

## AIRPROX REPORT No 2011163

Date/Time: 2 Dec 2011 1057Z

Position: 5151N 00057W (WCO)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Merlin PA34

Operator: HQ JHC Civ Trg

Alt/FL: 3000ft 3000ft  
QNH (1015hPa) QNH

Weather: VMC CLBC VMC CLOC

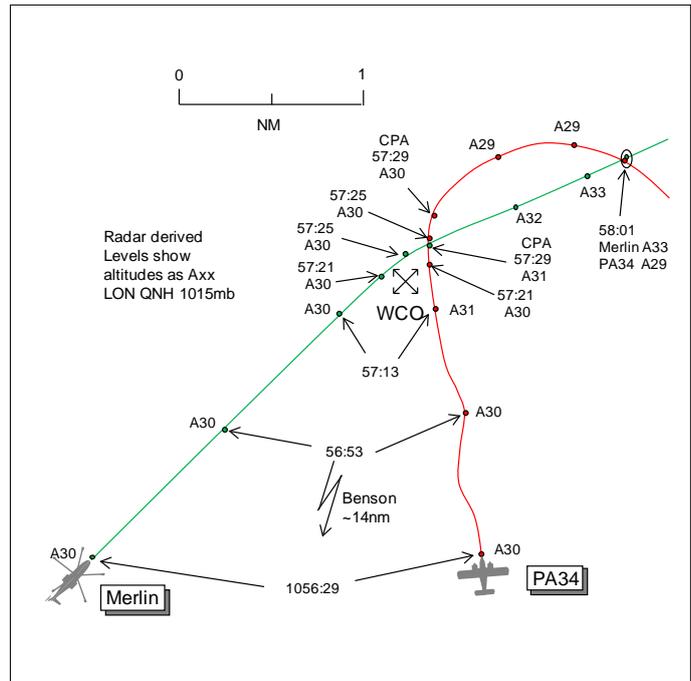
Visibility: 20km 10km

Reported Separation:

Nil V/50-100m H 400ft V/NR H

Recorded Separation:

100ft V/0.1nm H



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

**THE MERLIN PILOT** reports en-route to Cranfield under IFR on an IRT and in receipt of a TS from Benson on 376.65MHz, squawking an assigned code with Modes S and C. The visibility was 20km flying 2000ft below cloud in VMC and the helicopter was coloured green with nav, both landing lights and HISLs all switched on. They had completed IF GH to the W of Benson and were routing to Cranfield via WCO NDB. Heading 060° at 120kt and level at 3000ft QNH 1015mb with approximately 1nm to run to WCO the Capt saw a white and blue coloured light, twin-engine ac 100m away converging from their R at an identical altitude. The HP, seated on the RHS, took avoiding action to the L, although this was after the ac had passed 50-100m in front, before it banked hard L and then around to the R and departed to the NE. He assessed the risk as very high.

**THE PA34 PILOT** reports flying a dual training sortie from Oxford, VFR and in receipt of a BS from Oxford on 125.325MHz, squawking 7000 with Modes S and C. The visibility was 10km flying clear of cloud in VMC and the ac was coloured white/blue. Over WCO the student started a R turn onto heading 160° at 120kt and 3000ft QNH when he saw a Merlin in their 4 o'clock 200-300yd away and 400ft above. They continued the turn to pass behind and below it, assessing the risk of collision as none.

**THE BENSON APPROACH CONTROLLER** reports working the Merlin under a TS before 3 Tutor flights called in quick succession. He looked up at the Merlin and was happy that it had no traffic to affect. He identified each of the Tutors, placing them under a TS and checking the Mode C. He passed TI to all the Tutor pilots with regard to each other and gave them their departure clearances. He then code c/s converted one of the squawks so that it was easier to maintain ident. At this time there was a change of Wx information affecting the QNH and QFE. As all ac were flying on the QNH he made an 'all stations' broadcast and then started to receive acknowledgements from all of the flights on frequency. After an acknowledgement from all of the Tutor pilots he looked up at the Merlin to check its track and get an acknowledgement. He then saw a 7000 squawk approximately 0.5nm away just as the pilot called Airprox. After the pilot passed the details he informed the Supervisor.

**THE BENSON SUPERVISOR** reports that he did not witness the incident. Having just finished speaking to a pilot regarding the use of the airfield for a non-related flying event he left the ACR; the APP was working one flight. He then carried out a safety brief with a Safety Management team

member and on completion of the brief he was advised that an Airprox had occurred. He immediately informed the relevant authorities and impounded the tapes.

**BM SAFETY MANAGEMENT** reports that this Airprox occurred between a Merlin HC3 operating IFR in VMC in receipt of a TS from Benson APP and a PA34 operating VFR in VMC in receipt of a BS from Oxford APP.

All heights/altitudes quoted are based upon SSR Mode C from the radar replay unless otherwise stated.

The respective narratives of the aircrews, APP and SUP are accurate enough to provide an adequate picture of what occurred during the incident.

From the Merlin crew's perspective, the PA34 had been on a constant relative bearing, co-altitude in their 2 o'clock, since 1055:34. This, combined with the use of an IF visor by the HP in the RHS affecting the crew's lookout to starboard and the lack of TI from APP, caused them to sight the PA34 late. There is no mention in the PA34 pilot's report of any factors that may have affected their ability to visually acquire the Merlin.

The CPA was at 1057:29 with the PA34 at 3000ft having passed ahead of and now 0.1nm from the Merlin in it's 11 o'clock showing 3100ft.

This Airprox was caused by a late sighting by the Merlin crew and an effective non-sighting by the PA34 crew. From the Merlin's perspective, this was contributed to by a lack of TI from APP and the use of an IF visor by the RHS HP combined with the conflicting path of the PA34.

**ATSI** reports that the Airprox occurred at 1057:29, in Class G airspace, overhead WCO NDB, between a PA34 and a Merlin HC3 helicopter. The PA34 flight was operating VFR in receipt of a BS from Oxford Approach and the Merlin was in receipt of a TS from Benson Radar.

CAA ATSI had access to RT and area radar recordings, together with the written reports from both pilots. The Oxford controller was not aware that an Airprox had occurred and did not complete a report.

The weather for RAF Benson and RAF Brize Norton are provided:

METAR EGUB 021050Z 20003KT CAVOK 06/03 Q1015 BLU NOSIG=  
METAR EGVN 021050z 24005KT CAVOK 04/02 Q1015 BLU NOSIG=

The PA34 flight departed from Oxford, VFR contacting Oxford Approach at 1047:22. The PA34 pilot reported passing 2000ft on QNH 1014 and the Oxford controller replied, "*(PA34 c/s) Oxford Approach Basic Service Oxford has no other reported traffic known to the east of the airfield.*"

At 1047:33 the PA34 pilot reported, "*and (PA34 c/s) we'll be operating at three thousand feet over the Westcott er NDB.*" This was acknowledged by the Oxford controller.

At 1054:15 the radar recording shows the PA34 manoeuvring 3nm to the SE of WCO, with the Merlin 8.2nm SW of, and tracking towards, WCO. Both ac are indicating an altitude of 3000ft.

At 1057:13 the radar recording shows both ac on tracks converging towards WCO. The Merlin is shown 0.5nm to the SW of WCO indicating an altitude of 3000ft and the PA34 0.3nm SE of WCO indicating an altitude of 3100ft.

At 1057:21 the radar recording shows both ac approach WCO at an altitude of 3000ft. The PA34 is tracking NNW with the Merlin in the PA34's half past eight at a range of 0.3nm tracking NE on a converging heading.

[UKAB Note (1): The next radar sweep at 1057:25 shows the PA34 crossing 0.2nm ahead of the Merlin, both ac at altitude 3000ft. Four seconds later at 1057:29 the CPA occurs, the PA34 level at 3000ft having crossed R-L ahead of the Merlin indicating 3100ft QNH, in the Merlin's 11 o'clock at a range of 0.1nm.]

The Merlin then continues on a NE'y track and the PA34 commences a R turn to re-cross the Merlin's track at 1058:01, at a position 1.4nm NE of WCO. The Merlin is indicating an altitude of 3300ft and the PA34 2900ft. The 2 ac then begin to diverge.

The PA34 pilot's written report indicates that the Merlin was sighted at 4 o'clock and 400ft above. This is believed to correspond with the second pass at 1058:01.

The Merlin pilot's written report indicates that after the first encounter, the PA34 departed NE. It is not clear if the Merlin pilot was aware of the second encounter at 1058:05.

At 1117:53, the PA34 flight contacted Oxford Approach, 10nm E of Oxford for an O/H join. The controller was not aware of the Airprox and no comment was made by the PA34 pilot.

The PA34 was in receipt of a BS from the Oxford controller, who was not aware of the Merlin helicopter or of the Airprox. CAP 774, UK flight Information Services, Chapter 2, Page1, Paragraph 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.

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'.

**HQ JHC** comments that the reduced scan from the RHS pilot when conducting the IF sortie with an IF visor and lack of TI from the Benson App resulted in the late sighting of the PA34 conflicting traffic. However, the effective non-sighting by the PA34 pilot flying VFR under a BS from Oxford also contributed to this Airprox. With the limitations of a BS, pilots must always remain vigilant and a comprehensive lookout scan is essential. HQ JHC is also actively pursuing a collision avoidance system, which would have given the Merlin crew vital SA. This Airprox will be used to remind Benson ATC and Merlin crews of the necessity to maintain good situational awareness and lookout for aircrew in high workload environments in the busy Benson local area airspace.

## **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 video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

As this incident occurred in Class G airspace, there was equal responsibility on both crews to maintain their own separation from other ac through see and avoid. The Merlin crew, flying under IFR in VMC, was augmenting their look-out by receiving a TS from Benson but the controller did not provide the crew with TI as he was concentrating on 3 Tutor flights that had called for a service. The Supervisor was unable to assist APP in seeing the confliction, as he had left the ACR when only the Merlin was on frequency and was made aware of the Airprox after it had occurred. Members thought that APP should have allocated his priorities better by giving more attention to the ac he already had under service. The Merlin crew's lookout was undoubtedly degraded by the HP, seated on the RHS, using an IF visor; however, the PA34 was there to be seen for some time converging from their R.

Pilots should take these factors into account and mitigate this risk by moving their heads or the ac's nose during their lookout scan. It was not clear from their report whether there were rear crewmen on board the Merlin to supplement the lookout on the RHS. In the absence of TI, the crew reported seeing the PA34 100m away as it was converging from their R and taking avoiding action but only after it passed ahead, which Members agreed was effectively a non-sighting and part cause of the Airprox. Members wondered if the PA34 crew was also carrying out simulated IF as, from the radar, the ac appeared to be tracking the WCO NDB and turning O/H the beacon as the Airprox occurred. If so, the Instructor's lookout from the RH seat could also have been impaired if the ac was fitted with IF screens or the HP was using an IF hood or goggles. It was noted that the PA34 crew was in receipt of a BS from Oxford when a radar service may have been available from Brize Norton to supplement their lookout. The Merlin would have been visible to the PA34 crew in their L 8 o'clock position before the PA34 crossed ahead however, the PA34 crew only saw the Merlin in their 4 o'clock as they were turning R, after they had passed ahead of it, effectively a non-sighting and another part cause of the Airprox. Although the PA34 had right of way under the RoA Regulations, these rules only work if pilots see each other's ac in order to comply with them. With both ac passing each other by luck, with neither crew seeing the confliction in time to take effective avoiding action, the Board concluded that an actual risk of collision existed during the encounter.

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

Cause: A non-sighting by the PA34 crew and, in the absence of TI, effectively a non-sighting by the Merlin crew.

Degree of Risk: A.