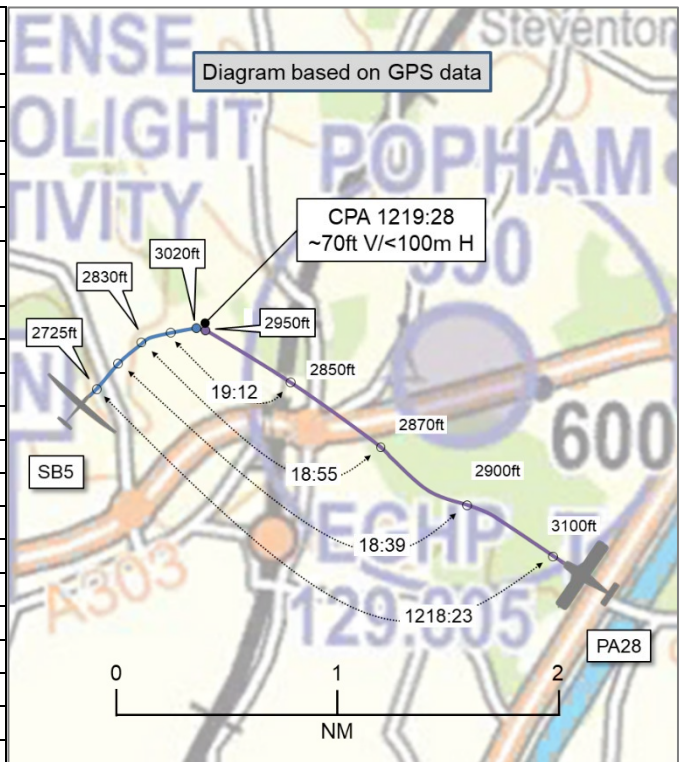


AIRPROX REPORT No 2022201

Date: 29 Aug 2022 Time: 1219Z Position: 5112N 00116W Location: 1NM W Popham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	SB5	PA28
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	Popham Radio	Farnborough LARS West
Altitude/FL	3020ft	2950ft
Transponder	Not fitted	A, C, S
Reported		
Colours	Yellow, White	White, Blue
Lighting	None	'Not on'
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3281ft ¹	~2800ft
Altimeter	QFE (NK hPa)	QNH (NK hPa)
Heading	~100°	'Northwest'
Speed	60kt	~100kt
ACAS/TAS	FLARM	SkyEcho
Alert	None	None
Separation at CPA		
Reported	50ft V/0m H	Not seen
Recorded	~70ft V/<100m H	



THE SB5 PILOT reports that they were flying a vintage glider from [departure airfield] to [destination airfield] and back, and were trying to get high enough [for an extended glide] with a moderate headwind. The flight had been relatively easy until Middle Wallop where conditions had deteriorated, but they had managed to connect with strong lift just west of Popham. It was strong enough that they did not need to circle, they just slowed down to get enough height for [the extended glide]. As they were close to Popham they were listening-out [on their frequency] but as they were high enough to be clear of the circuit they did not make contact. They did hear [another pilot] report they were going to join overhead but as they were nearly 3000ft above the airfield they felt that [the other aircraft] would not affect them. The PA28 type that approached from the southeast was head-on so they could not see the registration. They were flying quite slowly to make the most of the lift so, although they reacted to the sighting, they could not pull up much without stalling/spinning. The PA28 did not seem to react at all, even though they [the SB5 pilot, believes that] they must have filled their windscreen. The SB5 pilot was quite shaken and decided to concentrate on continuing and landing safely at [their destination] rather than try to make an airborne report, however, in hindsight, it may have been sensible to let Popham know. The reported altitude was taken from their GPS logger trace.

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

THE PA28 PILOT reports that they had been on a training flight which was a full revision in preparation for a Skill Test. They recall making track adjustments to keep further away from Lasham that day and also keeping a close eye on some gliders that were off to their right in that vicinity. They were very aware of nearby glider traffic north of Popham and remember seeing gliders to the east out of the aircraft window, which they kept a close watch on, and made sure they were well clear. They were totally unaware that they had had a close encounter with one until they were so informed. They do have an

¹ Pilot reports that this altitude was taken from their GPS log.

[EC device] with a subscription [to enable it to display EC commonly used by glider pilots] but they did not see this aircraft on their screen.

THE FARNBOROUGH LARS WEST CONTROLLER reports that they were bandboxed with Farnborough Zone. No report [of an Airprox] was made on the Farnborough West or Zone frequencies and they do not have any recollection of this event.

Factual Background

The weather at RAF Odiham was recorded as follows:

METAR EGVO 291220Z AUTO 04010KT 9999 FEW038/// OVC066/// 21/10 Q1022

Analysis and Investigation

Farnborough Unit Investigation

LARS West and Zone were bandboxed frequencies, with Approach split. RW06 was in use during daylight hours. Traffic levels were judged to be medium but throughout the impounded recording there were periods of high R/T workload.

[The PA28 pilot] called on frequency at 1150 and then subsequently left the frequency at 1303. The controller provided [the pilot with] a Radar Control Service for a zone transit (0461 squawk), followed by a Basic Service on leaving controlled airspace with a (0441 squawk).

At 1217, following [the PA28] vacating controlled airspace, and then being under a Basic Service, the controller issued a warning to [the pilot] describing intense aerial activity in the vicinity of Popham, it was acknowledged by the pilot, (Figure 1):

1217:10: '[PA28 c/s] *keep a very good lookout as you continue northbound, multiple primary-only contacts seen north of your position, believed to be gliders and traffic from Popham.*'

The area around Popham and between Popham and Lasham was observed to be very busy throughout the recording with multiple persistent primary-only contacts observed, in addition to a series of aircraft routing between Popham and Lasham.



Figure 1 – 1217:10

At 1219, a merge between [the PA28] and a primary contact occurred, approximately 0.5NM west of Popham. At the time of the merge, the Mode C of [the PA28] was displaying 3000ft, Figure 2 (the Mode C had been validated and verified).



Figure 2 - 1219

At the same time, another aircraft squawking 7000 was observed less than 0.5NM to the west of Popham, indicating 2500ft. They routed anti-clockwise round Popham and then appeared to position for final, north of the field. There was not a primary-only return (or any other contact observed) in the vicinity [of this other aircraft] but this occurred at the same time as the reported Airprox.

[The PA28 pilot] transited through an area of high traffic density. It was not possible to determine the distance between the aircraft as [one return was] primary-only. The radar often does not consistently detect all primary-only glider contacts due to their profile, so it was not possible to positively identify the Airprox.

The ATCO issued a generic traffic warning to [the PA28 pilot], this was acknowledged by the pilot. [The PA28 pilot was] was operating outside controlled airspace under a Basic Service and came into conflict with an unknown aircraft.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and, whilst the PA28 was reliably detected, the SB5 was not. However, both pilots kindly provided the UKAB Secretariat with GPS data files detailing their flights which have been used to construct the diagram and measure the CPA.

The SB5 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 hazard.² If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.³ If the incident geometry is considered as converging then the PA28 pilot was required to give way to the SB5.⁴

Comments

BGA

This incident occurred in an area of uncontrolled airspace that has always been busy with a varied mix of traffic, but after the expansion of Farnborough's controlled airspace westward appears to have become even more so, with aircraft being funnelled between the Farnborough controlled airspace, the Southampton/Solent CTA/CTR and the Boscombe Down complex.

² (UK) SERA.3205 Proximity.

³ (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

⁴ (UK) SERA.3210 Right-of-way (c)(2) Converging.

It's concerning that the PA28's [EC equipment] apparently did not warn its pilot of the SB5's proximity, based on the latter's [EC equipment] transmissions, despite having been configured to do so. It would be very helpful to understand why this safety barrier did not function.

Where forward-pointing high-intensity landing lights are fitted, many pilots now opt to leave them permanently switched on in daylight, to aid visual conspicuity in this direction.

Summary

An Airprox was reported when an SB5 and a PA28 flew into proximity 1NM west of Popham at 1219Z on Monday 29th August 2022. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Farnborough LARS West and the SB5 pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data files, 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 SB5 pilot and a glider pilot member explained that the SB5 pilot would have been using the available lift to climb the glider without having to circle, and that they would have likely been at their minimum sink speed, just a few knots above the stall, with minimal spare energy available for manoeuvring. Members noted that the SB5 pilot had been equipped with EC, however, the EC equipment carried had been unable to detect the equipment carried by the PA28 pilot and had therefore been incompatible (**CF3**). The Board was encouraged that the SB5 pilot had been listening-out on the Popham frequency but, as the PA28 pilot had not been using the Popham frequency, this had not given the SB5 pilot any awareness of their presence, leaving them with none (**CF2**). Members agreed that although the SB5 pilot had become visual with the PA28, and despite this having been at a later than optimum stage (**CF5**), there had been time to take avoiding action, however, due to the low energy state of the aircraft, they had been unable to do so.

Next, members considered the actions of the PA28 pilot and were encouraged that they had been using their EC equipment to supplement their lookout, having become visual with a number of aircraft during their flight and had taken steps to avoid them. Members agreed that the EC equipment carried would have been expected to have detected and alerted the pilot to the presence of the SB5, but no alert had been reported (**CF4**). Although sightings of other aircraft had given the PA28 pilot a generic awareness of the likelihood of further aircraft (**CF2**), which had been supported by information from the Farnborough LARS West controller's caution, members agreed that the PA28 pilot had not become visual with the SB5 at any point (**CF6**). A GA pilot member stated that the constant relative bearing geometry of this event would have made it difficult for the PA28 pilot to visually acquire the SB5, and suggested that occasional weaving can help 'break' the bearing, however, the Board acknowledged that it is not always practical to do this, especially when instruction is taking place.

The Board then examined the involvement of the ground element, agreeing that, although the Farnborough LARS West controller had not been required to monitor the flight of the PA28 pilot under a Basic Service (**CF1**), they had passed generic information about activity in the area, which the Board agreed had been appropriate.

Finally, in assessing the risk of collision, the Board agreed that although the pilots of both aircraft had been carrying EC equipment, these had either been incompatible or had not issued an alert. Members commented that whilst the SB5 pilot had become visual with the PA28 they had been unable to take any avoiding action, and that the PA28 pilot had not become visual with the SB5 at any point. Members agreed that, in this case, safety had not been assured and that there had been a risk of collision (**CF7**). Accordingly, the Board assigned a Risk Category B to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**Contributory Factors:**

2022201				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Ground Elements				
• Situational Awareness and Action				
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
2	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				
3	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
4	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				
5	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
6	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
• Outcome Events				
7	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 Assessment⁵

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 **not used** because under the Basic Service that the Farnborough LARS West controller was providing, they were not required to monitor the flight of the PA28.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA28 pilot had only had a generic awareness of the presence of gliders in the vicinity, whilst the SB5 pilot had not had any awareness of the presence of the PA28.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment carried by the SB5 pilot had been incompatible with that of the PA28. Additionally,

⁵ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

the PA28 pilot's EC equipment would have been expected to have alerted the pilot to the presence of the SB5, but no alert was issued.

See and Avoid were assessed as **ineffective** because the PA28 pilot had not become visual with the SB5 at any point and, although the SB5 pilot had visually acquired the PA28, this had been at a late stage and, due to the climb the pilot was undertaking, the ability for the pilot to take avoiding action had been much reduced.

Airprox Barrier Assessment: 2022201		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 Conflication & 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								