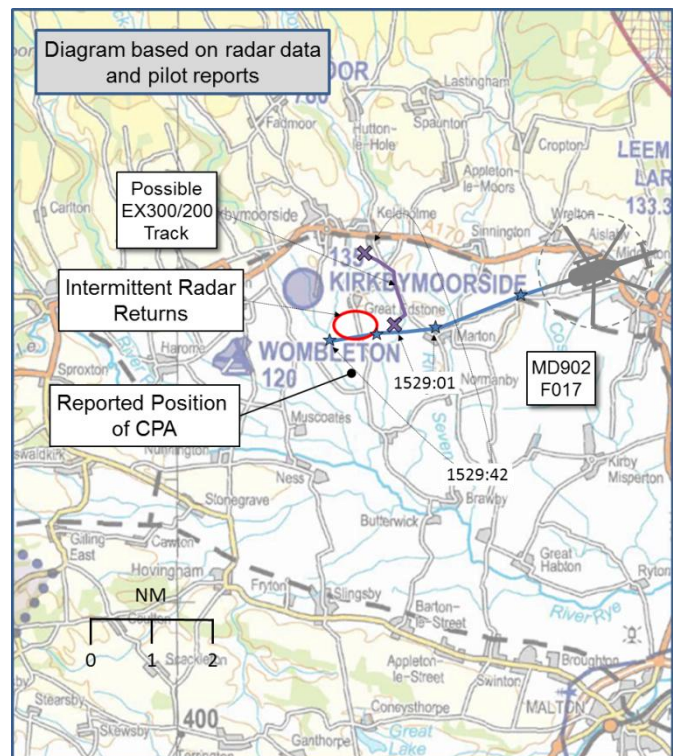


AIRPROX REPORT No 2014109**Date/Time:** 12 Jul 2014 1529Z (Saturday)**Position:** 5414N 00055W
(2nm E of Wombledon)**Airspace:** London FIR (Class: G)**Aircraft 1** **Aircraft 2****Type:** MD902 EX300/200**Operator:** HEMS Civ Pte**Alt/FL:** 1500ft 3000-6000ft
QNH (1006hPa) agl (NK hPa)**Conditions:** VMC VMC**Visibility:** >10km 10km**Reported Separation:**

200ft V/Nil H NK V/NK H

Recorded Separation:

NK V/NK H

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

THE MD902 PILOT reports heading 260° and cruising level at 1500ft QNH(1006hPa), 'on a clear afternoon with nil cloud, and the sun ahead', in a yellow helicopter with upper and lower strobe lights, navigation lights and HISLs¹ illuminated. The aircraft was equipped with TCAS I, and transponder modes 3/A, C and S had been selected. Whilst tracking towards RAF Topcliffe, the pilot was monitoring the Leeming ATC and Durham-Tees-Valley Radar frequencies and, although he could hear communication from a similar helicopter further to the north, he could not establish communication with ATC himself. Unexpectedly, both front-seat occupants of the MD902 saw a light aerobatic aircraft 'suddenly appear' 200ft directly overhead them and recalled that it continued to descend below their cruise altitude on a northerly track towards Kirbymoorside before starting a 'rapid climb' over the moors; because the other aircraft had passed overhead by the time they saw it, the MD902 crew elected not to take any avoiding action and they did not see any sign that made them think the pilot of the other aircraft has seen their helicopter.

He assessed the risk of collision as 'High'.

THE EX300/200 PILOT reports flying a blue and yellow aircraft with strobe lights illuminated and the transponder selected to OFF. The aircraft was being flown VFR in VMC, on a 30min flat-spin lesson; the pilot recalls that HASELL² checks were carried out before and after each spin and that visual cues were required for the exercise so both pilots were looking out of the cockpit 'at all times'. They did not see the MD902, and were not aware of the Airprox until they were informed of it later, but recalled that they would likely have been between 3000ft and 6000ft in that area.

Factual Background

The Topcliffe weather at 1450 and the Durham Tees Valley weather at 1520 were recorded as:

METAR EGXZ 121450Z AUTO 18008KT 9999 SCT050/// SCT190/// 25/12 Q1010
METAR EGNV 121520Z 19008KT 170V230 9999 FEW045 25/12 Q1010=

¹ High Intensity Strobe Lights

² Pre-aerobatic checks: Height; Airframe configuration, harness and hatch; Security; Engine; Location; and Lookout.

Analysis and Investigation

CAA ATSI

ATSI had access to the radar recordings but there was no RTF evidence relating to either aircraft on the Durham Approach frequency or the Leeming ATC frequencies.

Radar Analysis

At 1528:47 the MD902 was 2.5nm east-northeast of Wombledon indicating FL017 (converts to an altitude of 1619ft on QNH1010). An unknown primary radar contact was manoeuvring northwest of the MD902 but then faded from radar. It was not known if this was the EX300/200 (Figure 1).

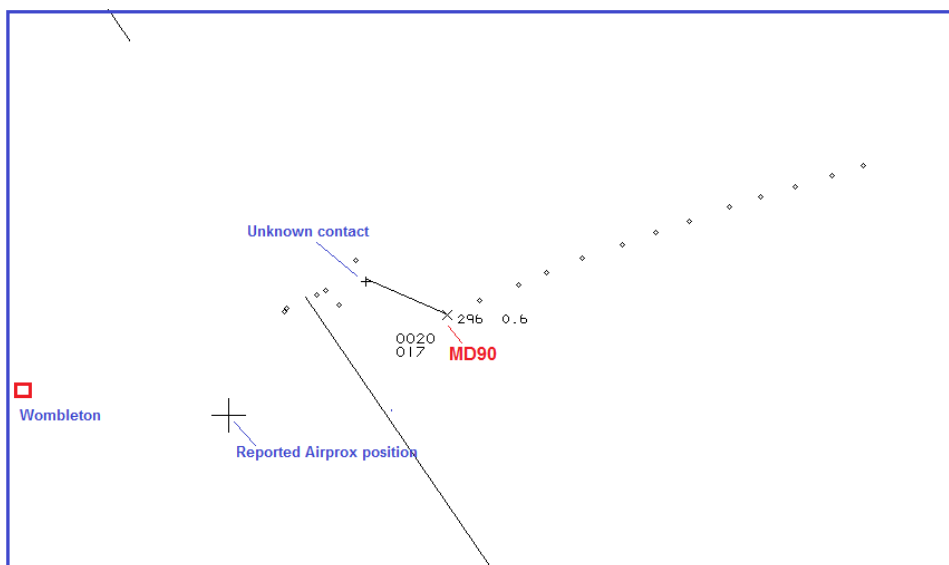


Figure 1 – Swanwick MRT at 1528:47 (MD90=MD902)

At 1529:20 the MD902 approached the reported position of the Airprox, indicating FL016 (altitude 1519ft). Radar showed three intermittent contacts in the area to the north and northeast of Wombledon airfield - Figure 2.

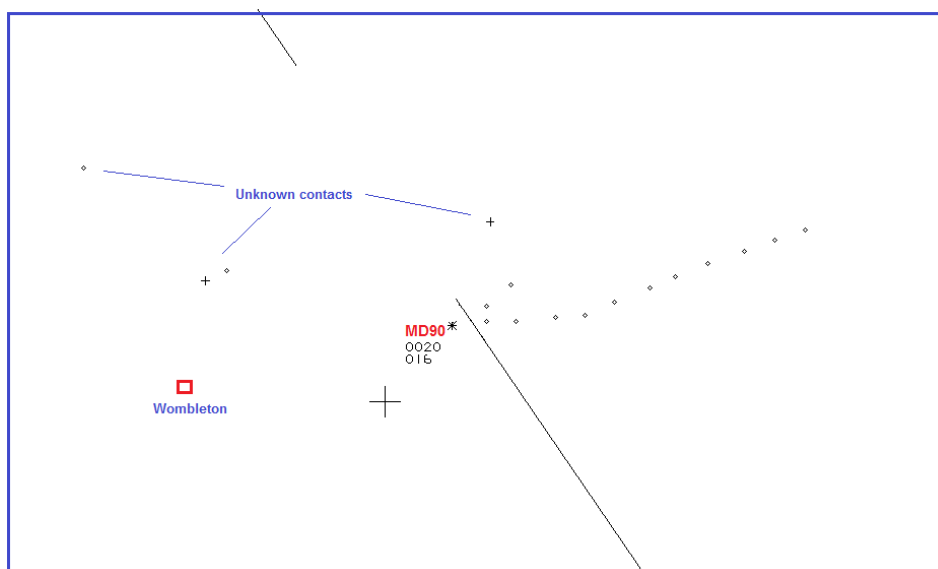


Figure 2 – Swanwick MRT at 1529:20 (MD90=MD902)

The MD902 continued on a westerly track and passed overhead Wombleton Airfield but no contacts were shown to be in close proximity and it was not therefore possible to show the geometry of the event.

UKAB Secretariat

Both pilots had equal responsibility to avoid a collision³ and, if the EX300/200 was overtaking the MD902, then the MD902 crew had right of way and the EX300/200 crew would have been required to keep out of their way by altering course to the right.⁴ However, the EX300/200 crew did not see the MD902 at any point and so could not have taken any action.

Summary

An Airprox was reported 2nm to the east of Wombleton, in Class G airspace, between an MD902 on a VFR transit, and an EX300/200 on a flat-spinning lesson. The EX300/200 crew did not see the MD902 and the MD902 crew saw the EX300/200 too late to take action. The CPA was not recorded on radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both aircraft, radar photographs/video recordings, and reports from the appropriate ATC and operating authorities.

The Board noted that despite approaching from above and behind the MD902, and reporting a good look-out, the EX300/200 crew had not seen the helicopter at all. They further noted that, as a result of the incident geometry the EX300/200 was in a blind-spot behind the MD902 crew, and they had not seen it until it was too late to take any action. Members commented that had the EX300/200 crew turned their transponder on, the helicopter crew may have received a Traffic Alert from their TCAS equipment; however, with no SSR signal from the EX300/200, the MD902's TCAS I system was rendered ineffective in this occurrence. This served as a salutary reminder as to the value of always flying with Mode C selected, and the Board were bewildered as to why the Extra crew would have decided not to do so.

Members quickly agreed that the cause of the Airprox was a non-sighting by the EX300/200 pilot and, effectively, a non-sighting by MD902 pilot. Turning to the degree of risk, the Board noted that the MD902 crew reported that the EX300/200 had 'suddenly appeared' 200ft directly overhead them, and that the radar recording supported a very close CPA; the Board agreed that separation was at a minimum, that chance had played a significant part in avoiding a mid-air collision, and that the degree of risk was category A.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A non-sighting by the Extra 300/200 pilot and effectively a non-sighting by MD902 pilot.

Degree of Risk: A.

ERC Score⁵: 100.

³ Rules of the Air 2007, Rule 8, Avoiding Aerial Collisions

⁴ Rules of the Air, 2007, Rule 11, Overtaking

⁵ 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.