

AIRPROX REPORT No 2013136

Date/Time: 21 Sep 2013 1712Z (Saturday)

Position: 5234N 00206W
(7nm NE of Wolverhampton
Halfpenny Green)

Airspace: London FIR (Class: G)

Reporting Ac **Reported Ac**

Type: EC135P2+ Robinson R44 II

Operator: Civ Comm Civ Pte

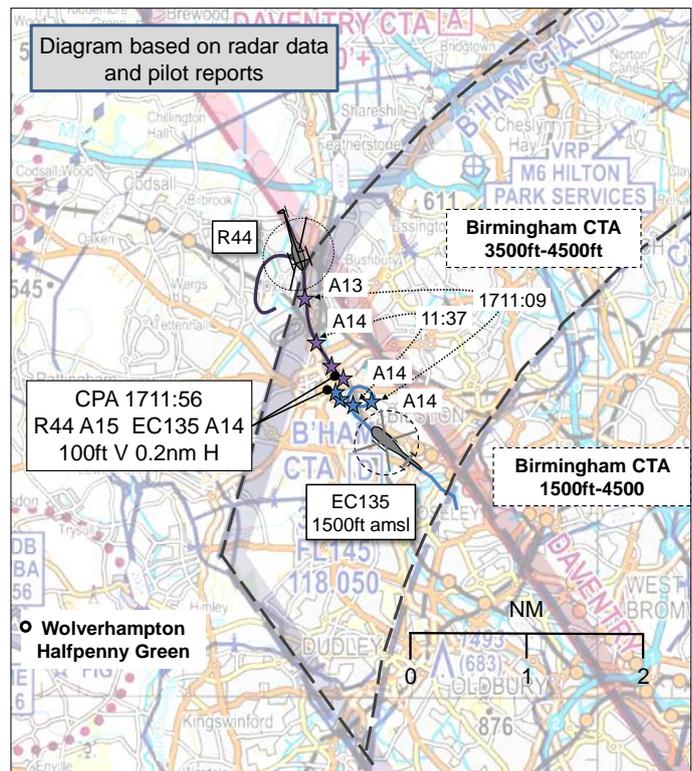
Alt/FL: 1500ft NK
QNH (1023hPa)

Conditions: VMC VMC

Visibility: NK NK

Reported Separation:
0ft V/100m H NK

Recorded Separation:
100ft V/0.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EC135 PILOT reports flying a dark blue and yellow helicopter squawking transponder Modes 3/A, C and S. The pilot recalls receiving a Basic Service from 'Birmingham Radar'. The crew were flying level at 1500ft QNH (1023hPa), in a right-hand orbit, engaged 'on task' around a large industrial fire. The TCAS¹ was 'set at 6 miles range' and there was an indication of an aircraft to the north-west; the crew subsequently received a Proximity Alert indicating the aircraft was 4nm away and 400ft below. Aware that TCAS can be unreliable in the azimuth plane, the pilot turned on all additional 'police aircraft external lights' so that the helicopter was displaying navigation lights, upper and side HISLs and two landing lights. TCAS indicated that the other aircraft was 'slowly closing' with a gradual increase in altitude until it levelled at the same altitude as the EC135. When the other aircraft entered the 3nm range-ring, the EC135 pilot 'broke off task' and turned on to a westerly heading in the hope of achieving a more accurate TCAS reading. As he reached the westerly heading, the EC135 pilot received a Traffic Alert indicating the other aircraft was 'one o'clock, same height, less than 1 mile', he could not see it straight away but the rear observer reported 'visual in the 1 o'clock' position. The pilot saw the R44 around 100m away as the TCAS indicated a TA "1 o'clock, same altitude, zero miles". The EC135 pilot assessed that no further avoiding action was necessary as the R44 passed down the EC135's right-hand side but he noted that the R44, made clearly visible due to the sun position, did not appear to take any avoiding action and 'flew directly overhead the origin of smoke at the large industrial fire'. The EC135 pilot used his role equipment to identify the R44 and reported the Airprox to Birmingham Radar, who were also able to identify the R44.

He assessed the risk of collision as 'High'.

THE R44 PILOT reports flying a red helicopter, in good VMC, squawking transponder Modes 3/A, C and S. He selected Birmingham Radar's frequency but reported that the RT was extremely busy; as the weather was 'excellent' he continued flying VFR whilst listening out and waiting for a suitable opportunity to contact Birmingham Radar. When he was 'mid-journey', around 1nm south of Wolverhampton, he reports seeing the EC135 2nm away, at around the same level, and maintained

¹ Traffic Alert and Collision Avoidance System. This EC135 was fitted with TCAS 1 and has a display screen as well as full audio traffic information giving relative bearing, range and height in addition to the usual 'Traffic' announcement. It does not provide Resolution Advisories.

visual contact with it at all times. He was turning gently left to keep separation from the EC135 and saw it roll out of its right-hand orbit. The R44 pilot made sure he was 'visual at all times and in control'; he was unsure of the minimum separation distance but assessed that neither helicopter was 'in any danger' during the encounter.

THE BIRMINGHAM RADAR 1 CONTROLLER reports having been in position for 40mins and recalls providing a Basic Service to the EC135 pilot, outside controlled airspace, at 1400ft (QNH 1023hPa) he recalled. The EC135 pilot reported that he had been involved in an Airprox with an R44 helicopter in the Wolverhampton area. The Birmingham Controller confirmed the Basic Service with the EC135 pilot, used the Mode S on his radar display to identify the R44, and passed its registration to the EC135 pilot. Shortly afterwards, the R44 pilot called on the controller's frequency and was informed of the Airprox report.

Factual Background

The Birmingham METAR observation is reproduced below:

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METAR EGBB 211650Z 20008KT 120V230 9999 FEW018 SCT030 20/16 Q1023=
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Analysis and Investigation

CAA ATSI

ATSI had access to RTF recording from Birmingham Radar, area radar recordings, written reports from both pilots and a written report from the Birmingham Radar controller.

At 1703:56 the EC135 pilot contacted Birmingham Radar, reporting outbound to the Wolverhampton area, not above 2000ft within the Birmingham Control Zone (CTR) Class D controlled airspace. The Birmingham Radar controller acknowledged the call and advised the QNH 1023hPa. Radar showed the EC135, 3.5nm west of Birmingham Airport. The R44 was 12.9nm northwest of Birmingham, tracking north-northwest, displaying the conspicuity squawk of 7000 at an altitude of 1500ft.

At 1708:19 the R44 faded from radar as it descended through 400ft in the vicinity of Wolverhampton Racecourse. Meanwhile the EC135 crossed the boundary of the Birmingham CTR into Class G uncontrolled airspace. It was noted that the EC135 pilot was not advised of the change to a Basic Service as he left controlled airspace, but both the controller and EC135 pilot reported that a Basic Service was being provided.

At 1709:45 the R44 reappeared on the radar passing 700ft in the climb. At this point the EC135 was at 1300ft and 3.2nm southeast of the R44.

At 1710:34 the EC135 commenced a right-hand orbit and the R44 completed a right-turn to track south. The lateral distance between the aircraft was 2.2nm.

At 1711:39 the distance between the two aircraft had reduced to 0.9nm as the R44 tracked south-southeast and the EC135 was passing through northwest in the orbit. Both aircraft were at an altitude of 1400ft as shown in Figure 1.

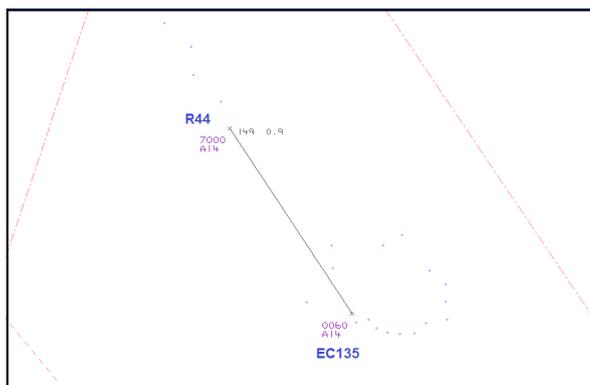


Figure 1 – Swanwick MRT at 1711:39

The EC135 pilot's written report indicated that he observed the unknown traffic closing on TCAS and in order to gain better situational awareness from TCAS, he had broken away from the orbit to track west. When the unknown contact was at 1nm the pilot received a TCAS TA².

At 1711:55 the range between the two aircraft was 0.2nm. The EC135 was 100ft below the R44, (shown in Figure 2). The EC135 pilot's written report indicated that an observer in the helicopter had reported the other aircraft at 1 o'clock and the EC135 pilot sighted the traffic at an estimated range of 100m just as a TCAS TA announced, "Traffic one o'clock same altitude zero miles".

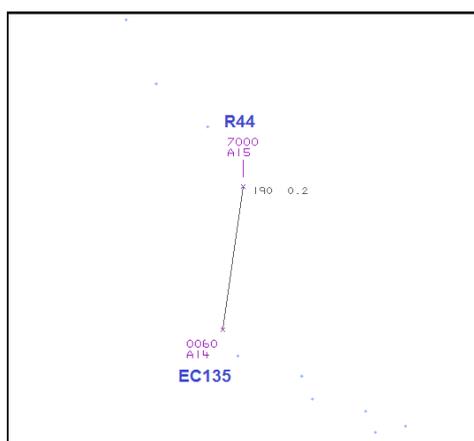


Figure 2 – Swanwick MRT at 1711:55

On the next sweep of the radar, at 1712:00, the two aircraft passed abeam at a range of 0.2nm (370 metres) and at a vertical distance of 100ft as shown in Figure 3 below.

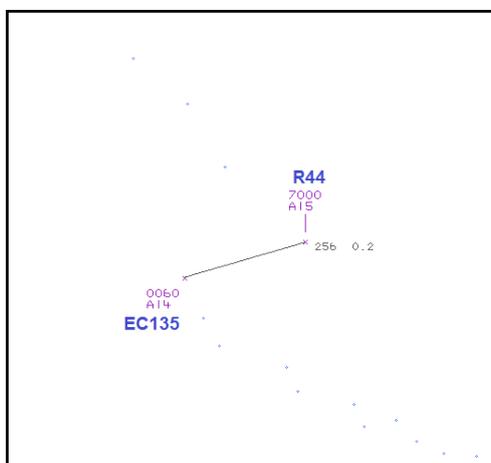


Figure 3 – Swanwick MRT at 1712:00

² Traffic Alert

At 1712:57 the following RTF exchange occurred:

- EC135: *"(EC135)c/s now complete at Wolverhampton moving down to the south er tracking down the western side er do you know of the er Robinson er fortyfour that's tracking down on the west"*
- Birmingham Radar: *"(EC135)c/s er there is traffic just in your twelve o'clock one mile sixteen hundred feet not talking to me"*
- EC135: *"Roger I'm just trying to catch it up to get a registration to put an Airprox in"*
- Birmingham Radar: *"Understood you were on a Basic Service outside"*
- EC135: *"Yeah that's understood (EC135)c/s."*

Using Mode S, the controller was able to identify the registration of the R44 which was passed to the pilot of the EC135. As the EC135 pilot acknowledged and read back the registration, the R44 pilot responded, "Er go ahead (R44)c/s". The controller advised the R44 pilot that the EC135 pilot intended to file an Airprox report. This was acknowledged by the R44 pilot; the controller's written report indicated a belief that the R44 pilot had been listening out on the radar frequency.

The R44 pilot, operating VFR, was not in receipt of an Air Traffic Service. The Birmingham controller was engaged in the provision of Radar Control Service inside controlled airspace and was not required to pass Traffic Information or monitor the EC135. The EC135 pilot was in receipt of a Basic Service from Birmingham Radar and had not requested an upgrade to a Traffic Service. CAP 774, UK Flight Information Services, Chapter 2, sections 2.1 and 2.5 state:

'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.

Basic Service relies on the pilot avoiding other traffic, unaided by controllers/FISOs. It is essential that a pilot receiving this service remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

'Pilots should not expect any form of Traffic Information from a controller/FISO, as there is no such obligation placed on the controller/FISO under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller/FISO may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance-derived information shall avoid the routine provision of Traffic Information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific Traffic Information shall request a Traffic Service. However, if a controller/ FISO considers that a definite risk of collision exists, a warning may be issued to the pilot.'

Summary

The Airprox occurred at 1712, 7nm northeast of Wolverhampton Halfpenny Green airfield, within Class G uncontrolled airspace, between an EC135P2+ and a Robinson R44 II. The EC135 pilot was operating VFR, orbiting around a large industrial fire situated 1nm to the southeast of Wolverhampton Town Centre; the EC135 pilot recalled being in receipt of a Basic Service from Birmingham Radar and the helicopter was equipped with TCAS I, which displayed and announced the R44's track. The R44 pilot was flying VFR en-route to Elstree. The R44 pilot reports listening-out on the Birmingham Radar frequency but was not in receipt of an ATS; he reports maintaining visual contact with the EC135 throughout the occurrence.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

It was clear to the Board that the pilots had very different perspectives regarding this occurrence: the R44 pilot had seen the EC135 early on and had assessed that there was adequate separation throughout; despite the fact that the EC135 pilot had detected the R44 on his TCAS at an early stage, he had not seen it until much later, and assessed that the separation was less acceptable. The Board noted that, although the EC135 was on an operational tasking, the crew were still subject to the Rules of the Air and that, if their tasking required reduced lookout from the pilot, then other mitigations may have been appropriate, such as additional crew members or temporary restricted airspace. Some members opined that, in any case, the EC135 pilot might have been better served by requesting a Traffic Service from Birmingham Radar; whilst other members agreed, they pointed out that the controller had been very busy and may well have refused such a service upgrade anyway. A Board member thought that, given that this was a public safety task, perhaps ATC could have broadcast the fact that the police helicopter was operating in that area. That being said, it was recognised that this was not a robust mitigation for all such situations because it might compromise covert operations; police helicopters also spend most of their airborne time conducting operations in ad hoc locations and so it would mean ATC would have to broadcast their position too frequently.

The Board noted that the R44 pilot had planned a curved flight-path to avoid the EC135. They also noted the efficacy of TCAS in highlighting the R44 to the EC135 pilot, and that this had successfully prompted the EC135 pilot to break off his task and try to achieve visual contact with the R44. They agreed that both pilots had done what could reasonably have been expected of them under the circumstances and that, notwithstanding the EC135 helicopter pilot's concerns, the resultant separation had been acceptable for relatively slow moving aircraft in Class G airspace. It was agreed that the cause of the Airprox was simply that the R44 pilot had flown close enough to the EC135 to cause its pilot concern.

There was however some debate about the degree of risk: some members thought that normal separation parameters had been maintained (and that the risk should therefore be E), whilst others opined that the separation would have been less but for the fact that the pilots had taken effective actions to prevent collision (and that the risk should therefore be C). The Board noted that the EC135 pilot had broken off his task when the R44 was 3nm away, the crew member had seen it 1nm away, and that the CPA was 0.2nm: in the end it was agreed that normal Class G separation standards had in fact been maintained and that the risk was E.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	The R44 pilot flew close enough to the EC135 to cause its pilot concern.
<u>Degree of Risk:</u>	E
<u>ERC Score³:</u>	2

³ Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.