

AIRPROX REPORT No 2013066

Date/Time: 3 Jul 2013 1556Z

Position: 52 03N 000 01W
(5nm west of Duxford)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Lynx Tiger Moth

Operator: RN Civ Trg

Alt/FL: 1500 1500
RPS (1000hPa) QNH (1009hPa)

Weather: VMC CLBC VMC CLBC

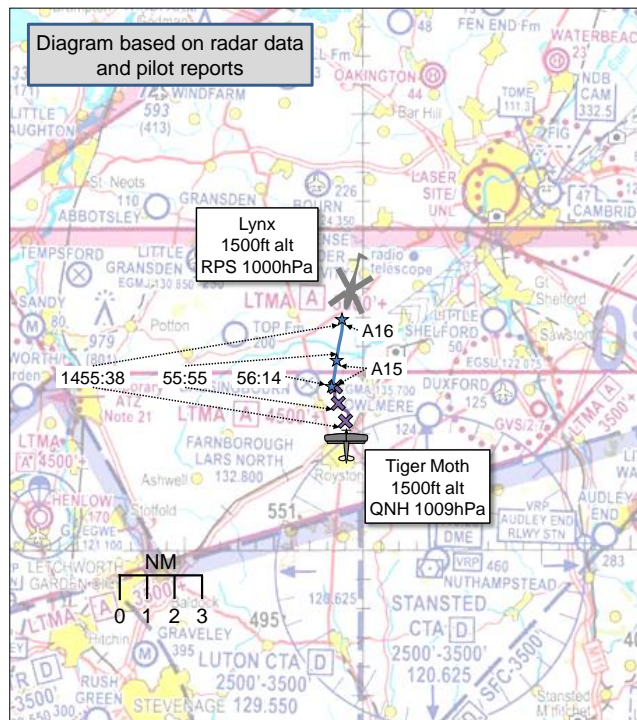
Visibility: 20km >10km

Reported Separation:

10ft V/80m H 75ft V/>200m H

Recorded Separation:

NR V/0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE LYNX PILOT reports routing VFR from Wittering to RNAS Yeovilton at 1500ft on the RPS of 1000hPa. The helicopter was grey with red anti-collision lights and navigation lights turned on, and was squawking transponder Modes A, C and S. The pilot reports heading 190°, at 120kts, in receipt of a Basic Service from Cambridge Approach when he saw the Tiger Moth 150m away, in his left, 11 o'clock position. He turned right and the Tiger Moth passed behind his aircraft with estimated minimum separation of 10ft vertically and 80m horizontally.

He perceived the severity of the incident as 'Medium'.

THE TIGER MOTH PILOT reports carrying out a training flight, cruising VFR, heading 340°, at 80kts, level at 1500ft on the Duxford QNH 1009hPa. The aircraft was 'bright RAF Training' yellow and did not have an ancillary electrical system; consequently, it did not display any lights and was not equipped with a transponder.

He was briefing the student on 'basic picture reference points' whilst looking out for traffic, when he saw the Lynx 1200m away, slightly left of his 12 o'clock position, around 10 or 11 seconds before the CPA. He made an avoiding action right turn and estimates the minimum separation to be 75ft vertically and over 200m horizontally. The pilot did not see the Lynx deviate from its course or altitude and felt confident that the Lynx crew would not have seen his aircraft until he had banked left back on to his track. He kept the Lynx in sight until the aircraft had passed clear of each other.

He assessed the risk of collision as 'None'.

THE CAMBRIDGE APPROACH CONTROLLER reports providing a non-radar Basic Service to the Lynx when the pilot reported an Airprox with a yellow bi-plane; the Lynx pilot left his frequency shortly afterwards.

Factual Background

The Cambridge METAR at 1550 was:

Analysis and Investigation

UKAB Secretariat

Both pilots were operating under VFR in class G airspace and shared the responsibility to avoid each other¹. When aircraft are approaching each-other head-on, or approximately so, the pilots should each adjust their course to the right².

Both pilots reported turning right; the Tiger Moth pilot submitted a cockpit video which clearly shows his turn and its effect but, whilst the Lynx can be seen, the image is not clear enough to assess any manoeuvres it may have made. Figures 1 and 2 are taken from the Tiger Moth's cockpit video and show the aircraft before and after the CPA.



Figure 1. Before CPA



Figure 2. After CPA

The 9hPa difference between the altimeter pressure settings of the two aircraft indicates that, as both pilots reported flying at 1500ft, there was likely to have been around 243ft vertical separation between them.

Navy Command

This Airprox occurred between 2 aircraft flying VFR in VMC, with both crews seeing the other aircraft very late and manoeuvring correctly in accordance with the rules of the air. Lookout was the only MAC barrier in this instance and collision was avoided. It is noted that the human estimation of distance is subject to significant variation.

Summary

The Airprox occurred between a Lynx and a Tiger Moth operating VFR in Class G airspace 5nm to the west of Duxford. Both pilots reported seeing the other aircraft and manoeuvring to the right. Minimum horizontal separation of 0.1nm was recorded on radar.

¹ Rules of the Air 2007, Rule 8, Avoiding aerial collisions

² Rules of the Air 2007, Rule 10, Approaching head-on

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available to the Board consisted of the reports from both crews and the radar recordings.

The Chairman invited the GA and helicopter members to lead the discussions and they unanimously felt that this was a straightforward occurrence of two aircraft operating VFR in Class G airspace. Whilst it appeared that the Lynx pilot saw the Tiger-Moth later than the Tiger-Moth pilot saw the Lynx, nonetheless, both pilots took appropriate action by manoeuvring to the right and achieving lateral separation of 0.1nm. Because the Tiger-Moth did not have a transponder, it was not possible to provide a measured vertical separation but it was noted that the difference in the pressure settings that the aircraft were flying on was likely to have provided around 243ft of vertical separation; both pilots reported less than that, but very accurate judgement of distance and height is always challenging, and the Board concluded that the pilots' reports were commensurate with that distance.

The Board agreed that, whilst safety margins had been reduced, both pilots had seen the other aircraft in time to take effective and timely action to prevent a collision; the Board agreed on a Risk Grading of C.

The safety barriers³ pertinent to this Airprox were: 'aircrew rules and procedures', 'visual sighting' and 'aircrew action'. The Board concluded that, as both crews had seen the other aircraft in time to take effective avoiding action in accordance with Rule 10⁴, the barriers had been 'effective'; The Lynx had 4 POB and the Tiger-Moth had 2 POB so an Event Risk Classification score of 10 was allocated.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Confliction of flight-paths resolved by both pilots.

Degree of Risk: C.

ERC Score: 10.

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.

⁴ Rules of the Air 2007, Rule 10, Approaching head-on: "When two aircraft are approaching head-on, or approximately so, in the air and there is a danger of collision, each shall alter its course to the right."