

AIRPROX REPORT No 2013142

Date/Time: 29 Sep 2013 1439Z (Sunday)

Position: 5118N 00054W
(2.2nm SW Blackbushe)

Airspace: Lon FIR (Class: G)

Aircraft 1 Aircraft 2

Type: C152 Cirrus SR20

Operator: Civ Trg Civ Pte

Alt/FL: 800ft 1800ft
QFE (994hPa) QNH (NK hPa)

Conditions: VMC VMC

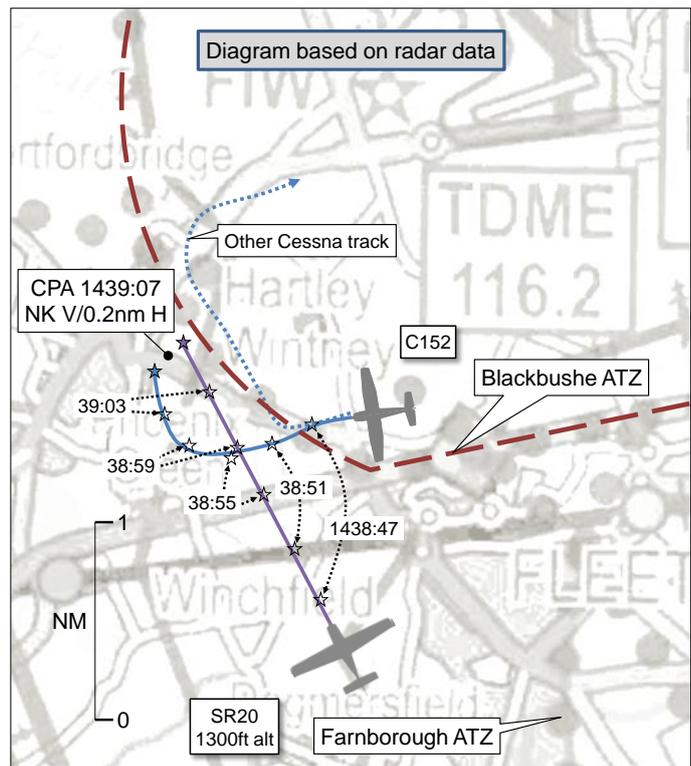
Visibility: 10km 10nm

Reported Separation:

100ft V/300m H 350ft V/1000ft H

Recorded Separation:

NK V/0.2nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE C152 PILOT reports returning to Blackbushe after instructing a student map-reading exercise. The orange and white aircraft had the landing light selected on, as was the SSR transponder with Modes A and C, he thought¹. The aircraft was not fitted with a TAS or ACAS. The pilot was operating under VFR in VMC, in receipt of an Aerodrome Flight Information Service from Blackbushe Information. Having joined overhead, he saw another Cessna taking off on RW07 as he was preparing to leave the dead side. He asked Blackbushe Information as to the intentions of the other Cessna pilot. They replied that he was staying in the circuit, so the C152 pilot elected to join the circuit behind the other Cessna and informed Blackbushe of his intentions. At that point he was 'number 2' of only 2 aircraft in the Blackbushe visual circuit. The Cessna ahead was flying a wider than normal circuit, although just within the ATZ. Flying right-hand downwind for RW07, behind the other Cessna, he lost sight of it as his student raised the nose to recover some height and because they were flying into a bright haze. As a result, he instructed the student to avoid turning onto the base leg until they could positively see the aircraft ahead. When they saw the other Cessna on final approach, they 'turned base' about 300m beyond where the C152 pilot would normally have turned. This put them just outside the ATZ. As they had extended downwind, they delayed the start of the descent until 'further into the base leg', and adjusted the base leg heading to bring them closer to the 'normal track'. As the student reduced power, heading 010° at 80kt and height 800ft, he pointed out a predominantly white, low-wing, single-engine aircraft on the starboard side in the 2 o'clock position in level flight. This aircraft crossed their track at what seemed to be at the same level, 300m away, travelling very quickly from right to left on a heading estimated to be 290°. The C152 pilot stated that he was not able to read the other aircraft's registration number due to its speed and track. He reported an Airprox to Blackbushe information at 14:39, describing the other aircraft as 'Cirrus-like' and was 'told a couple of minutes later by them' that the aircraft might have been [Cirrus SR20 registration], and that this information had been received from Farnborough Radar. The C152 pilot stated that although he didn't need to take avoiding action, the incident could have had a much higher risk of collision if they had turned onto the base leg at the usual point in the circuit. Extending the downwind leg meant they were not in the place they would normally have been, which in his view would have been right in the path of the other aircraft. The pilot noted that the conflicting aircraft was

¹ The radar replay did not display Mode C derived altitude data for the C152.

not in contact with Blackbushe, and that he was not aware of any other traffic in the Blackbushe ATZ other than himself, the other Cessna and rotary traffic operating on the northern side of the airfield.

He assessed the risk of collision as 'Medium'.

THE SR20 PILOT reports conducting a transit flight, flying 'between the Odiham, Farnborough and Blackbushe zones'. The white aircraft had navigation, strobe and landing lights selected on, as was the SSR transponder; the selected Modes were not reported². The aircraft was not fitted with a TAS or ACAS. The pilot was operating under VFR in VMC, in receipt of a Basic Service from Farnborough LARS(W). The pilot stated that a 'higher' service was not available due to controller workload. He believed he was flying at altitude 1800ft, in order to remain below 'traffic holding at 2000ft' and above 'circuit traffic outside zones'. The SR20 pilot was visual with a C152 in his right 1 o'clock position, crossing from right to left. He assessed that his track, heading 325° at 140kt, would have taken him behind the C152, but at 'shorter range' the C152 pilot turned right and the SR20 pilot elected to pass high and right as it was 'now obvious' that the C152 pilot was 'very wide base leg' for Blackbushe. The SR20 pilot stated that there was no risk of collision as he was visual with the C152 for some time before he passed it.

He assessed the risk of collision as 'None'.

THE FARNBOROUGH LARS CONTROLLER reports that shortly after taking over a very busy Farnborough LARS(W) position, a colleague informed him that a pilot not on the LARS(W) frequency was filing an Airprox against another aircraft that might have been on the LARS(W) frequency. No reference to the incident was made on the LARS(W) frequency and no further information was provided to the controller during the remainder of his shift. When he returned to work, after his 3 day break, he was informed that an aircraft in the vicinity of the Blackbushe ATZ had filed an Airprox against an aircraft that might have been on the LARS(W) frequency.

Factual Background

The weather for Farnborough (3.9nm southeast) was recorded as follows:

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METAR EGLF 291420Z 07011KT 9999 FEW025 20/14 Q1006
METAR EGLF 291450Z 07012KT 9999 FEW024 17/12 Q1006
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Analysis and Investigation

CAA ATSI

The incident occurred at 1439:07, 2.3nm southwest of Blackbushe Airport, within Class G airspace, just outside the Blackbushe ATZ, between a Cessna 152 and a Cirrus SR20. The Blackbushe ATZ comprises a circle of radius 2nm, centred at 511926N 0005051W on RW07/25 and extending to a height of 2000ft above aerodrome level (elevation 325ft), excepting that part of the circle located south of the M3 motorway.

The C152 pilot was operating under VFR in the right hand visual circuit for RW07 at Blackbushe Airport and was in receipt of an Aerodrome Flight Information Service (AFIS) from Blackbushe Information on frequency 122.300MHz. The UK AIP page AD 2.EGLK-6, dated 2 May 2013, states that the circuit height for light single-engine aircraft by day is 800ft (QFE), which equates to an altitude of 1125ft.

The SR20 pilot was operating on a VFR flight and routed to the southwest of Farnborough and then to the west of the Blackbushe ATZ. The SR20 pilot was in receipt of a Basic Service from Farnborough LARS(W) on frequency 125.250MHz.

² The radar replay displayed Modes A, C and S derived data for the SR20.

CAA ATSI had access to Farnborough and Blackbushe RTF recordings, area radar recordings together with written reports from the Farnborough controller and the pilots of both aircraft. Explanatory note (6) from the CAA certified speech transcript for Blackbushe Information states:

‘Throughout the period of this extract, transmissions to and from [C152 C/S] are clipped and in some cases appear to be missing from the original recording. The airport staff are aware of this issue.’

The Blackbushe FISO reported QFE as 994hPa.

At 1428:53, the SR20 pilot contacted Farnborough LARS(W) and reported 6 miles north of [departure airfield] routing to [destination] at 1400ft on 1006hPa, requesting a Basic Service. The Farnborough controller instructed the SR20 pilot to select a squawk of 0435 and agreed a Basic Service.

At 1433:44, the C152 pilot reported, “*descending deadside*” and was advised to report downwind. At 1436:34, the C152 pilot requested the intentions of the other Cessna pilot, who was climbing out; the FISO advised that he was remaining in the circuit. The C152 pilot reported that he would follow the other Cessna as ‘number 2’.

At 1437:27, the SR20 pilot was passing 3.4nm southwest of Farnborough at an altitude of 1300ft with the two Cessna aircraft in the circuit at Blackbushe. The C152 pilot reported downwind at 1438:27 and was advised to report final with one ahead. At this point the SR20 pilot was 2.7nm southwest of Blackbushe at altitude 1300ft. The lateral distance between the two aircraft was 0.9nm, as shown in Figure 1 below.

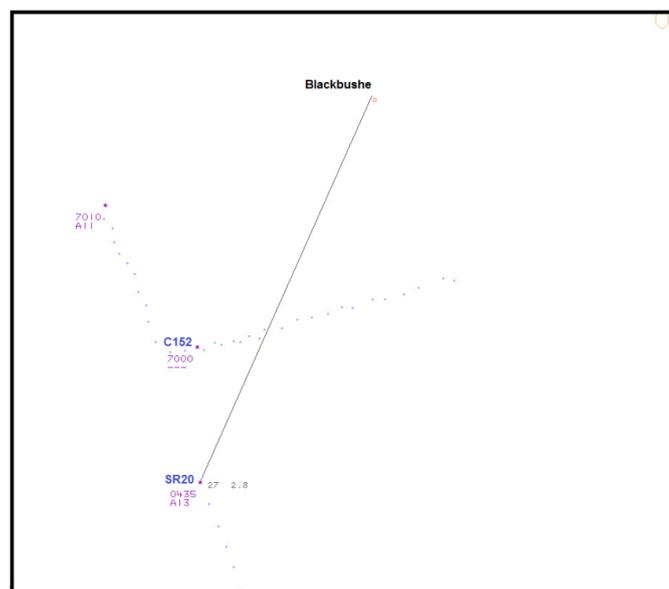


Figure 1: Swanwick MRT at 1438:27

At 1438:51, the SR20 passed 0.2nm behind the C152 which had extended the downwind leg to a position just outside the Blackbushe ATZ, as shown in Figure 2 below.

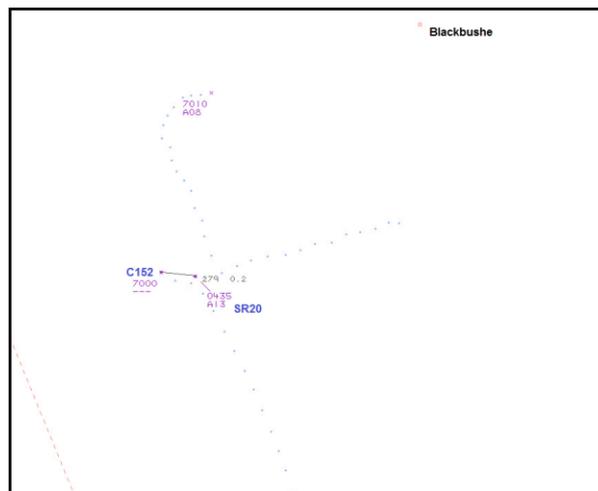


Figure 2: Swanwick MRT at 1438:51

The C152 pilot then turned crosswind and both aircraft tracked north-northwest, separated by 0.2nm. At 1439:07, the SR20 pilot was at altitude 1300ft, 2.3nm southwest of Blackbushe and was in the C152 pilot's 2 o'clock position at a range of 0.2nm, see Figure 3 below.

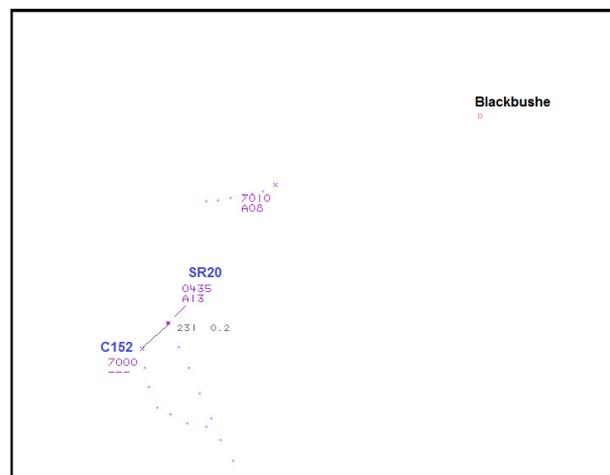


Figure 3: Swanwick MRT at 1439:07

The C152 pilot then commenced a right turn onto a northerly track and, at 1439:15, passed 0.2nm south of the SR20 which was just outside the Blackbushe ATZ, at a range of 2.1nm from Blackbushe, see Figure 4 below.

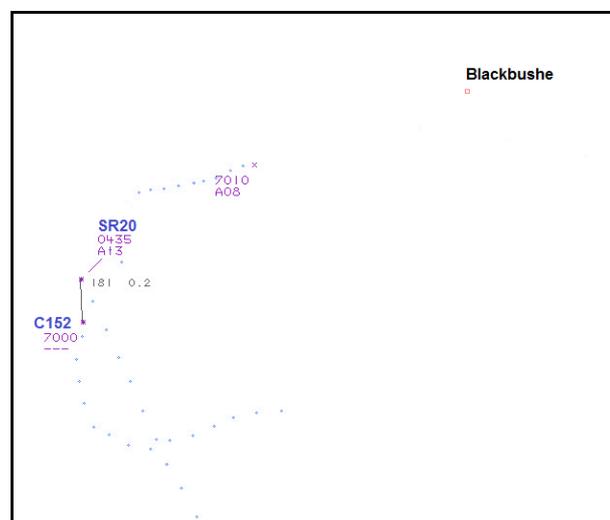


Figure 4: Swanwick MRT at 1439:15

Separation increased and the C152 pilot continued in the circuit without further incident. At 1449:01, the SR20 pilot was transferred to Farnborough LARS(N).

The SR20 was shown on radar to be at altitude 1300ft (QNH 1006hPa) and the C152 pilot's written report indicated flying at the circuit height of 800ft QFE 994, which converts to an altitude of 1124ft using QNH 1006hPa. It is likely that the C152 pilot was 200ft below the level of the SR20 with a minimum lateral distance of 0.2nm at the point when the C152 pilot indicated that the SR20 was first sighted in his 2 o'clock.

The SR20 pilot was in receipt of a Basic Service from Farnborough LARS(W) and passed just to the west of the Blackbushe remaining outside the ATZ. The controller was not required to pass traffic information or monitor the SR20. CAP 774, UK Flight Information Services, Chapter 2, Page 1, paragraphs 1 and 5, state:

'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.

Basic Service relies on the pilot avoiding other traffic, unaided by controllers/FISOs. It is essential that a pilot receiving this service remains alert to the fact that, unlike a Traffic Service and a Deconfliction Service, the provider of a Basic Service is not required to monitor the flight.'

'Pilots should not expect any form of traffic information from a controller/FISO, as there is no such obligation placed on the controller/FISO under a Basic Service outside an Aerodrome Traffic Zone (ATZ), and the pilot remains responsible for collision avoidance at all times. However, on initial contact the controller/FISO may provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update. A controller with access to surveillance-derived information shall avoid the routine provision of traffic information on specific aircraft, and a pilot who considers that he requires such a regular flow of specific traffic information shall request a Traffic Service. However, if a controller/ FISO considers that a definite risk of collision exists, a warning may be issued to the pilot.'

UKAB Secretariat

This incident presented a simple but changing geometry, resulting in a complex interaction of the Rules of the Air. Whilst the SR20 pilot was required to conform to the pattern of traffic intending to land at Blackbushe³, it could be argued that he made a reasonable assumption that the C152 pilot was not 'intending to land', but was leaving the circuit. His sighting of the C152 allowed him to make an assessment that he would pass behind, thereby giving way to traffic on his right⁴. The C152 pilot's late turn on to the base leg then placed the SR20 pilot in an overtaking position, which he discharged by remaining on the right⁵. Whilst the Rules of the Air is the statutory basis upon which flight in the UK is conducted, the importance of good planning, good airmanship and the sensible decision making which follows cannot be overstated. Ultimately, both pilots were equally responsible for collision avoidance⁶, a responsibility which they met.

Summary

A C152 and SR20 flew into conflict at 1439 on 29th September 2013, just outside the southwest boundary of the Blackbushe ATZ. The C152 pilot was operating under VFR in the visual circuit at Blackbushe, in receipt of an AFIS from Blackbushe Information. The SR20 pilot was to the west of the Blackbushe ATZ, in level transit, operating under VFR and in receipt of a Basic Service from Farnborough LARS(W).

³ *ibid.*, Rule 12 (Flight in the vicinity of an aerodrome).

⁴ *ibid.*, Rule 9 (Converging).

⁵ *ibid.*, Rule 11 (Overtaking).

⁶ Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first considered events from the perspective of the Instructor and Student in the C152. The 'bright haze' had resulted in both pilots losing sight of the Cessna ahead of them in the visual circuit and the Instructor understandably elected to extend downwind until he had regained visual contact. As a result, the C152 was flown outside the lateral limits of the ATZ. The Board recognized that the size of the visual circuit is not defined by the size of the ATZ but also noted that an ATZ is established at not inconsiderable cost in order to provide a degree of protection for traffic at an airfield. This protection is lost if traffic flies outside the ATZ; a factor worth bearing in mind by pilots in a similar situation to the C152 Instructor. The Board considered that the C152 pilots' lookout was then biased to the right, towards the base leg and final approach, in order to regain visual contact with the aircraft ahead when in fact, now being in 'open' Class G airspace, there was a clear imperative to ensure a rigorous all-round lookout. The SR20 approached from their left 9 o'clock position before they turned right, passed 0.2nm behind and was then seen by the C152 Student, at about CPA, in the right 2 o'clock position having been placed into an overtaking situation by the C152's turn onto the base leg.

Turning to the SR20 pilot, the Board noted that he had recognised he was transiting through airspace containing a number of closely spaced ATZs and had intended to mitigate the risk by flying at an altitude that kept him clear of 'circuit traffic outside zones' and below traffic 'holding at 2000ft'. In the event, this was not achieved; Blackbushe's elevation placed him just above circuit height. The SR20 pilot saw the C152 in good time and assessed that his track would take him behind it as it headed west-southwest. The SR20 pilot reported that as the C152 pilot then turned right it was now obvious that he was on a 'very wide base leg' for Blackbushe, which led some members to opine that it may at first have appeared to the SR20 pilot that the C152 was leaving the circuit to the west. The Board discussed the applicability of Rule 12 (Flight in the vicinity of an aerodrome) to the conduct of the SR20 pilot's flight and concluded that the SR20 pilot could have had a reasonable expectation that the C152 pilot was leaving the circuit. The fact that he wasn't doing so highlighted an important planning aspect; namely, that in transiting so close to the boundary of the Blackbushe ATZ, the SR20 pilot had reduced his options in the event of encountering unexpected traffic, or of traffic behaving in a way that was unexpected. By allowing greater lateral spacing, he would have had the opportunity to manoeuvre laterally to a greater degree and therefore to pass traffic without causing concern. The Board also noted that the base of CAS at the location of the Airprox is at altitude 3500ft; the SR20 pilot could have taken advantage of the increased vertical spacing that that afforded.

In the event, both pilots were operating under VFR in Class G airspace, with equal responsibility for collision avoidance. The SR20 pilot saw the C152 in good time and by dint of his overtake speed and assessment of the C152's flight path maintained visual separation, albeit with a later change of track by the unsighted C152 pilot. The Board concluded that this was a conflict in Class G airspace and that effective and timely action had been taken to prevent aircraft colliding.

PART C: ASSESSMENT OF CAUSE AND RISK

<u>Cause:</u>	A conflict in Class G.
<u>Contributory Factors:</u>	The C152 pilot's lookout was probably focused on the other circuit traffic.
<u>Degree of Risk:</u>	C.
<u>ERC Score⁷:</u>	4

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.