

## AIRPROX REPORT No 2010081

Date/Time: 2 Jul 2010 1647Z

Position: 5137N 00029W (1.9nm  
NE Denham - elev 249ft)

Airspace: ATZ (Class: G)

Reporting Ac Reported Ac

Type: EC135 Grob 109

Operator: Civ Comm Civ Pte

Alt/FL: 1000ft 1000ft  
(QNH 1012mb) (QNH 1012mb)

Weather: VMC CLBC VMC CLBC

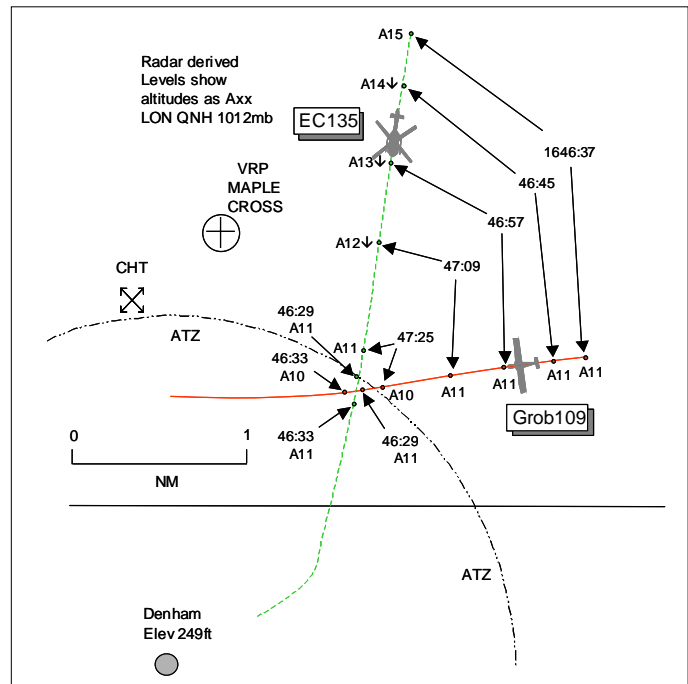
Visibility: >10km >10km

Reported Separation:

20ft V/30m H 50ft V/250ft H

Recorded Separation:

<100ft V/<0.1nm H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE EC135 PILOT** reports inbound to Denham VFR and in receipt of an AFIS on 119.475MHz squawking 7000 with Modes S and C. The visibility was >10km flying 2000ft below cloud in VMC and the ac was coloured black/cream/silver; no lighting was mentioned. He was joining the cct heading 180° at 130kt and 1000ft QNH 1012mb on R base leg for RW24 from the Maple Cross VRP. There was one other ac in the cct to his R, which he was looking for when he received a TCAS 'traffic' alert a 1nm range in his 11 o'clock indicating the same level. The bearing remained constant but he could not see the other ac, which might have been shielded by part of his own ac's structure. He finally saw the other ac, a Grob 109 Motorglider, at about 50m range and initiated a hard pull-up, the Grob passing 20ft beneath and 30m clear. He assessed the risk as high.

**THE GROB 109 PILOT** reports en-route to a private site in Wiltshire VFR and listening out with Elstree on 122.4MHz squawking 7000 with Modes S and C; Flarm was fitted. The visibility was >10km flying 1500ft below cloud in VMC and the ac was coloured white/blue with strobes and landing lights switched on. When to the NNE of Denham heading 270° at 90kt and 1000ft QNH 1012mb he saw a helicopter as it came into his 2 o'clock. He moved the stick forward -1G to avoid the helicopter which did not appear to move, believing the pilot had not seen his ac. The helicopter passed 50ft above and 250ft clear horizontally and he assessed the risk as medium. The Flarm trace clearly records the incident captured from the Flarm microphone; however, he was unsure whether the noise was him swearing, objects coming back down onto the parcel shelf or the noise of the helicopter. He opined that he was intending to listen with Denham as he went past but his mental speed was behind that of the Grob. The incident was a big wake-up call and it took a few minutes for him to calm down. He had flown into Denham many times and knew the joining procedure but why he was flying at that height and not looking R or L for traffic he could not say. At the time he was flying towards the lowering sun and spending much time looking forward.

UKAB Note (1): The UK AIP at AD 2-EGLD-1-4 Para 2.17 ATS Airspace promulgates Denham ATZ as a circle radius 2nm centred on the longest notified RW (06/24) at 513518N 0003047W from surface to 2000ft aal; airfield elevation 249ft. Para AD 2.18 ATS Communication Facilities promulgates Denham Information as 0700-1900 Summer. Page 1-5 Para 2.22 Flight Procedures states at 1. c) 'Circuit joining is achieved by establishing a long base leg and giving a position report at Chalfont St Giles for left hand circuits or Maple Cross for right hand circuits. The ATZ should be entered at a height of 750ft agl (1000ft amsl). Joining traffic should give way to circuit traffic.' Also at

1. f) 'Helicopters should follow the fixed-wing procedures unless alternative arrangements have been made.'

UKAB Note (2): The ANO Section 2 The Rules of the Air 2007 Rule 45 Flight within aerodrome traffic zones Para 1) shall apply to those aerodromes in Table III c) 'An aerodrome having a flight information service unit' at such times 'During the notified hours of watch of the flight information service unit'. Para (4) states 'If the aerodrome has a flight information service unit the commander shall obtain information from the flight information service unit to enable the flight to be conducted safely within the zone.'

UKAB Note (3): The radar recording at 1646:37 shows the EC135 3.9nm NNE of Denham tracking 190° indicating altitude 1500ft QNH 1012mb with the Grob 109 in its 11 o'clock range 2.1nm tracking 260° indicating altitude 1100ft QNH. The ac continue on steady tracks, closing on a line of constant bearing, the EC135 commencing a slow descent at 1646:45. Forty seconds later at 1647:25 separation has reduced to 0.2nm, the EC135 level at altitude 1100ft, 100ft above the Grob 109, which is on the boundary of the ATZ. The next sweep at 1647:29 separation reduces to 0.1nm, the EC135 is entering the ATZ with both ac showing altitude 1100ft. The CPA then occurs before the next sweep, as 4sec later the ac are separated by 0.1nm with the ac having crossed, the EC135 still showing 1100ft 100ft above the Grob 109 now showing 1000ft. The CPA therefore is assessed to <0.1nm and <100ft. Thereafter the EC135 tracks towards the extended C/L for RW24 whilst the Grob 109 tracks W'ly, passing 1.5nm N of Denham; this track is confirmed from the Grob 109's GPS trace.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies and radar video recordings.

The Board noted that the Grob pilot did not comply with the requirements of Rule 45 of the Rules of the Air. Had the Grob pilot called on the Denham frequency he probably would have heard the EC135 pilot's transmissions and therefore improved his SA with respect to any potential conflicts. Members agreed that this element had contributed to the Airprox. That said, without this additional information the crux of this incident boiled down to both pilots being responsible for their own separation from other traffic through see and avoid. The EC135 flight had right of way and its pilot received a traffic warning on TCAS of the approaching Grob in his 11 o'clock range 1nm. However he was unable to visually acquire the Grob until very late. As the ac were approaching on a line of constant bearing, the Grob may well have been obscured by part of the EC135's cockpit structure; however, best practice to mitigate this known degradation to lookout is for the pilot to move his head or move the ac's flightpath. The Grob pilot reported that he was flying into sun and concentrating on looking ahead when he saw the helicopter very late in his 2 o'clock. The opportunity for both pilots to see each other's ac was there for some time prior to the CPA; however, it was not to be and it was these late sightings that had caused the Airprox.

Turning to risk, after seeing the confliction both pilots reacted promptly and robustly in a complementary manner, the EC135 pilot pulling up whilst the Grob pilot bunted, with both pilots reporting reduced separation margins at the CPA. These avoiding action manoeuvres flown were enough to convince the Board that the actual risk of collision had been removed but that safety had been compromised during the encounter.

## **PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: Late sightings by the pilots of both ac.

Degree of Risk: B.

Contributory Factors: The Grob pilot did not comply with RoA Rule 45.