AIRPROX REPORT No 2014075

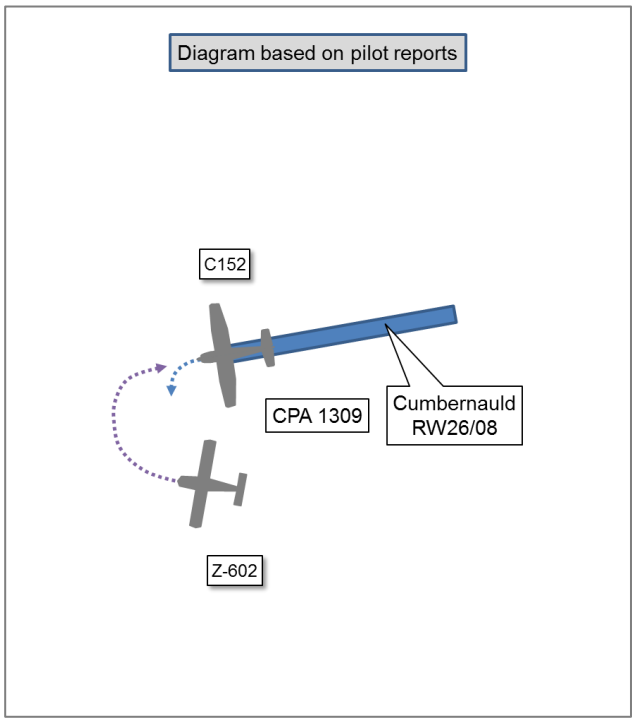
Date/Time: 30 May 2014 1309Z

Position: 5558N 00359W (Cumbernauld)

Airspace: Cumbernauld ATZ (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	C152	Roland Z-602[1]
Operator:	Civ Trg	Civ Pte
Alt/FL:	150ft QFE (1013hPa)	750ft QNH (NK hPa)
Conditions:	VMC	VMC
Visibility:	>20km	30km
Reported Separation:	50ft V/20m H	NK

Recorded Separation: NK



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C152 PILOT reports conducting an instructional sortie. The green and white aircraft had beacon, navigation lights and landing light selected on, as was the SSR transponder with Modes A and C. The aircraft was not fitted with a TAS. The pilot was operating under VFR in VMC, occupying the RHS with the student (PF) in the LHS. They were in receipt of an A/G Service from Cumbernauld Radio and were conducting a circuit detail on RW26 RH. Heading 260° at 75kt, and passing 200ft in the initial climb, the instructor was about to initiate a simulated EFATO[2] when he saw another aircraft in his left 10 o'clock position, less than ¼ mile away and 'just slightly high', crossing from left to right. He initially thought the other pilot was on a very low and tight crosswind join for RW26, but the other aircraft then turned right onto final approach for the opposite direction runway, RW08. The instructor immediately took control, levelled his aircraft and made a sharp left turn for avoiding action. After landing, the instructor spoke with the other pilot, who stated he had had a radio failure, that he did not join overhead because of this, and that the situation 'wasn't dangerous as he could see [the C152]'.

He assessed the risk of collision as 'High'.

THE Z-602 PILOT reports recovering to Cumbernauld with a complete electrical failure. The black and white aircraft had strobe lights selected on, as was the SSR transponder with Mode A and C. He was operating under VFR in VMC, not in receipt of a service. He was flying in company with another Zodiac Z-602 and used his mobile radio to remain in contact with the other pilot until it ran out of battery power[3]. He selected Cumbernauld as the nearest airfield and flew right-hand downwind for RW08. He could not see a windsock but did see another aircraft on the ground, tracking along RW08. He thought that this aircraft must have just landed and therefore that RW08 was the active runway. On turning final, he saw a white Cessna climbing out but did not believe there was a risk of collision because he could see the other aircraft. The pilot noted that in hindsight the aircraft he saw on the runway must have been back-tracking, and that he was under considerable stress as he did not know how long his engine would continue to run. He stated that it was not his intention to endanger other people, and that he had learned from this mistake.

He assessed the risk of collision as 'None'.

[1] A single engine, low-wing microlight with side-by-side seating and a choice of tricycle or conventional undercarriage.
[2] Engine Failure After Take Off.
[3] The other Z-602 pilot also provided a completed Airprox Report Form, on which he stated that after losing RT contact with the pilot in the emergency aircraft, he contacted Cumbernauld and reported the situation to them.

Factual Background

The weather at Glasgow was recorded as follows:

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METAR EGPF 301320Z VRB03KT 9999 FEW047 15/04 Q1026=
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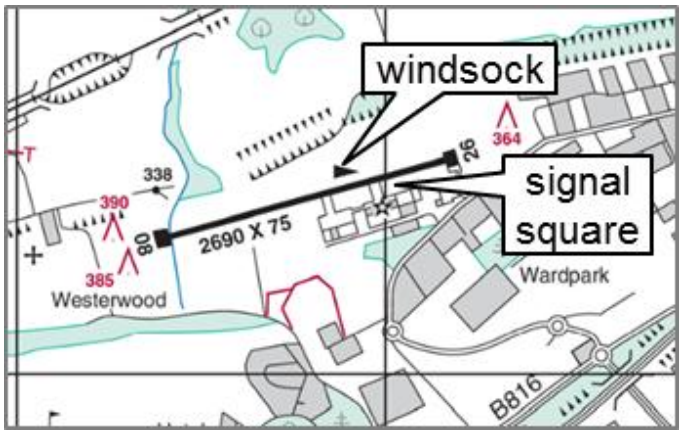
The windsock at Cumbernauld is situated on the north side of the airfield at the mid-point of the runway. The signal square is located on the south side of the airfield, between the hangar and the runway.



Analysis and Investigation

CAA ATSI

The Z-602 pilot was flying together with another Z-602 as a pair of aircraft operating VFR on a cross-country flight. At 1300:01, radar recording showed the two aircraft 11.7nm southwest of Cumbernauld tracking northwest with both aircraft squawking 7000. The subject Z-602 was not indicating Mode C but the other Z-602 aircraft was indicating an altitude of 2300ft. At 1303:24, the subject Z-602's SSR code faded from radar and at 1304:20 the primary return faded from radar.

At 1306:51, the C152 pilot reported on final for RW26 and at the same time the second Z-602 pilot called Cumbernauld Radio. However, the call was not clear, and the A/G Operator asked the pilot to try again. Meanwhile the C152 pilot was climbing out after departure. The Cumbernauld A/G Operator recalled sighting an aircraft (the emergency Z-602) making an approach to RW08 and observed the C152 pilot taking avoiding action.

The emergency Z-602 pilot landed on RW08 and radar recording showed the other Z-602 pilot position northeast of Cumbernauld right hand for RW26 before fading from radar. The other Z-602 pilot reported on right base at 1310:00, and reported he had lost sight of the emergency Z-602, believing it was behind him.

UKAB Secretariat

Both pilots shared an equal responsibility to avoid collision and not to fly into such proximity as to create a danger of collision[4]. Whilst it could be argued that the emergency Z-602 pilot was not required to conform to the pattern of traffic intending to land at Cumbernauld[5], this could only be practically achieved if other traffic was aware of his circumstances; in the absence of other information, such as a 7700 squawk, the pilot of a radio-failed aircraft would still practically need to conform to the pattern of traffic if possible because other pilots may not be aware of his emergency. If the commander of an aircraft is aware that another aircraft is making an emergency landing, he is required to give way to that aircraft[6].

[4] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).
[5] ibid., Rule 12 (Flight in the vicinity of an aerodrome).
[6] ibid., Rule 13 (Order of landing).

Summary

An Airprox was reported when a C152 and a Roland Z-602 were flown into proximity in the Cumbernauld visual circuit at about 1309 on Friday 30th May 2014. Both pilots were operating under VFR in VMC, the C152 pilot in receipt of an A/G Service from Cumbernauld Radio and the Zodiac pilot not in receipt of a service and conducting an electrical /radio-failure emergency landing.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, which unfortunately did not shown the low-level contacts of the aircraft involved, and a report from the appropriate ATC authority.

The Board first considered the actions of the Z-602 pilot. He had experienced a total electrical failure and was concerned that his engine might stop running. Using a hand-held radio, he had managed to communicate his predicament to another pilot in an identical aircraft who was accompanying him on the transit, but the hand-held radio subsequently failed when the battery ran out. The Board felt that his subsequent approach and landing to the reciprocal runway at Cumbernauld had been due to a number of compounding factors, including his misperception of the 'back-tracking' aircraft and his inability to see the signal square. However, members also opined that a number of actions could have been taken that would have both aided him in the conduct of his emergency and prevented the occurrence. Chief amongst these, in the prevailing good weather conditions, would have been a climb to the base of CAS, thereby giving the pilot time to plan and execute a successful forced landing should the engine have failed. An associated transit at height to the Cumbernauld overhead would then have placed him in a position to observe the pattern of traffic at the airfield, integrate with the aircraft within it, and perform a successful precautionary forced landing. Members also opined that both the Z-602 pilots may have been able to achieve a greater level of coordination if the emergency Z-602 pilot had communicated his arrival plan to the second Z-602 pilot who could have better shepherded the emergency Z-602 to Cumbernauld whilst communicating with them on his serviceable radio. Members were aware that this level of coordination would not commonly be practiced by non-military pilots, but nonetheless agreed that an overhead join for a precautionary forced landing would have been the more appropriate plan.

The Board noted that the C152 pilot had seen the Z-602 and took effective avoiding action at a late stage; however, they disagreed with the Z-602 pilot's assertion that the situation was not dangerous and considered that safety margins had been much reduced below normal. Ultimately, the Board agreed that the Airprox was caused by the Z-602 pilot conducting an approach to the reciprocal runway at Cumbernauld, albeit whilst coping with an emergency situation.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Z-602 pilot conducted an approach to the reciprocal runway whilst coping with an emergency situation.

Degree of Risk: B.

ERC Score[7]: 20

[7] 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.