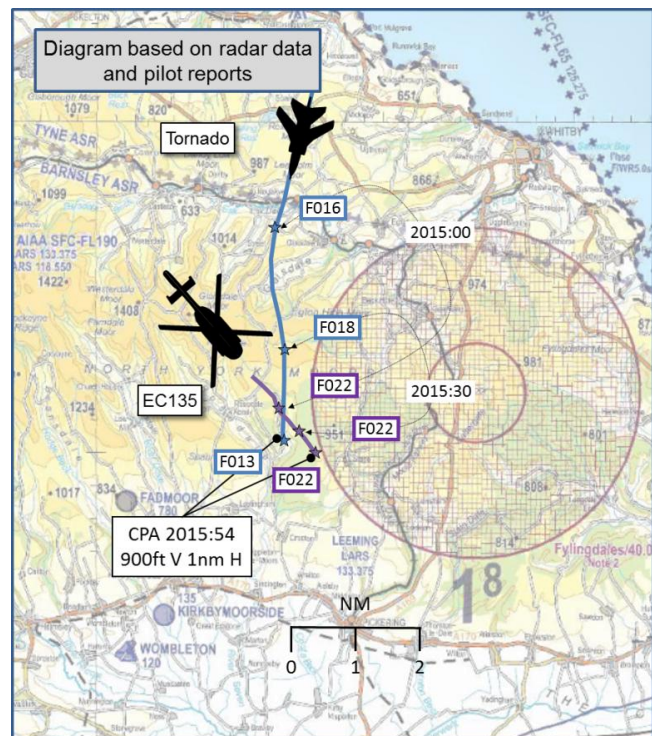


**AIRPROX REPORT No 2014057****Date/Time:** 6 May 2014 2015Z (Night)**Position:** 5418N 00050W Sunset: 1932:03  
(6.75nm SW of Fylingdales)**Airspace:** Night LFA 4BE (**Class:** G)**Aircraft 1**                      **Aircraft 2****Type:** Tornado GR4                      EC135**Operator:** HQ Air (Ops)                      NPAS**Alt/FL:** 400ft                      2000ft  
agl                      RPS (NKhPa)**Conditions:** VMC                      VMC**Visibility:** 30km                      >10km**Reported Separation:**

1000ft V/270m H NK V/NK H

**Recorded Separation:** 900ft V/1nm H**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

**THE TORNADO PILOT** reports flying a grey aircraft at night at low-level, under VFR, in CAVOK, with red HISLs illuminated and navigation and wing-tip lights set to 'bright'. The crew were using NVGs<sup>1</sup> and TFR<sup>2</sup>, had selected transponder Modes 3/A, C and S, but were not in receipt of an Air Traffic Service. Before take-off the crew had verbally de-conflicted their route with a Lynx crew, who intended to operate in the same area. Having established the Tornado at 400ft agl on the TFR, the crew observed a helicopter (the anti-collision lights were visible both with and without NVGs), at what appeared to be approximately 1500ft amsl, and a range of approximately 0.15nm in their left 10 o'clock position. They did not perceive an immediate risk of collision and so elected to leave the Tornado 'in the TFR regime'. They believed the other aircraft was likely to be the Lynx that they had previously deconflicted against, so they transmitted on the UHF Low-Level Common frequency asking the helicopter crew to state their callsign and climb out of the Night Low-Flying System, however they heard no response. Upon landing, the Tornado crew contacted local helicopter agencies and identified the aircraft as a Police helicopter on operational tasking. The helicopter pilot stated that they were aware of the Tornado due to TCAS, that they were at approximately 2000ft, and were permitted to operate lower if required. The Tornado crew noted that their calls on the UHF Low-Level Common frequency would not have been received because the helicopter was not equipped with UHF radios.

He assessed the risk of collision as 'Medium'.

**THE EC135 PILOT** reports flying a dark-blue and yellow helicopter, under VFR, in VMC, in rain. The helicopter had HISLs and navigation lights illuminated, transponder Modes 3/A, C & S operating, and was equipped with TCAS. The pilot reports flying at 120kt, heading 150°, cruising straight-and-level at 2000ft on the RPS, on an operational task, in receipt of a Basic Service from Durham Tees Valley Approach. Whilst abeam Fylingdales, en-route to Scarborough, the pilot heard a TCAS warning of an aircraft approaching from his 6 o'clock position. Assuming it was a Lynx in the Night Low-Flying System, the EC135 pilot maintained his 'height and heading' but did not see the other aircraft. Whilst returning to base on completion of his task, the pilot contacted Dishforth Tower who confirmed that there was a Lynx operating in the North Yorkshire Moors area. The EC135 pilot reports that, as an

<sup>1</sup> Night-Vision Goggles

<sup>2</sup> Terrain-following radar

ex-military helicopter pilot, he understands that military fast-jets operate in the area at low-level, which is why he opted to cruise at 2000ft.

He assessed the risk of collision as 'None'.

## Factual Background

The weather at Durham Tees Valley Airport at 1950 was recorded as:

METAR EGNV 061950Z 22004KT 200V280 9999 FEW045 14/06 Q1001=

The weather at RAF Linton-on-Ouse at 1950 was recorded as:

METAR EGXU 061950Z AUTO 23004KT 9999 // FEW070/// SCT100/// 11/09 Q1002

## Analysis and Investigation

### CAA ATSI

The EC135 departed from Durham Tees Valley Airport, routing southeast and, on leaving the Durham Tees Valley Control Zone, the EC135 pilot reported that he might lose RTF contact. The controller agreed a Basic Service and passed the Barnsley regional pressure setting of 996hPa. The next transmission received from the EC135 was at 2055:10 asking if Durham Tees Valley was still open [CPA occurred at 2015:54].

The EC135 was in receipt of a Basic Service wherein the pilot remains responsible for collision avoidance; the Durham Tees Valley controller was not aware of the Tornado and was not able to provide Traffic Information or warning. The Durham Tees Valley radar coverage at low levels in the vicinity of the Airprox would likely have been poor due to the range of the aircraft and position of the high ground. No Airprox report was made on the Durham Tees Valley frequency.

At 2011:43, using the Swanwick MRT recording, the Tornado was 24.1nm northeast of Durham Tees Valley Airport, over the North Sea, at FL017, and the EC135 was 16nm southeast of Durham Tees Valley at FL025. The Tornado crossed the coastline at 2014:02 tracking south-southwest. The distance between the Tornado and EC135 was 10.5nm.

At 2015:06 the Tornado made a left-turn onto a southerly track towards the EC135 and at 2015:30 was 2.3nm north-northwest of the EC135 and 400ft below – Figure 1.

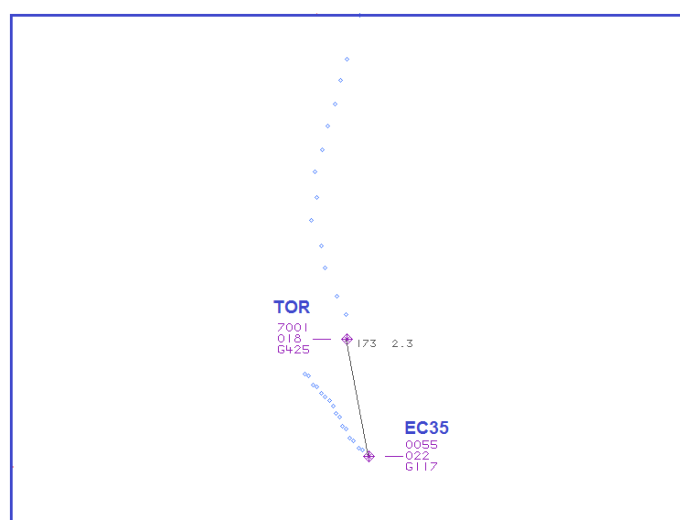


Figure 1 – Swanwick MRT at 2015:30  
(TOR=Tornado, EC35=EC135)

At 2015:42 the Tornado crossed 1.4nm behind the EC135 and 600ft below – Figure 2.

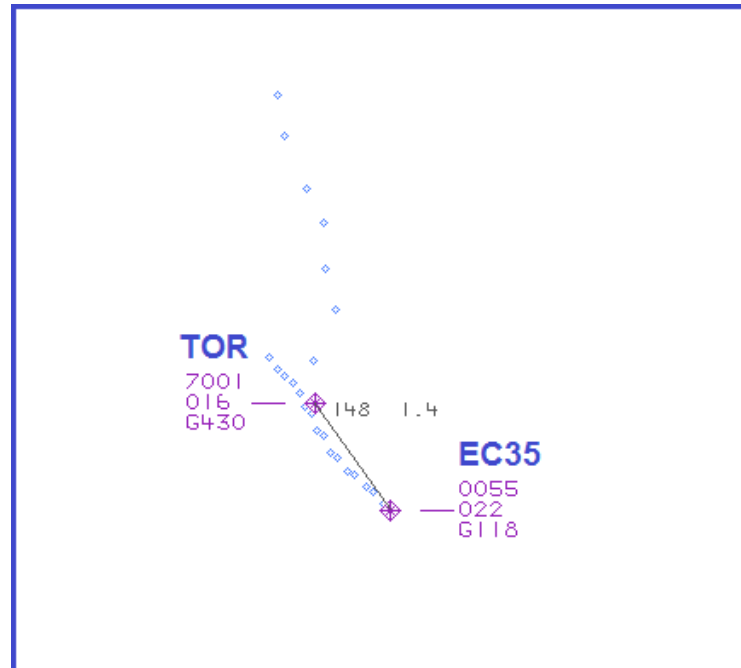


Figure 2 – Swanwick MRT at 2015:42

The CPA occurred at 2015:54, with the Tornado 1nm west of the EC135, 900ft below – Figure 3.

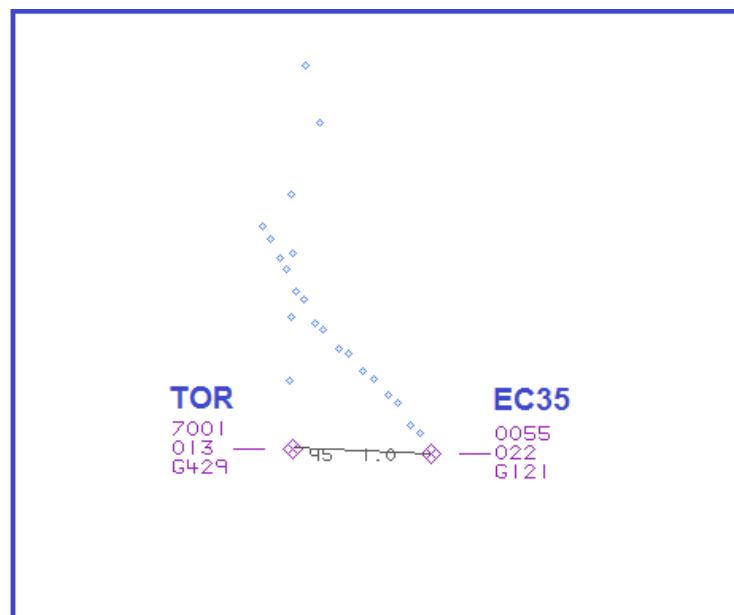


Figure 3 – Swanwick MRT at 2015:54

### UKAB Secretariat

As the Tornado was overtaking, the EC135 crew had the right-of-way and the Tornado pilot was required to keep out of its way by altering course to the right.<sup>3</sup> The Tornado pilot flew to the right of the EC135 but did not need to alter his course to achieve this.

<sup>3</sup> Rules of the Air, 2007, Rule 11, Overtaking

## Comments

### NPAS

This occurrence serves once again to highlight the value of TCAS as an aid to lookout. The difference in the pilots' recollections of the weather conditions was not a significant factor but it raises the question of whether the Police crew had recalled the same occurrence.

It is concerning that the Tornado crew appeared to have a misperception that the night airspace, at that level, was theirs and that having spotted a conflict, the use of UHF radios might have resolved the problem. With an increase in the number of night HEMS<sup>4</sup> operations (and from Jul 15 NPAS fixed-wing aircraft), the UK LFS is becoming more congested with helicopters going about their lawful business by night. If there would be a benefit from providing briefing material or face-to-face briefs for military crews, especially fixed-wing, NPAS would be pleased to assist.

All NPAS Bases and the centralised Despatch and Flight Monitoring Centre in Bradford now have access to CADS<sup>5</sup> and crews are actively encouraged to use it as a briefing tool throughout their shifts. The next generation of NPAS aircraft, due in the second quarter of 2015, will have 3G/4G mobile data access to CADS in-flight as part of the mission system. Whilst it is recognised that this is not a universal panacea for resolving Airprox, it is an important element of the NPAS strategy to manage the risks of mid-air collision. With the reactive nature of NPAS tasking, there are few occasions when the pilot can plan the route in advance of take-off, but it is intended that whenever time and security allow, tasks will be pre-planned so that the data can be shared with other airspace users.

### HQ Air Command

Having visually acquired the EC135, the Tornado crew felt no need to adjust their flight profile in order to remain safely clear. We thank the NPAS for their offer to liaise with Defence and will look to enhance the understanding and awareness of both communities in the future.

## Summary

An Airprox was reported in Class G airspace when a Tornado crew, flying VFR in the UK Night Low-Flying System, encountered an EC135 cruising VFR at around 2000ft. The Tornado crew were not in receipt of an Air Traffic Service, the EC135 crew were in receipt of a Basic Service and received a Traffic Alert from their TCAS equipment. Neither crew felt the need to take avoiding action and the CPA was 1nm horizontally and 900ft vertically.

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

Information available included reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controller involved and reports from the appropriate ATC and operating authorities.

The Board observed that the EC135 pilot had been alerted to the Tornado's presence by his TCAS, and did not feel the need to manoeuvre to maintain separation. Members noted again the value of Collision Warning Systems (CWS) in providing situational awareness to aviators, and were heartened to hear from the RAF advisor that the programme to fit CWS to the Tornado fleet will shortly come to fruition. Nonetheless, in this instance the Tornado crew had seen the helicopter at some distance and they had not felt the need to alter course.

The Board also noted the NPAS comments regarding their increasing NLFS usage, use of CADS, and the important point that what used to be almost an exclusive military preserve at night was

<sup>4</sup> Helicopter Emergency Medical Services or "Air Ambulance".

<sup>5</sup> Centralised Aviation Data Service

increasingly available to all aviators - military pilots should not consider the NLFS as segregated airspace for their use only. The Board also commended NPAS for their pro-active approach to information sharing and liaison; with this in mind, the Board opined that the military-hosted Regional Users Airspace Working Groups were an excellent forum for multi-operation information sharing and heartily endorsed attendance by all agencies and operators. It was pleasing to note that NPAS and HQ Air Command have already made an agreement to share information and improve their crews' understanding of each other's operations.

Notwithstanding the valuable lessons identified within this event, the Board quickly agreed that this was a benign sighting report wherein normal safety parameters had been maintained; they assessed that the degree of risk was therefore Category E.

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

Cause: A sighting report.

Degree of Risk: E

ERC Score<sup>6</sup>: 2

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<sup>6</sup> 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.