

## AIRPROX REPORT No 2010070

Date/Time: 11 Jun 2010 (Friday) 1324Z

Position: 5654N 00448W (1½nm  
E of Roybridge)

Airspace: UKDLFS LFA14 (Class: G)

Reporting Ac      Reporting Ac

Type: Tornado GR4      Tornado GR4

Operator: HQ Air (Ops)      HQ Air (Ops)

Alt/FL: 320ft      250ft  
agl      RadAlt

Weather: VMC CLBC      VMC CLBC

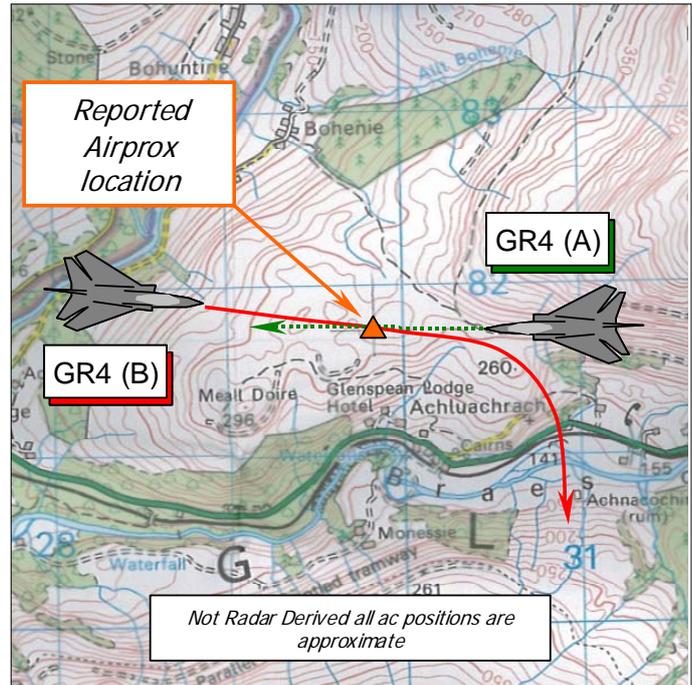
Visibility: 50km      40km

Reported Separation:

50ft V/nil H      ½nm H

Recorded Separation:

Not recorded



**BOTH PILOTS FILED**

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

**THE PILOT OF TORNADO GR4 (A)** reports flying as the wingman of a two-ship formation during a VFR low-level training sortie, whilst monitoring the LFS frequency and so not in receipt of any ATS. A squawk of A7001 was selected with Mode C; neither TCAS nor any other form of CWS is fitted. The ac is camouflaged grey but the HISLs were on.

He was flying in a 1min trail using the Terrain Following Radar (TFR) at 320ft agl in VMC with a BKN layer above at 2000ft and an in-flight visibility of 50km in light drizzle, when a radio call was received from his leader informing them of a jet flying in the opposite direction also at low level, which he acknowledged. Approaching a position about 1½nm E of Roybridge in Glen Spean [Lat & Long of 56°54' N 004°48'W given] heading 270° at 420kt, they immediately saw a single Tornado GR4 in their 1 o'clock about 100m slant range ahead, approximately 50ft below his ac, heading in the opposite direction. Unable to react in time, no avoiding action was possible as the other GR4 passed about 50ft vertically below, flying straight and level, with a 'high' Risk of a collision and cleared into his 7 o'clock. He immediately pulled up to 700ft agl whilst scanning for a possible wingman as the other ac made a hard R turn and departed to the S. No wingman was seen. He stressed that there had been no perceived movement 'in the canopy' before the other ac was sighted. The sortie was continued without further incident.

**THE PILOT OF TORNADO GR4 (B)** reports he was listening out on the LFS frequency whilst turning E out of the Great Glen at 420kt, whereupon he gained tally on another Tornado GR4 about 3nm ahead and L of the nose. Flying at 250ft RadAlt, he and his navigator began to look for a No2 in the normal positions they expected a wingman to be relative to a lead ac, but none was seen so he positioned his ac to pass the Tornado GR4 they could see [GR4 (A)'s leader] with around ½nm horizontal separation. Wagging his ac's wings to acknowledge to the other ac that he was 'tally' [visual] no response was observed from the GR4 [GR4 (A)'s leader]. About 1min later, as his ac was turning R, another Tornado GR4 [GR4 (A)] was observed in the mirrors crossing astern on a similar track to that of the first. He estimated the separation in the mirrors against this second ac [GR4 (A)] to be about ½ nm and the Risk 'low'.

A squawk of A7001 was selected with Mode C; neither TCAS nor any other form of CWS is fitted. The ac is camouflage grey but the white HISLs were on.

UKAB Note (1): This Airprox occurred outwith recorded radar coverage.

**HQ AIR (OPS)** comments that this confliction occurred between ac operating independently within the LFS. Both were aware of the likely presence of a wingman but unfortunately were unable to gain visual contact until after they had passed. TCAS or another form of cooperative CWS would undoubtedly have helped to improve SA and aid an earlier visual acquisition. Work is in progress to equip the Tornado GR4 with a CWS.

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

Information available included reports from the pilots of both ac and comment from the appropriate operating authority.

Members agreed that the difficulties of visual acquisition were the crux of this Airprox and the Board was cognisant of the work under way to equip the Tornado GR4 with a CWS. The crew of GR4 (A) was evidently unable to sight GR4 (B) in sufficient time to take avoiding action, despite their leader's warning. Flying in 1nm trail, at a closing speed of 14nm/min allowed little time for a full visual scan after the lead crew's heads-up. The small cross-sectional area of the grey GR4 – head-on – with no crossing motion to draw attention to it evidently masked its presence until the last moment. The pilot's candid comment that he was unable to react in the time led the Board to conclude that this was, effectively, a non-sighting by the crew of GR4 (A).

Despite looking for the other ac the crew of GR4 (B) did not see GR4 (A) before the conflict arose. When the crew of GR4 (B) sighted GR4 (A)'s leader, they recognised the possibility of a wingman being in the vicinity. However, the crew was unable to spot GR4 (A) for the very same reasons as their colleagues in the other Tornado. Unaware of the proximity of the other jet above them until it was first seen in the pilot's rear-view mirrors as they turned, this was once more, effectively, a non-sighting by the crew of GR4 (B).

Having determined the Cause to be, effectively, non-sightings by the crews of both ac, Members considered the inherent Risk. As the pilot of GR4 (B) only saw GR4 (A) in his mirrors afterwards, Members leaned towards the pilot of GR4 (A)'s view of the geometry and separation as being potentially more reliable. Without the benefit of a radar recording the geometry could not be independently verified but there was no reason to doubt the veracity of the separation quoted by the pilot of GR4 (A) – that he flew 50ft vertically above GR4 (B). With neither crew involved able to affect the outcome of this very close quarters encounter beforehand, any separation that did exist was purely fortuitous. Therefore, on the basis of the pilots' frank accounts, Members agreed unanimously that there had been a Risk of collision.

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

Cause: Effectively, non-sightings by the crews of both ac.

Degree of Risk: A.