

EUROCUP '83

The 1983 European Championships for Helicopter flying, hosted by the Bretons MFC on September 3 and 4.

ONE OF THE HIGHLIGHTS on the helicopter enthusiasts' diary is the Bretons Model Flying Club's annual helicopter competition. This year, the normal Bretons event played host to the Eurocup, the European Championships, a two day event which took place on September 3/4.

The Eurocup '83 consisted of two competitions, one for the full-blooded FAI F3C schedule and the other, with a simplified schedule, called the Sportsman event.

27 Competitors flew in the FAI class, 18 of these coming from the continent, 13 of the 20 sportsman class competitors also being well travelled. France and Germany were well represented in both events, while there was a spattering of entries from Belgium, Austria, Switzerland, Holland and Finland.

Sportsman class

This event gave the pilot ten minutes in which to fly eight manoeuvres selected from a list of twelve options. These manoeuvres had to be flown in the list sequence and the options are as follows:

1. Hovering
2. Vertical hovering circle
3. Hovering square
4. 360° pirouette
5. Top hat
6. Hovering eight
7. Straight forward and backward flight
8. Stall turn
9. 360° turn
10. Horizontal hovering circle
11. Approach and landing
12. Spot landing.

In the main these manoeuvres are self explanatory, although some could be clarified. The hovering manoeuvres 1, 2, 3 and 6 all require the model to maintain a constant heading and the geometric figures mentioned describe the track of the model over the ground. The *Hovering Square*, for example, requires the model to fly forwards, sideways, backwards and sideways again. Option 1, *Hovering*, requires the model to take off and rise vertically to an altitude of one metre and hover for five seconds, then rise to two metres and hold for five seconds, then rise again to four metres for a five second hover before descending vertically. The *Hovering Circle* (10) starts with the model hovering at eye level with the pilot standing about five metres directly behind it.

Sideways flight to left or right is then started while the pilot remains in the same place and keeps the model at the same distance and altitude with the tail pointing towards him. This continues until the helicopter returns to its starting point at the end of the circle.

The *Top Hat* (Option No. 5) starts with the model hovering at eye level. It moves forwards three metres, pauses, rises vertically for three metres and hovers briefly, pauses, flies forward ten metres, pauses, descends to eye level and, after a short pause, moves forward three metres to complete the manoeuvre.

Manoeuvre No. 7, *straight forward and backward flight*, is somewhat mistitled. It

involves a straight flight, at a constant speed and heading, of approximately 50 metres, followed by a 180° turn and a return to the starting point. The model does not fly backwards as such.

Spot Landing (Option 12) requires the model to make two spot landings from the hover in two separate marked places, while the *Approach and landing* (11) has the helicopter making one landing within a marked area but following a continuous 45° descent from an altitude of 20 metres, touching down without hovering to correct the positioning.

The Sportsman class is intended to encourage the helicopter enthusiast with average flying abilities, concentrating as it does upon hovering manoeuvres which are not as difficult to perfect as the transitional flight aerobatic manoeuvres found in the F3C competition schedule.

This event was won by Keith Whiddett of Britain, who was flying a Hirobo SST *Jet Ranger* and put up a superb performance considering the gale force winds and while using a scale model. Second place was taken by J. Neveling of Germany flying a *Star Ranger*, while another *Star Ranger* (albeit wrapped up with a Hirobo *Corvette* body) was used by the third place winner, A. Heyche of Belgium.



Right: John Griffiths' Westland Wessex, the winning scale helicopter at the Nationals.



Above: The Heim team relaxes in the model pound. Eduard Heim was the winner of the FAI event. Below: Vago Nordigan demonstrates the new Heim Bell 222.



Results

F.A.I.

Position	Name	Country	Total
1.	E. Heim	Germany	2391
2.	J. Dupont	Belgium	2374
3.	F. De Proft	Belgium	2281
4.	L. Mount	G.B.	2228
5.	K. Verplance	Holland	2042
6.	J. Michel	France	1942
7.	C. DeMaeyer	Belgium	1867
8.	D. Nieman	G.B.	1835

Sportsman

Position	Name	Country	Round 1	Round 2
1.	K. Whiddett	G.B.	70	95
2.	J. Neveling	Germany	54	83
3.	A. Heyche	Belgium	53	82
4.	E. Hagenaars	Holland	57	81
5.	L. Buss	G.B.	25	79
5.	E. Gutknecht	Belgium	59	79
7.	B. Schneider	Germany	61	76
8.	R. Makkonen	Finland	58	74

FAI F3C

F3C is the FAI's designation of the recognised international competition class for radio controlled helicopters, F3 denoting radio controlled models and C indicating choppers.

As with the Sportsman class, the competitor has a set time (ten minutes in this case) in which to perform eight manoeuvres. The first three, the *Hovering M*, *Hovering Circle* and *Horizontal Eight* (in which the helicopter flies a figure eight in transitional flight) are compulsory, as is the final manoeuvre, either a *Landing* (as the Sportsman class) or an *Autorotation*. The latter starts from true transitional flight (which requires less power than hovering flight) at 20 metres altitude and the model is flown to a point where a power-off descent could be made onto the landing square. The power is cut completely and the helicopter must land perfectly onto the heli-pad without re-engaging the engine to achieve a maximum score.

Four optional manoeuvres are selected in a sequence determined in advance of the flight. The options are:

Double pirouette; 720° rotation around the yaw axis.

Top Hat; Forwards flight for ten metres at eye level, brief hover, followed by two metre ascent and hover, a 360° pirouette, pause, a two metre ascent and then ten metres of forward flight. Descent staged as ascent, two metres, pirouette, two metres, with ten metres forward flight to complete.

Nose-in-Circle; as *Hovering Circle* but nose-in rather than tail-in.

Shovel; difficult to describe, see **Figure 1**. Starting altitude is 20 metres and the 'blade' of the shovel is drawn at eye level.

Pilots promenade; the model hovers on a fixed heading at eye level while the pilot walks around it.

Four point pirouette; while hovering at eye level, the model performs a 360° pirouette but pauses for two seconds at 90° intervals.

Stall turn; performed as a fixed wing manoeuvre.

Loop; as above.

Split S; as above.

Immelmann; as above.

Observation; Straight flight of twenty metres at five metre altitude followed by a short hovering pause. The model performs a slow pirouette at five metres, pauses, descends to eye level and performs a four point pirouette. After a pause it ascends to five metres, performs a 180° pirouette and, we quote, "flies away horizontally in the opposite direction of its initial approach."

Roll; as fixed wing.

Rolling Stall Turn; this manoeuvre includes a half roll in the upward leg, the model then half turns and descends as normal, leaving the manoeuvre on the same heading and altitude as the approach.

540° Stall Turn; this manoeuvre is the same as a stall turn but the model rotates 1½ times about its yaw axis before descending.

The FAI competition was won by Eduard Heim of Germany (manufacturer of the Heim

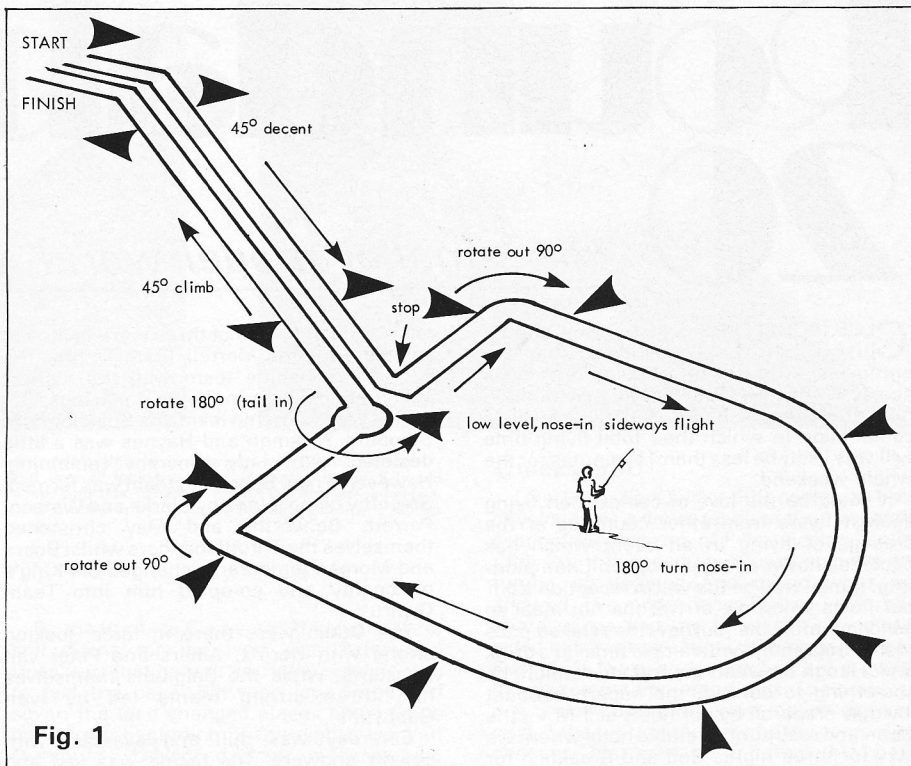


Fig. 1

Star Ranger). No prizes for guessing the make of his machine. Two Belgian pilots took second and third places; J. Dupont with a Schluter *Heliboy* and De Proft with a Schluter *Superior*.

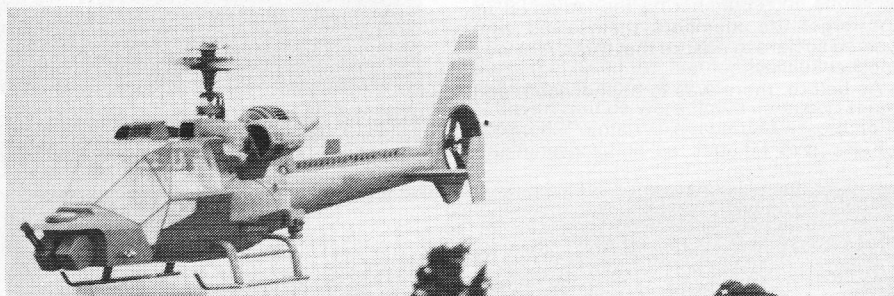
One of the most remarkable aspects about the event was the lack of significant individual modifications to the commercial models used, making it apparent that the event had been won by piloting abilities, not machine shop achievements. Or could it be that model helicopters are now approaching perfection?

Blue Thunder

After the Eurocup '83, which had been successfully concluded by Sunday lunchtime, a model flying display was presented for the spectators and competitors. One of the highlights of this display was Albert Heyche's *Blue Thunder* model. Taken from the American science fiction film of the same name, the model duplicates the construction of the full size film version in

that it is based upon a *Gazelle* fuselage, a Hirobo item on the model, with an 'armoured' cabin built up from a multitude of flat planes attached to the front. Heim mechanics were used, which in a way was unfortunate as this system cannot provide the motor speed direct drive to the tail to allow a scale Fenestron fan to be used. The cabin on the model was built up from balsa and clear plastic sheet and the whole model was built in three weeks so that it could be flown at the Brussels Film Show which coincided with the Belgian launch of *Blue Thunder*.

Pete Reay demonstrated his scratch built model of the home build *Scorpion* helicopter. The chassis is from welded steel tube and the pod is from glass fibre, as are the prototype's. Modified Hirobo Bell 47G mechanics are used and power comes from a 20cc two stroke petrol engine with transistorised ignition. An impressive project, the *Scorpion* weighs 20lbs and Pete flew the model in a convincing scale like manner.



Right: A. Heyche of Belgium with his *Blue Thunder* model. (See text).

