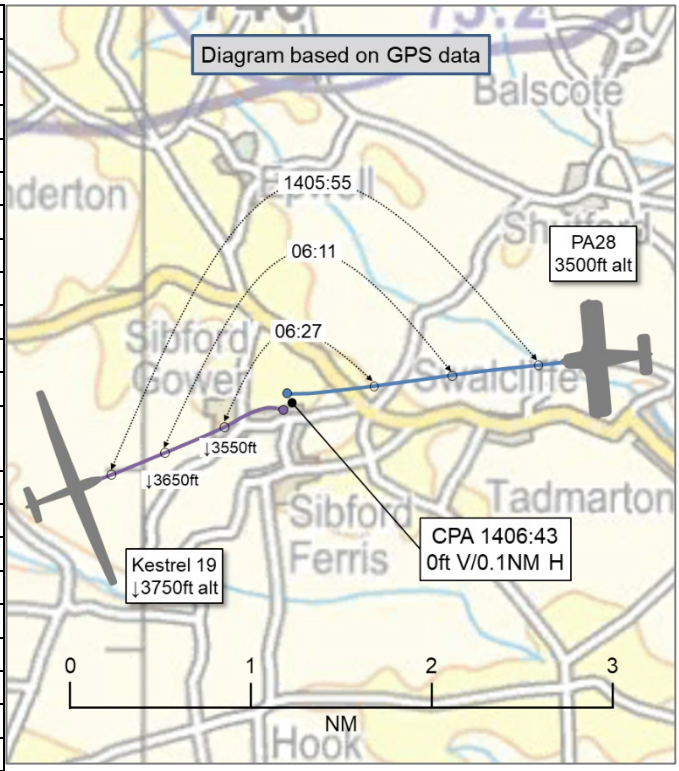
AIRPROX REPORT No 2022075

Date: 08 May 2022 Time: 1407Z Position: 5202N 00129W Location: 5NM west of Banbury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Kestrel 19
Operator	Civ FW	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Basic	None
Provider	Brize Radar	N/A
Altitude/FL	3500ft	3500ft
Transponder	A, C, S	Not fitted
Reported		
Colours	Blue, white, gold	White
Lighting	Nav, beacon, tail, landing	Nil
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3500ft	3000ft
Altimeter	QNH (1027hPa)	QFE (NK hPa)
Heading	249°	080°
Speed	95kt	80kt
ACAS/TAS	PilotAware	PowerFLARM
Alert	None	None
Separation at CPA		
Reported	0ft V/<0.5NM H	100ft V/40m H
Recorded	0ft V/0.1NM H[1]	



THE PA28 PILOT reports that they were working Brize Norton on a return trip from [departure airfield] to [destination airfield]. Brize Radar had advised that 'their entire screen was filled with non-squawking returns, likely gliders'. When passing 3NM southwest of IFR reporting point IXURA, they were passed first on the starboard side by a glider, which was co-alt but [adequate] horizontal separation, and they both indicated that they had seen each other. They were then passed on the port side by a further glider, which they had not seen while it was still in front – the reported aircraft. The glider did not show up on [either of their EC devices], it was co-altitude, and not visible at all until the last minute. It was clear it was going to pass down their port side but the distance was minimal, so they took a slight right turn to increase lateral separation and also waved their wings. The glider [pilot] showed no sign of acknowledgement and they didn't see avoiding action by the glider. Due to the frequent warnings from Brize Radar, as well as having the Nav, Tail and Beacon lights on, they had opted to fly with their Landing/Taxi light on (high-intensity LED) to improve conspicuity. Due to other returns on [their EC device], they remained on their course which left the bulk of reported glider traffic to their north and south, with a clearer corridor on their track.

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

THE KESTREL 19 PILOT reports that it was a good soaring day, sunny with scattered cumulus. They had been on a straight glide prior to the incident with an IAS of approximately 80kt. Upon seeing the other aircraft they turned right, as did the pilot of the other aircraft. The other aircraft passed to their left at a similar altitude.

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

[1] Based on GPS data.

THE BRIZE RADAR CONTROLLER reports that they were the controller at the reported time of the incident; however, it was not raised on frequency so they were unaware of the incident and it is difficult to identify/recall the exact circumstances, particularly as more than a week has passed since the incident. At the time the Airprox was reported, they believe that they also had other aircraft on frequency including a Traffic Service aircraft which had a lot of traffic to affect at the time of the reported incident and, as such, was their priority. [The PA28 pilot] was under a Basic Service. They do recall that on the day of the reported incident the radar picture was extremely cluttered, primarily due to gliders. Due to the quantity of traffic needing to be called to the Traffic Service aircraft, attention and capacity attributed towards Basic Service aircraft was therefore significantly reduced. Workload for the majority of the day was high. In terms of perceived severity, they had no awareness of the incident but, prior to it happening, [the PA28 pilot] reported having lots of gliders on their collision avoidance equipment and was climbing to avoid them. This gave the controller the sense that the pilot was aware of the heightened glider risk and would be maintaining a good lookout as a result.

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

THE BRIZE SUPERVISOR reports that their narrative was written over a week after the event and so they cannot recall any specifics. They do remember that there was a busy background picture, with lots of primary returns, and that the unit had been working a fairly consistently medium-to-high level of radar traffic throughout the day.

Factual Background

The weather at Oxford Airport was recorded as follows:

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METAR EGTK 081350Z 03005KT 340V070 9999 SCT044 17/08 Q1028=
METAR EGTK 081420Z 07005KT 010V100 9999 FEW047 18/07 Q1027=
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Analysis and Investigation

Military ATM

The Brize Radar controller was providing a service to up to 5 aircraft in the lead-up to the Airprox, including a Basic Service to the PA28 pilot and a Traffic Service to another aircraft. The types of service of the remaining aircraft are unknown. The workload was reported as high by the controller due to the volume of primary contacts on the radar screen which was drawing their capacity away from the PA28 and towards the other aircraft which required various sets of Traffic Information. The PA28 pilot was not passed any specific Traffic Information, however, they were advised that a nearby paradropping site was active. The PA28 pilot acknowledged this and advised that they were climbing due to multiple gliders on their electronic conspicuity [device].

The Brize Norton Supervisor does not recall the specifics of the incident due to the delayed reporting from the PA28 pilot but did recall that the workload for the day was medium-to-high and that there were numerous primary-only background tracks.

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

Prior to the PA28 showing a right-hand turn on the radar screen, a primary contact, believed to be a glider, tracking east appears on the radar screen. Separation was measured at 1.6NM. Twenty seconds later, the primary contact faded from radar and did not reappear. Separation decreased to 0.7NM.

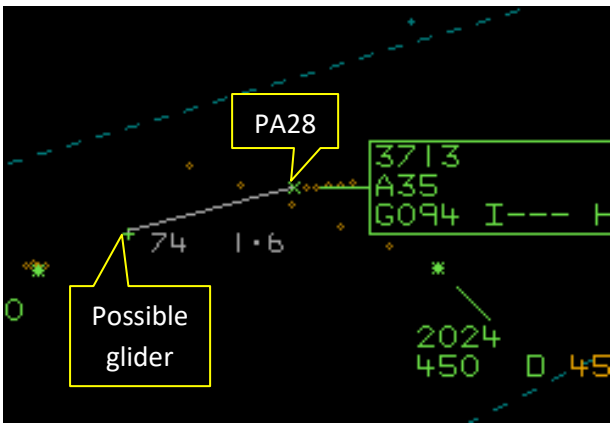

Figure 1 – Primary contact appears on radar

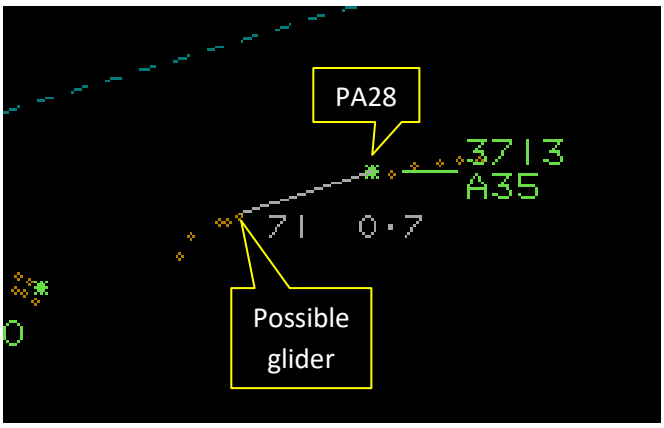

Figure 2 – Primary contact fades from radar

The Brize Radar controller, as evidenced by the RT transcript, appeared to have a high workload, and was prioritising their Traffic Service traffic due to the volume of Traffic Information that needed to be passed. The PA28 pilot had advised that they had multiple glider contacts on their electronic conspicuity [device] and had climbed to avoid. The radar replay was unable to positively detect the glider in question and it is unknown if the glider was displaying to the Brize Radar controller.

UKAB Secretariat

An analysis of the NATS radar replay and GPS data for both aircraft was undertaken. Although the PA28 was detected by the NATS area radars, the Kestrel 19 could not be positively identified and so GPS data from both aircraft has been used to construct the diagram on page 1 and to measure the CPA.

The PA28 and Kestrel 19 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 Kestrel 19.[4]

Comments

AOPA

It is heartening to see that the PA28 pilot was utilising a radar service on a busy gliding day and the controller was giving Traffic Information on a Basic Service. It is unknown if the glider was equipped with a radio – if it was, it is encouraging that the BGA is promoting its use, which in this case could have helped the controller's situational awareness and thereby the situational awareness of other airspace users.

Until electronic conspicuity is standardised, this event shows that lookout is of the utmost importance in the avoidance of mid-air collisions. It would also help data preservation (for subsequent investigations) if Airprox are reported on the frequency in use or as soon as possible by radio.

BGA

The east-west corridor of uncontrolled airspace between the Brize Norton CTR and the Birmingham CTA carries significant glider traffic on a good weekend soaring day such as this one. Both pilots are to be commended for voluntarily fitting additional Electronic Conspicuity equipment, but unfortunately the two products used do not directly interoperate, and did not provide a safety barrier

[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.

in this instance. Flying with high-intensity LED landing lights switched on during daylight hours increases visual conspicuity in a head-on encounter, and is to be recommended.

Summary

An Airprox was reported when a PA28 and a Kestrel 19 glider flew into proximity 5NM west of Banbury at 1407Z on Sunday 8th May 2022. Both pilots were operating under VFR in VMC, the PA28 pilot in receipt of a Basic Service from Brize Radar and the Kestrel 19 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 for both aircraft, 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 PA28 pilot and was heartened to hear that they had elected to fly with their landing light on to increase the visual conspicuity of their aircraft. Members noted that they had been proactively adjusting their flightpath in response to generic Traffic Information passed by the Brize controller and contacts detected by their electronic conspicuity device. However, the Board concluded that the Kestrel 19 had not been detected by the PA28 pilot's electronic conspicuity device (**CF3**) and that, therefore, the PA28 pilot had only had generic situational awareness that there had been gliders in the vicinity of their aircraft (**CF2**). The Board discussed that the nearly head-on aspect of the Kestrel 19 had presented a low visible cross-section to the PA28 pilot and members agreed that the PA28 pilot had, therefore, sighted the glider at a late stage (**CF5**). The Board also wished to remind pilots to report an Airprox event as soon as possible on the radio to the agency with which they are communicating, or the next agency they speak to.

Turning to the actions of the Kestrel 19 pilot, the Board noted that they had not been communicating with an ATSU and a glider pilot member re-affirmed to the Board that the BGA is actively encouraging its membership to gain an FRTOL[5] (the member estimated that approximately 25% of glider pilots now have an FRTOL). The member went on to say that the area between the southern extent of the Daventry CTA and the Brize Norton CTR is a popular area for gliding activity, particularly on days when the weather is suitable for soaring such as the weather on the day of the Airprox had been. Members noted that the Kestrel 19 had been fitted with an electronic conspicuity device which would normally have been expected to detect the signals from the PA28's transponder, but that the pilot had reported getting no alert from this device (**CF4**); the Board therefore agreed that the Kestrel 19 pilot had not had any situational awareness of the presence of the PA28 (**CF2**). Members also noted that the Kestrel 19 pilot's visual detection of the PA28 would have been similarly hindered by the nearly head-on aspect of the PA28 and agreed that the Kestrel 19 pilot had sighted the PA28 at a late stage (**CF5**) and had then manoeuvred to their right to maintain separation.

The Board then considered the actions of the Brize controller and heard from a military controller member that this had been a busy period for the controller and that they had – correctly – been prioritising traffic with a higher level of service (**CF1**). That said, the Board agreed that the controller had managed to indicate to the PA28 pilot that there had been a high number of primary-only contacts in the vicinity, and that these were likely to have been gliders.

Finally, the Board considered the risk involved in this Airprox. Members noted that the glider had only been detected intermittently by the NATS radars and were grateful to the pilots of both aircraft for providing GPS log files of their respective flights, as this had greatly enhanced the Board's understanding of the geometry of the event. Members noted that the Kestrel 19 pilot had reported a horizontal separation of 40m, while the PA28 pilot's estimation was relatively imprecise. However, both pilots indicated that there had been a reduced vertical separation and this was supported by the recorded data. Some members felt that safety had not been assured and that there had been a risk of

[5] Flight Radiotelephony Operator's Licence.

collision, whilst others argued that the actions of both pilots (in turning right) had effectively removed the collision risk. After further discussion, the majority of members agreed that, although safety had been reduced, there had been no risk of collision. Accordingly, the Board assigned a Risk Category C to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022075			
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

Degree of Risk: C

Safety Barrier Assessment[6]

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 the Brize Radar controller was not required to monitor the PA28 under the terms of a Basic Service.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA28 pilot had only generic situational awareness that there were gliders in their area, and the Kestrel 19 pilot had no situational awareness of the presence of the PA28.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the electronic conspicuity equipment onboard the PA28 could not detect the Kestrel 19, and the electronic conspicuity equipment onboard the Kestrel 19 did not provide an alert of the presence of the PA28 when it would have been expected to do so.

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

See and Avoid were assessed as **partially effective** because both pilots sighted the other aircraft at a late stage, albeit in time for each of them to adjust their respective flightpaths to maintain separation.