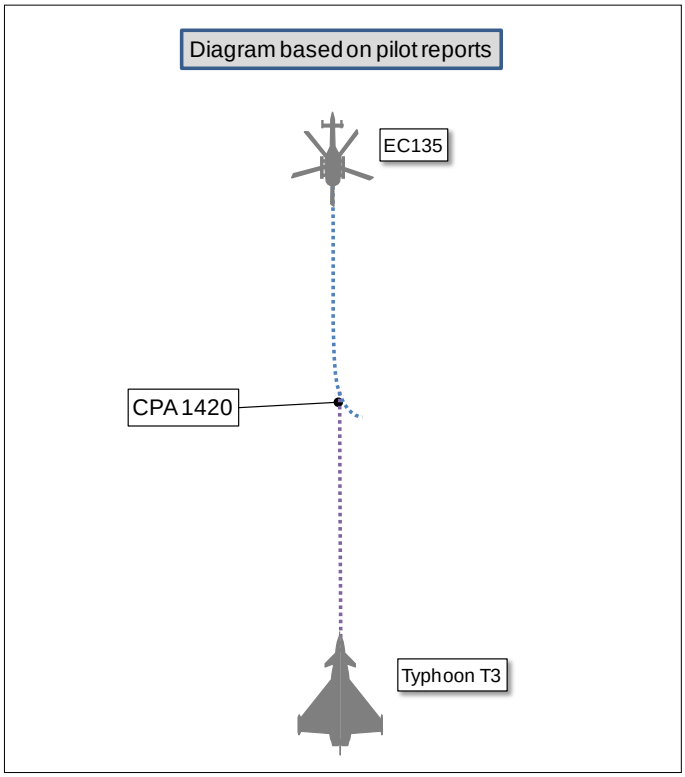
AIRPROX REPORT No 2013001

Date/Time:	11 Jan 2013 1420Z	
Position:	5308N 00347W (28nm ESE RAF Valley)	
Airspace:	Lon FIR	(*Class: G*)
	Reporting Ac	*Reported Ac*
Type:	EC135	Typhoon T3
Operator:	Civ Comm	Mil Trg
Alt/FL:	400ft (Rad Alt)	360ft (RPS 1011hPa)
Weather:	VMC CAVOK	VMC CAVOK
Visibility:	10km	40km
Reported Separation:	200ft V/0m H	1-2000ft V/0m H
Recorded Separation:	NR	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE EC135 PILOT reports conducting a Police task along the River Conwy, heading 180° at 60kt. He was operating autonomously under VFR in VMC, monitoring a VHF common frequency. The dark blue and yellow helicopter had HISLs and both landing lights selected on, as was the SSR transponder with Modes A, C and S. The ac was fitted with TCAS 1. He stated that there had been several TCAS indications of 'fast jet contacts' before the incident and, consequently, that all the crew had a 'raised level of lookout'. Two further non-conflicting contacts were indicated on TCAS immediately prior to a third contact in the 12o'clock position at a range of 1nm, which triggered a TCAS TA. A Typhoon ac was visually acquired within 1sec, heading directly towards him at the same level. He took immediate avoiding action, turning L and descending steeply to approximately 50ft MSD; the Typhoon was seen to pass directly overhead with approximately 200ft V separation.

He stated that all the helicopter occupants felt that the necessary avoiding action could not have been achieved had they not had a TCAS warning.

He assessed the risk of collision as 'High'.

THE TYPHOON T3 PILOT reports instructing a pre-deployment low-level intercept training sortie in the rear seat, with the front-seat pilot student handling the ac at low-level; the instructor pilot did not see the helicopter due to reduced visibility from the rear cockpit. They were operating in VMC with a TS from LATCC(Mil). The grey ac had HISLs and navigation lights selected on. The SSR transponder was selected on with Modes A and C. The ac was not fitted with Mode S or an ACAS. The student was transiting back to the start point at low-level and, approximately 5sec after rolling out of a RH turn, he saw a police helicopter directly ahead, at a range of 0.5nm and slightly below, at 'approximately 150ft'. The student immediately avoided by climbing; the miss distance could not be assessed accurately as they passed directly above the helicopter. The instructor also noted that, whilst the ac's radar was 'looking' in the correct location to pick up the helicopter, no pre-incident radar detection was indicated.

The instructor assessed the risk of collision as 'Medium'.

[UKAB Note(1): The RAF Valley weather was reported as follows:

METAR EGOV 111350Z 16013KT 9999 FEW038 BKN140 08/05 Q1015 BLU NOSIG
METAR EGOV 111450Z 16010KT 9999 SCT043 BKN080 BKN180 07/04 Q1014 BLU BECMG 7000 -RA BKN020 WHT]

BM SAFETY POLICY & ASSURANCE reports that this Airprox occurred in VMC at approximately 1420 on 11 Jan 13, between a Typhoon and an EC135. The Typhoon pilot was operating VFR at low-level in communication with LATCC(Mil) West Tac, as part of a formation conducting low level intercept trg. The EC135 pilot was operating VFR on a Police task in the vicinity of the River Conwy, not in receipt of an ATS.

The EC135 pilot can be observed on the radar replay operating at around 600ft (SSR Mode C information) and passed outside NATS surveillance coverage at 1414:13; he did not re-enter coverage until after both the reported time of the occurrence and the end of the radar replay. At this point, the Typhoon pilot was operating approximately 5nm SSE of the EC135, indicating FL101.

The Typhoon pilot was alternating between medium and low level and, at 1420:21, passed outside NATS surveillance coverage, re-appearing at 1421:21 as he climbed out from low level. At the point that radar contact was lost, the Typhoon pilot was already in receipt of a BS, having been advised by West Tac that they had, "*lost radar contact*". On this basis, West Tac was unable to affect the outcome of the occurrence.

HQ (AIR) OPS reports that this was undoubtedly an alarming incident for the helicopter crew. A slow moving helicopter will always appear to be virtually stationary to the pilot of a fast jet until a late stage, and limitations of the human visual system mean that detection will be problematic. As shown in this case, on board systems also cannot be relied on to provide timely warning, and all aircrew must do all that they can at the sortie planning stage to ensure they are de-conflicted from other airspace users. The NW Police Helicopter Operations team recently met with RAF Valley Stn Ops personnel to discuss potential de-confliction procedures, and to highlight likely areas of operation/conflict. They were encouraged by RAF Valley to notify ATC/Ops when they receive a tasking which would place them in the 'threat band' for fast jet operations, so that Valley ATC might warn other airspace users. Unfortunately, in this case they did not do so, and so the Typhoon had no prior warning of the Police helicopter's presence.

Finally, this incident gives further justification for other helicopter agencies, such as Police, pipeline and Helimed, to be given read-access to RAF Planning tools (such as the soon to be introduced CADS system) so that they may be forewarned about planned RAF operations in a particular area and thus may take extra measures to de-conflict (such as obtaining an ATS).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board commenced by establishing that although there was a large quantity of recorded data available, unfortunately none of it covered the Airprox incident and therefore that the Board's deliberations were wholly dependant on the pilots' reports.

The Board first discussed the pilots' actions. From the narrative of the incident as described by the helicopter pilot it would seem that TCAS played a vital role in mitigating this potential mid-air collision. The crew's actions in maintaining a vigilant lookout, especially given the nature of their task which involved searching along a ground feature, was commended and subsequently proved its worth. Members opined that the pilot's sighting of the conflicting head-on Typhoon at a range of 1nm was probably due to his 'cued' lookout from the TCAS traffic indication. Members also remarked that an effective lookout scan was an essential activity at all times and even more so at low level in class G

airspace. Several pilot Members remarked that if Police activity is pre-planned and of a non-urgent nature, use of the Civil Air Notification Procedure (CANP) would afford the helicopter and crew some protection [UK AIP ENR 1.10-12 para 5 refers]. The Low Flying Cell Advisor informed the Board that some degree of protection could be afforded with as little as 1hr warning of a CANP.

The Typhoon pilot recognised the helicopter at an estimated range of 0.5nm, some 4sec flying time at their reported closing speeds, in what was undoubtedly a busy cockpit. Whilst the Typhoon crew were satisfied that they had avoided the helicopter by a margin of 1-2000ft, the helicopter pilot reported a mis-distance of 200ft. Given that the Typhoon crew were unsighted, but that the helicopter pilot was not, the Board was of the opinion that normal safety margins had not been maintained. Helicopter pilot Members also reminded the Board that even if an ac manoeuvers to miss, helicopters are highly vulnerable to the wake of a passing ac. Whilst the precise geometry of the conflict in the seconds leading up to the CPA could not be established, the Board noted that the Typhoon radar did not provide warning to the crew. From the helicopter pilot's reported position, in the bottom of a long N-S valley, the Board did not consider that terrain screening was a factor.

Both ac were operating legitimately in class G airspace and the crews were equally responsible for 'see and avoid'. They were approaching head-on and were both required to give way, which they did, albeit having sighted each other at a late stage. The Board opined that although the sightings were later than ideal, given that the ac were approaching head-on the pilots saw each other as early as might reasonably be expected. As such, although the Board regarded the Cause as a conflict and were of the view that effective action was taken, it was also felt that the late sightings resulted in safety margins that were much reduced below normal.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A conflict in Class G airspace.

Degree of Risk: B.