction of the range of Hirobo helicopters several people have asked me what on earth that is. I was very glad they did because I didn't know either. A call to Dave Nieman put that right, and reminded me that I had met the term in connection with the Kavan Jetranger. I wrote it off then, as a peculiarity of translation from German to English. I still think it's a funny name for what I understand to be an interaction preventing device between collective and cyclic controls. Is the term ever used in full-size terminology?



Left: beautifully finished Hirobo Bell UH1B photographed on the Jim Davis Models stand at the M.E. Exhibition. Right: Falcon MkII mechanics also seen at Jim Davis Models, this is the same model as Roy Foster describes in the text.

