

AIRPROX REPORT No 2021230

Date: 13 Nov 2021 Time: 1147Z Position: 5130N 00138W Location: 3NM NW Membury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28(1)	PA28(2)
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Brize	Brize
Altitude/FL	FL023	FL024
Transponder	A, C, S	A, C, S
Reported		
Colours	Black	White, Yellow
Lighting	Strobes	Nav, Beacon, Landing
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	2500ft	2443ft
Altimeter	QNH (1017hPa)	QNH (1017hPa)
Heading	220°	100°
Speed	95kt	121kt
ACAS/TAS	SkyEcho	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	200ft V/0.1NM H	0ft V/70m H
Recorded	100ft V/<0.1NM H	



THE PA28(1) PILOT reports that they were on a training sortie, with an instructor and student and were completing exercise 'straight and level 2.' The student was practising a FREDAC check when the instructor spotted an aircraft in the 2 to 1 o'clock at approximately 250m and converging. The aircraft had been obscured by the strut in the canopy. No alert was given from the EWS nor ATC. The other aircraft seemed to be in a right turn and unaware of their aircraft. The instructor took avoiding action by turning right and descending. An Airprox was raised with ATC at the time.

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

THE PA28(2) PILOT reports that they saw the other aircraft flying to their left, approx. 5NM ahead at their 10 o'clock on what appeared to be a parallel track. They kept constant observation of this aircraft and observed that they were slowly converging. They adjusted their heading by approx. 10° to the right to give some distance (location east of Liddington Castle). The other aircraft then appeared to turn right putting them onto a converging track again. They commenced a 30° bank turn to their right to adjust their heading and provide separation. They had just commenced the turn when they saw the other aircraft turning right towards them. The other aircraft subsequently passed behind them. They believed the pilot of the other aircraft did not see their aircraft until they had commenced their 30° turn to the right and then saw the belly of their plane.

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

THE BRIZE CONTROLLER reports that they were operating as the band-boxed Zone and LARS controller during a low to, at most, moderately, busy day. Station movements had ceased for an hour or so allowing ATC to combine the LARS and Zone frequency together, with mostly up to 3 or 4 aircraft on the combined frequencies. Combining the frequencies allowed some of the controllers to take a break during a lull in expected traffic. They were the only controller in the approach room with one

nearby in the kitchenette area warming some lunch and the third upstairs taking over from the fourth controller in ADC. At around 1140 traffic levels began to increase. Their workload increased to match this – none of the aircraft on frequency were flying complex routes nor required any particular high work-rate from the controller, but the combination of all aircraft calling over a short period meant their workload was high with the initial who/what/where type transmissions. When they were approaching 8 aircraft on the combined frequencies (the maximum for Brize controllers) they felt that they were working within capacity, but PA28(1) reported an Airprox at 1149. PA28(1) was under a Basic Service approximately 20NM south of Brize Norton and their sortie was [departure airfield/landing airfield] with some general handling to the south. The aircraft was indicating around 2000ft at the time (from memory). Looking at the aircraft's contact they could see another aircraft within 300ft and had not noticed this prior due to picking up the other aircraft. They noted down the position of the Airprox. Contributory factor to this was in the minute or so prior to the Airprox they heard the ASOS¹ on Switchboard (4-5 yards to their right) answering a call from ADC discussing a jogger on the taxiway. Knowing this to be a significant event they had a half ear on that conversation as they were not initially content with the proposed action being discussed of escorting the jogger off the airfield – they called out to the ASOS that no, someone would need to have a chat with the jogger to investigate. This occurred at the same time as PA28(1) pilot reported the Airprox.

The controller perceived the severity of the incident as 'Low'.

THE BRIZE SUPERVISOR reports that they were in the crewroom preparing to eat lunch but on immediate readiness to take a frequency when required, when they heard the ASOS talking about a jogger on the airfield, when they went into the approach room, the controller on position informed them of the Airprox. They then initially took the LARS frequency on the ZONE position, then elected to bandbox both frequencies (the traffic levels were low at this stage) on the RA position to allow the controller to complete a DASOR.

Factual Background

The weather at Brize was recorded as follows:

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METAR EGVN 131120Z 11009KT 9999 FEW024 BKN060 18/11 Q1017 NOSIG RMK BLU BLU=
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Analysis and Investigation

Military ATM

An Airprox occurred on 13 Nov 21 at approximately 1145 UTC, in the vicinity of Membury between two PA28s. The PA28(1) was in receipt of a Basic Service from the Brize Norton controller and the PA28(2) was also in receipt of a Basic Service from the same controller at Brize Norton.

The Brize Norton radar controller was bandboxing the Zone and LARS tasking as there were no station movements. The controller reported that the complexity of the traffic on frequency was low however, with 8 aircraft across two frequencies and the nature of LARS aircraft transmissions their workrate was required to be high. They reported that despite working to the limits of allowed number of aircraft on frequency they did not feel at capacity. The PA28(1) was conducting general handling around 20NM to the south of the aerodrome but had not identified a conflict until after the PA28(1) pilot reported the Airprox. The controller reported that they overheard the ASOS engaged in a call with the Aerodrome controller discussing an airfield incursion and due to the proposed course of action being insufficient, the Radar controller advised the ASOS of the correct course of action that was required. It was following this action that the PA28(1) pilot reported the Airprox.

The ATCO I/C was in the crew room nearby preparing to eat lunch but were on immediate readiness if required to support the Radar controller. They reported returning to the Approach room when they heard the ASOS on the phone discussing the airfield incursion and were made aware of the Airprox.

¹ Air and Space Operations Specialist.

Figures 1-2 show the positions of the PA28(1) and the PA28(2) at relevant times during the Airprox. The screen shots are taken from a replay using the NATS radars which are not utilised by the Brize Radar controller, therefore, may not be entirely representative of the picture available to the controller.

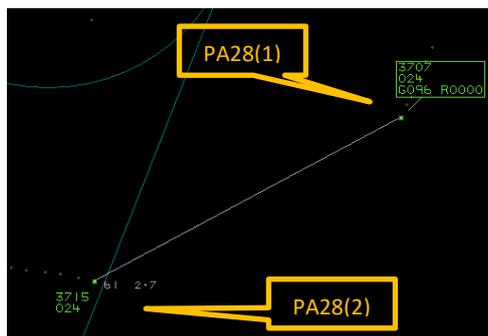


Figure 1:
Showing the converging headings of PA28(1) and PA(2).

One minute prior to the Airprox, the trails of both aircraft suggested a potential conflict. It is reported that the controller was distracted by the airfield incursion at this point. Separation at this point was 2.7NM and 0ft vertically.

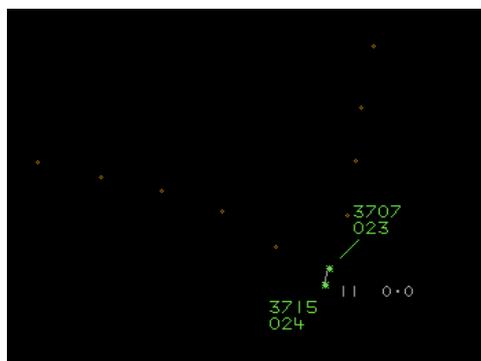


Figure 2:
CPA.

CPA was measured at 100ft vertically and 0.0NM horizontally. The PA28(1) pilot reported the Airprox to the controller 11 seconds later.

The Zone controller was working at the upper allowed limits of task capacity although the controller described the tracks as uncomplicated. The Zone controller became distracted due to the controller feeling like they had to intervene with the ASOS, taking their attention away from the control task.

As it was a weekend there was no nominated Supervisor however, there was an ATCO I/C available who the controller could have summoned to correct the ASOS's proposed course of action, allowing their concentration to remain on the control task. Additionally, had the ASOS, in conjunction with the Aerodrome controller, selected the correct course of action there would have been no need for the Radar controller to become involved in the situation.

The PA28(1) pilot highlighted that no alert was given by ATC, it should be noted that if Traffic Information was required due to the nature of their sortie, a Traffic Service should have been requested as Traffic Information under a Basic Service is not guaranteed.

UKAB Secretariat

The PA28(1) and PA28(2) 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 If the incident geometry is considered as converging then the PA28(1) pilot was required to give way to the PA28(2).³

Summary

An Airprox was reported when PA28(1) and PA28(2) flew into proximity 3NM NW of Membury at 1147Z on Saturday 13th November 2021. Both pilots were operating under VFR in VMC, both were in receipt of a Basic Service from Brize Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controllers involved. 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 PA28(1) pilot. They were receiving a Basic Service from Brize radar and under such an ATS, because controllers are not required to monitor aircraft receiving a Basic Service, would not generally have received any Traffic Information. Although they were fitted with a CWS, the pilot did not report receiving an alert, possibly due to incompatible equipment, or aerial obscuration (**CF5**). This incident highlighted that although worthwhile, CWS was only one element of mitigation to mid-air collision and that pilots should continue to maintain a good look-out. Without any information from either ATC or the CWS, the pilot did not have any prior situational awareness on the other aircraft until they saw it (**CF4**). Members thought it likely that it was the change in attitude of the other aircraft, as it took avoiding action, that alerted the pilot to PA28(2) and having seen the other aircraft relatively late (**CF6**), there was some element of being startled by its proximity (**CF7**). Members commended the pilot for reporting the Airprox on the frequency at the time, in doing so they alerted the controller to the situation and thus ensured that the relevant data was preserved.

Turning to the actions of the PA28(2) pilot, members noted that they reported that they were visual with the other aircraft from 5NM away and opined that perhaps the pilot could have made a greater turn, at range, once it was apparent that the aircraft were on a conflicting course, rather than just the reported 10° turn. They also thought that the pilot could have asked ATC whether the controller could give them more information on the aircraft that they could see converging. In this case, ATC had full details as they were providing the other aircraft with a service, but even if they were not, they may have had height information on the radar. The Board advocated a proactive rather than reactive stance wherever possible. Members also recommended that pilots did not maintain a straight and level course for long periods, but that by manoeuvring periodically the change in aspect may make an aircraft more visible to other pilots, and also ensure that any obscuration from the airframe is overcome.

Turning to the role of ATC, members noted that although the controller was not required to monitor aircraft receiving a Basic Service (**CF2**), still, controlling members thought it was regrettable that they had not noticed two of their own aircraft in close proximity. RAF controlling members thought that had the controller seen the two aircraft approaching, they would likely have given Traffic Information to both pilots. Unfortunately, it was probable that, as they became busier, any spare capacity had been subsumed by the ASOS conversation about the jogger on the airfield. Members thought that whilst an important issue, there were other people available to deal with it, and the reluctance to call a colleague in from a break (**CF1**), whilst working the maximum number of aircraft on frequency, and trying to deal with the airfield incident, contributed to the Airprox by taking the controller's attention away from their primary task (**CF3**).

² (UK) SERA.3205 Proximity.

³ (UK) SERA.3210 Right-of-way (c)(2) Converging.

When determining the risk of the Airprox, the Board considered the reports of both pilots together with the radar replay. They quickly agreed that because the PA28(2) pilot had been visual with the PA28(1) for some time and had taken avoiding action, there had been no risk of collision. However, despite this, they thought that the final separation and the late sighting by the PA28(1) pilot meant that safety had been degraded and therefore assessed the incident as Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2021230				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Manning and Equipment				
1	Organisational	• ATM Staffing and Scheduling	An event related to the planning and scheduling of ATM personnel	
• Situational Awareness and Action				
2	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
3	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
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
4	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
• Electronic Warning System Operation and Compliance				
5	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
• See and Avoid				
6	Human Factors	• Identification/Recognition	Events involving flight crew not fully identifying or recognising the reality of a situation	Late sighting by one or both pilots
7	Human Factors	• Lack of Individual Risk Perception	Events involving flight crew not fully appreciating the risk of a particular course of action	Pilot flew close enough to cause concern

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:

Manning and Equipment were assessed as **partially effective** because the Brize controller was working alone, with a controller on a break, when there was a distraction regarding the ASOS and an incident on the airfield.

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

Situational Awareness of the Confliction and Action were assessed as **not used** because the controller was not required to monitor aircraft receiving a Basic Service.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any prior situational awareness that the other was there, until they became visual.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because it was reported that the CWS on the PA28(1) did not alert, when one would have been expected.

Follow this link to the CAAs webpage on Electronic Conspicuity Devices, guidance material and compatibility table:

https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/Electronic-Conspicuity-devices/?mc_cid=ce23f03dac&mc_eid=d250bc9f1c

