

HELI-PAD

by John Heaton

THE CHELTENHAM HELICOPTER Fair was held this year at the venue of Cheltenham Race Course. Whilst not a model only event the models were again a fairly prominent part of the display and we were given an exclusive arena to perform in throughout the day. Although the crowd round the models was considerable I felt the attendance was down on last year. Whether it is just a sign of the times or due to less than favourable weather I don't know. As far as the model side goes we had a Hirobo *SST Jet Ranger* belonging to Dave Chiswell and Derrick Lindsay with his *808* plus my own fleet of models which have all featured in *Heli-Pad* at some time.

Dave's *SS7* was a very interesting model as he had equipped it with a smoke system, a pyrotechnic type as opposed to paraffin injected into the exhaust, and very effective it was too. Both times I jumped when it went off in the air with a noticeable crack. Actually the *SS7* is quite an interesting model in its own right and one I will consider for a new display model, as all my models are now over six months old and I usually as a matter of policy like to have a new model within this time. Before I give a brief description of the *SS7* layout I will quickly touch on the fullsize participation at Cheltenham.

The most unusual sight was not 1 but 2 *Brantlies* flying. I bet not many people have seen a *Brantly* in the air, it looked quite stable and docile. The second machine to attract my attention was a *Robinson* which entered the circuit at very high speed and, interestingly, could be seen to be effected by the extremely



John Griffiths of Sough R/C Models flew his Kalt Bell 222 at the Cheltenham Race Course.

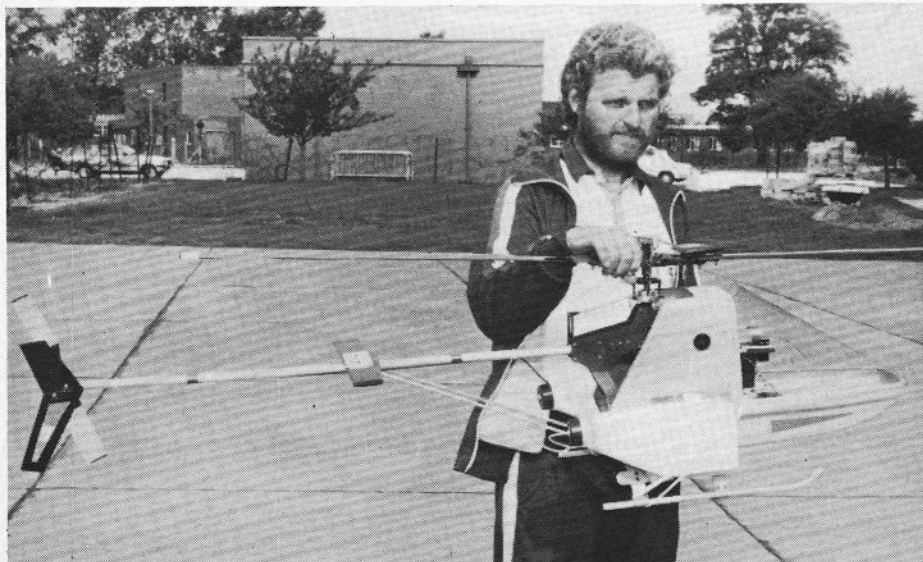
gusty conditions, which is understandable as I believe the *Robinson* has the lowest inertia rotors of any certified helicopter. I suppose the impression of speed was accentuated by the small size. It can't be long before someone comes out with a model.

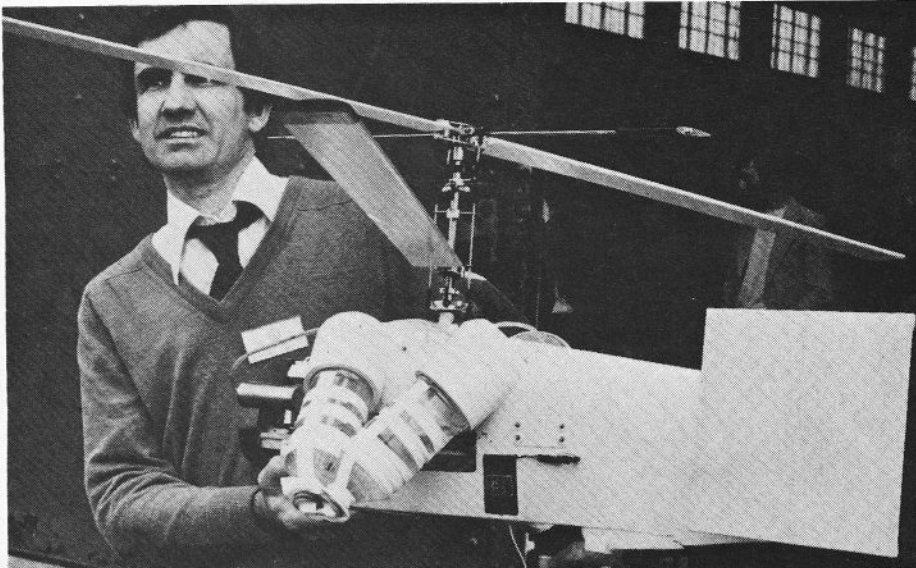
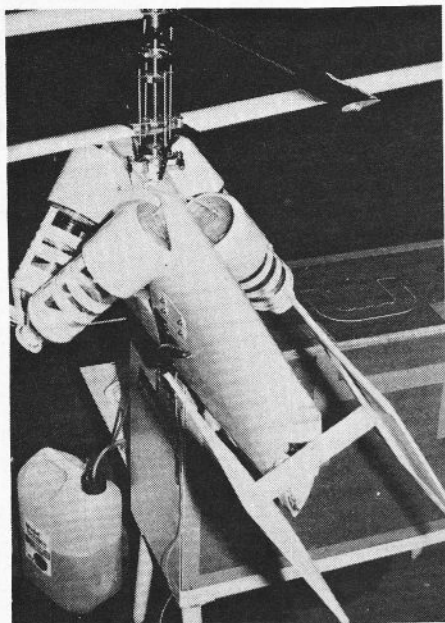
Robinsons are distributed in this country by David George's company, Sloane Helicopters, and David is also a model enthusiast. He saw one of my models flying whilst he was at some car do at Thruxton and promptly ordered one to be built. On discussing the learning to fly programme he said,

The author's winning duration entry carrying a pair of large pannier tanks. It flew for 58 mins. 53 secs.

being a bit of a lad, "Oh, that will be no problem as I fly the real ones!" He turned up on the day to collect in his *Hughes 500* and scorched up my helipad as *Hughes* do, and we got the new model out. I had provided David with a Hirobo *Falcon 505* with Futaba MAG radio and a fine flier it was too. I suggested in the normal way that he should get used to the controls without taking the model more than an inch or so into the air and whilst I was walking away the model was up to about 50 feet. I ran back and took control and stressed again that 50 feet initially was asking for a crash, and left him to it. That *505* must have a charmed life because during the first tankful I cringed every time I could hear the model revved up. Up in the air, the other side of the fence, out in the road, etc. This flying session ended when the battery tore from its mountings and came unplugged whilst on full bore of course (as a result of many arrivals) and the model gracefully climbed out, gyrating gently until it ran out of fuel about 300 feet high, then splat onto tarmac. David's luck is such that damage was minimal, basically unbend undercart, one new blade and straighten shaft. We called it a day and he gave us a ride round the local area in his *Hughes 500*, ultra low level — ultra high speed I might add. Subsequently David has come round to my way of thinking and within an hour or so was flying very nicely, albeit at a low level so it can set down in trouble.

Anyway back to the *SS7*. It is quite a large model of a *Jet Ranger* with purpose made mechanics, a little like the trainers in principle but totally different in layout, ie. the engine faces forward. It seems to be a total concept model designed to a high standard and I am quite impressed with the layout, seeing nothing that offended in the design and noticing a lot of attention to workmanlike





Brian Newey with his special-contra-rotating machine — the rear view shot, left, shows the rudders fixed directly to the servo output disc — fuel tanks form part of the landing gear.

detail and high quality components. Mind you it is an expensive kit at £425.00.

The rest of the Cheltenham display consisted of the usual stuff like *Jet Rangers*, *Enstroms*, *Bell 47's*, *Hughes 300* and the like. A display with a naval *Gazelle* made me tingle inside when the pilot pushed over to beyond the vertical in some of his dives after a climb. Not forgetting, of course, Ken Wallis with his splendid display of the autogyro principle. His own rather special machine is quite remarkable and manoeuvrable. I thought back to my own adventures with the *Kalt Robin*.

A late arrival with a very interesting machine was Andy Hopkins with an exceedingly attractive small size model of an *Augusta 109*. Reading between the lines I gathered that this was a joint effort with Jim Morley which utilised the new mechanics destined for Jim's *Hughes 300* kit coming out this winter. I must say that Andy's model was one of the prettiest models I have seen in a long time, the non-retractable wheeled undercarriage in particular giving it a very refined air. The mechanics are loosely based on Jim's usual system, ie. tooth belt primary drive to geared right angle drive. Tail rotor output is much improved with purpose made U/J.

R.Ae.S. Endurance Competition

Finals were held at RAF Finningley, Saturday July 3. Results were 1st John Heaton, 2nd Brian Newey, 3rd Eric Falkner. I was naturally elated at winning the coveted £1,000 and will in a future issue describe the model and equipment but this month I will analyse the other two finalists' models.

Third place man Eric Falkner unfortunately did not manage to sort his *Eugroton* design job in time, only achieving flights of a few minutes in duration due to erratic fuel feed. His was a reaction type with airscrew motors mounted where the paddles normally reside. Hopefully Eric may provide photos and more gen. as he didn't have the model with him. The model he had was a circa 1970 o/d utilising what looked like Schluter *Cobra* mechanics, fixed pitch, in an o/d frame with *Allouette* tail box and HP40 motor. Two large fuel tanks were slung on the side pannier fashion and Eric says the model completed the half hour preliminary trial with flying colours. However, on the day, without the advantage of a cooling breeze, the model wouldn't lift off with a reliable needle valve

setting, ie. lean off to achieve sufficient power and the HP40 would sag in a few minutes.

Second place man Brian Newey had with him his extremely elegant solution to the task, a purpose built contra-rotating single-shaft job. Fuselage was a finely sculptured piece of work which Brian explained was plywood covered foam. A modified Webra 61 sat in the front driving through a 212 clutch to a spur gear sandwiched between two modified 212 cogs for contra rotation. Top rotor was teetering non-collective with cyclic control, lower rotor was completely rigid.

Yaw control was by large servo tilted rudders operating in main rotor slipstream. The whole model was finished to a high standard and represented about eight months work, nearly every piece being home produced. The engine was heavily modified with a cast iron piston running in an iron liner, the whole assembly carefully balanced. He had even gone to the trouble of fitting a rubber cushioned drive between the clutch and spur gear to absorb torsional vibration. Unfortunately this was the item that let go after 37 rock steady minutes. The machine touched down heavily after the rubber sheared and drive was lost, the model was not able to be repaired in time for another attempt.

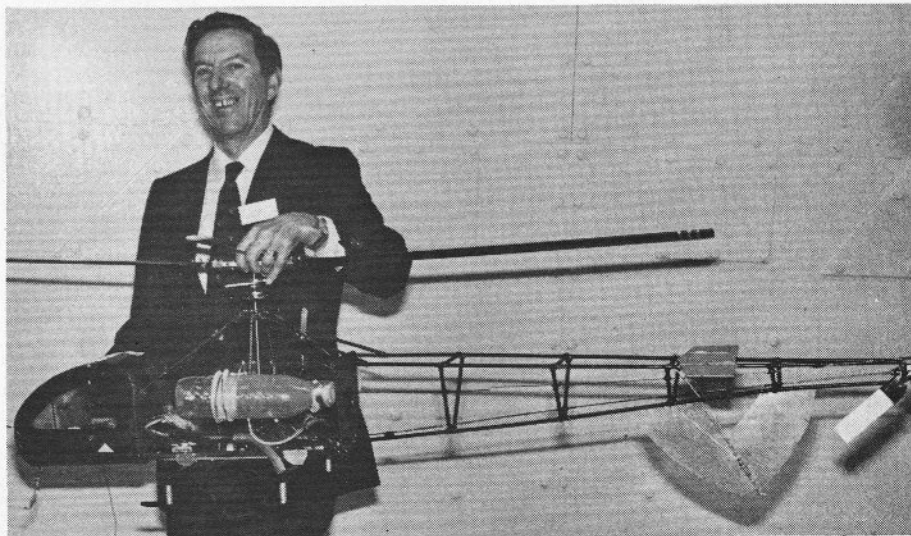
I must say that the flying qualities were most impressive and it looked the easiest model to fly that I have ever seen. It was obvious that Brian's model had the most endurance potential, I would estimate it

between three and four hours ultimately. Brian is going to continue in his own time.

A very interesting entrant all the way from Italy was Mike Smith. His model was not quite finished in time but he had it with him and I was able to take most of the relevant details. The main feature was an enormous pair of computer designed blades equipped with throttled 1½cc Tiger Cubs incorporating pressure regulating valves. No yaw control was fitted and cyclic control was supposed to operate with tiny paddles. If Mr Smith hadn't built his model to such a high standard I could have classed it as a 'joke' entrant as I could see basic flaws in his design which would prohibit controlled flight. However I would love to be proved wrong, perhaps we shall hear how flight trials progress.

I would like to take this opportunity to thank all the sponsors; Alan Mann Helicopters Ltd., British Airways Helicopters Ltd., Bristow Helicopters Ltd., Dollar Helicopters, Ferranti Ltd., Management Aviation Ltd., M. L. Aviation Co. Ltd., Rolls Royce Ltd., Shell Aircraft Ltd., Smiths Industries Ltd., and of course not forgetting the RAF who provided the splendid facilities and all the Society's various personnel whose participation was indispensable.

I am a little disappointed that nothing more radical or of a breakthrough nature was demonstrated, which after all was the purpose of the event, but am consoled by the splendid achievement of an hours hovering duration in still air with a standard model, like any can buy.



Eric Falkner with his second string model — plastic lemonade bottles seem popular in this contest!