



HELIPAD

by John Heaton

WOBURN ABBEY followed closely in the footsteps of the Bretons event and turned out to be another success. It is indeed a pleasure to be able to report that these all-helicopter events are so successful. I feel that the Woburn rally did not quite hit the same high note as the Bretons, but was really worthwhile all the same. I think that the weather was very much against things, being cold and windy, and was perhaps a reason for a slight lack of enthusiasm on the part of the fliers.

Competitions were run as a series of novelty events plus an expert event which drew about eight entries. This was run along the line of the FAI schedule (ie, same as the Nats) and was a very fair task, consisting of things like figure eights, nose-in and tail-in circles, circuit and landings, stall turns etc. I personally do not see any point in using anything other than the Nationals schedule for *serious* competition, but this is not a criticism, so thank you organisers. This was, as the results show, ably won by Len Mount using the faithful *Heliboy* with its high control power to good advantage. I'm sure we all thank the Marquis of Tavistock for donating the superb venue and presenting the prizes and hope we can do the same next year.

Results

Novelty

1. Len Mount
2. Dave Nieman
3. John Heaton

Expert

1. Len Mount
2. John Heaton
3. Dave Nieman

Scale

1. M. Tomalins
2. Len Mount
3. P. Raymon

Concours

Len Mount

Slough

This was the last helicopter fly-in last year and had a fantastic turn out of over a hundred models. It is difficult, after three events on the trot, not to repeat myself on format etc., so I will dwell on the more interesting facets, as most rallies are run along the same sort of lines. I had the most disastrous day by pranging both my models. Still, I suppose having flown really intensively all last year without a single mishap, a pile-in was long overdue. I drove my 212 into the ground after

simply making too fast a descent, and with the combination of a slightly rich engine and a very low rotor speed the model just over-pitched, (*stalled?*) lost rpm and crashed. However, the damage was extremely minor and the old girl was well on the way to better than new condition, as I am taking the opportunity to make good some other fuel damage to the paint around the filler at the same time.

My other crash involved the *Falcon* and was simply adjacent channel interference, again my own fault as I flew right over an adjacent frequency transmitter.

Among the fliers and models that impressed me were Nigel Brackley flying a Kalt *Squirrel*, making it look extremely big, smooth and fast. Dave Nieman did some immaculate flying of the Hirobo range. Len Mount was flying for the first time in a scale event and won it with a Kalt *Baron/Jet Ranger*. He had set this model up in the same sort of way as his *Heliboy* and it was quite impressive, extremely manoeuvrable but still smooth. A trio of Hirobo *Gazelles* were flying beautifully.

We tend to get blasé about the *Gazelles* with their Fenestrom tail fans, but a few years ago we would have been agog at a Fenestrom equipped *Gazelle* doing an engine out landing, yet today this is commonplace.

Two models that I think deserve special comment were Jim Morley's *Bell 47* flying as if it was a standard model. However, it has two separate engines. Twin engine security is only just becoming commonplace with full size choppers yet here we have a model equipped with twin engines and clutches. Finally, I noted John Barrow's Kalt *Baron* fitted with a three bladed head, (this being destined for a super scale *Gazelle*) flying stably without a tremor or vibration.

I was lucky enough to fly this model and it behaves superbly. Incidentally, readers from the South may have seen John, who is an Army officer, on the television at the time of the *Chinook* heavy lift operation, lifting tanks from Ludgershall to Southampton, explaining the pros and cons of the manoeuvre.

Slough Results

Scale

1. Len Mount
2. Dave Nieman
3. Warren Bailey

Static Scale

1. Len Mount
2. Jim Morley
3. John Barrow

Novelty

1. Len Mount
2. Dave Nieman
3. Alan Paris

KKK Hughes 300

This model should be hitting the market about the time this issue comes out, and believe me it is something special. It is a large heavy model of a *Hughes 300* and comes completely assembled and equipped with a 20cc recoil start petrol engine.

I opened the box at 9 a.m. and had her ready to fly at midday. All you have to do is screw in 5 servos. The motor starts extremely easily, just like a lawn mower; full choke, low throttle, a couple of pulls and away. You have to release the choke quickly or it goes over-rich and stops. I have subsequently devised a good sequence for starting where you give three gentle pulls on full choke to prime the engine, then take the choke off, give a good pull and she's away with no fiddling. It was immediately apparent that the clutch is superb, utterly drag free at idle yet having a firm powerful take up just off idle. In fact this caught me unawares as early on, before I realised how powerful the clutch was, I opened it up too much and the blades really tried to turn while I held on to them. This must have weakened the 3mm securing bolt holding the head on as it sheared a few moments later. This was the sum total of my mechanical woes in over two gallons of petrol. Cyclic response on lift off was good; firm and powerful but not twitchy, tail response was extremely powerful bordering on the twitchy but no problem.

It became apparent that I had some main-rotor-induced vibrations, not enough to stop flying but worrying all the same. I stopped after ten minutes hovering and rechecked everything. I checked the flybar blade balance, C of G of blades, main rotor lead-lag, in fact everything, but still had vibrations. Anyway, I ignored it and went on with flight testing. Everything went as planned with no nasties or surprises. I changed the lightweight plastic paddles for metal 505 ones to suit my particular preference for slow responding models and was very happy with flight performance. Later on that day I just happened to think 'Rogue blades?' and fitted a pair of 707 blades. Hey presto, total smoothness.

I proceeded to fly the rest of the day for pure joy. Just think of it, no oil residue, one pint of petrol per hour, low noise and I loved every minute of it.

In a couple of days I had put two gallons of petrol through and was becoming really confident with the machine. I don't think I could ever recommend one for learning, as a



The KKK Hughes 300 static and up, up and away (all photos by Colin Cameron-Tough).



thump is bound to be damaging due to the heavy weight and she is twitchy on the tail due to low weathercock stability (short boom and small fin). Against that the advantages for a competent flier are many; ease of operation, cleanliness and simplicity, economy and apparent reliability, large smart looking job etc.

Perhaps time for a close look at the mechanics. The engine forms the major assembly, a few plates and tail boom and that's about it. It's amazing how a few struts together with the canopy can transform the mechanics into a *Hughes 300*. The canopy is superb, incorporating dummy tanks and nice clear windows all out of flexible plastic. The pitch up mechanism is a bit like the *Baron* trainer with a large plastic lever, but instead of operating a link up the side of the mainshaft it raises the tray for the cyclic servos up and down the main shaft, in one cunning swoop doing away with all the complications of mixing levers or grooved mainshafts. It does look a bit funny seeing the exposed cyclic servos moving bodily for collective pitch, but I think for operation, if not for neatness, it's the best I've seen yet. Another good idea is the mounting for the collective servo, a metal plate with two ears — you just servo tape the servo and secure with an 'O' ring to the ears — easy. Moving on to the transmission, this is a childishly simple set of super gears of mammoth proportions needing neither lubrication or maintenance and after sixteen hours use do not so far show the slightest sign of wear. I guess they would last for ever.

The tail drive is a straight shaft with squared ends with a central bearing contained within the tail boom, about as idiot proof as you can get. Moving down to the tail gear box, again an utterly straight forward right angle bevel gear drive with detachable covers top and bottom. I was mildly alarmed to find that the bearings were plain bushes, but packed the gear box completely with grease and no wear is yet apparent. I suppose at the sort of rpm (4000) we are talking about, as long as the lubricant is there plain bushes are fine. After all, that's

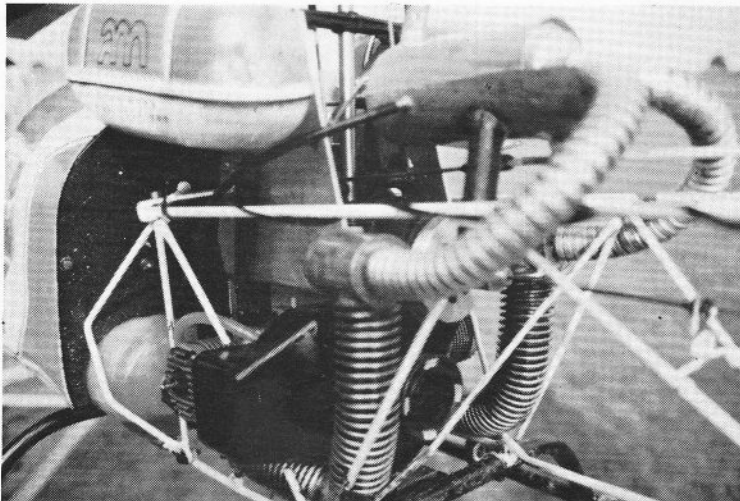
all the big ends on your car are.

Tail pitch mechanism is very straightforward, blade retention is like a Hirobo's and control linkages like a Schluter. Moving up to the rotor head we find there is nothing radical, a bit like the 212 with nice flexible teeter damping, mixing of Bell and Hiller styles a la Hirobo. Incidentally, I was pleased to see that the teeter restraint felt nice, the ends of the blades can be moved up and down about one foot with progressive stiffening making for smooth flight performance. I was never in agreement with the vogue a few years ago of stiffening the teeter. One reservation though, the more the blades move in teeter the easier it is to have a boom strike on a tail first arrival. Also, if you clip a

skid whilst flying it sets up an oscillation which takes about three cycles to settle down, because the fuselage has some give in relation to the rotors.

The construction of the clutch I cannot comment on as I have not dismantled the engine but would guess it bears little resemblance to model helicopter clutches. It weighs about as much as your average 61 and would do service in a Suffolk Colt.

Only one negative comment, it looks a bit toylike and stark when you first look at it completed, probably a bit psychological because it comes ready made, but a few hours with some transfers, a brushing of matt black and a few details and she really comes to life.



John Barrow's three bladed Kalt *Baron* — below; cryptic comment for the author's 212 from Dave Nieman — see text, and bottom left Jim Morley's twin engined *Bell 47* with shared silencer.

