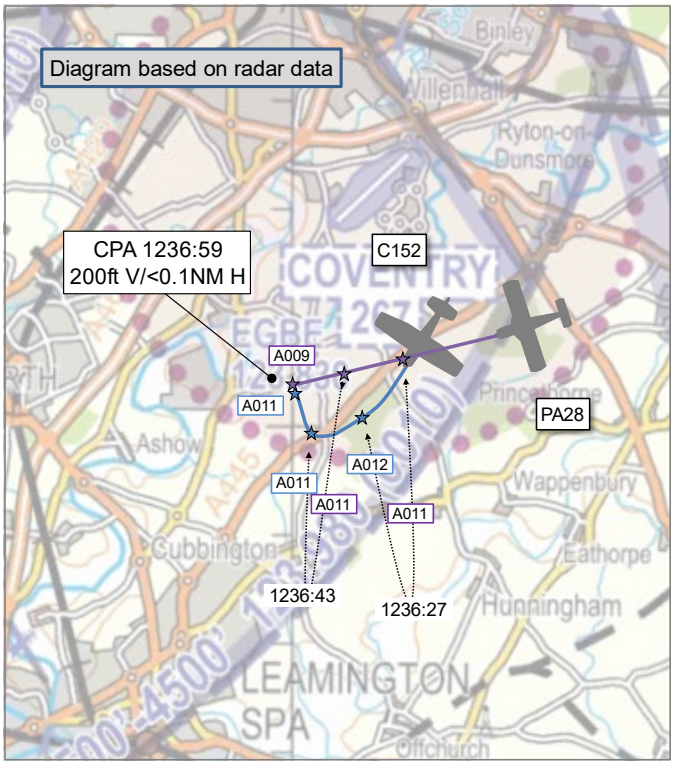
AIRPROX REPORT No 2022269

Date: 03 Dec 2022 Time: 1237Z Position: 5220N 00129W Location: Coventry

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C152	PA28
Operator	Civ FW	Civ FW
Airspace	Coventry ATZ	Coventry ATZ
Class	G	G
Rules	VFR	VFR
Service	AFIS	AFIS
Provider	Coventry	Coventry
Altitude/FL	1100ft	900ft
Transponder	A, C	A, C
Reported		
Colours	White, Blue	White, Red
Lighting	'VFR fit'	Landing, Nav, Anti-cols, HISL, Strobes, Beacon
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	1200ft	1200ft
Altimeter	QNH (1022hPa)	QNH (1022hPa)
Heading	320°	130°
Speed	65kt	90kt
ACAS/TAS	Not fitted	Not fitted
Separation at CPA		
Reported	50ft V/0m H	100ft V/200m H
Recorded	200ft V/<0.1NM H	



THE C152 PILOT reports that they were approaching Coventry from the north-east. They advised that they were going to join RH downwind for RW05. They were unaware of student traffic (the PA28) on crosswind, however, spotted this and continued without action as they were on course to pass ahead. This was closer than they would have liked, but was safe. When established downwind, they saw the same traffic, behind and considerably outside their track, flying a much wider circuit. From this, they were comfortable that they were now ahead of the other aircraft in the circuit. They turned onto base and began to slow the aircraft. At this point they were aware of [PA28 C/S] calling "Extending downwind". They then saw movement from the right of their aircraft but didn't register what it was. Almost instantly they saw [PA28 C/S] to the right of their aircraft having passed directly underneath them approximately 50ft below. They called an Airprox whilst at the same time watching the aircraft out to their left. The other pilot turned onto a base just outside of the C152, close horizontally, but below. As they were unsure of the other pilot's intensions, they immediately went around from base. They were unsure whether the student pilot sighted their aircraft at any time. In hindsight, the student could only have flown a diagonal downwind leg from the position where they first saw it, at the beginning of the downwind leg. Their circuit was standard, they have reviewed this on their SkyDemon log which was running but not being actively used at the time.

The pilot assessed the risk of collision as 'High'.

THE PA28 INSTRUCTOR reports that the student had completed 54 hours of dual training prior to this solo flight. Dual circuits were flown on the day prior to sending the student for solo circuits RW05RH. During the student's last circuit, whilst they were on the climb-out (upwind leg), the student did not realise that a slower aircraft C152 had taken-off ahead [they thought]. As the student was on the crosswind leg, a C152 appeared on the left on early downwind. According to the student, the C152 appeared to be 100ft high and approximately 200m away horizontally. The student decided to turn early onto downwind leg to avoid the converging traffic. Students are always made aware of joining traffic on

downwind or base legs from Draycote water or Southam VRPs, especially as no standard overhead joins are allowed due to the Birmingham controlled airspace.

The pilot assessed the risk of collision as 'Low'.

THE COVENTRY AFISO reports [PA28 C/S] was flying solo circuits, [C152 C/S] joined downwind RW05, inbound from [departure airfield]. They passed Traffic Information on both aircraft to each pilot. From memory, [PA28 C/S] turned downwind RW05, in front of [C152 C/S]. Both aircraft flew quite close to each other downwind. As both aircraft turned base leg, [PA28 C/S] passed close, underneath and ahead of [C152 C/S]. The pilot of the C152 transmitted "that will be an Airprox" (or words to that effect). [PA28 C/S] continued to make an approach to land RW05 (full-stop or touch-and-go, the AFISO could not recall), [C152 C/S] flew a go-around RW05.

Factual Background

The weather at Birmingham was recorded as follows:

```
EGBB 031250Z 03009KT 9999 BKN015 06/04 Q1022=
```

Analysis and Investigation

CAA ATSI

The C152 pilot had reported inbound, for a downwind join to RW05, to the Coventry AFISO at approximately 1229:00.[1] The AFISO confirmed it was a right-hand circuit, passed the QNH and requested a report from the pilot on entering the ATZ, which the pilot acknowledged. The PA28 was already airborne in the right-hand circuit, being flown solo by a student pilot, having earlier flown dual with an instructor. The pilot used the "Student" callsign prefix throughout. Also in the circuit was a C172, and there was an inbound PA46 routing to long final, having joined from right-base to allow the PA28 on their first circuit to turn in ahead.

At ~1233:48 the pilot of the C152 reported "*just about to enter the ATZ for downwind join runway 05*". The AFISO instructed them to report downwind. (Figure 1).

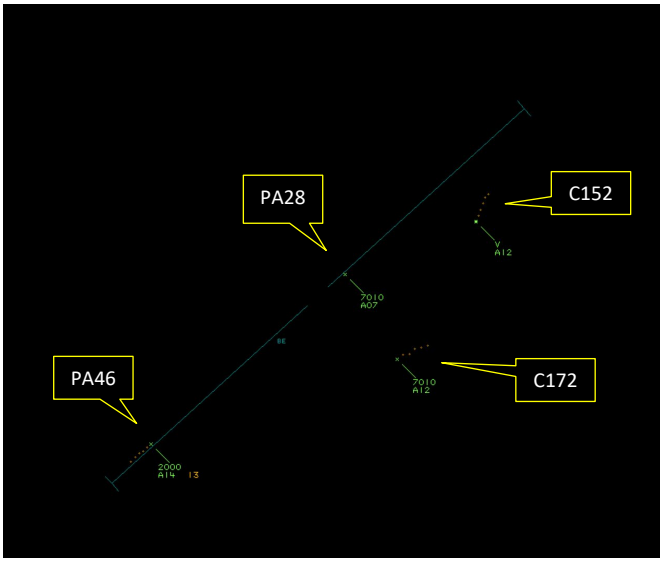


Figure 1 – 1233:48

At ~1234:05 the pilot of the C172 reported downwind for a touch-and-go. The AFISO instructed them to report final, advising that the PA46 was ahead of them on long final. At ~1234:18 the PA46 pilot reported being on a 3NM final and was given the runway by the AFISO (Figure 2).

[1] Coventry injected timecode estimated to be 1:40 fast. Times estimated from radar replay.

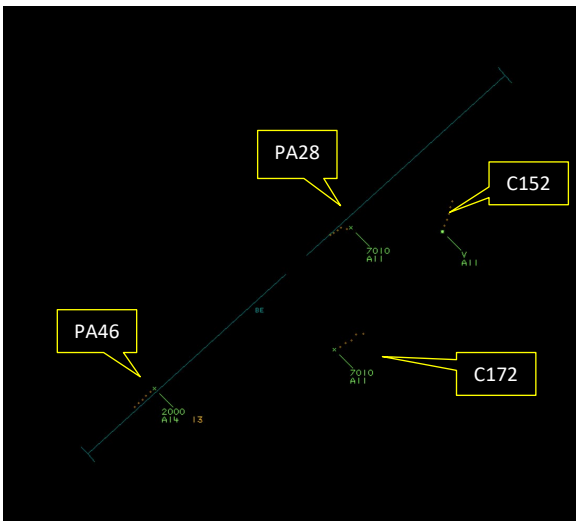


Figure 2 – 1234:18

At ~1234:50 the AFISO advised the pilot of the PA28: "*just caution there's a 152 entering the ATZ to report downwind*". The PA28 pilot's reply was unintelligible (Figure 3).

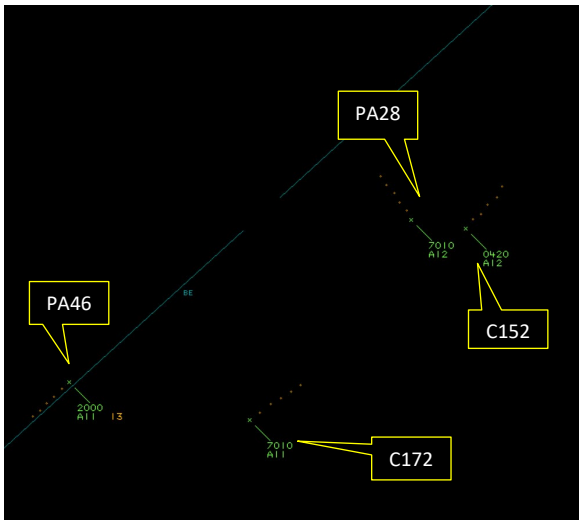


Figure 3 – 1234:50

At ~1235:03 the AFISO asked the pilot of the C152: "*you visual with the PA28 turning downwind?*" The C152 pilot replied: "*affirm – I've just passed in front of him*" (Figure 4).

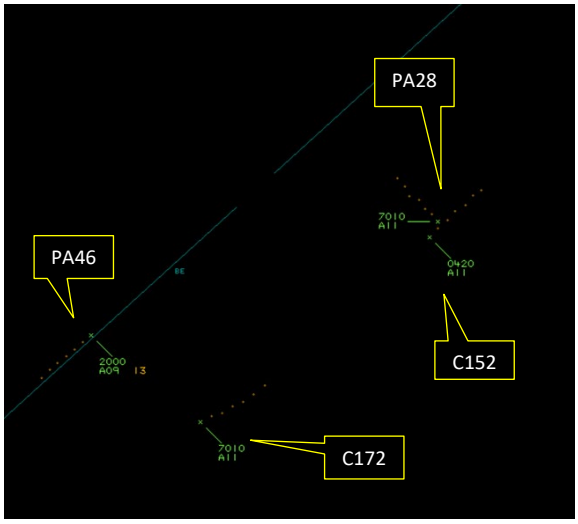


Figure 4 - 1235:03

At ~1235:24 the AFISO called another pilot – possibly the C172, but this could not be determined as the beginning of the transmission was clipped: "*you visual with the PA46 on final?*" There was no reply – possibly because no callsign was audible in the AFISO's transmission. At ~1235:37 the pilot of the PA28 reported downwind to land and was advised by the AFISO: "*Roger, report final, you have 2 ahead (pause) 3 ahead*" to which the PA28 pilot responded "*wilco*" (Figure 5.)

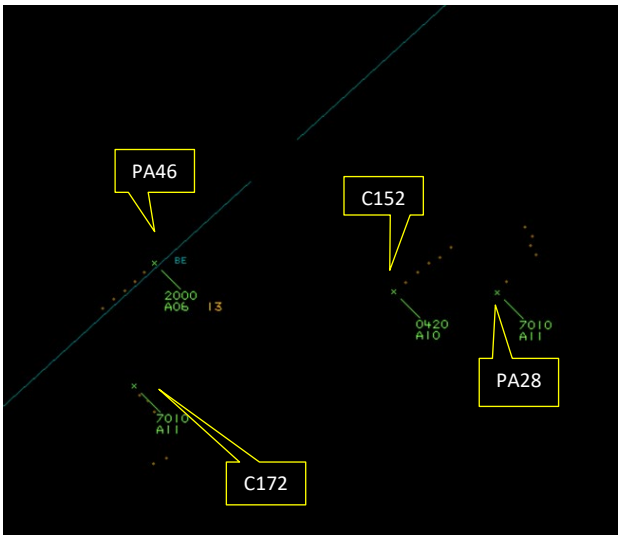


Figure 5 – 1235:37

Immediately following this, the pilot of the C152 reported "*late downwind*" and was advised by the AFISO: "*Roger – report final, you have two ahead*" which was acknowledged by the pilot.

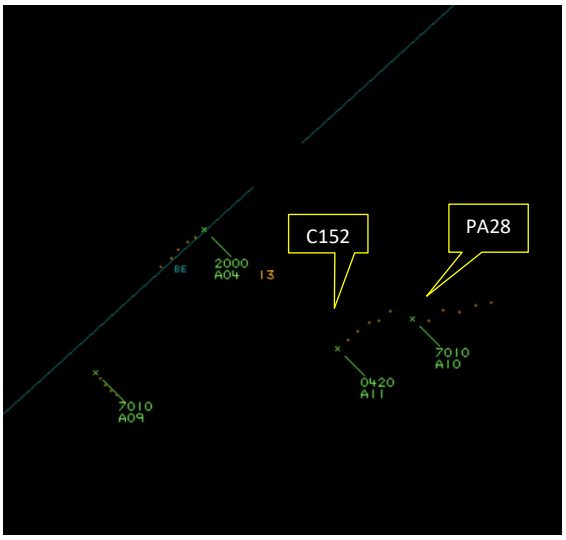


Figure 6 – 1236:00

At ~1236:23 the pilot of the C172 reported finals for a touch-and-go. The AFISO advised them that the runway was occupied by the PA46 and so the pilot replied that they would continue. The AFISO then passed taxy instructions to the pilot of the PA46 and, at ~1236:43, the PA28 pilot reported "*extending downwind*" to which the AFISO responded "*roger*".

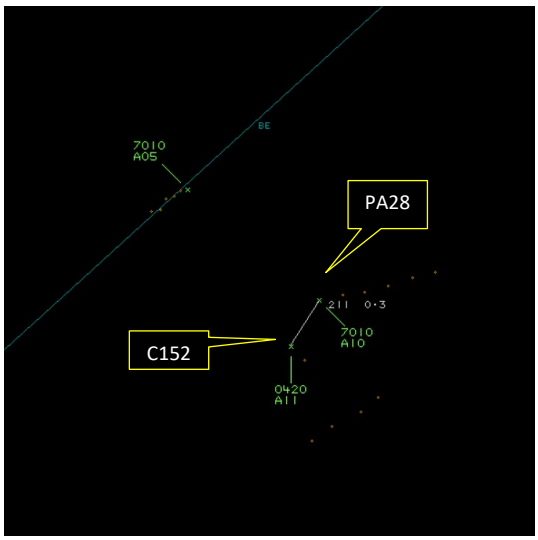


Figure 7 – 1236:55

CPA occurred between 1237:00-1237:04 (Figures 8 and 9).

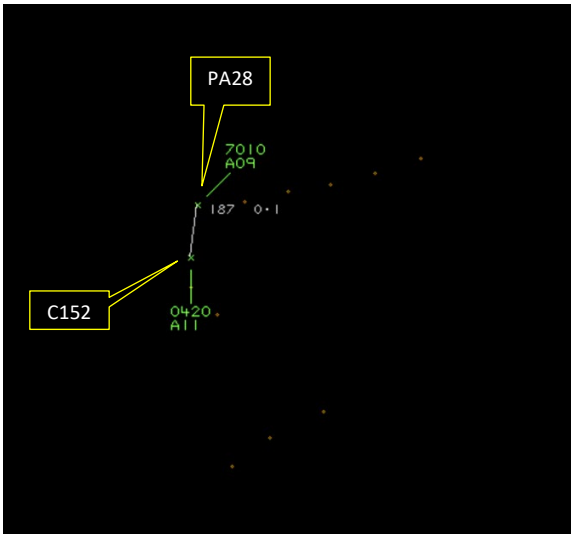


Figure 8 – 1237:00 - CPA

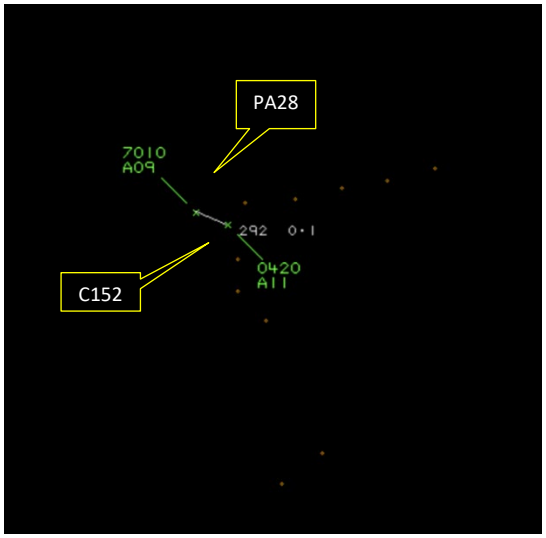


Figure 9 – 1237:04

At ~1237:10 the pilot of the C152 reported "*going around from base*" which the AFISO acknowledged "*roger*". The pilot followed-up with "*That was an Airprox. The student traffic there just passed to the right underneath me on base*".

The AFISO replied: "*Roger – Break (PA28 callsign) you visual with the 152 in your 2 o'clock?*" to which the PA28 pilot replied with their callsign only.

Analysis

ATSI reviewed reports from both pilots and the Coventry AFISO. No formal investigation report had been received from Coventry. A review of the Coventry RTF was completed, alongside the area radar replay. Coventry AFIS has no surveillance/FIDS capability.

Due to the proximity of Birmingham's controlled airspace above the airfield, overhead joins are not permitted at Coventry.

When the pilot of the C152 called inbound and then later, as they were approaching the boundary of the ATZ, the AFISO did not advise them that the circuit was active, (they had done so earlier for the pilot of the PA46). The pilot of the C152 reported being "unaware of student traffic (PA28 callsign) on crosswind, however spotted this and continued without action as was on course to pass

ahead". The AFISO did pass Traffic Information to the pilot of the PA28 on the C152, by which time both aircraft were converging within 0.5NM of each other.

The response by the PA28 pilot to the Traffic Information passed to them on the C152 was unintelligible to ATSI, and it cannot be determined if the pilot's reply was understood by the AFISO, or the information comprehended by the PA28 pilot. As the AFISO did not challenge the PA28 pilot's readback, it has to be assumed that they were comfortable that the information had been received correctly.

The PA28 pilot did not appear to adjust their circuit to follow the C152 ahead of them, suggesting they had not assimilated its presence, nor were they visual with it. Their call extending downwind may also have been to position behind the C172 already established on final approach. It is possible the pilot had not heard the AFISO's correction from there being three, not two aircraft ahead of them when they had originally called downwind. Furthermore, when the C152 pilot called "*late downwind*" immediately after the PA28 pilot's own downwind call, the PA28 pilot appears to have still not assimilated this information.

The report from the pilot of the PA28 was submitted by their instructor. Mention was made of the student not being aware that "a slower aircraft C152 had taken-off in front of [them]", which was not the case as the C152 had joined from the north-east. Their report suggested the PA28 pilot was visual with the C152 as it crossed ahead of them at the beginning of the downwind leg, but does not mention the subsequent confliction, suggesting the pilot may have believed this earlier encounter was the Airprox, not the later event reported by the pilot of the C152.

In conclusion, the pilot of the PA28 did not position themselves in the sequence of aircraft in the circuit ahead of them and flew into confliction with the C152.

Had better Traffic Information been provided by the AFISO on circuit activity at the beginning of this period when the C152 was joining, and had confirmation been obtained from the pilot of the PA28 that they understood the information passed on the C152, then this might have aided both pilots' situational awareness, particularly that of the PA28 pilot.

Coventry AFIS is reminded of its obligations under Regulation (EU) 2017/373 of 1 March 2017 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 ATM/ANS.OR.A.065 paragraphs (a) through (e), with regards to the initial submission of a mandatory occurrence report and any follow up reports within the specified timescales as defined within Regulations (EU) 996/2010 and 376/2014.

UKAB Secretariat

The C152 and PA28 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[2] 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.[3]

Summary

An Airprox was reported when a C152 and a PA28 flew into proximity in the Coventry visual circuit at 1237Z on Saturday 3rd December 2022. Both pilots were operating under VFR in VMC, both were in receipt of an AFIS from Coventry.

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the AFISO involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first looked at the actions of the C152 pilot. They had informed the AFISO of their intention to join the circuit, and had responded correctly to the AFISO's request to call entering the ATZ, but had not received any circuit information, nor information on the PA28. As a consequence of not being aware of the position of the PA28, the C152 pilot had not integrated with it as they approached downwind (**CF4**, **CF6**), crossing ahead in fairly close proximity. Once downwind, having heard the AFISO give the number ahead to both pilots and the PA28 pilot call extending their downwind leg, the C152 pilot had not been expecting the PA28 to cross beneath them (**CF7**) and had not seen it in time to take any avoiding action (**CF9**).

Turning to the actions of the PA28 pilot, they had received Traffic Information on the C152 as it joined, but could have rightly have expected it to join the circuit behind them. However, once the C152 had crossed ahead on the downwind leg, and the AFISO had told the PA28 pilot the number ahead, the Board agreed that it had been for the PA28 pilot to fit in behind. Members thought that once the C152 had crossed ahead, the PA28 pilot had probably lost situational awareness on it (**CF7**). It had been unfortunate that the AFISO had first reported two aircraft were ahead, although they had corrected this to three ahead immediately, but this call had not been acknowledged by the PA28 pilot and may have led to the pilot discounting the C152 as ahead in the circuit. Although the PA28 pilot had reported extending downwind, members noted that the circuit flown had not been a normal square circuit; instead, the pilot had cut the corner and therefore caught up with the C152 ahead (**CF5**). Having been told about the aircraft ahead, it had been for the PA28 pilot to integrate with the other aircraft in the circuit (**CF4**, **CF6**), but members thought that the PA28 pilot had not assimilated the information that the C152 had been ahead (**CF8**). Indeed, noting that the pilot's report appeared to describe the first encounter with the C152, members thought that the PA28 pilot had not been visual with the C152 on base-leg at all (**CF9**).

When discussing the actions of the AFISO, members acknowledged that they had been busy (**CF2**) and, in the main, had done a good job of keeping all of the pilots informed about each other. It had therefore been unfortunate that they had not passed Traffic Information to the C152 pilot on their join (**CF1**). After they had realised that the C152 had joined the circuit they had asked the pilot whether they had been visual with the PA28 and received an affirmation. Once they had established which aircraft had been ahead in the circuit, and passed the appropriate information calls to both pilots downwind, the AFISO had not been aware that the PA28 pilot had flown into proximity with the C152 on base until the C152 pilot reported it (**CF3**), but members thought there had been little the AFISO could have done to prevent it, unless they had happened to see the PA28 converging on the C152.

When assessing the risk, members considered the reports from both pilots and the AFISO, together with the NATS radar replay screenshots. They noted that neither pilot had been visual with the other prior to CPA and it had been likely that the PA28 pilot had not been visual with the C152 at all. Members discussed the difference in the estimation of separation by the C152 pilot (50ft) and that shown on the radar (200ft) but noted that the pilot would no doubt have been surprised to see the PA28 in such close proximity, which may have provided a 'startle factor' that meant they had perceived the aircraft to be closer than it had been in reality. That being said, they also noted that the vagaries of the radar could round up the height of one aircraft and round down the height of the other, potentially meaning that the separation could quite easily have been in the region of 100ft. Noting that neither pilot had taken any avoiding action, members therefore assessed that there had been a risk of collision, but thought that at between 100-200ft, the separation had not been at the bare minimum, however, safety had been much reduced (**CF10**); Risk Category B.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022269			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Human Factors	• Task Monitoring	Events involving an individual or a crew/ team not appropriately monitoring their performance of a task	Controller engaged in other tasks
3	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Regulations, Processes, Procedures and Compliance			
4	Human Factors	• Use of policy/Procedures	Events involving the use of the relevant policy or procedures by flight crew	Regulations and/or procedures not complied with
	• Tactical Planning and Execution			
5	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
6	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
7	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
8	Human Factors	• Understanding/ Comprehension	Events involving flight crew that did not understand or comprehend a situation or instruction	Pilot did not assimilate conflict information
	• See and Avoid			
9	Human Factors	• Monitoring of Other Aircraft	Events involving flight crew not fully monitoring another aircraft	Non-sighting or effectively a non-sighting by one or both pilots
	• Outcome Events			
10	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: B.

Safety Barrier Assessment[4]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the C152 pilot had not been given Traffic information on the PA28 on joining the circuit.

Flight Elements:

[4] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the C152 pilot had not integrated with the PA28 on joining the circuit; however, once the C152 had positioned ahead downwind, the PA28 pilot had been required to sequence behind.

Tactical Planning and Execution was assessed as **partially effective** because neither pilot had effectively integrated into the circuit.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA28 pilot had not assimilated that the C152 had positioned ahead downwind, and the C152 pilot had not been aware that the PA28 would cross below on base-leg.

See and Avoid were assessed as **ineffective** because neither pilot saw the other aircraft in time to take avoiding action.