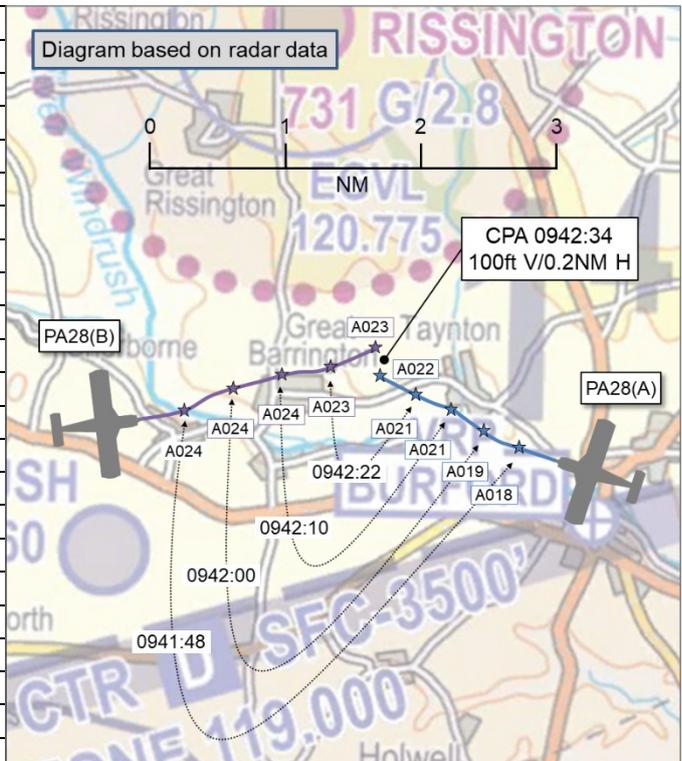


AIRPROX REPORT No 2022197

Date: 26 Aug 2022 Time: 0943Z Position: 5150N 00142W Location: 2.5NM S Little Rissington

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	PA28
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	Basic
Provider	Brize Zone	Brize Radar
Altitude/FL	2200ft	2300ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Dark blue	Blue, white
Lighting	Anti-col	Landing, strobe
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2000ft	2200ft
Altimeter	QNH (1020hPa)	QNH (1020hPa)
Heading	290°	090°
Speed	85kt	90kt
ACAS/TAS	SkyEcho	TAS
Alert	None	Information
Separation at CPA		
Reported	100ft V/500m H	0ft V/300m H
Recorded	100ft V/0.2NM H	



THE PA28(A) PILOT reports that they were climbing to cruise altitude (with a nose-high attitude) when Brize Zone advised them of a confliction 1NM west, “slightly above” [they recall] and opposite direction. At about the same time, they saw the other aircraft in a 30-40° left angle-of-bank attitude (avoiding action), and it then reverted back to its original course. There was no time to take avoiding action before [the other aircraft] had passed down their right side and disappeared. They believe that [the other aircraft] had been in their blind area (below their engine) and had the Brize controller not drawn their attention to the contact, there was a significant chance of a collision.

The pilot assessed the risk of collision as ‘High’.

THE PA28(B) PILOT reports that they were flying en-route to [destination airfield]. Weather and visibility were good. They were in communication with Brize (and don’t believe that the other aircraft was on frequency). Their TAS threw up an alert of an aircraft possibly 6NM to their right, 1000ft lower and climbing. They kept an eye on this contact and turned on their landing light and executed a turn to the left to show their wings, and then levelled-out. On doing so, they briefly saw the [other] aircraft pass behind, left-to-right [they recall] and in a climb. They resumed heading and landed safely at [destination airfield]. Brize called them up a few minutes later to ask if they had seen the passing aircraft and they replied that their TAS had indicated 1000ft below and that it had passed behind them. The PA28(B) pilot recalls that they were not unduly concerned as they had the aircraft under observation throughout. They are pretty sure that the [pilot of the PA28(A)] should have seen them sooner as the sun had been behind them and the [PA28(B)] was higher so should have been silhouetted and easy to spot.

The pilot assessed the risk of collision as ‘Low’.

THE BRIZE APPROACH CONTROLLER reports that they were providing a Basic Service (BS) to [the pilot of the PA28(A)] on exiting the CTR, at 1300ft on 1020[hPa] at the time. There was BZN BS squawk (3737) 8NM NW of BZN [which was the PA28(B)], but was indicating over 2000ft. They then saw [the

PA28(A)] Mode C pass 1700ft and passed Traffic Information at 2NM, similar altitude. However, [the radar replay] equipment indicated 1NM. [The pilot of the PA28(A)] called visual and then 4-5NM later declared an Airprox with the [PA28(B)]. The [PA28(B)] remained at the same altitude, and [the pilot of the PA28(A)] declared that they were heading 290° and climbing to 2900ft, and declared that the minimum separation had been 400m laterally. Under a BS, a [pilot] does not have to inform the ATCO of changes in heading or altitude.

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

THE BRIZE LARS CONTROLLER reports that they were the Brize Norton Radar controller providing a LARS to several aircraft at the time of the incident. As well as the [PA28(B)] that was involved, they were providing a Traffic Service (TS) to an aircraft practising holds at the DTY VOR. [The pilot of the PA28(B)] was under a Basic Service (BS) transiting from [departure airfield] to [destination airfield] at 2500ft BZN QNH 1020[hPa]. They had observed the [PA28(A)] inside BZN Class D airspace squawking 3707, deemed it to be of no concern, and returned their attention to the aircraft at DTY. It wasn't until the Approach controller informed them of the Airprox that they returned their attention to [the PA28(B)]. The [PA28(A)] was by then 4NM west of Enstone. They asked [the pilot of the PA28(B)] if they had observed it, and they replied that they had monitored the [PA28(A)] on 'TCAS' and watched it as it had climbed through their level. [The pilot] didn't appear overly concerned by the incident and changed frequency to Enstone.

THE BRIZE ZONE SUPERVISOR reports that they were the Supervisor at the time of the event. The unit and controller workload was low. They had not been listening to the frequencies at the time [of the Airprox] as they were having a conversation with DSATCO about airspace and completing other admin. After the pilot had declared the Airprox, the controller informed [the Supervisor] and they ensured the tape was marked for transcript. After a short investigation it had become clear that the controller had applied the requested service correctly.

Factual Background

The weather at Brize Norton was recorded as follows:

```
METAR EGVN 260950Z 17004KT 9999 FEW035 SCT075 19/13 Q1020 NOSIG RMK BLU BLU
```

Analysis and Investigation

Brize Unit Investigation

The DASOR was submitted immediately after the incident was reported on frequency. Statements were provided by both the LARS controller working [the PA28(B)] and the Zone controller working [the PA28(A)]. A tape transcript and an Incident Initial Response form were completed.

[The PA28(A)] was departing Brize Norton [zone] on a standard Burford departure (VFR departure not above 1300ft inside BZN Class D) with a BS given outside the CTR. Traffic, [the PA28(B)], was called after being issued a BS as a duty of care. The pilot of [the PA28(A)] called visual with the traffic and then declared an Airprox on frequency. After calling visual, [the pilot of the PA28(A)] continued to climb towards the traffic, resulting in the Airprox occurring. The traffic was called under a BS as a duty of care. All Air Traffic Services were followed with the correct procedures.

Military ATM

The Brize Norton LARS controller was controlling multiple aircraft, including a Traffic Service being provided to an aircraft practising holds at Daventry VOR. The pilot of the PA28(B) was in receipt of a Basic Service transiting from [departure airfield] to [destination airfield] at 2500ft BZN QNH 1020hPa. Prior to the occurrence, the Brize Norton LARS controller deemed the PA28(A) to be of no concern and turned their attention to the aircraft under a Traffic Service.

The Brize Norton Approach controller was band-boxing Approach, Zone and Director at the time of the occurrence, providing a BS to the pilot of the PA28(A) departing on a standard Burford departure not above 1300ft BZN QNH 1020hPa until leaving Controlled Airspace.

Figures 1-3 show the positions of the two PA28 aircraft at relevant times during the Airprox. The screenshots are taken from a replay using the NATS radars which are not available to the Brize Norton controller, therefore may not be entirely representative of the picture available.

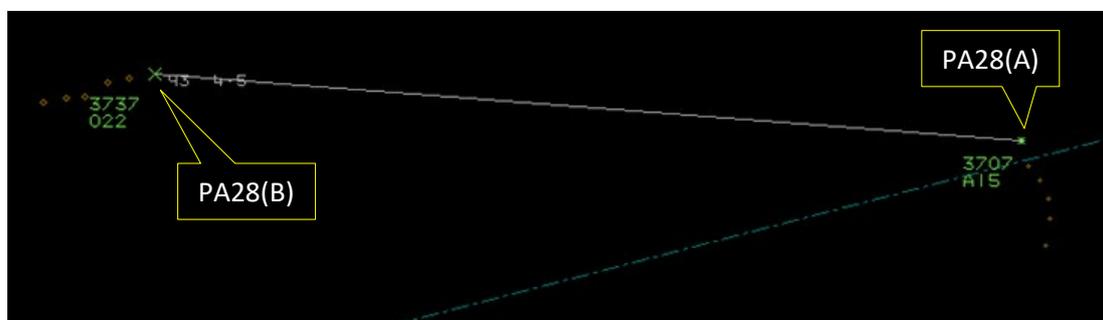


Figure 1 - 0941:10 PA28(A) squawking 3707 left controlled airspace.

The Brize Norton Approach controller reported the PA28(A) left Brize Norton controlled airspace at 0940:46, providing a Basic Service. As per Figure 1, the PA28(A) exited Brize Norton controlled airspace 24sec after this transmission. Horizontal separation was measured as 4.5NM.

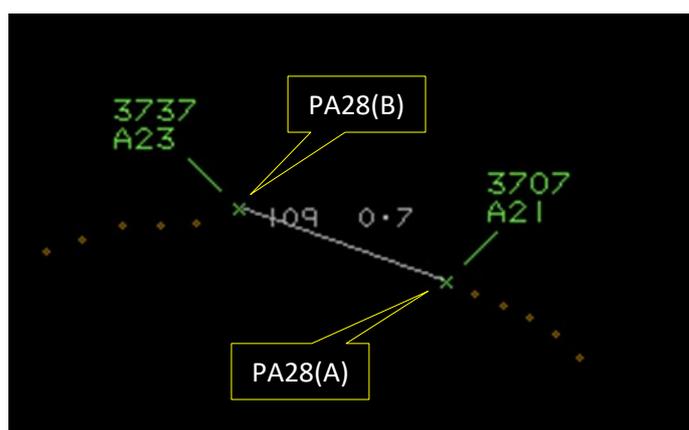


Figure 2 - 0942:23 Brize Norton Approach controller passed Traffic Information.

The Brize Norton Approach controller provided Traffic Information to the PA28(A) (squawking 3707) *“traffic northwest two miles similar altitude”*. [The pilot of] PA28(A) reported visual with PA28(B) (squawking 3737). Separation was measured as 200ft and 0.7NM.

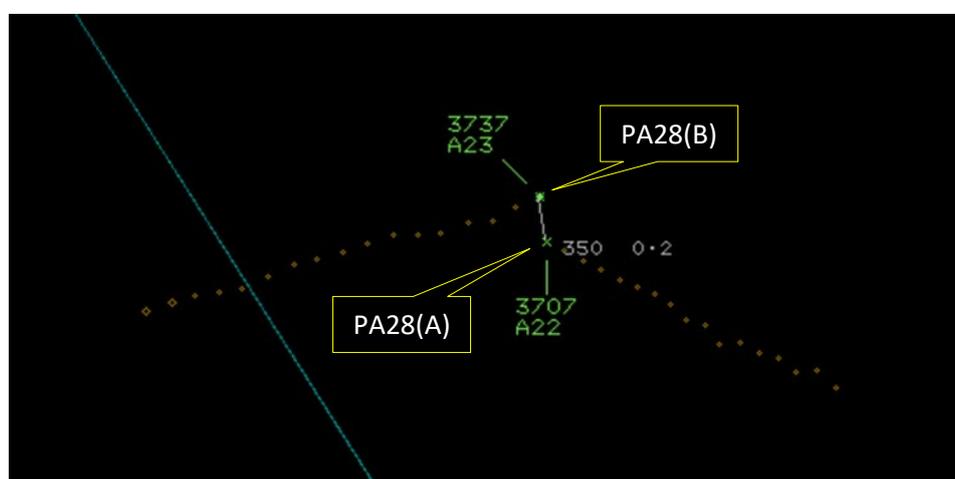


Figure 3 - CPA at 0942:34

The CPA was measured as 100ft and 0.2NM. No Traffic Information was passed to either PA28 aircraft. At 0943:26, the pilot of the PA28(A) declared an Airprox. At 0944:18, the Brize Norton LARS controller asked the PA28(B) pilot if they had seen the PA28(A). The pilot reported it had been alerted on TCAS, “*climbing from a thousand feet below me to my flight level*”.

Analysis: The Brize Norton LARS controller at the time of occurrence was prioritising the Traffic Service aircraft and therefore was not aware of the Airprox until the Brize Norton Approach controller highlighted the occurrence. The Brize Norton Approach controller did provide Traffic Information to the pilot of the PA28(A). However, the range was incorrect. Despite this, the pilot of the PA28(A) did report visual with the PA28(B) and therefore there was no further requirement to provide Traffic Information.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft could be positively identified from Mode S data.

The PA28(A) and PA28(B) pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.¹ If the incident geometry is considered as converging then the PA28(B) pilot was required to give way to the PA28(A).²

Summary

An Airprox was reported when PA28(A) and PA28(B) flew into proximity 2.5NM south of Little Rissington at 0943Z on Friday 26th August 2022. Both pilots were operating under VFR in VMC, the PA28(A) pilot in receipt of a Basic Service from Brize Approach and the PA28(B) pilot 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, 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.

The Board first considered the actions of the pilot of PA28(A). Members noted that the PA28(B) had been obscured from the view of the pilot of the PA28(A) (**CF9**) and that this highlighted the importance of an effective lookout, particularly when climbing or descending. Members emphasised that the ‘constant bearing’ confliction is often the most difficult to discern and suggested that there are actions that a pilot can take to highlight their presence to other airspace users, such as; a gentle weave, slight pitch changes up or down and use of the landing lights. In consideration of the EC equipment fitted to the PA28(A), members agreed that it would not have been expected to have detected the presence of the PA28(B) (**CF6**). Members noted that the pilot of the PA28(A) had been in receipt of a Basic Service from Brize Approach and wondered whether a Traffic Service may have been more suitable. Notwithstanding, the pilot of the PA28(A) had received Traffic Information on the PA28(B) which had provided some situational awareness. However, the Traffic Information had included an exaggerated range for the conflicting aircraft and members therefore agreed that it had effectively been passed late (**CF5**). Although the pilot of the PA28(A) had visually acquired the PA28(B), there had been no time to have taken action to materially increase separation and members concluded that that effectively constituted a non-sighting (**CF8**).

The Board next considered the actions of the pilot of the PA28(B). Members were heartened that the PA28(A) had been detected by the EC equipment fitted to the PA28(B) and that it had provided plenty of time for the pilot of the PA28(B) to have assessed the situation and considered a course of action (**CF7**). Members noted that the pilot of the PA28(B) had ‘shown their wings’ and illuminated their landing

¹ (UK) SERA.3205 Proximity.

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

light to aid conspicuity, actions which the Board applauded, but members were keen to point out that those actions alone had not resolved the conflict. The pilot of the PA28(B) had been on the leftmost of converging tracks and had not materially deviated from their heading (CF4). Members acknowledged that 'showing their wings' had increased the separation, albeit perhaps inadvertently. Members agreed that the PA28(A) had not been visually acquired until the point of CPA and that it had effectively been a non-sighting (CF8). Members wondered whether, given the information presented by the TAS on the PA28(B), the conflict could have been anticipated and averted sooner.

Turning their attention to the actions of the Brize Approach controller, members acknowledged that the pilot of the PA28(A) had been in receipt of a Basic Service and that there had been no requirement to monitor the flight or to have provided Traffic Information (CF1). Nevertheless, it was apparent that the Brize Approach controller had seen that the PA28(A) had been climbing and converging with the PA28(B) and had passed Traffic Information. The content of the message had included an ordinal direction, range and relative altitude. The range had been given as 2NM but had actually been approximately 0.7NM. Whilst members applauded the passing of Traffic Information to aid the safe passage of the flight, members agreed that it had been provided late (CF2). Insofar as the Brize Approach controller had passed Traffic Information to the pilot of the PA28(A), members wondered why similar Traffic Information had not been passed to the pilot of PA28(B). Further, members wished to explore whether there had been coordination between the Brize Approach controller and the Brize LARS controller in this instance. Members with particular knowledge of the Brize unit explained that the Brize Approach or Zone controller may not necessarily pass details of an aircraft leaving the Brize Zone to their counterpart at the LARS station. Such coordination would be dependent upon the nature of the traffic involved and the unit's workload. It was noted that in this instance, each aircraft had had a squawk allocated by their respective controller and it was suggested that this would have provided the controllers sufficient situational awareness of the traffic outside their area of responsibility. The question of whether STCA had been available at the time of the incident was raised by members. It was explained that the proximity of aircraft under a Basic Service would not have been detected as they would have fallen outside the select frame of the STCA in use (CF3).

Next, the members turned their attention to the actions of the Brize LARS controller and acknowledged that the pilot of the PA28(B) had been in receipt of a Basic Service and that there had been no requirement to monitor the flight or to have provided Traffic Information (CF1). Members noted that the Brize LARS controller had been informed of the Airprox by the Brize Approach controller after CPA had occurred and had subsequently called the PA28(B) pilot to ask whether the PA28(A) had been observed.

Members next considered the actions of the Brize Supervisor. It was noted that the Supervisor had not been listening to the frequencies in use or interacting with the controllers involved in the moments leading up to the incident. Members determined that the Supervisor's involvement had not been germane to the considerations of this Airprox.

When determining the risk of collision, the Board agreed that safety had been degraded, but members were satisfied that there had been no risk of collision. Consequently, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022197			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	<ul style="list-style-type: none"> ANS Flight Information Provision 	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
2	Human Factors	<ul style="list-style-type: none"> ANS Traffic Information Provision 	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late

• Electronic Warning System Operation and Compliance				
3	Technical	• Conflict Alert System Failure	Conflict Alert System did not function as expected	The Conflict Alert system did not function or was not utilised in this situation
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
4	Human Factors	• Incomplete Action	Events involving flight crew performing a task but then not fully completing that task or action that they were intending to carry out	Pilot did not sufficiently integrate with the other aircraft despite Situational Awareness
5	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				
6	Technical	• ACAS/TCAS System Failure	An event involving the system which provides information to determine aircraft position and is primarily independent of ground installations	Incompatible CWS equipment
7	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
• See and Avoid				
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

Degree of Risk: C

Safety Barrier Assessment³

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

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **partially effective** because, notwithstanding that the Brize Zone controller had not been required to monitor the flight under the terms of a Basic Service, inaccurate Traffic Information had been passed to the pilot of the PA28(A).

Electronic Warning System Operation and Compliance were assessed as **not used** because the Airprox took place outside the select frame of the STCA in use.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because despite having received a TAS alert indicating that the PA28(A) had been 1000ft below them initially, the pilot of the PA28(B) had continued along the leftmost of converging tracks as the PA28(A) had been climbing to a similar level.

See and Avoid were assessed as **ineffective** because although each pilot had sighted the other, neither pilot had materially increased their separation from the other aircraft.

³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Airprox Barrier Assessment: 2022197

Outside Controlled Airspace

Barrier		Provision	Application	Effectiveness				
				Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Manning & Equipment	✓	✓					
	Situational Awareness of the Conflicition & Action	✓	⚠					
	Electronic Warning System Operation and Compliance	✓	○					
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓					
	Tactical Planning and Execution	✓	✓					
	Situational Awareness of the Conflicting Aircraft & Action	⚠	⚠					
	Electronic Warning System Operation and Compliance	⚠	✓					
	See & Avoid	✗	✗					
Key:		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	✓	⚠	✗	●				
Application	✓	⚠	✗	●	○			
Effectiveness								