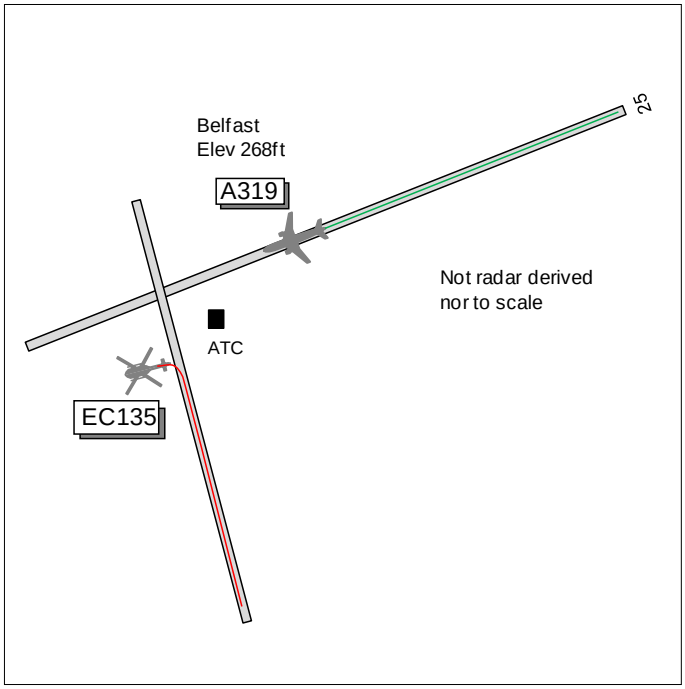
AIRPROX REPORT No 2011152

Date/Time:	27 Oct 2011 1831Z (Night)	
Position:	5439N 00614W (0·5nm SW Belfast/Aldergrove - elev 268ft)	
Airspace:	ATZ	(*Class: D*)
	Reporting Ac	*Reported Ac*
Type:	A319	EC135
Operator:	CAT	Civ Trg
Alt/FL:	300ft↑ QNH (1009mb)	300ft QNH
Weather:	VMC CLBC	VMC NR
Visibility:	10km	>10km
Reported Separation:	200ftV/NR H	NR
Recorded Separation:	NR	



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE A319 PILOT reports departing Belfast under IFR and in receipt of an Aerodrome Control Service (ACS) from Belfast Tower on 118·3MHz, squawking 7025 with Modes S and C. The visibility was 10km in VMC and the ac's anti-collision, nav and strobe lights were all switched on. They were cleared to line-up RW25, take-off clearance received and after departure a L turn to PEPOD. During the early stages of the take-off roll ATC advised them to climb straight ahead after departure, which they acknowledged. At a late stage of the take-off roll they saw traffic moving from S to N O/H the aerodrome approaching the RW. Concerned once airborne climbing through 300ft QNH at 180kt and to maintain separation, they made a 30° R turn. They asked ATC for information on the traffic who acknowledged that the traffic was turning S. At one point vertical separation of 200ft was seen on TCAS; however, the lateral separation was difficult to gauge as it was dark. He assessed the risk as high.

THE EC135 PILOT reports flying a dual proficiency check flight from Belfast and in receipt of a RCS from Belfast Tower on 118·3MHz, squawking an assigned code with Mode C; TCAS was fitted. The visibility was >10km in VMC and the helicopter's nav and tail HISL were switched on. The TRE was seated on the LHS and had elected to fly a demonstration cct during the night phase of the sortie being conducted in the Southern sector (S of Tower and RW25 and W of RW35 within the aerodrome boundary). They were cleared for take-off from the RW35 numbers for a LH cct not above 1000ft QNH SVFR and were also informed of IFR traffic shortly departing RW25. They conducted a CAT A clear area departure heading 350°, climbing at 40kt and increasing to 65kt and executed an early L turn at 300ft QNH onto 170° to remain S of the Control Tower in compliance with the local procedure. During the L turn ATC requested that they turn S immediately and not to fly any closer to RW25. As the TRE, the HP, had already passed through heading 270°, ATC was advised of this and the LH turn was continued onto a S'ly heading, reporting the A319 in sight. The A319 was not seen by him in the RH seat as they were in a L turn before the A319 became airborne; however, it was seen later over his shoulder about 2-3nm away when they were steady on 170° as the A319 flight was asked to report its passing level, which was 2000ft. He didn't recall receiving any TCAS TA indication and he assessed the risk as none. On completion of the sortie, ATC asked the crew to contact them by land-line and they were informed of the departing A319 crew's concern of their proximity and that ATC would be conducting a review. As he was P1 (u/s) and a local pilot, he

participated in the review; however, on returning to his operational flying duties he was requested to complete an Airprox report form for the incident.

THE BELFAST ADC reports the EC135 was routeing from Crumlin back to its dispersal via RW35. The A319 flight was cleared for take-off from RW25 with a L turn to PEPOD after departure. The EC135 pilot then requested to "fly another cct" which was approved, expecting the helicopter to route S'bound back to its previous operating area. He amended the A319's departure instruction to fly on the RW track after departure as he did not want it turning towards the helicopter; at this time the A319 was already on RW25. During the A319's departure he saw the EC135 flying in a N'ly direction towards RW25 so he instructed the flight to turn L immediately to remain S of the departing A319. The A319 crew then queried the position of the helicopter and started to turn away from it to the NW, the Capt later confirming that he turned 30° to the R after seeing the helicopter. Once the A319 was above 2000ft he cleared the flight towards PEPOD. The EC135 finished its cct and landed normally.

ATSI reports that the Airprox occurred at 1831:15 (night), at Belfast Aldergrove, within the ATZ, Class D CAS, which consists of a circle 2·5nm radius, centred on the mid-point of RW07/25 and extending from the surface to 2000ft above aerodrome elevation (268ft).

The A319 was departing IFR from RW25 on a flight from Belfast Aldergrove to London Stansted. The EC135 helicopter was operating SVFR with a locally based pilot training under the supervision of an instructor who was not locally based. The instructor had requested an additional visual cct on RW35. The Aldergrove Manual of Air Traffic Services, Part 2, Section 2-28, Paragraph 3.4, Parking area for the EC135 helicopter operations, states:

> 'The helicopter will park adjacent to the PSNI hangar where two pans are available. The helicopter will lift directly to/from these pans and does not require the use of runways or taxiways.'

Earlier in daylight hours, the EC135 whilst training, had been lifting from the threshold of RW35 on RW track, remaining S of the control tower line and RW25, in compliance with local procedures. The controller had been providing an ACS (Tower) for 40min prior to the incident. Workload was assessed as medium and official night was 1714 UTC (AIP SS/SR table). CAA ATSI had access to RT and area radar recordings, together with written reports from both of the pilots, the controller and ATSU investigation. The area radar recordings did not show the ac returns below an altitude of 900ft.

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The A319 flight had received an airways clearance at 1802:33, *"…cleared to Stansted via Lima one zero climb to altitude five thousand feet squawk is seven zero two five,"* which was acknowledged correctly by the A319 pilot.

The EC135 helicopter was on a training exercise and transferred from Radar to Tower at 1811:55, fully established on the ILS at 4nm. The EC135 pilot requested a go around followed by a L turn to operate over Crumlin (S of the airport) at 1000ft. The controller approved a L turn SVFR towards Crumlin.

At 1826:37, the EC135 pilot reported, *"…the southern sector I'd like to join er straight in for a 35 direction"*. The ADC cleared the flight to route to the RW35 threshold, which was correctly read back. At 1828:18, the EC135 pilot reported on final for RW35 intending to position to dispersal. The Tower controller responded, "(*EC135 c/s) route to your dispersal land at your discretion surface wind is two five zero degrees eight knots."* This was acknowledged by the EC135 pilot.

At 1828:46, the A319 flight was cleared to line up and wait RW25 and at 1829:43, the A319 was given take off clearance, *"(A319 c/s) after departure turn left on track PEPOD Runway two five cleared for take-off surface wind is two five zero degrees eight knots."* The A319 pilot acknowledged, *"???? After departure er left turn to PEPOD and cleared for take-off Runway 25 (A319 c/s)."*

At 1830:04, the EC135 instructor decided to demonstrate one more approach and transmitted, *"(EC135 c/s) er just request er one last er lefthand circuit back on Runway three five please."* The controller responded, *"(EC135 c/s) that is approved not above altitude one thousand feet please I have IFR departure will be turning left shortly."* The EC135 pilot acknowledged, *"Roger not above er altitude one thousand feet one zero one zero (EC135 c/s)."* The controller's written report and subsequent telephone conversation indicated that the controller had an expectation that the helicopter would reposition from dispersal routeing directly S of the airfield towards Crumlin for another approach to RW35.

In order to provide separation from the helicopter's southerly departure, the controller then instructed the A319 flight, *"…after departure maintain runway track initially please."* The A319 was in the early stages of the take-off roll and the A319 pilot replied, *"(A319 c/s) roger we're rolling."*

As the A319 departed, the controller observed that the helicopter was departing N and at 1831:12 the controller instructed, *"(EC135 c/s) turn left immediately do not route towards the active runway."* The EC135 pilot responded, *"Yeah we are we're er turning through two seventy now ???? in sight."* The A319 pilot transmitted, *"(A319 c/s) we have er traffic on the left advise."* The controller replied, *"It's a Police helicopter I have both of you visual"* and, *"turning south now it's clear of you."* The unit radar recording shows that the CPA between the ac was 0·2nm (370m). The EC135 pilot's written report and subsequent telephone conversation indicated that the pilot was departing from the RW35 threshold, initially N making a L turn onto a heading of 170° but remaining S of the Tower line, in a similar manner to that approved earlier in the day.

The A319 pilot had been given take off clearance without TI regarding the EC135 helicopter. The A319 pilot's written report indicates that during the late stage of take off, traffic was observed overflying the airfield from S to N, approaching the active RW. When airborne the A319 pilot initiated a R turn of 30° to maintain separation.

At 1831:50, in response to a request from the controller, the EC135 pilot reported at an altitude of 900ft and the A319 pilot reported passing an altitude of 2000ft for 5000ft. The A319 flight was then cleared L turn on track PEPOD and transferred to radar.

The ATSU investigation report and RT recordings suggest that the controller was engaged in a conversation with the ATSA just prior to the incident, which may have been an aggravating factor in the controller misperceiving the helicopter pilot's intentions.

As a result of the incident and in consultation with CAA SRG appropriate unit action has been taken with additional training for the controller and with lessons learned material disseminated within the unit.

The A319 was already commencing the take-off roll when the EC135 helicopter pilot requested a cct on RW35. A number of factors may have caused the controller's misperception and lack of situational awareness regarding the helicopter pilot's intentions:

The controller had been in position for 40min and may not have been fully familiar with the earlier training requirements of the EC135 helicopter.

In operational circumstances the EC135 would normally lift directly from dispersal and the controller's haste in approving the cct may have reflected a pre-disposed assumption that the helicopter would depart from dispersal.

The controller's conversation with the ATSA just prior to the incident, may have been an aggravating factor in the controller misperceiving the helicopter pilot's intentions.

The Airprox occurred at night whilst the EC135 was operating SVFR. The controller was responsible for providing the separation between SVFR and IFR traffic within the vicinity of the cct. The A319

flight had been given take-off clearance before the EC135 pilot requested the additional cct. The controller approved the cct, "…*that is approved not above altitude one thousand feet please I have IFR departure will be turning left shortly."* The phraseology used was ambiguous, implying the take-off clearance but without specific instructions or TI that would have provided separation from the departing A319.

The controller mistakenly assumed that the EC135 would route from the RW35 threshold directly to the S. However the EC135 pilot's expectation was to depart into a visual cct from RW35 threshold in a similar manner to that previously approved (remaining S of the Tower line and RW25). This resulted in the A319 and EC135 departing from crossing RWs at the same time.

In the absence of any TI, the A319 pilot departed, unaware that the EC135 helicopter was approaching, at night, from the S. The A319 crew perceived that there was a conflict and the pilot took action to ensure that separation was maintained, by turning R 30° immediately after departure.

The EC135 helicopter was a training Flight (CAT Z) and the A319 should have been afforded a higher priority. Holding the EC135 until the A319 was airborne would have resolved any separation problems. The controller's haste in approving the cct was done without the use of appropriate phraseology or clearances to provide the required separation or aid the situational awareness of the pilots. MATS Part 2, Appendix E, Page 2, Paragraph 1.1, states:

> '…..Incidents and accidents have occurred in which a contributing factor has been the misunderstanding caused by the use of non-standard phraseology. **The importance of using correct and precise standard phraseology cannot be over-emphasised.'**

When the A319 was departing IFR at night from RW25, the controller approved the departure of the EC135 SVFR from RW35, without ensuring that an appropriate form of separation existed between the 2 ac.

The following were considered to be contributory factors:

An appropriate departure clearance was not provided to the EC135 helicopter and the phraseology used by the controller was ambiguous, implying a take-off clearance without specific instructions.

The controller did not have full situational awareness of the helicopter pilot's intentions and misperceived that the helicopter would route S from the RW35 threshold.

The EC135 pilot assumed that he was cleared to make an additional cct to RW35 in a similar manner to that previously approved during the day.

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 video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC authorities.

Members sympathised with the A319 crew's predicament. It was during their take-off roll that ATC passed an amendment to their departure, not best practice, to climb straight ahead, which they acknowledged before they saw traffic approaching the RW from their L, apparently on a conflicting flightpath. It would have been difficult to judge the helicopter's separation from its lights in the circumstances and, concerned as to its intentions, the A319 crew turned R 30° after departure. On requesting information on the traffic from ATC, the ADC told them that he had both of them in sight and that it was turning S. The reason the EC135 had been in that position was because the ADC had assumed that the helicopter would lift from its dispersal and depart to the S. The EC135 pilot had requested "a LH cct back onto 35", after the A319 flight had been issued take-off clearance, and the ADC had hastily approved it without issuing specific instructions to take-off, route, TI or any

clearance limit to its flight other than 'not above 1000ft'. The EC135 crew had been operating earlier, during daylight hours, to the S of RW25 from the RW35 threshold in accordance with normal day procedures, and although the ADC was expecting a S'ly departure from dispersal, the pilot's request for a LH cct back onto 35 should have been a clue that this expectation was incorrect. The EC135 crew did not query the ATC instruction issued, accepting it as an implied take-off clearance without specific instructions. The ADC had a responsibility to separate the 2 flights at night and it was only when he saw the EC135 transitioning to the N and heading towards RW25 that he instructed the pilot to turn L immediately and not route towards RW25. By then the EC135 was already turning through a W'ly heading and its pilot reported the A319 in sight. Members agreed that, technically, the ADC was providing reduced separation in the vicinity of the aerodrome as he had both ac in sight, but this was as the situation was unfolding, not by following a predetermined plan. With hindsight, the EC135 should have been restricted, ideally by delaying its take-off until after the A319 had departed. As it was, the A319 crew was unaware of the EC135's departure, because of the lack of TI from the ADC, which had led to their concern and which caused the Airprox.

As the EC135 pilot called for departure after the A319 flight had been given take-off clearance, the timings were not ideal for the ADC to pass TI to the A319 crew during a critical stage of flight even if he had been aware that the helicopter was going to take off towards the Airbus. As it was, by the time the ADC saw the EC135, it was already turning away and he updated the A319 crew's SA late, when they queried it. Nevertheless, although the A319 crew was unaware of the helicopter crew's intentions and turned R 30°, the EC135 pilot was always intending to turn S before reaching a line parallel to RW25 through the Tower and the unit radar recording shows the separation as 0·2nm at the CPA. These elements were enough to allow the Board to conclude that any risk of collision had been quickly and effectively removed.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: In the absence of TI, the A319 crew was concerned by the proximity of the EC135.

Degree of Risk: C.