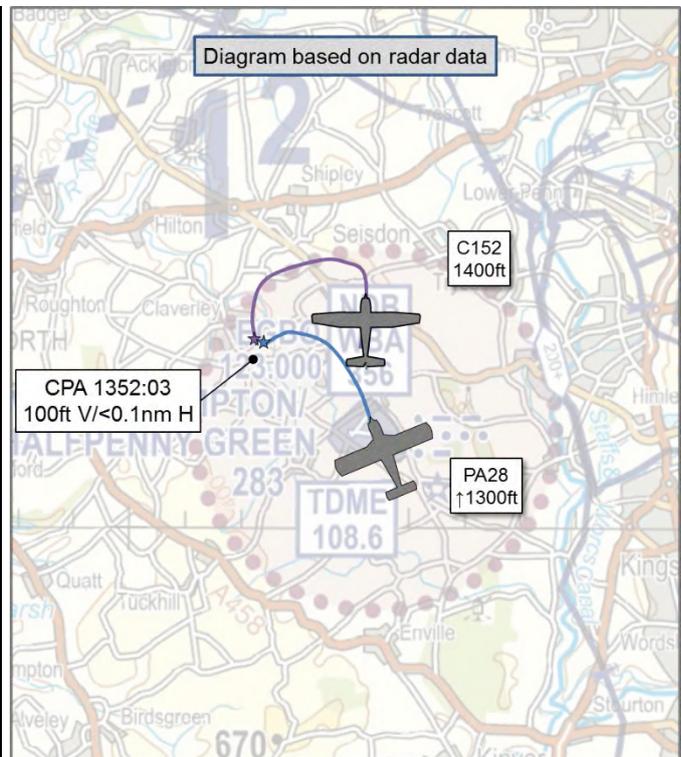


## AIRPROX REPORT No 2018093

Date: 17 May 2018 Time: 1352Z Position: 5231N 00217W Location: Halfpenny Green

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	C152
Operator	Civ FW	Civ FW
Airspace	Ha'penny Green ATZ	Ha'penny Green ATZ
Class	G	G
Rules	VFR	VFR
Service	Information	Information
Provider	Ha'penny Green	Ha'penny Green
Altitude/FL		
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	Blue, silver	White
Lighting	Strobes, Landing	Strobes
Conditions	VMC	VMC
Visibility	10km	>10km
Altitude/FL	900ft	1000ft
Altimeter	QNH	QFE
Heading	270°	
Speed	90kt	
ACAS/TAS	Not fitted	Not fitted
<b>Separation</b>		
Reported	50ft V/0m H	Not seen
Recorded	100ft V/<0.1nm H	



**THE PA28 PILOT** reports that he was at Halfpenny Green, ready for departure, and had stopped at the holding point for RW34 to complete pre-flight checks. He heard one pilot call finals and another call for join. He watched a C152 complete a touch-and-go and then, a minute later, he obtained a clearance to depart. He could see the Cessna in the distance at about 700ft and it appeared to be drifting right. He had been planning to depart from a left-hand circuit and called the tower to confirm the circuit direction. They advised that it was indeed a left-hand circuit but, because there was no traffic to affect, offered him either direction for departure; he decided to turn left. He noted that in his subconscious, seeing the previous aircraft drift right, together with the 'no traffic to affect' information from the tower, this led him to believe the Cessna was departing the circuit to the east. He could see that in retrospect this was a poor conclusion. He took off and climbed to 500ft before commencing a left turn onto cross-wind. He continued turning and climbing and was approaching a heading roughly perpendicular to the runway heading (i.e. cross-wind, left) at 900ft when he heard another pilot call joining for RW34. He looked for it and saw it in the 11 o'clock about a mile away at the same level, but no conflict. As he moved his head to continue his scan he saw a brief flash of white in the right-angle gap between the wing-root of the right wing and the cockpit. He glimpsed a white aircraft, head-on, slightly below at close range (50-75ft). He then lost sight of it as it went under his seat, and it re-appeared from underneath him tracking approx 80° to the left of his heading (although he was still in the left turn). It appeared to be straight-and-level and on a downwind leg.

He continued turning and climbing and heard the other pilot call downwind. He was uncertain what to do next; mindful that the other pilot sounded like a student and could be solo he didn't want to alarm or distract him. He therefore called the tower and suggested that once it had landed, they ask the pilot whether he had seen him in the PA28. However, they immediately called the C152 and a different voice replied, a discussion followed, and it became clear that they hadn't seen him. After landing he telephoned ATC to ascertain whether there were any RT recordings and subsequently spoke to the captain of the other aircraft.

The PA28 pilot made a number of observations: when he took-off he (incorrectly) believed the C152 had departed the circuit and therefore did not look for it; at the point at which he might have seen it he was distracted by looking for the joining traffic; the C152 was blanked from view by the raised right wing of the PA28 as it turned; and he may also have been obscured by the blind spot created by the C152 high-wing. He was aware that as the following traffic it was for him to have kept the C152 in sight and that as traffic converging from the right, it had right of way; however, he had wrongly concluded that it was no longer in the circuit. He observed that it was the closest he had ever come to another aircraft and that the only reason they didn't collide was because they happened to be separated by 50-75ft.

He assessed the risk of collision as 'High'.

**THE C152 PILOT** reports that when he was on the downwind leg at Halfpenny Green, a pilot in a PA28 reported that he had come close to them. They did not see it so after landing he went up to the tower to discover what had happened. The controller told him that he had seen the PA28 and it had appeared to be outside the C152. Later he had a telephone conversation with the PA28 pilot, who said he came within 50ft of the C152 and that he hadn't known which way they would turn and that he would file an Airprox so that they might learn something. The C152 pilot opined that they couldn't have been expected to see the PA28 approach from behind, the PA28 pilot should have known that they would follow a standard left-hand circuit, and that it was for the PA28 pilot to give way to them.

**THE HALFPENNY GREEN AFIS CONTROLLER** reports that the PA28 pilot departed RW34 and turned left to depart. At the same time the C152 was flying left-hand circuits and another PA28 was joining to land. The departing PA28 pilot considered he came into close proximity to the C152, although the C152 pilot did not see it.

## Factual Background

The weather at Birmingham was recorded as follows:

EGBB 171350Z 03007KT 340V090 9999 FEW048 15/03 Q1027=

## Analysis and Investigation

### CAA ATSI

The CAA Transcription Unit visited the airfield and attempted to obtain and provide verified recordings of the R/T but the airfield's equipment was found to be faulty and this was not possible. The unit had managed to complete a transcript prior to the visit, but admitted that the timecode was inaccurate by as much as 16 minutes. All references to time are taken from the radar replay recordings.

The C152 pilot had been conducting a number of circuits at the airfield, flying a left-hand pattern to RW34. At 1348:00, (Figure 1), the aircraft was observed on final approach, with a second aircraft, (a PA28 – not involved in the Airprox), positioning from the northwest for a downwind left-hand join for RW34. The Airprox PA28 was carrying-out preflight checks at the holding point, prior to departure.

According to the R/T transcript provided by Halfpenny Green, the PA28 pilot joining from the northwest had been advised by the Halfpenny Green AFISO that the circuit was active, and had been requested to report downwind. The C152 pilot was then given discretion for a touch-and-go. Approximately 1 min later, the PA28 pilot reported ready for departure and was given discretion to take-off.

Approximately 30 secs later, the PA28 pilot asked the AFISO if the circuit was left or right-hand. According to their subsequent report, the PA28 pilot asked this because they had seen the C152 either drifting or deliberately turning to the right. The AFISO advised the pilot that it was a left-hand

circuit, but that there was nothing known to affect a right turn if the pilot required. The PA28 pilot confirmed they would turn left.



Figure 1 – 1348:00



Figure 2 – 1349:28

The C152 had been observed on the radar replay on two previous circuits to drift towards the right of the climb-out before turning crosswind left-hand. On this particular circuit, the drift was more pronounced, (Figures 2-6).

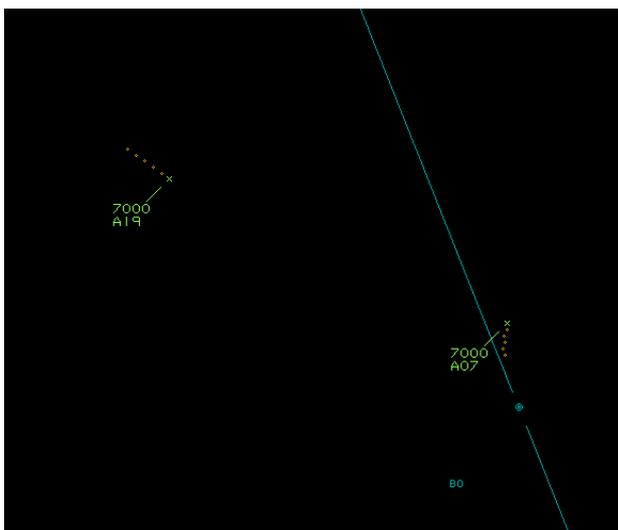


Figure 3 – 1350:00



Figure 4 – 1350:20

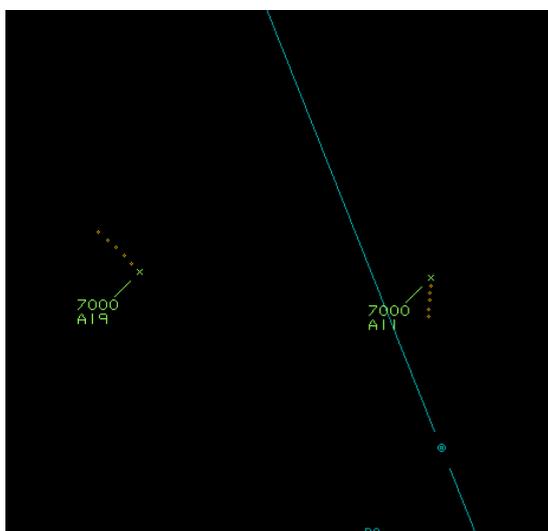


Figure 5 – 1350:40

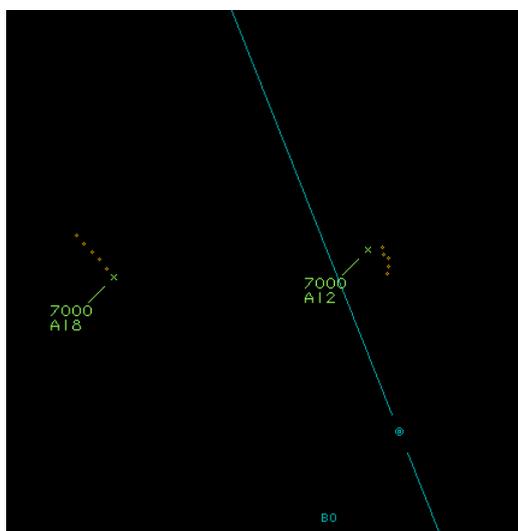


Figure 6 – 1350:53

At 1351:00, the PA28 became visible on the radar replay, with the C152 established crosswind, but still to the east of the RW34 climbout (Figure 7). Figures 8 and 9 illustrate the aircraft tracks running up to CPA at 1352:03 (Figure 10).

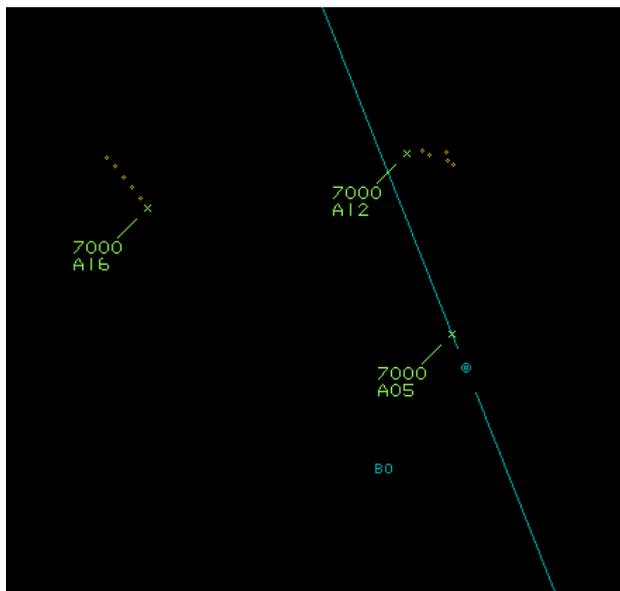


Figure 7 – 1351:00

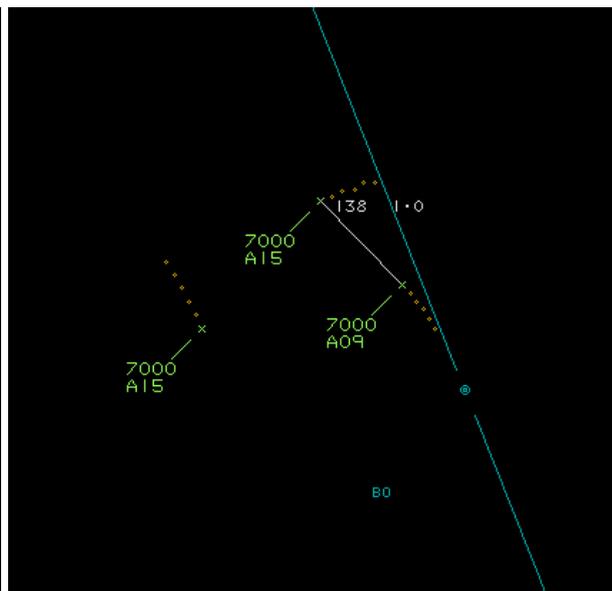


Figure 8 – 1351:33

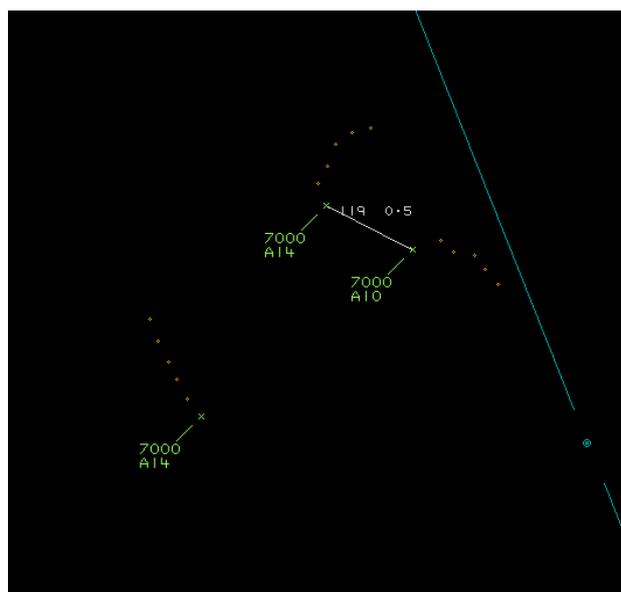


Figure 9 – 1351:48

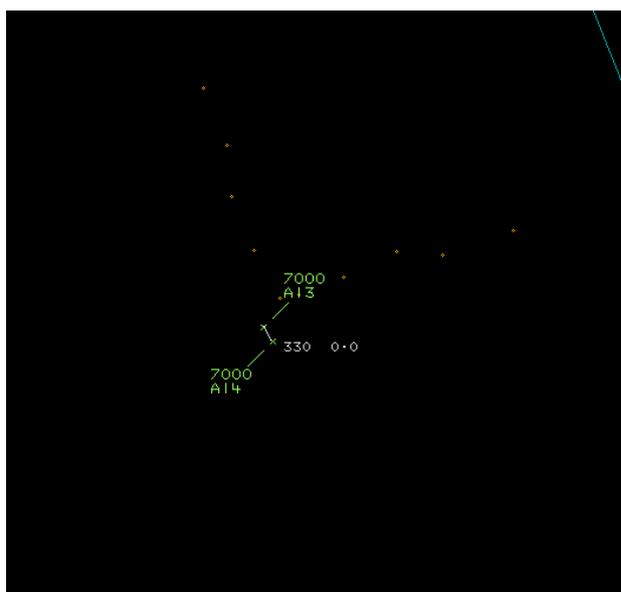


Figure 10 – CPA 1352:03

The AFISO reported seeing the PA28 and the C152 through a pair of binoculars, after initially searching for the 3<sup>rd</sup> aircraft (the joining PA28), which had reported downwind. The AFISO had passed generic Traffic Information to the PA28 pilot joining from the northwest on the circuit traffic, (the C152), prior to the aircraft joining downwind; however, no other Traffic Information was passed to any of the aircraft about each other.

CAP797 states, with regards to departing traffic:

*ATC clearance including transponder code when required, as well as traffic information about traffic known to the ATC unit that the departing aircraft will need to be informed of before departure.*<sup>1</sup>

and on Traffic Information in general:

<sup>1</sup> CAP797 Section 2. Ch 8 Para 8.12

*Traffic information to traffic operating in the vicinity of an aerodrome, and specifically within the ATZ and to flights conducting Instrument Approach Procedures (IAP) shall be issued in a timely manner when, in the judgement of the AFISO, such information is necessary in the interests of safety, or when requested by the aircraft. When a pilot report indicates, or an AFISO considers, that there may be a collision risk, specific traffic information shall be passed to each pilot concerned.*

*In addition to the information listed in paragraph 8.94, before entering the traffic circuit an aircraft should be informed of the current traffic circuits and other traffic when necessary.<sup>2</sup>*

In accordance with SERA.3225:

*An aircraft operated on or in the vicinity of an aerodrome shall:*

- (a) observe other aerodrome traffic for the purpose of avoiding collision;*
- (b) conform with or avoid the pattern of traffic formed by other aircraft in operation.*

### **UKAB Secretariat**

The PA28 and C152 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>3</sup>. If the incident geometry is considered as converging, then the PA28 pilot was required to give way to the C152<sup>4</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>5</sup>.

### **Summary**

An Airprox was reported when a PA28 and a C152 flew into proximity at 1352hrs on Thursday 17<sup>th</sup> May 2018. Both pilots were operating under VFR in VMC, and both were in the visual circuit at Halfpenny Green, receiving an AFIS.

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

Information available consisted of reports from the pilots of both aircraft, radar photographs/video recordings, reports from the AFISO involved and reports from the appropriate ATC operating authorities.

The Board first commended the PA28 pilot for his open, honest and frank reporting. They agreed that, as he himself had pointed out, it was for him to integrate with the visual circuit traffic C152 ahead. However, it was clear to the Board that he had made assumptions about the intentions of the C152 when he saw it drifting to the right and, in asking the FISO the circuit direction rather than the question he wanted the answer to - the intentions of the C152 - he allowed his mental model to be shaped by confirmation bias when the FISO told him he could depart in either direction. Members commented that this illustrated why assumptions should not be made about the intentions of other pilots; if in doubt, pilots should not be afraid to ask direct questions on the RT. Having convinced himself that the C152 was not remaining in the circuit, the PA28 pilot then did not keep visual contact with it and lost sight of it whilst he was turning downwind, only seeing it again once they were in close proximity. Fortuitously, the aircraft had providential height separation given that he was not able to take any avoiding action himself.

For his part, the C152 pilot was certainly flying well right of the extended centreline on climb-out, as he had done on his previous circuits. Board members agreed that there was a fine line between instructors allowing students to make and learn from their mistakes and corrected their errors in a timely fashion.

<sup>2</sup> CAP797 Section 2. Ch 8 Para 8.18

<sup>3</sup> SERA.3205 Proximity.

<sup>4</sup> SERA.3210 Right-of-way (c)(2) Converging.

<sup>5</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

The danger with allowing students to fly grossly non-standard patterns was that other pilots might then wrongly assimilate what the other aircraft was doing (as in this case), or might not see it because it was not where they expected it to be. Once the PA28 and C152 had both started turning crosswind, the high-wing, low-wing combination of the two aircraft meant that neither pilot could see the other's aircraft and, as a result, the two aircraft came into close proximity without the C152 pilot even seeing the PA28.

The Board then discussed the role of the AFISO. Whilst he was not required to sequence traffic in the visual circuit, he was required to provide Traffic Information; members debated whether he should have given the PA28 pilot more information about the C152 on departure. In the end they noted that it wasn't standard practice for AFISOs to tell departing pilots about traffic remaining in the circuit, and neither could he have been expected to know that the PA28 pilot's question about the circuit direction was because he was uncertain about the intentions of the C152 pilot. Some controller members thought it was unfortunate that the AFISO hadn't noticed the two aircraft begin to turn into proximity crosswind; however, they conceded that looking for the joining aircraft was probably the AFISOs main priority, given that he had no reason to believe that the PA28 pilot wasn't visual with the C152 and therefore fitting in behind. Although he was the one with the full situational awareness and the knowledge to improve the situation, the AFISO had been unaware that the PA28 pilot had an incorrect mental model of the circuit traffic. After much debate, in the end members agreed that the lack of awareness of the impending incident, and thus lack of Traffic Information from the AFISO, could not be considered a contributory factor in the Airprox.

Finally, the Board discussed the cause of the Airprox. They quickly agreed that it had been that the PA28 pilot had not integrated with the C152 in the visual circuit, with two contributory factors that the C152 pilot had deviated well to the right of the centreline on climb-out; and that the PA28 pilot had not ascertained the intentions of the C152 when he was uncertain whether it was remaining in the circuit or not. In assessing the risk, it was similarly quickly agreed that because neither pilot effectively saw the other before CPA, providence had played a large part and separation had been reduced to the bare minimum; risk Category A.

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

Cause: The PA28 pilot did not integrate with the C152 ahead in the visual circuit pattern.

Contributory Factor:

1. The C152 pilot deviated well to the right of the centreline on climb-out.
2. The PA28 pilot did not ascertain the C152 pilot's intentions when uncertain of his track.

Degree of Risk: A.

#### Safety Barrier Assessment<sup>6</sup>

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

#### **ANSP:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because the AFISO did not pass any Traffic Information.

**Situational Awareness and Action** were assessed as **ineffective** because the AFISO did not know that the PA28 was turning into conflict with the C152 and therefore did not pass Traffic Information to the PA28 pilot.

<sup>6</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**Flight Crew:**

**Regulations, Processes, Procedures, Instructions and Compliance** were assessed as **ineffective** because the PA28 pilot did not integrate with the C152.

**Tactical Planning** was assessed as **partially effective** because the PA28 pilot did not ascertain the intentions of the C152 prior to departing.

**Situational Awareness and Action** were assessed as **partially effective** because although the PA28 pilot was generically aware of circuit traffic, he wasn't fully aware of the intentions of the C152, did not ask the AFISO to clarify, and assumed that the C152 was departing the visual circuit.

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

