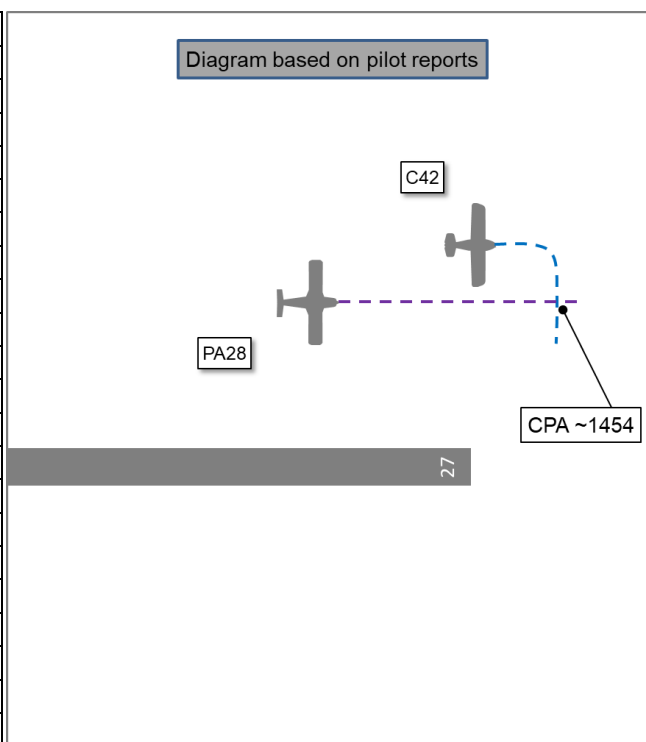


**AIRPROX REPORT No 2025001**

Date: 02 Jan 2025 Time: ~1454Z Position: 5153N 00210W Location: Gloucester Airfield

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	Ikarus C42	PA28
Operator	Civ FW	Civ FW
Airspace	Gloucester ATZ	Gloucester ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Gloster Tower	Gloster Tower
Altitude/FL	NK	NK
Transponder	None <sup>1</sup>	NR
Reported		
Colours	White	NR
Lighting	None	NR
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1000ft	1100ft
Altimeter	QFE (1018hPa)	NR
Heading	090°	NR
Speed	70kt	80kt
ACAS/TAS	Not fitted	NR
Separation at CPA		
Reported	50ft V/100ft H	50ft V/50ft H
Recorded	NK	



**THE C42 PILOT** reports a conflicting aircraft joining direct downwind for RW27RH, the C42 pilot had joined overhead and had been late downwind for RW27RH. The conflicting aircraft made an orbit for spacing as directed by Gloster ATC. The C42 pilot was following the aircraft on long final and about to turn base for RW27RH when the PA28 flew over them from right-to-left in close proximity.

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

**THE PA28 PILOT** reports that it had been a flight to Gloucester for circuit practice with a student. The PA28 pilot had not been the PF but was acting PIC for a student who was about a quarter of the way through their PPL course. It had been the final flight of the day after previously doing the same thing just an hour before and other circuit practice that morning at another airfield. The PA28 pilot had booked the slot for circuits for 1400 and had first called Gloucester at 1430 and they had said that they were still able to accommodate them. The first 4 circuits were uneventful, ATC was very accommodating and they had been the only aircraft in the circuit for the majority of the session. After the fourth touch-and-go, they had climbed straight ahead then turned crosswind for their circuit. From listening to other aircraft on the radio, there had then been 3 aircraft in the circuit all in relatively close proximity. They were asked to commence one left-hand orbit at the start of the downwind leg for spacing. Prior to commencing these orbits they had been visual with both other aircraft. Upon finishing the one orbit they were then only visual with one aircraft ahead. They had asked ATC if the aircraft ahead was to land or touch-and-go, which ATC had confirmed that it had been to land and the PA28 pilot had informed ATC that they would slow down. They asked their student to slow down to 80kts. After the orbit the student had gained 100ft of altitude so they were now downwind at 1100ft QFE. At the end of the downwind leg both the Instructor and student saw an aircraft 100ft below them and turning on to base leg. The PA28 pilot was then instructed to orbit left-hand at the end of the downwind leg. Once the other traffic had

<sup>1</sup> Pilot reports Modes A/C/S but nothing displayed on radar.

landed, the PA28 pilot was instructed to continue to final for a touch-and-go, after this they had returned back to [destination airfield] and the rest of the flight had been uneventful.

#### Contributing factors:

Human factors: with it being the final flight of a long day of circuit practice with students at the early stages of their training, it had been a very mentally tiring day so fatigue was definitely a factor.

Complacency: The PA28 pilot's thinking was that the number one traffic was on short final outside their field of view and the traffic they had been visual with ahead on downwind was the number two which they were following. In reality the number two traffic was just ahead of them but slightly below. The PA28 pilot notes that they should have checked with ATC where the other not-sighted traffic was.

Weather and topography: with it being later on in the day, the sun was very low; this, combined with high ground to the east of the airport, made spotting traffic quite difficult due to there being little contrast between aircraft and the ground.

Spacing: due to all three aircraft arriving at crosswind in close proximity, greater spacing could have been given between them. This hadn't been a problem with the first aircraft as the number one traffic was faster than the number two. However, the PA28 pilot reports that they had been a lot faster than the number two aircraft so they were able to catch up to it even after slowing down to 80kts. Possibly 2/3 orbits may have been required for spacing.

**THE GLOSTER CONTROLLER** reports that at 1455 the C42 pilot had reported an Airprox with a PA28 (PA28(A)) which had flown above them and close, whilst late downwind/turning base for RW27RH. The controller reports that they had been the Tower ATCO at the time. At around 1452, the PA28(A) pilot had been instructed to make one left orbit when at the start of the downwind leg for spacing against the C42 which was on its right-hand side on crosswind and inside it, after leaving the deadside. The C42 pilot was then instructed to report final number 2 following a 2<sup>nd</sup> PA28 (PA28(B)) which was early-to-mid-downwind crossing its left-to-right then, on completion of the PA28(A)'s orbit, the pilot was instructed to report final number 3 and follow the C42 ahead of them on downwind, which they had reported being visual with. At 1455, the C42 [pilot] whilst turning base reported an Airprox as stated above, the controller had replied "Roger" then asked the PA28(A) pilot if they had still been visual with the C42, to which they said they had mistaken it for the PA28(B) on final (about 1NM final at the time), and said they would continue downwind. The controller had then instructed the PA28(A) pilot to enter left-hand orbits at its [current] position, whilst the C42 was turning about 2NM final. The C42 pilot said that the PA28(A) had flown quite close to it and above, and confirmed they would file after landing. The C42 pilot was instructed to land after the previously landed PA28(B), then the controller had asked the PA28(A) pilot if they would also file an Airprox, to which they replied that they would fly back to [destination airfield] after their current touch-and-go and would file after landing and would also give the Gloster controller a call. NOTE: the weather had been almost CAVOK which had made it hard for them to even spot any aircraft late downwind. Also, they believed that they may have said to the PA28(A) pilot to report ready to turn base at some point, but not having listened to the tapes, they were not sure if it was to the PA28(A) or another aircraft earlier on the watch.

## Factual Background

The weather at Gloster airfield was recorded as follows:

METAR: 1450UTC 32004KT 9999 FEW040 04/M01 Q1021=

## Analysis and Investigation

### Gloucester Airport Safety Investigation

Both ADC and APP positions were open and both the ADC and APP controllers were endorsed in both ADC and APP positions. The radar had been unserviceable which had meant that the Aerodrome Traffic Monitor was not available. One of the uses of the ATM is to provide information

to aircraft on the position of other aircraft in the circuit or carrying out an instrument approach. Because of the radar/ATM unserviceability a local Airport Advice Notice (AAN 24 - 1130) was in effect:

- Only one aircraft in the fixed wing and helicopter circuit at a time.
- Non-home-based arrivals may be restricted.
- All movements are subject to PPR, and times allocated must be adhered to.
- Direct joins may not be available.
- Home based operators shall book returns/arrivals as this helps reduce workload for ATCOs.
- You may be asked for position reports more frequently than usual. Please ensure you pass accurate range reports or position reports.
- Cross runway operations may be restricted.
- Ad hoc IAPs may not be permitted or may be subject to significant delays.

As per this AAN, there was only one aircraft in the fixed-wing circuit at the time of the reported Airprox.

The PA28(A) had been carrying out VFR circuits right-hand on RW27. The flight had 2 persons on board, one of which was a student pilot and one was the Instructor. The Instructor was interviewed by the investigator on the 9th of January 2025. The C42 had departed Gloucester at 1419 on a local VFR flight to the north and returned for a standard overhead join. The default joining procedure for VFR fixed-wing traffic is the standard overhead join. The flight was solo.

PA28(B) had been an inbound VFR flight and joined right-hand downwind for RW27 from a westerly direction. This direct join was coordinated between APP and ADC as per MATS 2 requirements.

The following timeline omits some calls between Tower and other aircraft not directly involved in the Airprox.

At 1445 the C42 had been approaching from the northwest and Gloster APP cleared them for a standard overhead join. APP passed generic Traffic Information on the fixed-wing and helicopter circuits both being active. The C42 pilot was transferred to Gloster Tower.

1446 the C42 pilot contacted Gloster Tower and was given generic Traffic Information on the fixed-wing and helicopter circuits being active.

1447 the PA28(A) pilot reported downwind and was told to report final.

1448:27 the C42 pilot reported deadside for RW27RH and was told to report downwind which was read back. Specific Traffic Information was passed by ADC to the C42 pilot regarding the PA28(A) which had been turning final into the circuit. The information was acknowledged by the C42 pilot.

1448:44 ADC passed specific Traffic Information to the PA28(A) pilot regarding the C42 having been deadside and this was acknowledged. The PA28(A) pilot was cleared touch-and-go RW27. The PA28(A) pilot reported being visual with the traffic.

1449:32 the PA28(B) pilot reported to APP that they were at a range of 5 miles (from a westerly direction) and the pilot was given generic Traffic Information about the fixed-wing and helicopter circuits being active right-hand and told to contact Tower.

1449:45 Tower passed specific Traffic Information to the C42 pilot on PA28(B) joining from the west. The C42 pilot acknowledged this – *“I’ll keep a good look out for that, he’s going to be a lot faster than me”*.

1450:01 Tower (to the C42 pilot): *“Oh yes, um, report turning northbound”*. This was intended to afford the TWR ATCO time to consider the order in the right-hand circuit as there was now one joining from the west, one in the circuit and one descending deadside. This request to report before turning northbound (crosswind) was not acknowledged and not complied with.

An observation from the investigator is that the Tower ATCO should have reiterated this request and received a readback as it is considered an important trigger for planning purposes.

1450:22 the PA28(B) pilot had contacted Tower and reported joining downwind RW27. Tower requested their range and they advised “2 point 5”.

1450:32 Tower: “[PA28(B) C/S] roger, keep it wide, keep wide downwind join please, there’s traffic inside of you on like a crosswind join for the circuit – an Ikarus – report ready to turn base leg number one \*\*\*\*\* (unreadable)”. The PA28(B) pilot replied that they would keep it wide and report at the end of the (downwind) leg.

1450:50 C42 pilot: “[C42 C/S] are we keeping this tight or do you want me to go in behind the Arrow?”. The Investigator believes that the C42 pilot had been questioning whether they or the PA28(B) were to be number one as, whilst the PA28(B) was faster, the C42 could have flown a “tighter” circuit knowing that the PA28(B) pilot had been instructed to fly a wide circuit.

1450:53 Tower had asked the C42 pilot “Are you visual with the Arrow?” to which the C42 pilot had replied “negative”.

1450:58 Tower: “Roger, continue normal circuit”. At interview, the Tower ATCO reported that at this point they could see both the C42 and the PA28(A). They were both crosswind but, the Tower ATCO believed, they were between half a mile and a mile apart with the C42 in the 4 o'clock position of the PA28(A). The pilot of the PA28(A) reported that they regained visual contact with the C42 when they had been crosswind (after having lost visual crosswind during their last touch-and-go). At this point the Tower ATCO’s plan had been to make the PA28(B) number 1, the PA28(A) number 2 and the C42 number 3. That plan changed at the moment the PA28(A) pilot reported visual with the traffic on their right (the C42) and said they’d “go in behind them”.

1451:02 The PA28(A) pilot had transmitted “[PA28(A) C/S] visual with the traffic just to our right, we’ll go in behind them”. At interview it was evident that the PA28(A) pilot was definitely referring to the C42.

1451:08 Tower: “[PA28(A) C/S] if you can make one left-hand orbit current position”.

An observation is that if the Tower ATCO had requested that the PA28(A) pilot were to take up left-hand orbits for spacing until they had been ready to roll out, then the onus would have been on the PA28(A) pilot to ensure they maintained visual contact with the C42 or asked for updates.

1451:12 PA28(A) pilot: “one left-hand orbit [PA28(A) C/S]”.

1451:15 C42 pilot: “And I’m visual with him as well, [C42 C/S]”.

At interview it became clear that the C42 pilot had been referring to the PA28(A).

As the order had now been established that the PA28(B) was number one, the C42 was number two and the PA28(A) was number three:

1451:18 Tower said “[C42 C/S], the one on your left is not the one in question, they should be somewhere mid-downwind but I can’t see them yet, standby.”

i.e. The Tower ATCO had been trying to ensure that the C42 pilot was visual with the PA28(B).

1451:30 Tower: “[PA28(B) C/S] report your position”.

1451:34 PA28(B) pilot: “[PA28(B) C/S], we’re currently 2 miles, we’re just near the pond actually on the downwind.”

The reference to “the pond” is not a recognised position report.

1451:43 Tower: *"Ah [PA28(B) C/S] I have you in sight, standby, break, [C42 C/S] he's about to cross your left-to-right".*

1451:49 C42 pilot *"And [C42 C/S] got him now, yep, contact with them".*

1451:52 Tower: *"[C42 C/S] thanks, follow".*

1451:54 C42 pilot: *"Wilco, [C42 C/S]".*

An observation is that the executive use of the word "follow" by Tower i.e. instructing the C42 pilot to follow the PA28(B) may have led the C42 pilot to fly a wide circuit and that this may have contributed to the PA28(A) pilot subsequently catching them up. It may have been more appropriate for Tower to pass Traffic Information to the C42 pilot on the PA28(B) (e.g. *"[C42 C/S], report final number two, number one is the Piper Arrow wide downwind"*) but leaving them the freedom to fly a "normal" circuit if they chose to. This may have assisted the PA28(A) pilot in acquiring visual contact with the C42 after rolling out of the orbit.

1451:56 Tower: *"[PA28(A) C/S] on completion of this orbit continue downwind number 3".*

The report filed by the PA28(A) pilot suggests more than one orbit may have been appropriate.

It is reasonable to observe that at this point the Tower controller could see all 3 aircraft, that the PA28(B) was number one to land and was midpoint on a wide downwind leg, the C42 was number two following the PA28(B) and was on a relatively tight crosswind leg (having positioned from the deadside (and confirmed by the SkyDemon tracks that the pilot supplied) and that the PA28(A) was number three on a crosswind leg (wider than the C42) and in a left hand orbit knowing that the C42 was ahead of them in the circuit order and that the PA28(A) [pilot] had definitely been visual with the C42 whilst crosswind.

It should also be noted that the Gloster MATS 2 states:

"ADC shall determine the landing order so as to accommodate the maximum number of arrivals with minimal delay consistent with a safe and orderly flow of air traffic. An aircraft shall be given its number in the sequence, together with the position and type of the preceding aircraft, and when appropriate, instructions to follow."

It is reasonable to state that at this time the ADC ATCO had established the landing order, advised [the pilot of] each aircraft what number they were in the sequence and passed relevant Traffic Information.

1452:00 PA28(A) pilot: *"On completion of the orbit downwind number 3, are these to land ahead of us?".*

Tower replied *"Affirm"*.

The report filed by the PA28(A) pilot states that they asked if the (one) aircraft ahead was to land or touch-and-go. At interview the Instructor stated that they had been aware that there were two aircraft ahead of them in the circuit as is corroborated by their question over the radio. The Instructor of the PA28(A) asked the student to slow down to 80kts and this was because they had been aware that the Ikarus was slower. The Instructor was asking if the aircraft were to land as they wanted to take appropriate spacing behind them both i.e. a little more spacing is required behind a landing aircraft than an aircraft on a touch-and-go.

1452:07 PA28(A) pilot *"Ah, we'll give (keep?) a lot of space then"*.

Tower replied *"Roger"*.

It is a reasonable assumption that this statement (less than a minute after the PA28(A) pilot had reported visual with the C42 when they were both crosswind and a few seconds after the PA28(A) had asked the intention of the 2 ahead and said they would give them *“a lot of space”*) would indicate to the ADC ATCO that they had provided sufficient information for the PA28(A) pilot to maintain separation from the C42 and so the ATCO could reasonably consider that it was not necessary to pass further Traffic Information and instructions to the PA28(A) pilot on this occasion in the interests of safety. It is worthy of note that the pilot of the PA28(A) did not request any further updates on the positions of the other aircraft.

The Investigator observes that at this point the ADC ATCO had given:

- (1) Generic Traffic Information to enable VFR pilots to safely integrate their flight with other aircraft;
- (2) Specific Traffic Information appropriate to the stage of flight and risk of collision;
- (3) Timely instructions as necessary to prevent collisions and to enable safe, orderly and expeditious flight within and in the vicinity of the ATZ.

1452:11 PA28(A) pilot: *“We really got it quite good last time didn’t we?”*.

At interview it became clear that this related to a sortie earlier in the day when, during right-hand VFR circuits on RW27, the student had misjudged spacing with an aircraft ahead and had had to carry out a go-around on two separate occasions.

1452:15 Tower: *“And [PA28(B) C/S] number one report final”*.

1452:19 PA28(B): *“circuit number one, wilco”*.

1452:29 Tower: *“All stations within the fixed -wing and heli circuit, caution there is a large flock of birds migrating NE to SW, no height information”*.

An observation would be that the ADC ATCO had been keeping an appropriate lookout from the VCR and was passing relevant essential information to pilots in the interests of safety.

1452:42 an unidentified station: *“are they not squawking”* and the Tower controller had responded *“ha ha”*. It is not believed that this distracted from the situation.

[ATC communication with uninvolved aircraft requesting ground movements and departure ].

1453:38 Tower: *“[C42 C/S] are you still visual with the Arrow?”*.

1453:41 C42 pilot: *“Just about sir, yeah, he’s just coming in over Cheltenham now”* to which the Tower controller replied *“Thank you”*.

At interview, the ATCO reported that they had asked this as visual acquisition was difficult despite good weather conditions. In a written statement the ATCO observed *“There were no clouds. Aircraft on late downwind from the TWR perspective are hard to spot in general but more so that day (no cloud, sunny days). It is easier to see aircraft in the circuit with clouds in the background than blue sky, as we can see the contrast between clouds and aircraft. This is why I kept asking aircraft if they were visual with each other because I couldn’t see them whilst downwind, and also why I couldn’t initially see the direct downwind joiner until it was mid-downwind”*. The pilot of the C42 (who has extensive flying experience at Gloucester airfield) also stated that visual acquisition of other aircraft at Gloucester can be difficult.

1453:50 PA28(B) pilot: *“[PA28(B) C/S] finals we’re just (unreadable)”*.

1453:54 Tower: “[PA28(B) C/S] *continue approach, Cherokee departing before you*” to which the pilot replied “*continue, [PA28(B) C/S]*”.

1454:04 Another aircraft (uninvolved) said “[C/S] *just approaching Worcester, we’ll be changing to Halfpenny Green on 123.005*”.

1454:11 Tower: “[C/S], *squawk conspicuity, bye bye*”.

1454:14 [C/S]: “*Squawk (unreadable...), that’s easy for me to say, squawk conspicuity,[C/S]*”.

This aircraft would not usually have been on the Tower frequency at this point as it would probably been approximately 15 miles from Gloucester as it approached Worcester. The Investigator does not consider this to be a significant root cause of the Airprox but the call would have been a distraction to the Tower controller's primary functions. For information, [C/S] departed Gloucester at 1447 on a VFR flight to [destination]. The C42 pilot was given Traffic Information on this departure as they approached the standard overhead join. [C/S] would normally have been transferred to APP, but the Tower ATCO could not remember why they weren't.

1454:21 Tower: “*And [PA28(B) C/S] wind 330 degrees, 4, runway 27 cleared to land*”.

1454:26 PA28(B): “*Cleared to land, [PA28 C/S], thank you*”.

1454:29 C42 pilot: “*Ah [C42 C/S] I’d like to report an Airprox, a Cherokee has just gone straight over the top of me on the downwind*”.

It is a reasonable observation that in the two and a half minutes leading up to the Airprox the ADC ATCO was prioritising tasks appropriately. They had established the landing order, informed the 3 pilots concerned and had been visual with them all at various times. They had then spent their time passing essential aerodrome information to all aircraft regarding a large flock of birds that could have posed a threat to safety. The ADC ATCO then responded to a request from an aircraft to start. 70sec before the Airprox was reported, they had dealt with an aircraft that was ready for an immediate departure versus an aircraft on final approach to land. It is reasonable to say that their actions and decision making here were appropriate given that they had established the landing order and passed Traffic Information to the aircraft in the circuit. As the ADC ATCO had been focused on the aircraft on final versus the departing aircraft, they may not have seen the PA28(A) catching the C42.

MATS Part 1 states:

“Aerodrome controllers shall maintain as far as practicable, a continuous watch by visual observation on all flight operations on and in the vicinity of an aerodrome”.

Evidently, the ADC ATCO had been maintaining a continuous watch on flight operations by visual observations but had to prioritise, and in that moment the PA28(A) overflew the C42. It is highly likely, given the timeline of transmissions, that the PA28(A) overflew the C42 at the closest point sometime between the Tower controller clearing the pilot of PA28(B) to land and the C42 pilot reporting the Airprox. Considering this, it is not surprising that the ADC ATCO did not see the immediate lead-up to the Airprox or to be able to take appropriate actions to try and stop it happening.

1454:38 Tower: “[C42 C/S] *roger*”.

1454:42 C42 pilot “*Damn close that was sir, damn close*”.

During the above exchange it is believed (following evidence taken at interview, viewing of video evidence, SkyDemon tracks submitted by the C42 pilot and the RT transcript) that the C42 pilot had been visual with the PA28(B), as they had flown a relatively wide downwind leg, “cut the corner” between downwind and base leg, flying a short diagonal leg. At the same time the PA28(A) pilot

had seen the PA28(B) on final approach and made the assumption that the PA28(B) was the C42. As the C42 pilot flew the diagonal route between downwind and base leg, the PA28(A) pilot flew over the top of the C42 as they continued downwind. The C42 and PA28(A) pilots were not visual with each other until the Airprox was actually happening and by that time no avoidance action would have been possible. Both pilots report the risk of collision to be high.

1454:45 PA28 pilot: *"Yeah apologies that was [PA28(A) C/S], we didn't quite see, I think we caught up with you".*

1454:51 Tower: *"[PA28(A) C/S] were you in sight with the Ikarus you were supposed to follow?"*.

1454:55 PA28(A) pilot: *"We, uh, we thought we saw, uh, what it was on final, we thought they'd turned final, so we're just continuing out downwind".*

1455:02 Tower: *"[PA28(A) C/S] roger make one left-hand orbit".*

At this point the risk of collision had passed and the C42 pilot reported final.

At interview, the pilot of the C42 stated that it had been a solo flight. They said that they had flown a wide circuit as the ATCO had told them to follow the PA28(B). They said that, whilst downwind, they saw the PA28(B), thought there was plenty of space and so cut the corner between downwind and base leg to "tighten it up". It is the belief of the pilot that the PA28(A) pilot flew the downwind leg "inside" them having rolled out of the orbit on crosswind. They reported that they had not heard the TWR request to "report before turning northbound". They stated that they were visual with the PA28(A) when they were both crosswind and that the PA28(A) was between half a mile and a mile away on their port side. The C42 pilot stated that the risk of collision was high and that they thought they were less than 50ft apart vertically and less than 100ft apart horizontally. They stated that they could not have taken evasive action as it was too late when they saw the PA28(A) passing them.

At interview with the PA28(A) pilot they stated that they had been fatigued after having carried out 2 full days instructing students carrying out VFR circuits. They stated that they had routed inbound VFR from [...], joined left base and then been cleared for VFR circuits right hand RW27. They believed they had lost sight of the C42 when they carried out a touch-and-go but remembered being visual with the C42 when crosswind. The PA28(A) pilot reports that they had lost sight of both aircraft when they had orbited left on crosswind. When they were downwind they thought they had regained visual contact with the C42 but it was actually the PA28(B). The PA28(A) pilot instructed the student to slow down to 80kts as they were aware by then that both aircraft ahead were to land and so they needed "to give more room to the Ikarus" and that the Ikarus would, in turn, be giving more room to the Arrow. The PA28(A) pilot stated that on a previous circuit detail at Gloucester that day (about 1 or 2 hours earlier) their student had "got distances wrong and had to go-around twice". They stated that they had been doing the RT and that the student was flying the aircraft. They stated that they didn't see the Ikarus again after the orbit and that complacency (their word) led them to expectation bias that they were following the correct aircraft when they weren't. They stated that their "mental model did not match what was happening". They stated that they thought the Arrow must have been on short final (under their starboard wing) out of sight and that the aircraft they could see on final was number two (it was in reality number one). They stated that some of the RT calls which would have helped with their situational awareness may not have registered as there were training issues (e.g. they had drifted 100ft above circuit level, they were considering the departure route back to [...], carrying out landing checks etc.). The PA28(A) pilot thought that the risk of collision was high (this had changed from when they had submitted their own report) and that the minimum separation between the two aircraft was 50ft vertically and 50ft horizontally.

The Investigator would like to state that both pilots were very helpful with the investigation.

Video evidence supplied by the pilot of the C42 indicates that an estimate of minimum distance between the 2 aircraft could be as little as 10ft vertically and less than 50ft horizontally.



The main root cause for the Airprox was the loss of visual contact with the C42 by the pilot of the PA28(A) and the subsequent assumption that the aircraft that they could see that was on final was the C42 when it was actually the PA28(B).

The Rules of the Air Regulations state: "If an air traffic control unit has communicated to any aircraft an order of priority for landing, the aircraft must approach to land in that order."

Despite being given generic and specific Traffic Information and being told the type (of the Ikarus), the PA28(A) pilot did not adhere to this rule.

Secondary root causes were:

- The unserviceability of the Radar/ATM meaning that the ATCO could not use the ATM to provide information to aircraft on the position of other aircraft in the circuit.
- The ATCO not reiterating an instruction for the C42 pilot to report before turning northbound (crosswind) at the end of the deadside descent as this would have afforded them the opportunity to make the PA28(A) number two and the C42 number three. This order in the circuit would have been easier to manage safely as the P28(A) had been faster than the C42.
- The ATCO instructing the PA28(A) pilot to carry out one left-hand orbit (for spacing) whilst crosswind instead of allowing the pilot to orbit as necessary.
- The ATCO telling the C42 pilot to follow the PA28(B) who had been on a wide downwind leg. The act of following the track of the PA28(B) in conjunction with the relatively slow circuit speed of the C42 meant that the PA28(A) caught the C42 at the end of their downwind leg.
- In light of the unserviceability of the ATM, the ATCO did not exercise enough positive control to prevent the Airprox; however, the Investigator believes their actions were reasonable and the ATCO could be reasonably assured that the PA28(A) pilot should have maintained their own separation against the C42.
- The PA28(A) pilot did not ask for updates on the position of the C42 and had an expectation bias that the PA28(B) was the C42.
- Previous incidents that day indicate that the PA28(A) pilot had twice flown too close to aircraft ahead of them in the circuit which, on both occasions, led them to have to go-around.
- Workload in the cockpit meant that the (PA28(A)) Instructor lost sight of the C42.
- Weather conditions may have made it difficult to see light-aircraft.
- The ADC ATCO prioritising traffic on final approach awaiting clearance to land against departing traffic given a clearance for immediate take off. This appropriate prioritisation meant that the ATCO had not been looking directly at a potential confliction at the end of the downwind leg (which had been [deemed] reasonable as the pilots knew their order in the landing pattern and Traffic Information had been passed).

## UKAB Secretariat

The C42 and PA28(A) 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>

<sup>2</sup> (UK) SERA.3205 Proximity.

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

## Summary

An Airprox was reported when a C42 and a PA28 flew into proximity at Gloucester airfield at approximately 1454Z on Thursday 2<sup>nd</sup> January 2025. Both pilots were operating under VFR in VMC and in receipt of an Aerodrome Control Service from Gloster Tower.

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

Information available consisted of reports from both pilots, reports from the air traffic controllers 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.

Members firstly considered the actions of the C42 pilot, noting that they had joined through the overhead, had established downwind and had been nominated as number 2 to a second PA28 (PA28(B)) on long final. They had been aware of the Airprox PA28 (PA28(A)) which had been behind them and obscured from their view (**CF9**) and whose pilot had been instructed to make a single orbit for spacing and had been nominated as number 3 behind the C42. Board members acknowledged that the C42 pilot had developed their air picture based on the flow of RT calls and had rightly assumed that the PA28(A) had been well spaced behind them (**CF7**) and would then have followed them around the pattern as number 3 and had been startled as the PA28(A) had crossed their path as they had turned onto the base leg (**CF8**). Members felt that, although there had been little more the C42 pilot could have done in this case, an RT call indicating their turn toward the base leg may have helped develop the PA28(A) pilot's situational awareness.

Members moved on to review the actions of the PA28(A) pilot, noting that they had been established in the circuit prior to this reported event which itself had been toward the end of a long flying day. Members thanked the pilot for the full and frank report they had submitted which had helped the Board better understand the situation at the time. They noted that, as the PA28(A) pilot had turned downwind, the Gloster Tower controller had instructed them to perform a single orbit to the left to increase separation between themselves and the C42, and had been nominated as number 3 to follow the other PA28 (PA28(B)) and the C42 immediately ahead of them. In doing so, the PA28(A) pilot had degraded their situational awareness (**CF7**), had lost visual contact with the C42 - mis-identifying the PA28(B) as the aircraft ahead - and had aimed to sequence behind it for approach to the runway thereby not following the approach order as specified by the controller (**CF4**, **CF5**). The Board wished to stress that at any time when operating in and around the circuit, with potential for inaccurate situational awareness, it is wise to request further information from the controller regarding other traffic (which the PA28(A) pilot had not done (**CF6**)) and reinforced the need to follow the established traffic pattern and make all appropriate calls. As the PA28(A) pilot had then followed the PA28(B) towards the runway, they had turned across the C42 and visually re-acquired it only at that point (**CF8**). Members did recognise that the low wing construction of the PA28 had effectively obscured the pilot's view of the C42 as they had flown across it (**CF9**).

In considering the contribution by the Gloster controller, members recognised that the radar and ATM equipment had been inoperable at that time (**CF1**) and felt that this had impeded the controller's ability to fully develop and maintain a robust awareness of the various aircraft in the circuit at that time. The Board briefly discussed the extant AAN (AAN24-1130) which had been in place at that time and felt that it had the potential to confuse regarding the restriction to 'one fixed-wing aircraft in the circuit at any time' as, although only one aircraft in this case had been completing circuits at this time, there had in fact been 3 aircraft in or joining the circuit. The Board acknowledged the controller's direction to the PA28(A) pilot to make 'one full orbit to the left' to generate spacing, accepting that this may have generated sufficient spacing between the PA28(A) and the C42, but opined that it may be possible in such circumstances to issue the instruction to orbit 'until sufficient separation is achieved', thereby allowing the pilot to assess the need at the time. Members recognised that, until the Airprox call had been made by the C42 pilot, the controller had believed that all participants had been aware of the position and responsibility held by each pilot and had therefore rightly focussed on the aircraft nominated as number 1 and the approaching number 2 and had therefore not detected the conflict

between the number 2 and number 3 aircraft (**CF2**). The picture had become more complicated due to the PA28(A) pilot's mis-identification of the PA28(B) as the C42, an error which the controller had been unaware of until the C42 pilot had made their Airprox call (**CF3**). The Board felt that the picture had become confused due to a mis-identification of the aircraft the PA28(A) pilot had been instructed to follow, after having lost visual during their orbit, but that had not been apparent to either pilot or the controller until CPA, and members agreed that there had been little more the controller could have done in this case.

Concluding their discussion, members turned their attention to the determination of the risk of collision. Members noted that both the C42 and the PA28 pilots had reduced situational awareness as they had approached the CPA due to a combination of obscurity and mis-identification and, as a result, the Board felt that safety margins had been reduced much below the norm. Members were in agreement that there had been a risk of collision (**CF10**) and, accordingly, assigned a Risk Category B to this event.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### **Contributory Factors:**

	2025001			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	<b>Ground Elements</b>			
	<b>• Manning and Equipment</b>			
1	Technical	• Radar Coverage	Radar Coverage	Non-functional or unavailable
	<b>• Situational Awareness and Action</b>			
2	Human Factors	• Conflict Detection - Not Detected	An event involving Air Navigation Services conflict not being detected.	
3	Human Factors	• Expectation/ Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	
	<b>Flight Elements</b>			
	<b>• Regulations, Processes, Procedures and Compliance</b>			
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
	<b>• Tactical Planning and Execution</b>			
5	Human Factors	• Action Performed Incorrectly	Events involving flight crew performing the selected action incorrectly	Incorrect or ineffective execution
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>			
6	Human Factors	• Lack of Communication	Events involving flight crew that did not communicate enough - not enough communication	Pilot did not request additional information
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
	<b>• See and Avoid</b>			
8	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
9	Contextual	• Visual Impairment	Events involving impairment due to an inability to see properly	One or both aircraft were obscured from the other
	<b>• Outcome Events</b>			
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<sup>4</sup>

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 **ineffective** because the Gloster Tower controller's focus had been on the aircraft requesting take-off as a second had approached for landing whilst the Airprox-involved aircraft had both been downwind.

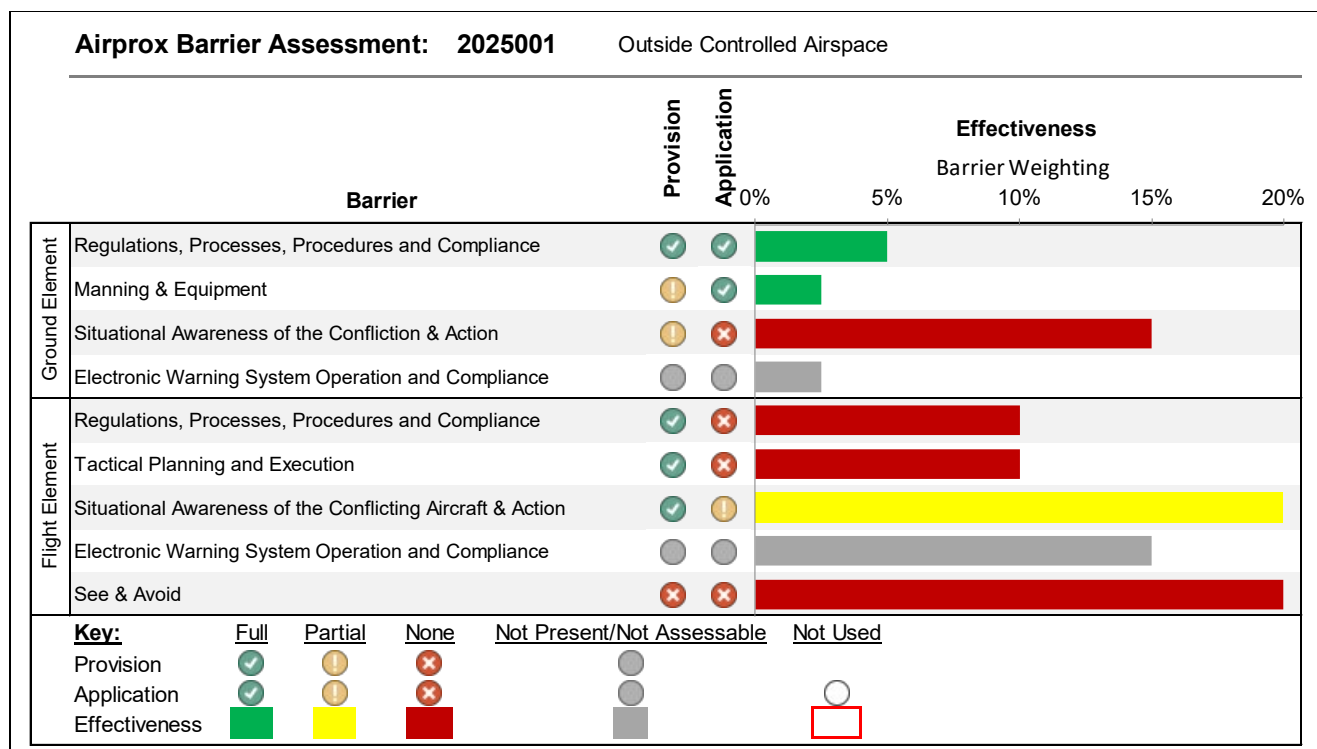
### Flight Elements:

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the PA28(A) pilot, having mis-identified the PA28(B) as the C42, had not complied with the circuit pattern priority instruction issued by the Gloster Tower controller.

**Tactical Planning and Execution** was assessed as **ineffective** because the PA28(A) pilot had not followed the aircraft ahead of them as directed by the Gloster Tower controller.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **partially effective** because the C42 pilot had inaccurate situational awareness of the position of the PA28(A) and the PA28(A) pilot, having misidentified the PA28(B) as the C42, had inaccurate situational awareness and could have sought clarity from the Gloster Tower controller.

**See and Avoid** were assessed as **ineffective** because both the C42 and PA28(A) had been obscured from the other pilot leading to effective non-sighting by both ahead of the CPA.



<sup>4</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).