

AIRPROX REPORT No 2010050

Date/Time: 9 May 2010 (Sunday) 1019Z

Position: 5212N 00015E (3½ nm
E of Cambridge - elev
47ft)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Robinson R44 Untraced Model ac

Operator: Civ Trg Civ

Alt/FL: 850ft NK
QNH (1013mb)

Weather: VMC CLOC NK

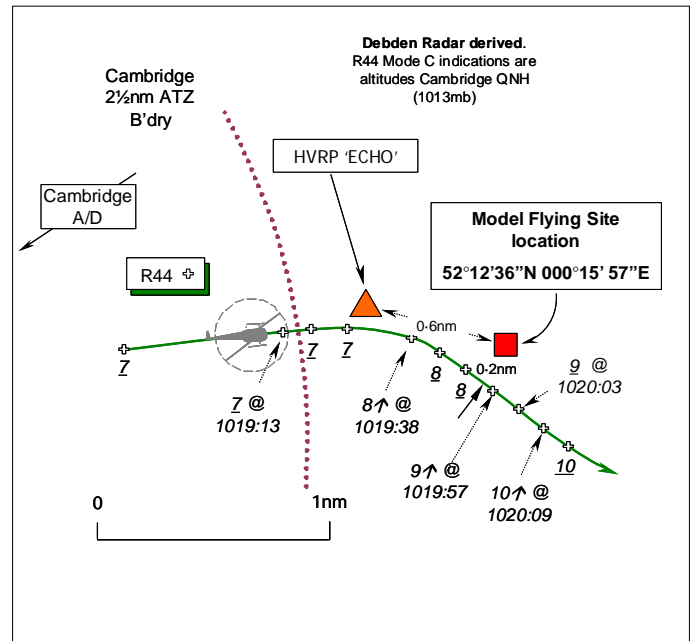
Visibility: 30km NK

Reported Separation:

Nil V/60m H NK

Recorded Separation:

Not recorded



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE ROBINSON R44 HELICOPTER PILOT, the P-i-C and flight instructor, reports he was supervising a type-rating student, who was executing a visual helicopter departure from Cambridge airport. He was in receipt of a BS from Cambridge APPROACH (APP) on 123.6MHz and a squawk of A7000 was selected with Mode C on. His helicopter has a dark blue livery and the HISL – situated on the tail boom – was on.

The normal VFR departure procedure is to remain at or below 700ft QFE until reaching the ATZ boundary, after which the helicopter can be climbed to the desired operating altitude. After his R44 had passed the ATZ boundary to the E they had commenced a climb at 80kt when he noticed a large model ac of about 6ft wingspan manoeuvring very close to his helicopter. The model ac was in a vertical climb whilst spinning and at the top of the climb it executed a number of flips/rolls before descending. When the model was at the top of its climb, he estimated that it was less than 200ft away at 10 o'clock, level with his own R44, which was climbing through about 850ft QFE [about 910ft QNH]. The position and altitude of the model was passed to APP. He thought the Airprox occurred at 1030UTC [UKAB Note (1): More probably just after 1019:38.]

Whilst avoiding action was not necessary it seems there are two possibilities:

- The model operator saw the helicopter and deliberately flew the model into close proximity.
- The helicopter was unsighted by the model operator.

In either case a Risk of collision cannot be ruled out in future encounters. This would almost certainly cause major damage to the helicopter, possibly catastrophic. He thought that a model flying club site is located almost directly underneath the eastern Helicopter VFRP (HVRP) known as point 'Echo'.

UKAB Note (2): Subsequent to enquiries through the BMFA, a model flying club was identified as operating in the vicinity of the Airprox. The owner provided a comprehensive response, complete with aerial photograph and maps of their Model Flying Site (MFS). The following is an extract of the main points noted in the owner's account.

THE OWNER OF THE MODEL FLYING CLUB reports that one model aeroplane pilot was present at the MFS at the reported Airprox time of 1030UTC [and when the Airprox occurred about 10min earlier], together with another person acting as a spotter for other ac. It is reported that no other ac, either military or civilian, was sighted whilst the model aeroplane was being flown at this time. Furthermore, no model 'runaways' occurred on this date. The R44 pilot reports the MFS as being located at HVRP 'Echo', which is not the case, the owner thought the MFS was 750m E of point 'Echo' [see UKAB Note (3)]. The position of the MFS, a grass mown area the size of a football pitch, is in the middle of a field at 52°12'36"N 000°15' 57"E - some 3.86 statute miles [3.3nm] E of Cambridge airport – and, he thought, 1.36 statute miles from the position of the Airprox originally reported by the R44 pilot – 2½nm E of Cambridge airport. Model ac flying only takes place around 250m E, W and N of the MFS.

The MFS has been established for 18 years; all club members are also members of the British Model Flying Association (BMFA) and comply with Club and BMFA rules. No free flight models are flown from this location and all models are under precise control at all times. They are 'always aware' of low ac in the vicinity and fly their models down to a low altitude or land them. No dangerous model flying is tolerated and safety is considered paramount within the club,

He concluded that another model ac, not that flown from this MFS, had been flying between the ATZ boundary and the VRP as none of the club members fly in this area. He vouched for the model ac pilot present at the MFS when the Airprox occurred as being a very responsible, safe and experienced model ac pilot, with a BMFA 'B' certificate.

Subsequent to this Airprox, he met with the Head of Training from the R44 pilot's company. A workable set of procedures (copy provided) was mutually agreed that were to be incorporated into the Company Flying Order Book and operations manuals.

UKAB Note (2): The UK AIP at EGSC AD 2.20 - LOCAL TRAFFIC REGULATIONS – para 5 Helicopter Operations states:

b. Helicopters are encouraged to join the circuit through one of three Helicopter Visual Reference Points (HVRP) north, east and south of the aerodrome. Request 'Join' one minute before HVRP and establish at 700 ft QFE.

HVRP E is noted as the plantation south of the A14 road at OS Grid TL 537 596 (52° 12' 46"N 000 15'E).

UKAB Note (3): The MFS is situated 0.8nm outside the ATZ boundary and HVRP Echo bears 290° (M) from the MFS at a range of 0.6nm – 1100m.

ATSI reports that the Airprox is reported to have occurred 2.5nm E of Cambridge Airport and just to the S of the designated HVRP Echo (OS Grid Ref: TL 537 596). HVRP Echo [the location of a tree plantation bisected by a country road] – is situated about 0.3nm to the E of the Cambridge ATZ boundary. This ATZ extends to a height of 2000ft above the aerodrome elevation of 47ft amsl and bounded by a circle 2½nm radius centred on the mid-point of RW05/23.

The Cambridge METAR for 1050Z was: 02010kt 330V060; >10km; BKN023 11/04 Q1013=.

The Robinson R44 helicopter departed VFR from Cambridge RW05 at 1017UTC on an easterly track, not above a height of 700ft QFE until crossing the boundary of the ATZ. At 1020:03 the R44 crew called Cambridge APP, "*Cambridge APPROACH [R44 C/S] request basic service*", and the controller responded, "[R44 C/S] *Cambridge APPROACH basic service Cambridge Q-N-H 1-0-1-3.*" This was acknowledged correctly by the R44 crew, "*QNH 1-0-1-3 helicopter [R44 C/S]*".

At 1020:41 the R44 pilot reported, "*Helicopter [R44 C/S] just to let you know again we've got..models operating up to about 1000 feet right hand..Echo*", which was acknowledged by APP.

Radar recordings show the helicopter departing the cct and leaving the ATZ to the E. No other radar returns are observed in the vicinity of the reported Airprox location. It is probable that the size of the model ac did not provide a sufficient reflective surface for an acceptable radar return.

Cambridge airport report that they were not aware of the MFS until the Airprox was reported. When questioned regarding the pilot's comment "*again we've got models*", Cambridge confirm that they had no prior knowledge of model ac operations from this site until the Airprox was reported and that they are now in the process of trying to establish a letter of agreement. Cambridge APP was providing the R44 with a BS, was not aware of the model ac activity and therefore unable to pass appropriate activity information.

MATS Pt1, Section 11, Page 4, Page 4, Para 3.1.1 states:

A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

UKAB Note (4): Analysis of the Debden Radar recording shows the R44 departing from Cambridge Airport to the E but the model is not shown at all. The Helicopter levels initially at 700ft Cambridge QNH (1013mb) and exits the ATZ boundary just after 1019:13, passing about 0.1nm – 185m - S abeam HVRP E before climbing to 800ft QNH and turning R onto a SE'ly course. Passing 0.2nm – 370m - SW abeam the MFS at the closest point, the R44 indicates a climb to 900ft at 1019:57. The helicopter was due S of the MFS when the R44 crew called Cambridge APP for a BS, the helicopter climbing further to an altitude of 1000ft as it cleared to the SE.

THE BMFA comments that the owner of the model-flying club remains adamant that there was no close conflict between a model aeroplane operated from his flying site and a full size helicopter on the day of the reported Airprox. Clearly from their location they are familiar with helicopters transiting nearby and it is difficult to see how a conclusion can be reached on this matter. The Club have already taken steps to improve communications with the operator of the R44 helicopter, so although they do not feel that the R44 pilot's report accurately reflects events on the day, they have taken the matter seriously. It would be unfortunate if this Airprox resulted in a negative impact on the club activities.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilot of the R44 and a model flying club, transcripts of the relevant RT frequencies, radar video recordings, a report from the appropriate ATC authority and comment from the BMFA.

In the Board's experience the investigation of Airprox that involve model ac is invariably complicated. It is often difficult to establish the location where the model was flown from and thus the identity of the model pilot, or obtain an account from the individual about what had occurred. Moreover, without the foregoing, determination of the actual size of the model involved was impossible. The vastly differing size of model ac therefore makes accurate judgement of their range – and hence the minimum separation and associated Risk - without prior knowledge of their actual size doubly difficult even to the experienced eye. The Board did not doubt the veracity of the R44 pilot's account but acknowledged that estimation of the actual separation that pertained was problematic and could not be verified independently from radar data.

The owner of the Model Flying Club that operates from the MFS situated 0.6nm to the SW of the HVRP refutes that the model ac seen by the reporting R44 helicopter pilot had flown from his club site or was operated by one of the club members. Nonetheless, analysis of the radar recording had shown the track of the R44 had passed some 370m SW the MFS at the closest point, just as the R44

climbed to an altitude of 900ft, the altitude the pilot reported he was climbing through when the Airprox occurred. Without doubt the helicopter flew past the location where model flying was reported to be taking place, yet the model ac operator to be on the ground at the MFS together with another person acting as a spotter for other ac did not see the R44 helicopter. Whilst the R44 is undoubtedly a small ac and quite difficult to see in the air, its dark colour-scheme silhouetted against the sky coupled with the noise of the engine and rotor should have made it readily conspicuous to observers on the ground. That the R44 was not seen at all was of great concern to the Members, but given that model ac flying only takes place from the MFS around 250m to the E, W and N, the Board had been advised, the model ac could have been flying to the N of the site, so it was feasible that those on the ground might have been looking the opposite way when the R44 flew by. This seemed to be the only potential explanation for this anomaly based on the information available.

Some Members contended that on the balance of probability the R44 pilot might well have seen the model flown from the MFS, but others were not of the same opinion. It seemed surprising to many Members that another model operator might have been flying his model between the ATZ boundary and the MFS, but the account by the owner suggested this. Without irrefutable evidence as to the identity of the actual model seen by the R44 pilot, Members believed that there was insufficient information available to come to any meaningful conclusions and in the end this was their unanimous view. The Board could only conclude therefore, rather unsatisfactorily, that this Airprox had resulted from a conflict with an untraced model ac. Furthermore, the Members agreed unanimously that there was insufficient information available upon which to base an accurate assessment of the actual Risk.

Despite the foregoing, however, the Board welcomed the positive stance taken by the MFS owner and the helicopter operator to effect a liaison to establish practical guidelines and workable procedures. Moreover, the Board was briefed that Cambridge ATC was also keen to be party to these arrangements and notified when model flying was taking place at the MFS so that pilots could be advised. It was envisaged that a letter of agreement would be drawn up between those involved to ensure the mutual safety of all concerned, which seemed to the Board to be eminently sensible.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Conflict with an untraced model ac.

Degree of Risk: D.