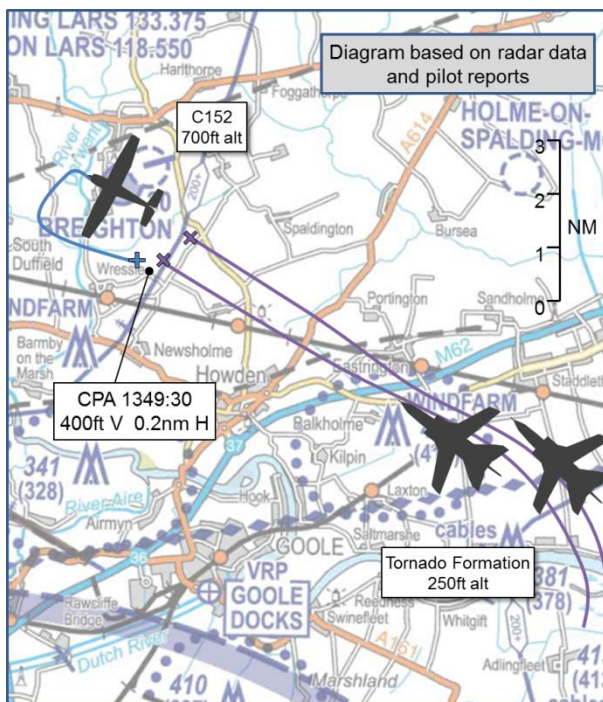


AIRPROX REPORT No 2014112**Date/Time:** 17 Jul 2014 1349Z**Position:** 5347N 00054W
(Brighton Airfield)**Airspace:** Vale of York AIAA (**Class:** G)**Aircraft 1** **Aircraft 2****Type:** C152 Tornado**Operator:** Civ Trg HQ Air (Ops)**Alt/FL:** 700ft 250ft
QFE (1021hPa) RPS**Conditions:** VMC VMC**Visibility:** 40km 10K**Reported Separation:**

300ft V/0nm H 500ft V/0.25nm H

Recorded Separation:

400ft V/0.2nm H

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

THE C152 PILOT reports flying a white and blue aircraft with beacon and landing lights illuminated and transponder Modes 3A and C selected. He was carrying out circuits at Brighton, and was downwind to land at 700ft when he noticed 2 Tornado jets converging on his position approximately 300-400ft below him. The aircraft then proceeded away from his position and avoiding action was not required.

He assessed the risk of collision as 'Low'.

THE TORNADO PILOT reports flying in a formation of 2 aircraft with all lights illuminated and transponder Modes 3/A, C and S selected. The formation was transiting at low-level, at 420kt, and receiving a Basic Service from Doncaster radar. At 1349:30, whilst heading 300°, they saw a light aircraft pass above and to the side of the formation. The lead pilot had seen the light aircraft and judged there to be no collision risk; however, there was insufficient time to generate a larger miss distance without manoeuvring aggressively. The number two pilot called the conflicting traffic as he saw it pass over the lead aircraft.

He assessed the risk of collision as 'Low'.

Factual Background

The weather at Leeds Bradford was reported as:

METAR EGNM 171320Z VRB05KT 9999 SCT049 23/16 Q1021

Analysis and Investigation**CAA ATSI**

Brighton airfield is unlicensed and marked on the UK Aeronautical charts as a circle. The airfield website indicates a single grass runway 11/29 which is 850m long with all circuits to the south of the airfield at 700ft. The C152 pilot reported carrying out circuits.

At 1344:52 a formation of two GR4s contacted Doncaster Radar and reported “*Formation of two Tornado GR4s five miles abeam Scampton northbound low level for the Sandtoft-Scunthorpe gap*”. The Doncaster controller replied “*No known traffic to affect QNH one zero two one standby for Barnsley*”. The Barnsley regional pressure setting was confirmed as 1017hPa and a Basic Service was agreed, which is defined as:

‘Pilots should not expect any form of traffic information from a controller, as there is no such obligation placed on the controller under a Basic Service, and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller may provide traffic information in general terms to assist with the pilot’s situational awareness... A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller considers that a definite risk of collision exists, a warning may be issued to the pilot.’¹

On initial contact, the formation was 34nm south-southeast of Brighton and the controller advised the pilots that there was no known traffic to affect and no further information was provided by the controller to the formation. CAA ATSI assessed the controller’s workload as medium. No Airprox report was made to the unit and, consequently, no controller report was available.

The C152 pilot’s written report indicated that he was downwind to the south of the airfield at 700ft when he noticed the Tornados converging 300ft to 400ft below. The formation then proceeded away from him and no avoiding action was required.

The formation leader’s written report indicated sighting the C152 and he assessed there to be no collision risk and maintained course. At 1350:40 the formation changed frequency to Linton.

At 1349:25 radar recording showed the C152 downwind in the Brighton circuit with the Tornado formation approaching from the southeast– Figure 1.

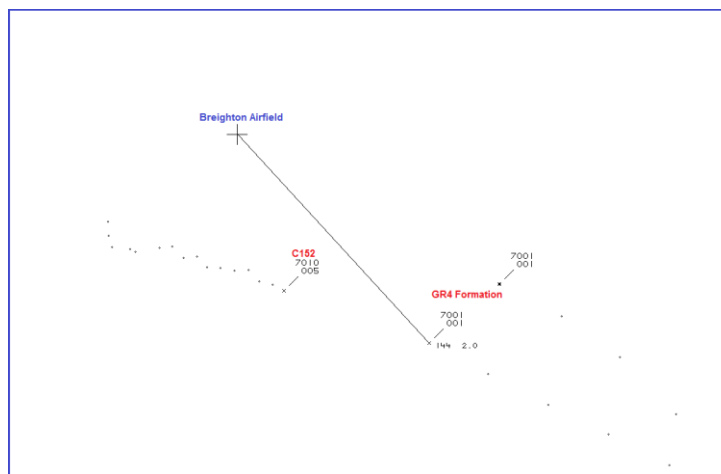


Figure 1 – Swanwick MRT at 1349:25

At 1349:29 the C152 at FL005 (altitude 700ft) and the formation leader at FL001 (altitude 300ft) were on reciprocal tracks at a range of 0.5nm. The prevailing QNH was 1021hPa and with 1hPa equivalent to 27ft the difference between Flight Level and altitude was +216ft (rounded to the nearest 100ft) - Figure 2.

¹ CAP774, Chapter 2, Paragraph 2.5

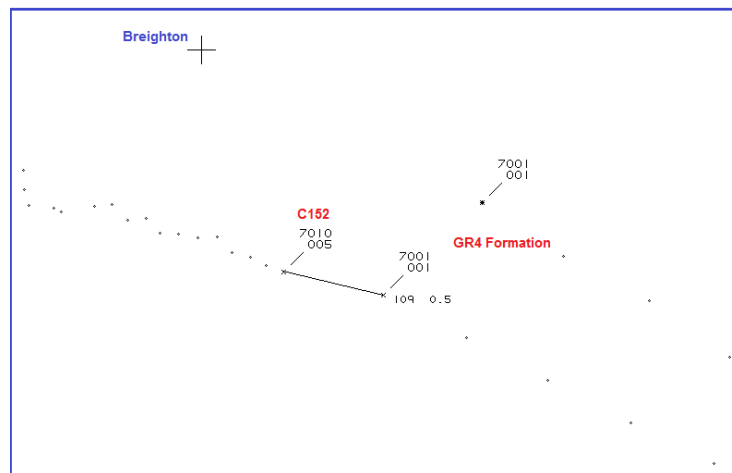


Figure 2 – Swanwick MRT at 1349:29

At 1349:33 The formation leader passed 0.2nm north of the C152 and 400ft below – Figure 3.

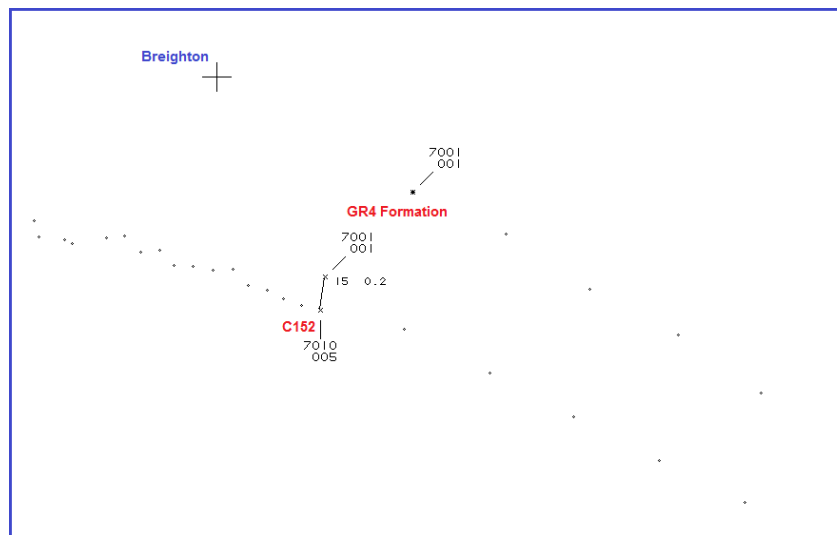


Figure 3 – Swanwick MRT at 1349:33

UKAB Secretariat

Both pilots shared an equal responsibility to avoid a collision, and for not flying into such proximity as to create a danger of collision², additionally the Tornados were required to conform to the pattern of traffic formed by the other aircraft intending to land at the aerodrome, or keep clear of the airspace in which the pattern is formed³.

Comments

HQ Air Command

The Tornados were operating within the 'see-and-avoid' principles of Class G airspace and, once the Cessna's presence was detected, judged that nothing short of an aggressive manoeuvre would generate a greater miss distance. It is unclear whether or not the Tornado pilots acknowledged that they had seen the Cessna (with a 'wing-waggle') and so may have caused the Cessna pilot undue concern. That said, the lookout (by all parties) was effective in this case, and it highlights the importance of vigilance during all phases of flight.

² Rules of the Air 2007 (as amended), Rule 8 (Avoiding Aerial Collisions) and as reflected in Military flying regulations

³ Ibid., Rule 12 (Flights in the vicinity of an aerodrome) and as reflected in Military flying regulations

Summary

An Airprox was reported on 17 July 2014 when a C152 and a formation of 2 Tornados flew into proximity. The C152 was at 700ft downwind in the Brighton circuit and not receiving an ATS; the Tornados were flying low-level and receiving a Basic Service from Doncaster Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first discussed the actions of the C152 pilot and agreed that he had done well to see the Tornados whilst concentrating on flying his circuit. They also noted that, whilst he remained ready to take avoiding action, he assessed that none was required at that point, although this would not have been the case had he been a little further on in his circuit and entering his base leg/final turn.

The Board then turned to the actions of the Doncaster controller. The Tornados had not been identified on radar, and it is unlikely that they, or the C152, were shown consistently, or at all, on the Doncaster radar display. Whilst no Traffic Information is required under a Basic Service, the controller had passed generic information that there was *"no known traffic to affect"*. Board members agreed that the controller could not have done any more, but wondered if this generic Traffic Information may have given the Tornado crews a false sense of security notwithstanding that military crews are used to flying low-level and encountering traffic visually that has not been seen on radar. In the end, the Board agreed that the Doncaster controller had done all that was possible and had not affected the outcome of the Airprox.

Turning to the actions of the Tornado crews, the Board noted that, as a pair, the aircraft were somewhat more constrained in routing by formation geometry than a single aircraft and, consequently, the formation leader's options were more limited. Brighton airfield is marked on the military low-flying chart as a minor aerodrome with more than 6 movements per day; the Board opined that the Tornado leader could have chosen to give the aerodrome a wider berth, or tighten his formation as he approached. That being said, it was also noted that there are many minor aerodromes in the low-flying regime and it is not possible for military crews to give them all a wide berth. See-and-avoid and applying the Rules of the Air remain the main defences against mid-air collision in this environment and, in this case, the Tornado crews saw the C152, albeit late. The Board noted that the Tornado lead did not think that there had been a collision risk but that there was insufficient time to generate a larger miss distance without manoeuvring aggressively.

The Board recognised that separation had been much reduced from the ideal, which would indicate a risk category B; however, some members argued that, although a late sighting, the Tornado leader had remained ready to take avoiding action but had deemed it unnecessary (which would indicate a risk category of C). The resulting debate was inconclusive and so the Chairman proposed a vote. As a result, the majority decision was that the cause was determined to be a late sighting by the Tornado crews, with the degree of risk Category B.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by the Tornado crews.

Degree of Risk: B.

ERC Score⁴: 101.

⁴ 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.