

ELI-PAD

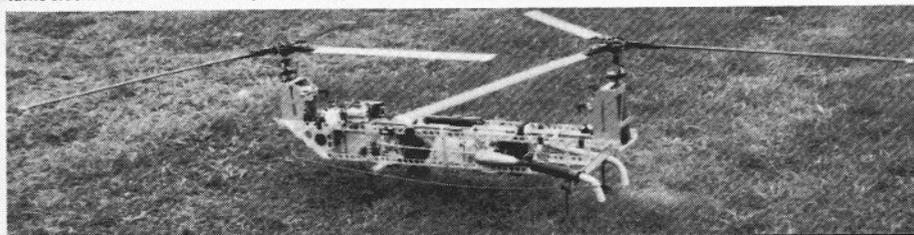
by John Heaton

LOTS TO REPORT on this month, including my own training week and fly-in at Thruxton plus the Bretons and Slough Helicopter Meets.

The training week was a great success with much midnight oil being burned in the workshop every night preparing for the next day's flying. Special congratulations to Gerry, Jim, Mick and Larry — all the way from Ireland — for their very noticeable improvements during the week.

The Sunday Fly-in was a pleasant affair, just a fly-for-fun with no competitions and we all enjoyed a fine day's flying. Jim Morley brought along his new *Hughes 300* and we had a bit of a first with the public flying debut of John Barrow's *Chinook*. This is a tremendous project, using twin Irvine 40 engines and three bladed rotors. I haven't established exactly what the mechanics are but they seem to be Morley based. The machine purrs very sweetly and the realism of landings with wheeled undercarriage was uncanny even though it did not have its scale fuselage fitted. However, John has shown me the mould plug and believe me it is going to be impressive.

Below: John Barrow's *Chinook* employs two three bladed rotors, the front rotating anti-clockwise while the rear turns clockwise. Two Irvine 40s provide the power.



Bretons

This year we were again treated to a superb helicopter fly-in. The Bretons club members always do us proud and I know we all appreciate it.

Pete Reay had an absolutely enormous model of a *Scorpion* with him, scratchbuilt from metal tube and destined to be fitted with a petrol motor. At first glance the canopy seems to be a superb glass fibre moulding, but it is actually made of plywood — amazing. I hope to keep in touch with this model's progress and will report as things develop.

We were treated to a demonstration flight by Herr Heim from Germany, the designer/manufacturer of the Heim *Star Ranger* as championed by our own Vago Nordigan. He showed complete mastery of all manoeuvres and such was the control power of the screaming *Star Ranger* he was able to completely ignore the wind, which became quite blustery in the afternoon. His slow roll and stall turn were quite brilliant. I must say though that although the model will perform schedules in almost any conditions, I feel that the scale appearance suffers due to the extremely high rotor speed used to achieve this sort of performance.

We also had a couple of Dutch guys who fly *Heliboys* at home, and as all the European flyers including Heim seem to fly my preferred helicopter mode, i.e., pull for pitch up, I let them have a go with my *Iroquois*, which was set up in my usual docile way and they loved every minute of it, finding it hard to believe how stable it was. One of the memorable flights of the day was the figure of eight in Carl Ewer's competition flight, the way he zoomed round the poles was quite brilliant. As a measure I managed eight laps on what is basically an orientation rather than an aerobic exercise and Carl achieved 14 laps. I also spotted Len Mount doing — would you believe — an inverted autorotation!

Full results as follows:

Entries

75 + Helicopters
50 + Scale
25 Non-Scale
30 Entries in Scale Flying

Scale Flying Results

Expert

1st D. Nieman	Hirobo-Bell-47G (Petrol)
2nd J. Heaton	<i>Iroquois</i>
3rd P. Ashford	<i>Iroquois</i>

Novice

1st Mr. Earl	Hirobo Bell-47G (Petrol)
2nd A. Newman	<i>Iroquois</i>
3rd T. Angel	<i>Jet Ranger</i>

Static Concours Results

1st J. Barrow	<i>Gazelle</i>
2nd P. Reay	1/3 scale <i>Scorpion</i>
3rd D. Nieman	Hirobo Bell-47G (Petrol)
4th T. Moon	<i>Augusta 109</i>

Below: a scene at your columnist's own training week. Left: J. B.'s *Gazelle* won the static concours at the Bretons fly-in.



Best Helicopter (Dave Nieman Trophy)
Nigel Smith *Jet Ranger*

Fun Competition
Skittles Results
Expert

1st D. Mount
2nd D. Nieman

Novice
1st A. Newman
2nd J. Benson

Air Lift Results
Expert
1st J. Heaton
2nd M. Cogger

Novice
1st C. Ewer
2nd C. Bliss

Pylon Results (Fig. 8)
Expert
1st A. Parris
2nd L. Mount

Novice
1st J. Young
2nd C. Ewer

Obstacle Course Results
Experts
1st L. Mount
2nd J. Heaton

Novice
1st A. Newman
2nd J. Benson

Slough

The Slough Fly-in was not blessed with good weather, being extremely windy with occasional torrential rain but we all enjoyed a very friendly meet. Thanks go to the organisers, from **Slough Radio Control** John Griffiths and Nigel Brackley, and Jim Morley of **Morley Helicopters**. Novelty events were excellent I thought, and the scale event had full size helicopter pilots as judges. A neat innovation I saw was on Moussa Namih's *Falcon*, which employed a

The latest from Jim Morley is this *Hughes 300*, which looks very realistic, despite an absence of panels behind which the modeller can conceal non-scale hardware.



HB PDP helicopter engine and instead of the usual fan he had fitted a cone for starting — food for thought. Results are as follows:

Scale
1st D. Nieman
2nd P. Reay
3rd J. Heaton

Spot Landing
1st J. Heaton
Joint 2nd: D. Nieman and M. Cogger

Combination Event
1st V. Nordigan
2nd D. Nieman
3rd G. Richardson

Skittles
1st C. Bliss
Joint 2nd: J. Heaton and D. Nieman

Hirobo Iroquois

I feel a spotlight on this model might be interesting as although I have built the *Iroquois* in the past, I haven't done an article on one.

It is a very impressive looking model due in part to its large size, being about the fattest of the scale jobs. Constructionally, the layout is good with the whole front of the fuselage shell being detachable for access. A notable point is that the four servos are in line at the front, minimising bell cranks, etc. The parallelogram pitch-up mechanism is complex but absolutely trouble free if assembled correctly. This particular model

came in to the shop as part exchange and I fancied adding it to my fleet as I like the subject. Stripping the completed model down for checking didn't take long, and I also took the precaution of removing the brass tail drive guide and re-fitting it in the optimum between power take-off and tail rotor. This is one of the critical assembly stages for if the shaft is too sharply curved the chances of tail drive breakage are increased — better safe than sorry I thought. The model was fitted with a tail speed-up drive which I felt was absurd as it is unnecessary, spoils the line up and transforms a well designed transmission into an externally belted lash-up. Needless to say it didn't take long to throw away. (The only model I feel is better with the speed up unit is the *Hirobo Jet Ranger* because in that case it improves the line up of the tail drive).

This model is fitted with an Enya 60, an engine I would not normally use, generally preferring an OS50, but it proves satisfactory in every respect and I would not hesitate to recommend one. I fitted a new Acoms FM set, using differential on the throttle in the normal way. This simply means that the linkages are set up so that the carb barrel opens only a little with the first movement of the stick and then at an increasing rate (Fig. 1). In my opinion this is definitely the best way to set up a machine with lifting section rotor blades.

I set the pitch on the blades as follows: with throttle stick closed and trim fully open blades are at about 3°, full throttle moves the blades to about 10°, while closing the throttle and the trim stops the engine and reduces pitch to zero for autorotation. This set up just happens to be the one I arrived at, everyone to their own of course. The model however is very docile and a sweet flying machine, as I am sure those who have seen her fly will agree.

I have made a couple of subsequent modifications. One was to add weights to the clutch segments as it was inclined to slip (probably due to the low engine rpm I use), secondly I added a bit of weight to the blade tips to increase autorotational energy in engine-off landings. The third modification was to fit a fifth function cargo release. This was used at the Bretons in the Scale competition and dropped off an Action Man jeep — luckily I have a young son which saves being embarrassed in the toy shops!

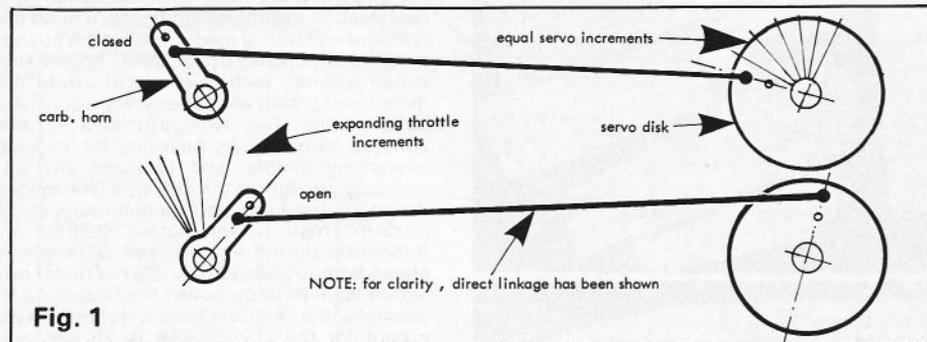


Fig. 1