



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.