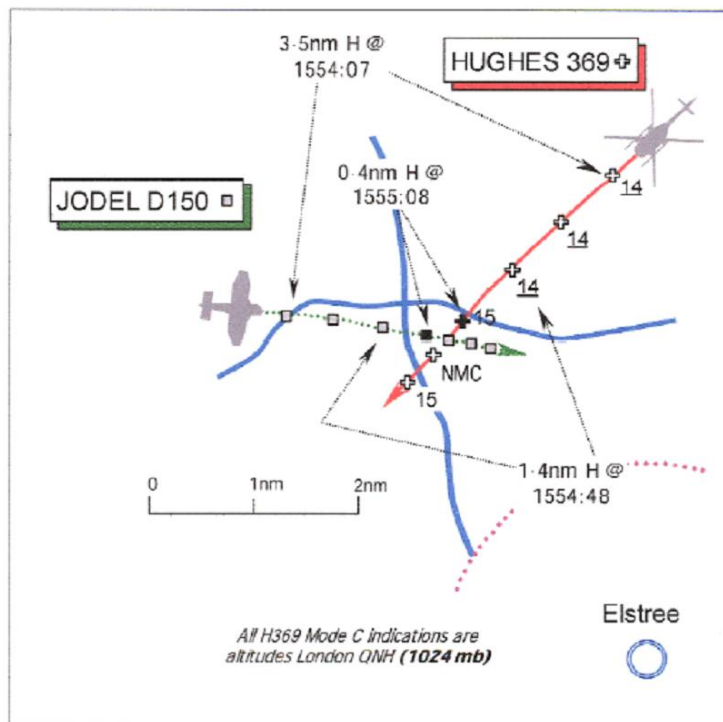


AIRPROX REPORT No 148/07

Date/Time: 5 Oct 1555
Position: 5142N 00022W (3½ nm NW by N from Elstree)
Airspace: London FI R (Class: G)
Reporting Ac Reported
Ac
Type: Jodel 0150 Hughes
369
Operator: Civ Club Civ Pte
Alt/FL: 1400ft 1500ft
QNH
QNH (1026mb)
Weather VMC CLOC VMC
CAVOK
Visibility: 10km+ 10nm
Reported Separation:
30-50ft V/nil H 15-20ft
V/nil H
Recorded Separation:
Contacts merged



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE JODEL 0150 MASCARET PILOT provided a comprehensive and candid account, reporting that he was en route under VFR from Sleaf to Headcorn routeing direct to LIC, thence to OTY, BNN & LAM. A squawk of A7000 was selected but Mode C is not fitted (NMC). At the time of the Airprox, weather conditions were very good and he was flying in VMC, with a visibility of 10km+ and a good horizon, but with some relatively low stratus - base of about 2000ft - visible to the NE.

As it was a very fine day, there was a lot of traffic around and especially flying past the Bovingdon VOR, he saw a lot of GA ac in the locality. For this very reason, he was conscious of other traffic and was keeping a very sharp look out. His track took him past Elstree aerodrome, but not through their ATZ, so he was maintaining a "listening watch" on their frequency of 122.2MHz rather than contacting them, as they appeared to be quite busy.

Flying between Bovingdon and Stapleford in a level cruise at 1400ft, QNH (1026mb), approaching a position some 3½ nm NW of Elstree heading 100° at 100kt, he looked down at his chart and then, upon looking up and L, saw a dark coloured black or dark green Hughes 500 helicopter at about the same level closing on a constant relative bearing in his 10 o'clock about 100m away and heading towards him. To avoid the helicopter he immediately pushed forward on the stick into a descent as he wanted to keep the Hughes helicopter in his view as it passed some 30-50ft directly overhead with a "high" risk of a collision. No deviation in the helicopter's course was evident and he assumed the helicopter pilot had not spotted his aeroplane.

Whilst annoyed with himself that he only saw the helicopter at a very late stage, especially as he was supposedly keeping a good lookout, he put this down to the fact that the Hughes helicopter was on a steady relative bearing and it was also partly hidden behind his ac's doorframe until he spotted it.

He stressed that he is used to flying in very close proximity to other ac, as a formation and air display pilot, but this was much closer than he would have liked to have been without a formation briefing! If he had not seen the helicopter or altered his height, he believes that they would have collided.

THE HUGHES 369 (H369/500) PILOT reports his helicopter is finished in a disruptive pattern green camouflage scheme, but the 2 HISLs were on whilst flying under VFR between a private landing site near Wattisham to White Waltham at 115kt.

Cruising level at an altitude of 1500ft QNH, in CAVOK weather conditions, he was however flying a heading of 250°(M) directly into the sun with very limited forward visibility. After passing Stansted, he contacted Heathrow initially and was then passed onto Northolt "who had the space". Just after establishing RT contact with Northolt ATC and whilst setting their new transponder code he noticed a "white flash" very close below his helicopter - he quoted about 15-20ft - as another ac passed directly below with a "very high" risk of a collision. No avoiding action was taken, as the other ac was not seen until it was already passing immediately below his helicopter. He stressed that with 2 frequency selections and transponder squawk changes in a short period his workload was high, furthermore, the transponder is sited low down on the central radio "stack" in the cockpit.

MIL ACC had nothing to report.

UKAB Note (1): The Heathrow Radar recording illustrates this Airprox, although the H369 is not shown just at the point that the tracks cross. The Jodel - squawking A7000 NMC fitted - is shown flying steadily eastbound on a track of about 100°, crossing over the M25 motorway. The H369 approaches SW bound, squawking A7000, on a steady relative bearing in the Jodel's 11 o'clock at a range of 3-5nm at 1554:07, indicating 1400ft London QNH (1024mb) unverified Mode C. The Jodel maintains it's course S of the M25 motorway, subsequently crossing the M1 and at 1555:08, the H369 has closed to a range of 0.1nm - still in the 11 o'clock - but has now climbed very slightly to 1500ft London QNH. Secondary contact on the H369 is then lost and one primary return of dubious reliability shows in the Jodel's 10 o'clock at <0'15nm - 300yd. The Airprox occurs at 1555: 16, as the tracks cross, with no contact on the H369 that is then shown as a primary contact opening in the Jodel's 5 o'clock and rapidly drawing aft, before a Northolt code of A0260 subsequently appears indicating 1500ft London QNH.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and radar video recordings.

The candid accounts provided by both pilots had made it clear that neither was in receipt of an ATS at the moment this Airprox occurred and the Board readily agreed that this was intrinsically a sighting issue. Both pilots were operating quite legitimately in the narrow confines of Class G airspace beneath the L TMA, where see and avoid prevails. Whereas the Jodel 150 pilot had stressed that he was cognisant of the busy traffic scenario and was maintaining a careful scan for other ac, a member postulated that his attention might naturally have been drawn to any traffic in the circuit at Elstree off to starboard. Unfortunately, the other ac was approaching unseen from the port side. This Airprox illustrated clearly the difficulties of sighting a small helicopter in a mock camouflage colour-scheme of very small cross sectional area, closing on a steady relative bearing with no crossing motion to draw attention to its presence, despite a disciplined lookout and the two HISLs fitted to the Hughes H369. Providentially, the Jodel pilot did manage to spot it, just in time at minimal range in his 10 o'clock ~ about 100m away he reported - which enabled him to push forward and take avoiding action. This was clearly less than ideal and the Members agreed that a very late sighting by the Jodel D150 pilot was part of the cause.

Commercial helicopter pilot Members were concerned that the H369 pilot had elected to press-on into a low setting sun and whilst his route to his destination took him that way, it might have been wiser to have purposefully introduced a dogleg into his route so as to enable him to see where he was going more clearly. A GA Member wondered if this was a practical thing to do, however, good airmanship would naturally dictate this should be considered when weighing up the risk of encountering another ac. This Airprox was a salutary lesson of the unseen dangers existing in good weather when flying 'into sun'. Moreover, in this instance the H369 pilot was responsible for sighting the other ac and 'giving way' under the 'Rules of the Air'. But 'the Rules' can only work if the other ac is seen in time to take positive action when necessary. Here, the H369 pilot reports he only saw the Jodel as it was already passing immediately below his helicopter. Furthermore, it was evident that this Airprox occurred as the H369 pilot was changing his SSR code - another distraction that can be

time consuming. A pilot Member noted that it could take about 7sec to change a code setting, which is a long time to have eyes in the cockpit. A technique he uses is to change two numbers - before taking a scan outside the cockpit - and then changing the last two numbers. However, here the helicopter pilot was unable to take any action whatsoever to forestall this close quarters situation and the Board agreed that this was effectively, a non-sighting by the Hughes H369 pilot and the other part of the cause.

In this instance the Jodel 0150 pilot attempted to avoid the Hughes helicopter by diving below it. His reasoning - to keep the other ac in sight - was sound, but the resultant separation was apparently minimal. As Mode C was not fitted to the Jodel, the absence of comparable altitude data made accurate independent assessment of the vertical separation that pertained here impossible. The Jodel pilot had reported transiting in a level cruise at 1400ft QNH (1026mb); whereas the H369 was indicating 1500ft London QNH (1024mb) moments before the tracks crossed. This suggested 160ft of theoretical separation existed, but given the applicable tolerances of Mode C [± 200 ft on *verified* data] this was clearly minimal. There was no reason to doubt the veracity of the reports provided - 15-20ft reported by the helicopter pilot and 30-50ft from the Jodel pilot's account - who was probably better placed to judge the distance anyway. Whether the Jodel pilot had sufficient time to physically move his aeroplane out of the way to avert a collision was debateable, but the radar data had shown the tracks had crossed exactly which corroborated the pilots' reports. Therefore, with at most 50ft reported between them and one of the pilots unable to react because the Jodel was not seen until it was already passing immediately below his helicopter, Members agreed unanimously that an actual risk of a collision had existed in the circumstances conscientiously reported here.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: An effective non-sighting by the Hughes H369 pilot and a very late sighting by the Jodel 0150 pilot.

Degree of Risk: A.