

## AIRPROX REPORT No 2012039

Date/Time: 16 Mar 2012 1144Z

Position: 5332N 00234W (3½nm  
NE of Haydock Park  
VRP)

Airspace: London FIR (Class: G)

Reporting Ac Reported Ac

Type: Squirrel HT3 DH Tiger Moth

Operator: HQ Air (Trg) Civ Club

Alt/FL: 1000ft ↑↓1100-1800ft  
QNH (1015hPa) QNH

Weather: VMC CLBC VMC CLBC

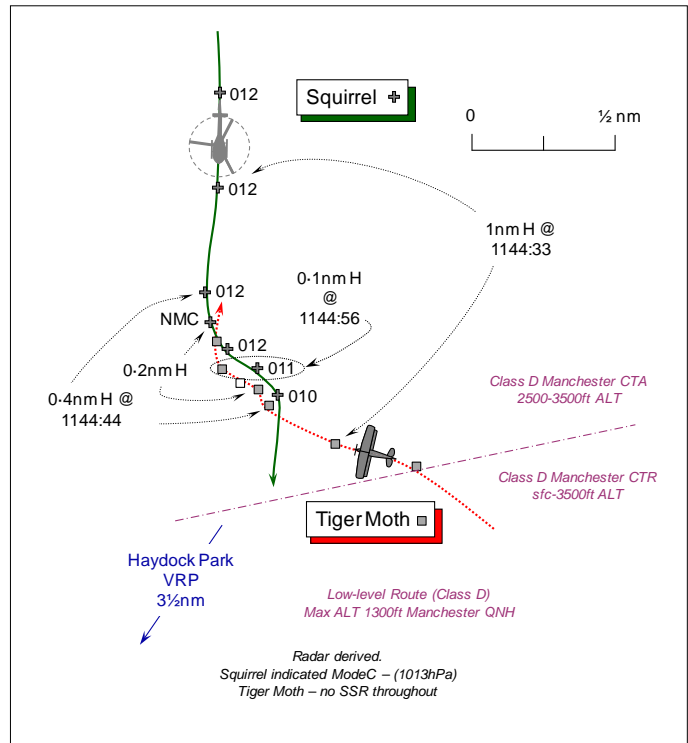
Visibility: 20km >10km

Reported Separation:

50ft V/Nil H Not seen

Recorded Separation:

<200yd H



## PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

**THE SQUIRREL HT3 HELICOPTER PILOT** reports he was flying a VFR NAVEX returning to Shawbury via the Low-Level Route through the Manchester CTR. He was listening out on the promulgated frequency of 118.575MHz; the Manchester ATC conspicuity code of A7366 was selected with Modes C and S.

Shortly after entering the Low-Level Route in the vicinity of Haydock Park, he thought, [actually just to the N of the boundary] level at 1000ft Manchester QNH (1015hPa), heading 185° at 110kt, a biplane was seen at short range in his 11 o'clock about 150ft away and 50ft above his helicopter, crossing from left to right. Initially the conflicting biplane – with silver wings and a dark green fuselage - had been obscured behind the standby compass on the central cockpit strut; it did not appear to be showing any lights. To avoid the biplane [a DH82 Tiger Moth] he immediately initiated a 60° AOB descending L turn; at this point the Tiger Moth pilot also commenced what seemed to be an avoiding action turn to the R exacerbating the situation still further. Consequently, he increased his ROD to about 2000-3000ft/min in order to avoid the Tiger Moth, whose pilot then reversed the turn to the L thereby passing about 200-300ft overhead his helicopter. The Tiger Moth continued on a NW'ly course, so when clear he climbed back to his transit altitude and regained his track to exit the low-level route to the S via Oulton Park VRP. He assessed the Risk as 'medium'.

His helicopter has a black fuselage with yellow upperworks; all the white HISLs were on together with the landing light.

**THE de HAVILLAND DH82A TIGER MOTH PILOT** reports he was instructing a student, who was the PF, after departing Liverpool bound for Manchester (Barton). His Tiger Moth has white wings with a green fuselage and he was in receipt of a BS from Barton INFORMATION on 120.25MHz; SSR is not fitted. Whilst conducting general handling (GH), VFR, at the reported Airprox location he was operating between 1100 – 1800ft QNH beneath overcast cloud at 75kt. The Squirrel helicopter flown by the reporting pilot was not seen and he was informed of the Airprox in a telephone call from the RAC at Swanwick.

**ATSI** reports that the Airprox occurred at 1144:56 UTC, in Class G airspace, 3.3nm NE of Haydock Park VRP and just to the N of the Manchester Low-Level Route, which lies within the Manchester CTR.

The Squirrel HT3 helicopter was operating VFR on a training exercise from Shawbury, squawking A7366 to transit N-S through the Manchester Low-Level Route. The Squirrel was maintaining a listening watch on the Manchester APPROACH frequency in accordance with the UK AIP Page AD 2-EGCC-1-15 (8 Mar 12), paragraph 7, which states that:

‘within the Low-Level Route helicopters or aeroplanes may fly without individual ATC clearance...’; and paragraph 8, which states that: ‘pilots flying within 5nm of the Manchester CTR and maintaining a listening watch on the Manchester APPROACH frequency may select code 7366’ (does not imply the receipt of an air traffic control service).

Manchester ATC confirmed that neither the Squirrel nor the Tiger Moth pilot had contacted Manchester APPROACH.

The Manchester 1120Z METAR: 20012KT 9999 BKN020 11/06 Q1015 NOSIG=

At 1144:15, radar recording shows the Squirrel, squawking A7366 indicating 1200ft Mode C (1013hPa) flying southbound towards the Manchester Low-level route. The Tiger Moth is shown as a primary contact only [no SSR fitted] manoeuvring in the Squirrel helicopter’s 11 o’clock at a range of 1.7nm. The Tiger Moth is observed to track broadly NW.

At 1144:50, the two ac are shown as primary contacts only, on reciprocal tracks at a range of 0.3nm. The Squirrel pilot’s written report indicated that the Tiger Moth was sighted in his 11 o’clock at a range of 150ft and 50ft above. At 1144:56, radar recording shows the Squirrel, indicating an altitude of 1100ft in a L turn, with the Tiger Moth in close proximity [<200yd. The Squirrel’s Mode C then indicates further descent to 1000ft (1013hPa) in general conformity with the pilot’s reported avoiding action descent before the helicopter turns S to regain track through the Low-Level Route.]

CAP774, Chapter 1, Page1, Paragraph 2, states:

‘Within Class F and G airspace, regardless of the service being provided, pilots are ultimately responsible for collision avoidance and terrain clearance, and they should consider service provision to be constrained by the unpredictable nature of this environment.’

The Airprox occurred when the Squirrel helicopter and Tiger Moth came into close proximity within Class G airspace. Pilots operating in Class G airspace are ultimately responsible for collision avoidance.

**HQ AIR (TRG)** comments that based on the Tiger Moth pilot’s report, the ‘avoiding action’ seen by the Squirrel pilot was unrelated manoeuvring by the Tiger Moth. The range of the Squirrel pilot’s initial sighting appears from the radar picture to have been about 0.5nm rather than the reported 150ft. The decision to manoeuvre in altitude was sensible, particularly in light of the apparent compensating turns. The incident highlights the known issue with cockpit obstructions in any ac and reemphasises the need to move the head when looking out and/or altering flight path to expose conflicting ac on a collision course that may be hidden behind such obstructions.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

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

It was apparent to the Board that ATC played no part in this Airprox; the Squirrel was operating autonomously, whilst approaching the Class D CTR to transit through the low-level route, where there is special provision for pilots to transit this 4nm wide route under VFR without an individual ATC clearance. The Tiger Moth pilot reports he was intending to land at Barton, having departed from Liverpool, so it seemed that he had not just cleared the route; however, the ac did fly further to the N after the Airprox had occurred. Whilst the Tiger Moth crew was plainly also entitled to be operating in this vicinity, Board Members were surprised that the instructor had chosen the natural choke point of the northern entry point to the route to conduct GH instruction. This seemed unwise and this Airprox was a good example of what can happen when pilots are closely focussed on their individual tasks – perhaps to the detriment of all-around lookout.

As it was, both ac were just outside the northern boundary of the CTR in Class G airspace with both pilots equally responsible to ‘see and avoid’ other ac in the vicinity. In this situation, however, the Tiger Moth crew had the helicopter to their R and in accordance with the Rules of the Air were required to ‘give way’ to the Squirrel. The GA Member stressed the poor lookout from the front seat of the Tiger Moth – the rear seat is better – and the difficulties of communicating in an open cockpit, but it is evident that neither the instructor in the Tiger Moth nor the student PF saw the helicopter at all - possibly as a result of the inherent limitations caused by the biplane’s configuration. Given these limitations, and the proximity to the low-level corridor, the GA Member opined that more attention should have been given by the Tiger Moth pilot to clearing their air ahead. The HQ AAC Member emphasised that lookout from the Squirrel helicopter is not particularly good either, and he reinforced the importance of pilots continually moving their heads, coupled with moving the ac, to clear airframe blind spots regularly. Nonetheless, the Command considered that the Squirrel crew might have seen the Tiger Moth a little earlier than the pilot had estimated; this was based on the helicopter’s manoeuvre as evinced by the radar recording just as the range between the two ac returns decreased from 0.4 - 0.2nm. The Board was briefed that the weak primary contact of the Tiger Moth did exhibit some ‘track jitter’ on the recording and the radar data was incomplete with a number of returns missing – which was not surprising from the fabric covered aeroplane - the open white square on the diagram representing a predicted position for the Tiger Moth just before the two ac passed very close indeed, but certainly less than 200yd apart. Although the Squirrel pilot perceived the Tiger Moth’s manoeuvres to be avoiding action, the Tiger Moth pilots were completely unaware of the Squirrel. The Board concluded, therefore, that this Airprox was the result of a non-sighting by the Tiger Moth pilots and a late sighting by the Squirrel crew.

While there was no reason to doubt the Squirrel pilot’s estimate of 50ft vertical separation, the lack of any Mode C from the Tiger Moth did not enable the vertical separation to be confirmed independently. Fortunately, the Squirrel pilot’s robust avoiding action turn and descent proved wholly effective and he was able to remain clear of the other ac despite the Tiger Moth student’s manoeuvres. Nevertheless, the Board concluded unanimously that at these close quarters, with only one crew aware of what was happening, the safety of the ac involved had been compromised in the circumstances conscientiously reported here.

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

Cause: A non-sighting by the Tiger Moth pilots and a late sighting by the Squirrel crew.

Degree of Risk: B.