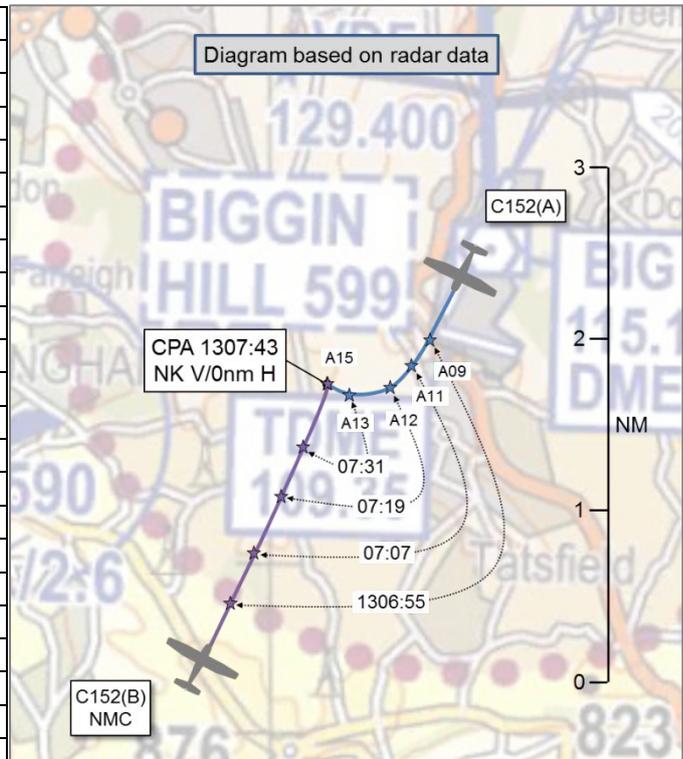


**AIRPROX REPORT No 2015130**

Date: 6 Aug 2015 Time: 1308Z Position: 5119N 00001E Location: Biggin Hill Airport

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152(A)	C152(B)
Operator	Civ Trg	Civ Club
Airspace	ATZ	ATZ
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Aerodrome
Provider	Biggin Hill	Biggin Hill
Altitude/FL	1500ft	NK
Transponder	A, C	A
Reported		
Colours	White	White
Lighting	Red fin strobe	Stobes, nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1000ft	1000ft
Altimeter	QFE	QFE (995hPa)
Heading	300°	030°
Speed	95kt	85kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	40ft V/40m H	Not seen
Recorded	NK V/0nm H	



**THE CESSNA 152(A) PILOT** reports that he was carrying out a circuit training detail on RW21RH in preparation for his student’s first solo. They heard the C152 (B) pilot, who was routing inbound from the west, being instructed to call at 5nm. On one of the touch-and-go landings, ATC asked them to initially maintain runway heading after take-off. On hearing a slightly unclear call thought to be directed to them, he asked if they could commence the turn onto the crosswind leg. They were instructed to do so, and were advised they would be number one. They were aware of, and heard, the other pilot being told to join downwind number two to a C152 currently on the crosswind leg (his aircraft). The other pilot acknowledged the instruction and, he believed, confirmed having his aircraft in sight. His student levelled out at 1000ft on the crosswind leg, and started the look-out prior to commencing the right turn onto the downwind leg. They had looked to the left and saw nothing, and were just scanning round from left to right prior to the turn when the aircraft crossed ahead of them. The C152 had suddenly appeared above their port wing, descending approximately 30-50ft ahead of their windscreen (crossing from their 8 to 12 o’clock), and then descended further into a low downwind leg position ahead of them.

He assessed the risk of collision as ‘High’.

**THE CESSNA C152 (B) PILOT** reports that, whilst inbound to Biggin Hill airport, routing south of Kenley, ATC directed him to join RW21, downwind right-hand, QFE 995hPa and to report at 5nm. No other aircraft were seen to be close at any stage during the approach, downwind, base or during landing. He was careful to set QFE as he approached Biggin, having been well briefed on this issue when joining his flying group in March 2015. During his approach, he was initially directed by ATC that he was third, this was revised to second after the order of arrival became clearer. When an Airprox was mentioned by radio to ATC by the pilot of the other aircraft, he was at 1000ft QFE, more than halfway along the downwind leg, and with one ahead which was soon on finals as he passed abeam late downwind. This aircraft ahead landed well before he did. He believed that there were at least two other aircraft joining at around the same time, one behind and one possibly crossing from

the deadside. Appreciating the need to keep a good look-out, and though no other aircraft were seen nearby at any point, he opined that an aircraft behind him on the downwind leg or joining behind would be expected to give way, as would an aircraft joining from deadside. Nevertheless the requirement for VFR to de-conflict with other VFR aircraft was clearly understood and a good lookout was maintained for this reason.

He assessed the risk of collision as 'Low'.

## Factual Background

The weather at Biggin Hill was recorded as follows:

EGKB061250 20011KT 170V250 9999 SCT025 20/13 Q1014=

## Analysis and Investigation

### CAA ATSI

A C152 (A) pilot was flying VFR and operating in the right-hand circuit for RW21 at Biggin Hill. The C152 (B) pilot was operating VFR and was approaching Biggin Hill from the southwest.

At 1305:45 the C152(B) pilot reported (as previously instructed) at 5nm from Biggin Hill. At that time the C152(A) pilot was on final approach for RW21 and was told to continue approach as there was another aircraft (C), an unknown type, ahead for departure.

At 1306:08 the pilot of the departing aircraft (C) was issued with Traffic Information on the arriving C152(B) and reciprocal Traffic Information was passed to the C152(B) pilot.

At 1306:24 (on completion of the touch and go) the C152(A) pilot was instructed to continue on the runway heading and given Traffic Information about the inbound C152(B). At 1307:01, the C152(A) pilot was instructed to turn crosswind, Figure 1.

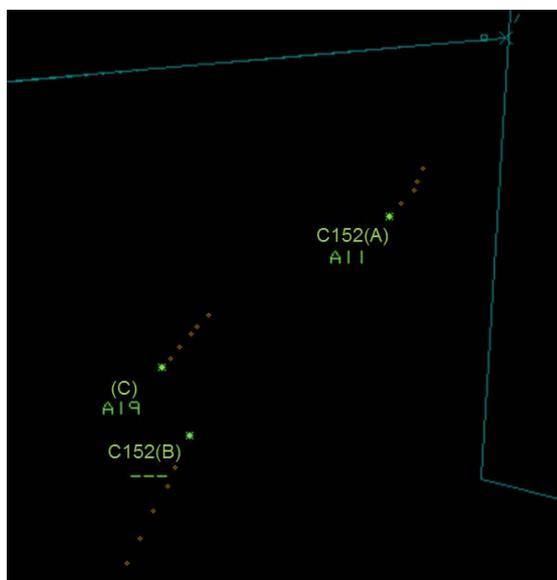


Figure 1: Swanwick MRT at 1307:01

At 1307:15 the pilot of aircraft (C) reported sighting the C152(B) on the port side. The controller took this call as having come from the C152(B) pilot, whom he thought was referring to sighting the C152(A). He instructed the C152(B) pilot to follow the traffic ahead and join downwind. The C152(B) pilot acknowledged this instruction. However, it was the pilot in aircraft (C) that had reported the C152(B) in sight and not the C152(B) pilot reporting the C152(A) in sight. The C152(B) and aircraft (C) had similar sounding callsigns but did not need special differentiation.

Content that the C152(B) pilot was visual with the C152(A) the controller continued with other traffic. CPA occurred at 1307:42, Figure 2.



Figure 2: Swanwick MRT at 1307:42

Note: there appears to be a similar misunderstanding in the C152(A) pilot report as that made by the controller that when the pilot of aircraft (C) reported the C152(B) in sight this was the C152(B) pilot calling visual with C152(A).

Under an Aerodrome Control Service the controller is responsible for issuing instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of preventing collisions between aircraft flying in, and in the vicinity of the ATZ and also aircraft taking off and landing. However, Aerodrome Control is not solely responsible for the prevention of collisions as pilots must also fulfil their own responsibilities in accordance with the Rules of the Air<sup>1</sup>.

### UKAB Secretariat

The C152 (A) and C152 (B) pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard<sup>2</sup>. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation<sup>3</sup>.

### Summary

An Airprox was reported when C152 (A) and C152 (B) flew into proximity at 1308 on Thursday 6<sup>th</sup> August 2015 inside the Biggin Hill ATZ. Both pilots were operating under VFR in VMC, in receipt of an Aerodrome Control Service from Biggin Hill. The C152(A) pilot was operating a training flight in the right-hand visual circuit to RW21; the C152(B) pilot was inbound to Biggin Hill from the southwest and was cleared to join downwind right-hand to RW21. He did not see C152 (A) when joining downwind. The controller believed incorrectly that the C152 (B) pilot had reported seeing the C152 (A) and instructed its pilot to position behind the C152 (A).

### PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from both pilots, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

<sup>1</sup> CAP493 Section 2, Chapter1, Paragraph 2.

<sup>2</sup> SERA.3205 Proximity.

<sup>3</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

In trying to understand the context behind the incident, the Board noted that there had been a misunderstanding by the controller and the pilot of C152 (A) when the pilot of aircraft (C) reported seeing a Cessna (which was C152 (B)). Both had believed that the pilot of C152 (B) had made this call. The ATSI advisor explained that the three-letter callsigns of C152 (B) and aircraft (C) were similar; only the last letter being different. He commented that when he had initially listened to the RT recording, due to the quality of the transmission, he also believed that the C152 (B) pilot had made the visual call. He added that the voices of the pilots of the C152 (B) and aircraft (C) also sounded similar. It was only on further investigation that he realised that it had come from the pilot of aircraft (C). Following this explanation the Board were able to understand why this confusion had arisen. They considered that if a desk-investigation had found it hard to establish which pilot had transmitted then it would obviously have been more difficult for the controller and the C152 (A) pilot as they had only had one opportunity to hear the transmission in what was a busy operational environment.

In further investigating the context behind the incident, the Board were disappointed that the Biggin Hill controller had not filed a report. The ATSI advisor explained that, although the controller had been aware that the pilot of C152 (A) would be filing an Airprox, he did not consider he needed to file an MOR but had completed a local report on the incident. The advisor commented that there had been a number of occasions recently when controllers had not filed reports concerning Airprox; this matter is being addressed by ATSI. By way of adding more context to the incident, the ATSI advisor briefed the Board that, during his investigation, he had been informed by Biggin Hill ATC that the controller had been monitoring a trainee at the time of the Airprox and, although the transmissions had been made by the trainee, he had been largely prompted by his mentor in most aspects.

The Board then turned their attention to the ATC circumstances of the Airprox. They noted that the C152 (A) pilot had been carrying out a training detail on RW21RH, that the C152 (B) pilot had been cleared to join right-hand downwind RW21 to report at 5nm and that, at the same time, the pilot of aircraft (C) was departing ahead of C152 (A), which was on final approach. As C152 (B) approached, its pilot, and that of aircraft (C), were given Traffic Information on each other and C152 (A) pilot was also advised about the inbound C152 (B) and instructed to continue on runway heading after his touch and go. The ATSI advisor explained that the controller had then become aware from looking at the Aerodrome Traffic Monitor (ATM)<sup>4</sup> that the C152 (B) pilot was approaching the downwind leg from the southwest, close to the airfield, rather than joining from the west as he had expected. As a result, the controller's plan had been to turn the C152 (A) pilot onto the crosswind leg in good time, but this instruction had been delayed by another pilot contacting the frequency at the time, after which he made the call to the C152 (A) pilot and advised him that he was number one. Civil ATC Airfield members commented that he should have been aware, from observation of the ATM, of the position of C152 (B) at the time and that, in their opinion this delayed turn onto the crosswind leg created a potential conflict between C152 (A) and C152(B). Some members wondered whether it was possible that the controller had misjudged the relative speeds of the two aircraft, C152 (A) would have been slower than C152 (B) as it climbed, and C152 (B) would have had a tailwind as its pilot positioned downwind. As luck would have it, just before the controller was going to inform the pilot of C152(B) of his sequence in the circuit, the pilot of aircraft (C) reported seeing a C152 (C152(B)) and this had been when confusion had arisen. Mistaking the call as being made by the C152 (B) pilot, the controller had instructed C152 (B) pilot to follow C152 (A), which he thought he could see, and join downwind. The pilot of C152 (B) acknowledged the call and so, because the controller believed that the traffic situation between the two C152s had been resolved, he had turned his attention to other traffic.

The Board then discussed the actions of the two pilots. A civil pilot member commented that he was surprised that the pilot of the C152 (A) had not seen C152 (B) prior to turning crosswind. However, it was possible that the geometry of the incident had meant that C152 (B) had been obscured to C152 (A)'s pilot. Unfortunately, C152 (A)'s pilot believed that the joining traffic had him in sight, and so was comfortable to continue. For his part, the Board noted that the C152 (B) pilot had been informed

---

<sup>4</sup> CAP 493, Manual of Air Traffic Services, Section 2, Chapter 1, Paragraph 21, states that the ATM can be used to provide information to aircraft on the position of other aircraft in the circuit.

about C152 (A) being on the crosswind leg, and had been instructed to join downwind behind the aircraft. Although he had acknowledged this instruction, members commented that he had continued to proceed along the downwind leg without having seen C152 (A). Again, members thought that C152 (A) might have been obscured to the C152 (B) pilot due to the geometry of the situation, but the fact that he had not assimilated the Traffic Information that C152 (A) was crosswind ahead of him was a key factor that had resulted in a very close conflict between the two aircraft. .

The Board discussed the cause of the Airprox in some detail to determine why there had been a conflict in the circuit, whether ATC had allowed the aircraft to fly into conflict, and why the C152 (B) pilot had not integrated into the circuit. After lengthy deliberation, the Board agreed that the root cause of the Airprox was that the C152 (B) pilot had not conformed to the pattern of traffic, as instructed, having been sequenced as number 2. Notwithstanding, the Board considered that the ATC aspects were a contributory factor: ATC had allowed the C152 (A) pilot to turn crosswind and into conflict with the C152 (B). The confusion with Aircraft C's radio call was recognised as a factor that had led ATC (and the C152 (A) pilot) to form a false mental model of who could see who, but the Board considered that there was other information available to ATC that should have been used to prevent the aircraft coming so close in the first place.

The Board noted that the 2 aircraft had been very close to each other at the time of the Airprox. Radar recordings showed that they were less than 0.1nm apart horizontally, although it was not possible to positively determine the vertical separation because C152 (B) was not equipped with SSR Mode C. However, the Board noted that the C152 (A) pilot had reported a vertical separation of 30-50ft as C152 (B) descended across their path; the Board also noted that C152 (B) pilot had not seen C152 (A) at all. Accordingly, the Board quickly decided that separation had been reduced to the minimum and, because neither pilot had effectively seen the other before CPA, luck had played a major part in the incident. Consequently, the Board decided that the Airprox should be categorised as risk Category A.

### **PART C: ASSESSMENT OF CAUSE AND RISK**

<u>Cause:</u>	The C152 (B) pilot did not conform to the pattern of traffic, having been sequenced as number 2.
<u>Contributory factor:</u>	ATC allowed the C152 (A) pilot to turn crosswind and into conflict with the C152 (B).
<u>Degree of Risk:</u>	A.