

AIRPROX REPORT No 2011106

Date/Time: 6 Aug 2011 1314Z (Saturday)

Position: 5600N 00357W (2.3nm
NNE of Cumbernauld A/D
- elev 350ft)

Airspace: FIR/ATZ (Class: G)

Reporting Ac Reported Ac

Type: AS355 Tecnam P92

Operator: Civ Trg Civ Pte

Alt/FL: 1000ft 950ft
QFE QFE

Weather: VMC NK VMC CLOC

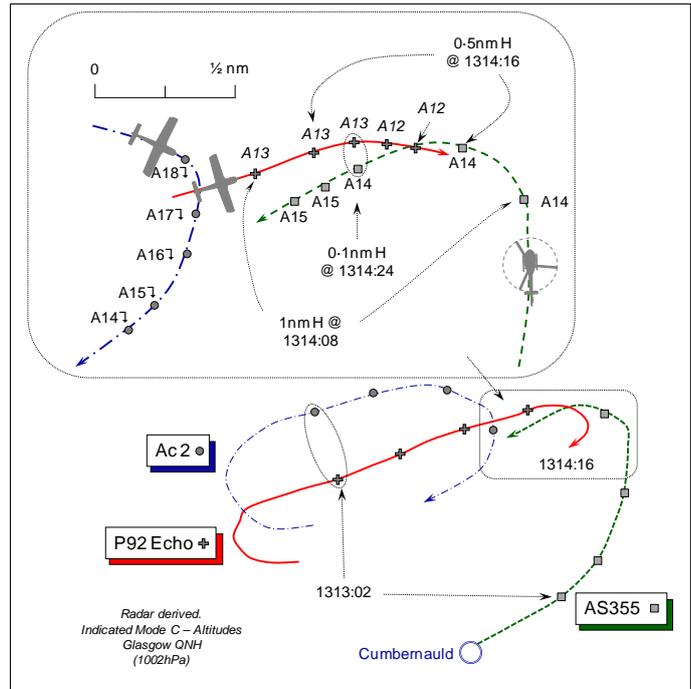
Visibility: 10km 10km

Reported Separation:

100ft V/nil H Not seen

Recorded Separation:

100ft V/0.1nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE AEROSPATIALE SQUIRREL II (AS355) PILOT reports he was conducting a licence skills test on a company pilot following a course of approved type rating training. The helicopter is coloured blue and the HISLs were on. A squawk of A7000 was selected with Mode C on; TCAS is not fitted.

On climb-out into the Cumbernauld cct for RW08 at 100kt whilst in communication with Cumbernauld RADIO on 120.6MHz, another ac [Ac 3] called to report that there were two ac in the downwind heading in the wrong direction. This raised their awareness and they established visual contact when they commenced the downwind leg level at 1000ft (1007hPa). When established downwind, one ac turned 180° and joined the downwind leg about ½nm in front of them [Ac 2]. The other ac – the white P92 [registration given] – that had been spotted about 1nm away, continued heading towards them and turned about 100ft beneath their helicopter. He as the instructor and PIC had issued a warning on RT to the P92 pilot before the Airprox occurred and he asked the A/G Operator to log it. There was not enough time for avoiding action and he assessed the Risk as 'medium'.

After landing he went to discuss the Airprox with the A/G Operator and asked if he could locate the P92 pilot so they could discuss the incident further. The P92 pilot didn't believe he had done anything wrong and also said that even though he had passed 100ft below it, he never saw his AS355 helicopter.

THE TECNAM P92 SUPER ECHO PILOT reports he was returning VFR to Cumbernauld from Glenforsa Mull and in communication with Cumbernauld RADIO on 120.6MHz. A squawk of A7000 was selected with Mode C on. His aeroplane is predominantly white with orange and blue stripes; no lighting is fitted.

He called Cumbernauld and advised that he was joining from Denny [3nm NE of Cumbernauld A/D] downwind for RW08, which Cumbernauld RADIO acknowledged. Adjacent to the RW26 numbers, he called downwind for RW08 to land; Cumbernauld RADIO acknowledged this call. Then he heard a radio call for another ac also joining downwind – Ac2. His P92 was No 1 in the cct and Ac2 was No 2, but he was not visual with it. At the end of downwind leg, when he was just to the N of Banton at 80kt [2nm NW of the A/D], he saw what he could only assume was Ac2 - a faster low wing aeroplane

- about 200ft to his L and about 50ft higher as it overtook him. He presumed that his P92 had not been seen by the pilot under his R wing; he also heard a downwind call on RT from a third ac – Ac3. [UKAB Note (1) Ac2 – that is presumed to be the Cherokee referred to later in the ATSI report - is shown on the radar recording to L of the P92 only at the start of the first downwind leg at about 1.5nm N of the A/D at 1310:49. Ac2 is above the P92 as Ac2 overtakes and crosses ahead from L – R descending to 1200ft ALT.]

While considering his reaction, Cumbernauld RADIO advised of a possible conflict. He transmitted that he was entering a R orbit to allow Ac2 and Ac3 to clear, so he flew a long elliptical RH orbit on a heading of 080° to rejoin the cct downwind for RW08; Ac3 was not seen. [UKAB Note (2): Ac3 passed abeam to starboard of the P92 just after 1313:02, heading downwind but with no Mode C displayed.] He then heard an RT call from the AS355 pilot reporting an Airprox as he rejoined downwind and landed.

Later he spoke to the A/G Operator and went to see the pilot of the AS355 pilot – to whom he explained his decision and actions and that his P92's flight path was outside the cct. However, the AS355 pilot claimed that his P92 was flying in the opposite direction to cct traffic within the cct area about 150ft from the AS355. Since he did not see the AS355 at all he cannot disagree. The AS355 pilot said to him that he would not progress the Airprox report so he apologised and thanked the AS355 pilot.

He then sought advice from his previous instructor as to what might have been a better course of action. He accepts that a better decision might have been to make a circular orbit and rejoin on base leg, but he wasn't sure where Ac3 would be when he completed his orbit. He thought his elliptical orbit was outside the cct well clear of normal downwind traffic, but the AS355 pilot disagreed.

He should have alerted the No 2 - Ac2 - to his presence, let him go in ahead as No 1 and extended his downwind leg to give him space, but he was concerned about Ac 3 [which ultimately joined ahead]. Orbiting back to downwind might have been OK if he had gone a mile further to the N. A valuable lesson learned he opined.

ATSI reports that Cumbernauld A/D is situated within Class G airspace. The Aerodrome Traffic Zone (ATZ) is a circle radius 2nm centred on the midpoint of RW08/26, extending from the surface to 2000ft above the aerodrome elevation of 350ft. An Air/Ground Communication Service (AGCS) is provided.

The AS355 crew departed for a local training flight to the N of Cumbernauld at 1235. About 20min later, when the helicopter was 3nm N of the A/D, the crew made a Practice PAN call, requesting to return for landing on the N side grass to RW08. After returning, the AS355 entered the LH cct for RW08 northern grass.

At 1306, the P92 pilot reported inbound from the E by the Falkirk Wheel (situated about 5nm E of the A/D), at 1800ft for a left hand cct to RW08. Shortly afterwards, the AS355 reported downwind for the northern grass. Approximately 2min later, the P92 pilot reported downwind for RW08 and this was followed by a late downwind call at 1311. The A/G Operator asked the P92 pilot if he was on a left base-leg. The P92 pilot reported over Banton (2nm NW of the A/D), turning base [but did not appear to do so]. The next RT call was from the AS355 crew, who reported going around.

In addition to the P92, a Cherokee [Ac2] had also reported downwind for RW08. The A/G Operator noticed that these two ac were potentially in conflict and warned both pilots accordingly. They both opted to make a right hand orbit. [This resulted in them turning R onto a reciprocal heading parallel to the downwind leg.] Whilst they were turning onto a reciprocal heading, another flight [Ac3] that was joining downwind reported sighting traffic below flying in the other direction. The A/G Operator confirmed there were two aircraft flying E - the P92 and the Cherokee [Ac2]. The pilot of the AS355 later commented in his written report that 'this raised awareness and we established visual contact when we commenced the downwind leg'.

The Cherokee pilot subsequently reported downwind. The P92 reported at the 'water features' turning downwind. (ATSI Note: The 'water features' are a reservoir and pond situated NE of the airport at the start of the downwind leg for RW08.) The pilot of the AS355 transmitted, "*that's not awfully clever*" and he would consider filing an Airprox. He later reported that an ac [Ac2 - the Cherokee] joined the downwind leg approximately 0.5nm in front of him. He added that the P92 'continued heading towards us and turned underneath us at approx 100ft below'. The radar photographs of the incident show two aircraft, both squawking A7000 and assessed to be the subject flights, on conflicting tracks.

[UKAB Note (3): The SAC (Prestwick) System recording shows Ac 2 turning R onto a downwind heading for RW08 from its orbit at 1314:08, descending through 1800ft QNH and turning astern of the P92 as the latter tracks easterly at 1300ft QNH. The AS355 is shown at this point in a L turn onto a downwind heading level at 1400ft QNH at a range of 1nm. Just before the AS355 steadies downwind indicating 1400ft QNH, the P92 commences a gentle R turn, still 100ft below the helicopter that has closed to a range of 0.5nm. The AS355 and P92 pass 'starboard to starboard' 0.1nm abeam one another at 1314:24 with 100ft vertical separation. Subsequently the AS355 climbs to 1500ft QNH, and follows Ac2 downwind whilst the P92 descends marginally to 1200ft and turns R onto the downwind leg astern of the AS355.]

CAP 413 (The Radiotelephony Manual), Chapter 4, Page 32, states:

'An AGCS radio station operator is not necessarily able to view any part of the aerodrome or surrounding airspace. Traffic information provided by an AGCS radio station operator is therefore based primarily on reports made by other pilots. Information provided by an AGCS radio station operator may be used to assist a pilot in making decisions, however, the safe conduct of the flight remains the pilot's responsibility'.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, RT and radar video recordings and a report from the appropriate ATC authority.

At aerodromes such as Cumbernauld where an aerodrome control service is not provided, pilot Members were keen to emphasise that keeping everything standard was a great advantage, particularly for those with limited experience to fall back on. By joining the cct downwind the P92 pilot had not allowed himself sufficient opportunity to establish what was happening within the cct and pilot Members articulated the advantages of an overhead join in this respect. The 'standard' overhead join enables pilots to fly safely above other cct traffic until they have spotted all the ac already in the cct, including here the AS355, and gives the joining pilot time and space to integrate his ac into the pattern so formed safely, before descending to cct height. Three ac had all joined the RW08 LH cct downwind at cct height, which reduced the available time for pilots to assimilate what was going on and act appropriately. Moreover, as the P92 pilot was established ahead of both Ac2 and Ac3 downwind, these pilots should have followed him in the pattern but the radar recording revealed that Ac2 had pressed on, overtaking the P92 in the cct initially, before turning R just as the P92 pilot did so as well. Fortunately, the pilot of Ac3 seemed to have recognised what was happening when he met the P92 and Ac2 going the opposite way in the cct area and issued a warning on the RT. The long elliptical RH orbit executed by the P92 pilot and Ac2, as revealed by the recorded radar data, was close to a reciprocal of the downwind leg and experienced pilot Members opined this was most unwise course of action and the Board agreed that it was part of the cause of the Airprox. The safest course of action would have been for the P92 pilot to continue on downwind and then turn base at the normal position but remain at cct height; he could then have crossed to the dead side and flown a dead side leg while assessing the cct traffic and judging when to make his turn on to downwind. All turns would then be to the L in the LH cct – as specified in the Rules of the Air. As it was, the P92 pilot was unaware of the AS355 until he heard the crew declare the Airprox; as he had not seen the helicopter at all when he flew under it this was also part of the Cause. The Board concluded that this

Airprox resulted because the P92 pilot repositioned by flying in the opposite direction to circuit traffic downwind and into conflict with the AS355, which he did not see.

Turning to the inherent Risk, the recorded radar data shows that this Airprox occurred just outside the ATZ boundary some 2-3nm N of the aerodrome. A helicopter pilot Member opined that this was a fairly wide cct for an AS355, but it was evident the PIC had been conducting a test which included various practice emergencies and the warning provided by the pilot of Ac3 might have induced the AS355 crew to expand their cct somewhat. This warning call was certainly a helpful heads-up for the AS355 crew climbing out, who had been established in the cct before either the P92 or Ac2 (the Cherokee) joined. Consequently, they were looking for Ac2 and the P92 as they turned downwind and fortunately spotted the former as its pilot turned in ahead. Although the AS355 crew's sighting of the P92 at a range of 1nm was somewhat less than ideal, there was a lot going on here and the AS355 crew probably saw the P92 as soon as they were able as they steadied downwind; however, the AS355 pilot reports that he was unable to take any avoiding action in the time available. Members considered that although the AS355 crew's sighting and reported 100ft vertical separation was sufficient to avert an actual collision, as the P92 pilot was unaware of the helicopter as it passed just 200yd away, the Board agreed unanimously that the safety of the ac involved had been compromised.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The P92 pilot repositioned by flying in the opposite direction to circuit traffic downwind and into conflict with the AS355, which he did not see.

Degree of Risk: B.