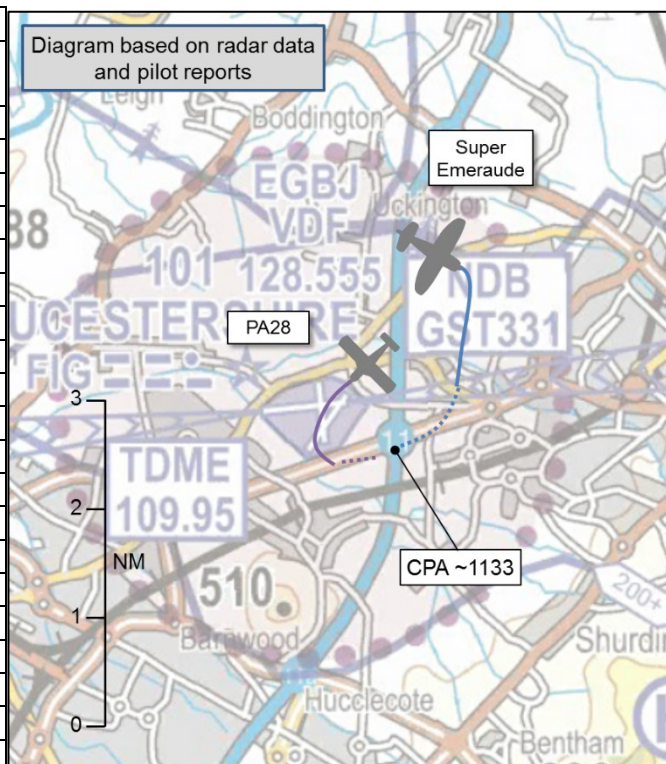


AIRPROX REPORT No 2019279

Date: 19 Sep 2019 Time: 1133Z Position: 5153N 00209W Location: Gloucestershire Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Piel Super Emeraude	PA28
Operator	Civ FW	Civ FW
Airspace	Gloucestershire ATZ	Gloucestershire ATZ
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Gloster Tower	Gloster
Altitude/FL	NK	NK
Transponder	A, C	Not fitted
Reported		
Colours	White	
Lighting		
Conditions	VMC	VMC
Visibility		
Altitude/FL	2300ft	NR
Altimeter	QFE (1028hPa)	NR
Heading	180°	NR
Speed	95kt	100kt
ACAS/TAS	Not fitted	Not fitted
Separation		
Reported	300ft V/200m H	Not seen
Recorded	NK	



THE PIEL SUPER EMERAUDE (CP32) PILOT reports that he was joining at Gloucestershire for an overhead join for RW27RH at 2300ft. He was told by ATC that another aircraft was joining and he saw an aircraft tracking left-to-right and reported visual. However, after reporting ready to descend deadside and receiving a clearance from ATC, it became apparent that there was another aircraft in their 2 o'clock, slightly below, coming towards them. He reported to ATC that he had an aircraft turning towards them in a left-hand pattern in the overhead. Due to the close proximity of the other aircraft, he reduced his rate of descent and stopped the right-hand turn to continue straight ahead. Once the other aircraft was clear he continued with the deadside descent. ATC reported that they could not see the other aircraft and once he had stated its position again, they asked the other pilot to climb in a right turn back into the overhead and await further instructions. Once on the ground it became obvious that the other pilot had turned left instead of right in the overhead and descended on the wrong side.

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

THE PA28 PILOT reports that he contacted Gloster App to report inbound from the northeast. He was told to join overhead and descend deadside for RW27RH. He joined in the overhead to descend deadside, but made a left-hand turn to get into position. This was reported to ATC by another pilot. On completing crosswind he called downwind and was told by ATC to return to the overhead, he then returned to the overhead from late downwind RW27, which is when he assumed the Airprox took place.

THE GLOSTER CONTROLLER reports that the PA28 pilot called App inbound 10nm south at 1123z and was instructed to conduct an overhead join for RW27RH. At 1126z the CP32 pilot called App 6nm northwest and was also instructed to conduct a standard overhead join. Both aircraft were then transferred to Gloster Tower. When the PA28 reported on frequency, the controller instructed him to report in the overhead before descending. At 1131, the CP32 pilot was given Traffic Information on the PA28 and instructed to report overhead before descending. Reciprocal information was given to the

PA28 pilot. At 1132, the PA28 pilot reported in the overhead and the controller reiterated 'right-hand circuit, report descending deadside'. At 1133, the CP32 pilot reported that the other traffic was in a left turn on the deadside. When asked, the PA28 pilot said he was about to join crosswind. The controller did not have the PA28 in sight so instructed him to climb back into the overhead to rejoin. The CP32 pilot met with the controller later and informed him that he was going to report an Airprox.

Factual Background

The weather at Gloucestershire was recorded as follows:

METAR EGBJ 191120Z 35002KT 9999 FEW040 19/10 Q1031=

Analysis and Investigation

CAA ATSI

NATS radar replay was used by CAA ATSI, this radar was not available to the Gloucestershire controllers. Neither aircraft was positively identified on the radar replay; however, the contacts deemed to be the aircraft concerned, manoeuvred in accordance with the pilot and ATC reports and the RTF transmissions.

At 1121:47, the PA28 pilot reported 10nm to the east of Gloucestershire Airport and was told by the Gloucestershire App controller to standby because the controller was coordinating preceding joining traffic with the Tower controller at the time. At 1123:05, the App controller advised the PA28 pilot that it would be a standard overhead join for RW27 with a right-hand circuit, and passed the QFE. This was read-back correctly by the pilot. The controller then instructed the pilot to report at 3nm.

At 1126:55, the CP32 pilot called for re-join from the northwest. The approach controller confirmed that it would be a standard overhead join for RW27, with a right-hand circuit, passed the QFE and instructed the pilot to report at 3nm, which was read back correctly.

At 1127:20, the PA28 pilot reported at 2nm, (he was actually 3nm east). The Approach controller instructed the pilot to *"take up delaying action to the south"*, advising that there would be a 2-minute delay for their join because the Tower was very busy. This was acknowledged by the pilot, and the radar contact believed to be the PA28 was observed commencing left-hand orbits. Three other aircraft were ahead in the circuit – one on final approach, one late downwind, one commencing the downwind leg, and one other aircraft joining the overhead from the north (Figures 1 & 2).

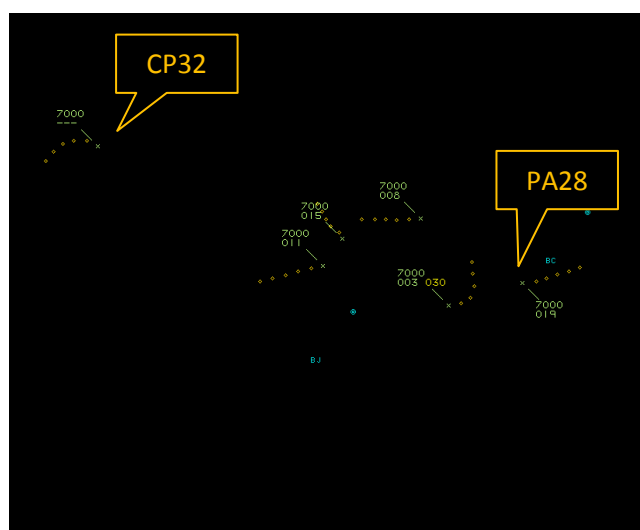


Figure 1 - 1127:20

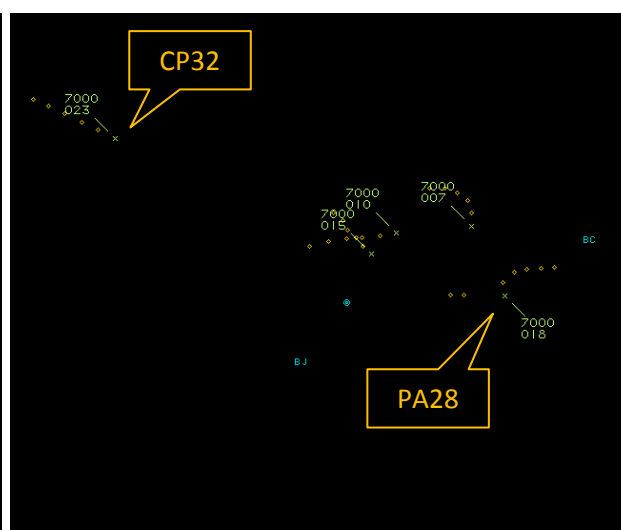


Figure 2 - 1127:56

At 1128:02, the App controller advised the PA28 pilot that the fixed wing and helicopter circuits were both active right-hand, and instructed them to contact Tower which, after a short delay and a request

to confirm the frequency that had initially been read back incorrectly, was correctly read back by the pilot.

At 1128:32, the CP32 pilot reported at 3nm and was instructed by the Approach controller to take up delaying action. They too were advised of a 2min delay for their join which was acknowledged.

At 1130:18, the PA28 pilot reported on the Tower frequency and was instructed to report overhead before descending, which was read back correctly by the pilot.

At 1130:23, the CP32 was instructed by App to route towards the overhead, and to switch to the Tower frequency. At 1130:52 (Figure 3), the CP32 pilot reported inbound to the overhead. The Tower controller acknowledged this, instructing them to report the overhead before descending, and advising that they had further traffic for the overhead approaching from the south, (the PA28, which was actually approaching from the east). The Tower controller then passed reciprocal Traffic Information to the PA28 pilot on the CP32 advising that it was inbound from the north.

At 1131:58 (Figure 4), the PA28 pilot reported in the overhead. The Tower controller instructed them to descend on the dead side and to report doing so, which was acknowledged by the pilot.

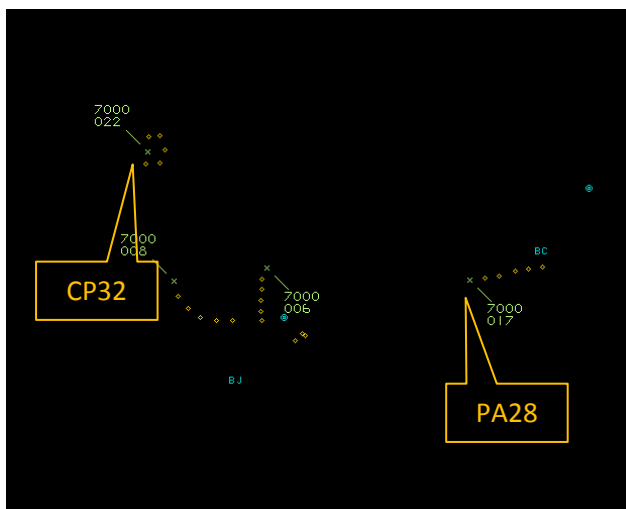


Figure 3 – 1130:52

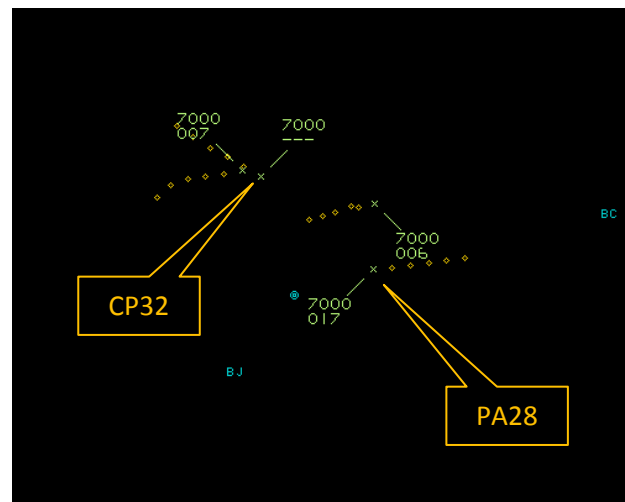


Figure 4 – 1131:58

At 1132:10 (Figure 5), the CP32 pilot reported in the overhead and advised that they were “visual with the traffic”. The Tower controller instructed the CP32 pilot to “follow him, report downwind, in fact, report descending on the dead side”, which was acknowledged. The CP32 was 1.3nm NW of the PA28 at this time.

At 1132:48 (Figure 6), the CP32 pilot advised “*descending dead side, the other aircraft’s in a left hand turn on the dead side*”. The Tower controller acknowledged this and, at 1133:15, called the PA28 and requested a position report. The PA28 pilot reported that they were about to join downwind. The Tower controller advised “*I don’t have you in sight but eh someone reported you’re doing a left-hand pattern. It is a right-hand pattern for RW27, so just safely climb again towards the overhead and report ready to descend*”, which was acknowledged by the pilot. The aircraft were still 1.3nm apart at this stage.

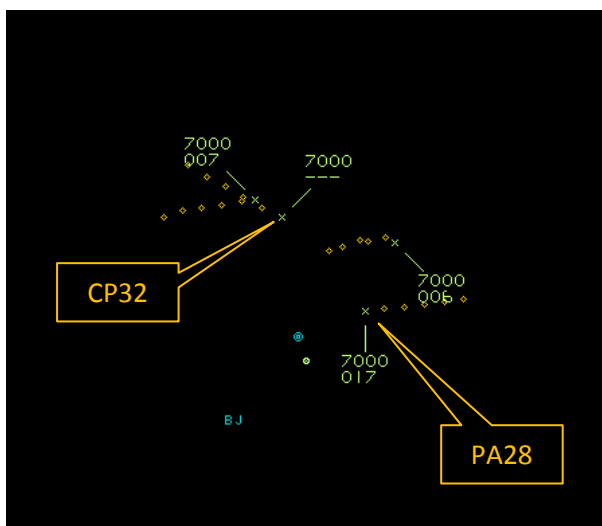


Figure 5 – 1132:10

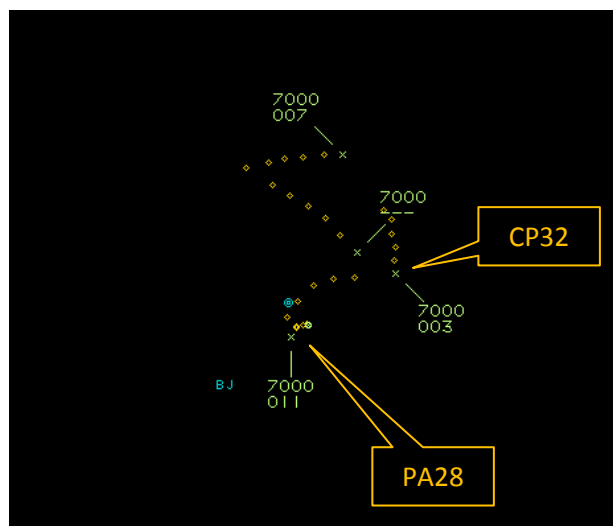


Figure 6 – 1132:48

The controller then advised the CP32 pilot of the intentions of the PA28 to return to the overhead. He acknowledged this advising that the PA28 had *“just gone crosswind in the right turn now to the overhead”*.

Although there appeared to be some confusion in the Tower controller’s mind as to the direction of approach of the PA28, (reported as being from the south, whereas the aircraft was inbound from the east,) it is not thought that this contributed to the Airprox because the CP32 pilot appeared to have established a visual contact with the PA28 as they joined in the overhead. The CP32 pilot does, however, appear to lose visual contact with the PA28 because they subsequently reported in their written report that *“there was another aircraft in our 2 o’clock position, slightly below, but coming towards us as I started the descent.”* The CP32 pilot reported reducing their rate of descent and stopping their right turn to continue straight ahead due to the proximity of the PA28. The Tower controller reported not having the PA28 in sight. The Tower controller referred to the pilot of the PA28 as *“student”* on two occasions, as did the subsequent ATC report but the PA28 pilot’s own initial calls to the Gloucestershire Approach and Tower controllers did not include this prefix.

The radar replay between 1132:53 and 1133:20 did not accurately illustrate the track of the PA28, likely due to its (low) level, and it did ultimately disappear from radar for a time, therefore CPA could not be determined.

Relevant CAP 493 extracts:

Section 2: Chapter 1: Aerodrome Control:

2. Responsibilities

2.1 Aerodrome Control shall issue information and instructions to aircraft under its control to achieve a safe, orderly and expeditious flow of air traffic with the objective of:

(1) Preventing collisions between:

(a) aircraft flying in, and in the vicinity of, the ATZ;

(b) aircraft taking-off and landing;

(c) aircraft and vehicles, obstructions and other aircraft on the manoeuvring area.

Note: *Aerodrome Control is not solely responsible for the prevention of collisions. Pilots and vehicle drivers must also fulfil their own responsibilities in accordance with Rules of the Air.*

7. Information to Aircraft

7A. Traffic Information and Instructions

7A.1 Traffic information and instructions shall be passed to aircraft on any occasion that a controller considers it necessary in the interests of safety, or when requested by a pilot. In particular, Aerodrome Control shall provide:

- (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.*

7A.2 MATS Part 2 shall detail local procedures for the integration of aircraft in the vicinity of the aerodrome.

18. Arriving Aircraft

18A. Joining Circuit

18A.1 Clearance to enter a traffic circuit is issued when an aircraft is still some distance from the aerodrome to enable the pilot to conform with the traffic circuit, pending clearance to land. Information concerning landing direction or runway in use and any other necessary instructions are given at the same time so that the pilot may intelligently position himself in the traffic pattern.

Additionally, a guide to joining procedures for visiting VFR aircraft is published on the Gloucestershire Airport website, and which is referenced in the AIP entry for the airport. It emphasises the requirement for aircraft joining in the overhead to make all turns in the direction of the circuit, i.e. to the right for a right-hand circuit.

UKAB Secretariat

The Super Emeraude 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 hazard¹. If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right². 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 operation³.

Summary

An Airprox was reported when a Piel Super Emeraude and a PA28 flew into proximity in the Gloucester overhead at approximately 1133hrs on Thursday 19th September 2019. Both pilots were operating under VFR in VMC and both were in receipt of an ACS from Gloster Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from the pilots of both aircraft, transcripts of the relevant RT frequencies, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and 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.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of

¹ SERA.3205 Proximity.

² SERA.3210 Right-of-way (c)(1) Approaching head-on.

³ SERA.3225 Operation on and in the Vicinity of an Aerodrome.

written contributions and dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board quickly agreed that this incident had occurred because the PA28 pilot had turned left instead of right when joining in the Gloucester overhead. Members noted that the Gloucester AIP entry instructed right-hand turns (**CF3, CF4**) and that the App controller had also advised that it was a right-hand circuit (**CF5**). A member commented that pilots can sometimes get confused about turn directions when approaching an overhead join, and that a good way of avoiding this was to always keep the airfield on the specified side of the circuit direction. So, in this case, a right-hand pattern means always keep the airfield on the right. By doing that, it is then natural to turn in the right direction when conducting the join. Ultimately, in not following the correct joining procedure, members agreed that the PA28 pilot had not conformed to the pattern of traffic formed by the other aircraft in the circuit, about which he had been given Traffic Information (**CF6, CF7**).

For his part, members commended the Super Emeraude pilot for pro-actively resolving the conflict, noting that he took avoiding action to increase separation (**CF8**) and also highlighted the PA28's position and track to ATC who were not aware that the PA28 pilot had conducted a left-hand join because they could not see the aircraft in the overhead (**CF1**). Because he was initially unaware of the conflict, the controller could not offer any deconfliction advice (**CF2**) but, once he was made aware of the situation, he instructed the PA28 pilot to return to the overhead.

In assessing the risk, the Board agreed that although safety had been reduced by the PA28 pilot not conforming with the pattern of traffic, there had been no risk of collision because the Super Emeraude pilot was visual with the PA28 and resolved the conflict as they converged; risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2019279			
CF	Factor	Description	Amplification
Ground Elements			
• Situational Awareness and Action			
1	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
2	Human Factors	• Conflict Detection - Not Detected	
Flight Elements			
• Regulations, Processes, Procedures and Compliance			
3	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
• Tactical Planning and Execution			
4	Human Factors	• Action Performed Incorrectly	Incorrect or ineffective execution
5	Human Factors	• Action Performed Incorrectly	Did not follow instructions
6	Human Factors	• Aircraft Navigation	Did not avoid/conform with the pattern of traffic already formed
• Situational Awareness of the Conflicting Aircraft and Action			
7	Human Factors	• Lack of Action	Pilot flew close enough to cause concern despite Situational Awareness
• See and Avoid			
8	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

Safety Barrier Assessment⁴

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 controller did not identify the conflict because he could not see the PA28 turn the wrong way in the overhead.

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the PA28 pilot did not follow the correct circuit direction when he joined.

Tactical Planning and Execution was assessed as **ineffective** because although the PA28 pilot was given the correct circuit information, he turned the wrong way.

Airprox Barrier Assessment: 2019279		Outside Controlled Airspace					
Barrier	Provision	Application	Effectiveness				
			Barrier Weighting				
			0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Green bar to 5%]			
	Manning & Equipment	✓	✓	[Green bar to 2.5%]			
	Situational Awareness of the Confliction & Action	✓	✗	[Red bar to 15%]			
	Electronic Warning System Operation and Compliance	○	○	[Grey bar to 2.5%]			
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✗	[Red bar to 10%]			
	Tactical Planning and Execution	✓	✗	[Red bar to 10%]			
	Situational Awareness of the Conflicting Aircraft & Action	✓	✓	[Green bar to 20%]			
	Electronic Warning System Operation and Compliance	○	○	[Grey bar to 15%]			
	See & Avoid	✓	✓	[Green bar to 20%]			
Key: Full Partial None Not Present/Not Assessable Not Used							
Provision: ✓ ○ ✗ ○							
Application: ✓ ○ ✗ ○							
Effectiveness: [Green] [Yellow] [Red] [Grey] [Red Box]							

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