

AIRPROX REPORT No 2010032

Date/Time: 26 Apr 1258

Position: 5541N 00206W
(5NM SW Berwick)

Airspace: UKDLFS (Class: G)

Reporting Ac Reporting Ac

Type: Tornado Hawk Mk1

Operator: HQ AIR (OPS) HQ AIR (OPS)

Alt/FL: 250ft 300ft
(RPS 1015mb) (RPS 1015mb)

Weather: VMC CLBC VMC CAVOK

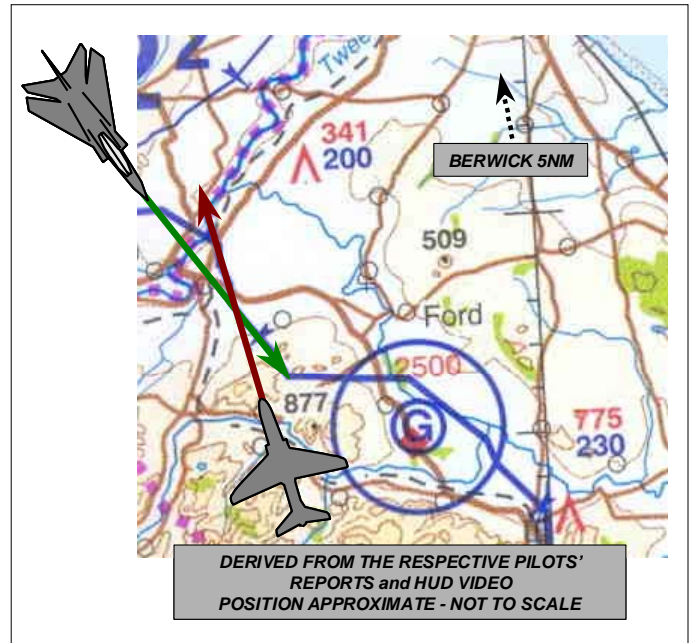
Visibility: 20km 10km

Reported Separation:

NK <200ft V/<200ft H

Recorded Separation:

Not Recorded (See UKAB Note (2))



BOTH PILOTS FILED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE TORNADO PILOT reports flying a low level tactical training sortie in LFA 12/16 in a grey ac with HISLs and Nav lights switched on, squawking 7001 with Mode C, but TCAS was not fitted. They had been low level for 15min in good weather and were heading 180° [the HUD video shows 140°, which is depicted in the diagram above] at 420kt [the HUD video shows 450kt G/S], when they saw very late a black Hawk ac appear from behind the metal work round the HUD and cross the canopy diagonally from right to left very slightly above them. He took no avoiding action as it was too late but continued looking for a wingman. They transmitted on the UHF 'Guard' frequency to confirm that the Hawk pilot had seen them; the Hawk pilot stated that he would also be reporting an Airprox.

He assessed the risk as Medium.

THE HAWK Mk 1 PILOT reports leading a pair of ac on a low level tactical training sortie in LFA 12/16 in a black ac with HISLs and Nav lights switched on, squawking 7001 with Mode C; TCAS was not fitted. They were in a high workload situation having split the formation for a low level target run at a nominal 300ft agl, heading 347° at 420kt, when a grey Tornado GR4 was seen just left of the ac nose at less than 1nm range. As the Tornado blossomed in the canopy, he pulled aggressively to 8.7G, to avoid a collision and missed the Tornado by an estimated 200ft. The Tornado did not appear to manoeuvre but the pilot contacted him on UHF 'Guard' concerning the incident.

He assessed the risk as Very High.

HQ AIR (OPS) comments that this is a classic example where two ac were correctly using the LFS and operating to the "see and avoid" principle. Cockpit structure is a known hindrance to lookout and crews are aware of it; TCAS would have alerted each ac to the other if fitted and could have increased the safety margins considerably.

UKAB Note (1): The incident took place below the base of recorded radar coverage.

UKAB Note (2): The incident is seen clearly on the Tornado HUD/Head Down Display Video. The Hawk first becomes visible 5sec before the CPA, approaching the Tornado from its 1 o'clock, slightly high, on a line of constant bearing but descending. When co alt with the Tornado, closing at over

800kt, it commences a pull-up and right turn, about 2sec before the CPA to pass about 100ft above. The Tornado turns right by about 10° but only after the CPA.

UKAB Note (3): Both ac were correctly booked into the LFS and LF Ops advise that they were warned of 'Mixed Traffic' with their respective bookings.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac and a report from the ac operating authority.

The Board was shown the Tornado HUD video, which showed the event clearly. Before commencing their deliberations, the HQ Air (Ops) Member reminded colleagues that, although the Hawk initially became discernable on close inspection of the HUD recording 5 seconds before the ac crossed, the Tornado pilot would not have acquired it immediately. The light conditions were not conducive to an early acquisition and the terrain and ac flight profiles, when viewed from the Tornado cockpit, meant that the black Hawk was below the skyline against a dark agricultural background and had no relative motion. Although the pilot was most likely conducting a full lookout scan, he might not have been looking in the precise area of the Hawk's approach in that 5 second period; furthermore it was most likely obscured by the ac fuselage or cockpit framework to the rear seat crewmember. Given that the Hawk was below the skyline from the Tornado crew's perspective then the opposite would have been the case (i.e. the Tornado was just above the local horizon), albeit still with no relative motion, when viewed from the Hawk's cockpit; that would explain why the Hawk pilot (in the front seat) saw the Tornado slightly earlier and reacted accordingly by pulling up hard and right to avoid it.

The Tornado crew had not seen the Hawk effectively until the ac crossed and therefore had not been able to react to it. The Hawk pilot, on the other hand, saw the Tornado a few seconds earlier, and had time to initiate an effective avoiding manoeuvre. Since the ac had not been obscured to each other by terrain or other features and notwithstanding the high rate of closure, the Board agreed that neither pilot had seen and avoided the opposing ac in sufficient time to prevent a compromise to the safety of their ac and therefore the cause had been an issue of sighting. Members agreed, however, that the Hawk pilot's late manoeuvre had (just) removed the risk of collision.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Effective non-sighting by the Tornado crew and a late sighting by the Hawk crew.

Degree of Risk: B.