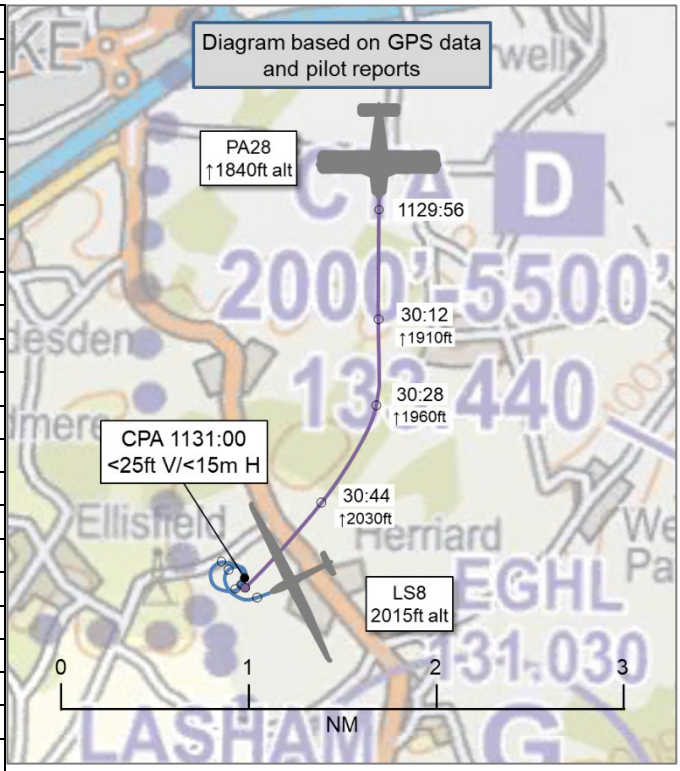
AIRPROX REPORT No 2022052

Date: 15 Apr 2022 Time: 1131Z Position: 5113N 00104W Location: 1.5NM NW of Lasham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	LS8	PA28
Operator	Civ Gld	Civ FW
Airspace	Odiham MATZ	Odiham MATZ
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	Lasham Gliders	Farnborough
Altitude/FL	2015ft	2030ft
Transponder	Off	A
Reported		
Colours	White	White, green
Lighting	Nil	Beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2020ft	2100ft
Altimeter	QNH (1027hPa)	QNH (NK hPa)
Heading	180°	180°
Speed	50kt	130kt
ACAS/TAS	PowerFLARM	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	50ft V/0m H	NK V/NK H
Recorded	<25ft V/<15m H[1]	



THE LS8 PILOT reports that they had just taken an aerotow from Lasham airfield and released from the tow in the vicinity of Herriard village. They began a right-hand turn to centre in a thermal. On their third turn they heard an engine and then a monoplane appeared from their blind-spot in the rear left-hand quarter, less than 50ft above them with and 0ft horizontal separation. They reported the incident to Lasham over the radio. They were unable to see the registration of the other aircraft. Lasham at the time was launching a grid of gliders planning to fly cross-country.

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

THE PA28 PILOT reports that the wind at [their departure airfield] was from the south-east (RW12 in use), so they anticipated that Lasham gliders would be taking-off towards the east and changed their planned track so as to route to the west of Lasham. They were on a Basic Service from Farnborough and had obtained clearance through the Odiham MATZ. Though a Basic Service does not provide separation [sic], Farnborough does normally inform LARS aircraft of conflicting targets in the neighbourhood of their route. They received no such notification and, from the left-hand cockpit seat, they did not observe any aircraft taking-off from Lasham. The glider in question was seen at the last minute by the pilot in the right-hand cockpit seat – the aircraft was in a left turn [they recalled] away from them and was not visible to the PIC in the left-hand seat. They do not understand how they did not see the glider earlier on their starboard side, though the considerations in "5 seconds to Impact" in the Airprox magazine in 2017 are likely to be relevant. It might also be relevant that the LS8 has a very small cross-section when viewed from the front or side. There were a few cumulus clouds about, so a small white glider could have been missed in their scan against such clouds, particularly if it was not in a banked attitude. In future, when flying in this congested airspace, they will ask for a Traffic Service (as they normally do when flying IFR) and, as recommended in the Airprox magazine, also do the same for VFR flying. Equally, they will try to get transit clearance through Farnborough airspace and, if this is

[1] Separation derived from the GPS data from both aircraft.

not possible, to make a greater effort to avoid Lasham airspace both horizontally and/or vertically irrespective of the LARS they might be receiving. This was a salutatory and frightening experience for them. They were considering whether to report an Airprox when they received the email from the Airprox Board.

[UKAB Note: On speaking with the PA28 pilot, it transpired that the transponder was unable to transmit Mode C data due to the erroneous installation of some new equipment to the aircraft the day before – this has since been rectified. Furthermore, the pilot has since chosen to purchase electronic conspicuity (EC) equipment that is compatible with the EC equipment normally carried by gliders and is ensuring that they have the appropriate subscription to be able to display EC-equipped gliders on their navigation software application.]

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

THE FARNBOROUGH LARS WEST CONTROLLER reports that it was a very busy day with multiple aircraft on frequency and a busy frequency with aircraft calling on and off. [The PA28 pilot] called at 1123 for a Basic Service; details were taken, QNH 1026hPa, 0437 [Mode A transponder code] issued and Basic Service applied. No Mode C was displayed, so the aircraft was identified Mode A only. Several minutes later, [the PA28 pilot] requested a MATZ transit, so the controller authorised it. They did not see the track of [the PA28] pass in such close proximity to Lasham, so did not issue an additional warning of the airspace activity that is NOTAM'd to occur there. No reference to an Airprox was made with the controller at the time of the incident and they were not aware an Airprox had occurred.

Factual Background

The weather at Odiham was recorded as follows:

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METAR EGVO 151150Z AUTO 15005KT 9999 NCD 19/09 Q1026=
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Analysis and Investigation

NATS Farnborough

At **1122** [the PA28 pilot] called on LARS West reporting: [departure airfield to destination airfield] 1500ft climbing to 2000ft on QNH 1027hPa and was issued a Basic Service as requested and a squawk of 0437. [The PA28] was mode A only.

1122:31: ([PA28 c/s]) "*Farnborough radar [PA28 c/s], good morning*"
1122:37: (RAD) "*[PA28 c/s] Farnborough Radar, pass your message*"
1122:43: ([PA28 c/s]) "*[PA28 c/s]'s a P28R out of [departure airfield], for [destination airfield], currently at Woodley tracking towards VAPID, currently at 1500ft climbing to 2000ft on 1027 request Basic Service and MATZ penetration at Odiham*"
1123:13 (RAD) "*[PA28 c/s] confirm you're VFR or IFR?*"
1123:16 ([PA28 c/s]) "*Err [PA28 c/s] is VFR today sir.*"
1123:24 (RAD) "*[PA28 c/s] roger, QNH is 1026 Basic Service, squawk 0437*"
1123:32 ([PA28 c/s]) "*1026 and squawk 0437, [PA28 c/s]*"

At **1126** [the PA28 pilot] requested a MATZ transit which was given. Lasham was very busy with gliding activity, with at least two tug aircraft squawking 0034 airborne at the time the transit was given and multiple primary contacts in the vicinity.

[The PA28 pilot] did not specify the track they were going to take through the MATZ.

1126:03 ([PA28 c/s]) "*[PA28 c/s] request MATZ penetration for Odiham*"
1126:08 (RAD) "*[PA28 c/s] MATZ transit approved*"
1126:09 ([PA28 c/s]) "*MATZ transit approved [PA28 c/s]*"

At **1128** [the PA28] could be seen inside the Odiham MATZ squawking 0437. At this time, the track of [the PA28] appeared to be SW and would track west of Lasham (see Figure 1).

Figure 1 – PA28 inside Odiham MATZ on a south-westerly track

At **1130** [the PA28]'s squawk could be seen operating in close proximity to a considerable number of transponding and non-transponding aircraft as its route took it close to the Lasham overhead but to the west of it by approximately 1 mile.

Figures 2-5 are a series of screenshots depicting this minute: The screenshot on the left of the pictures is the Heathrow green Ethernet; the right is the Farnborough Assigned Primary and Heathrow 10cm SSR as depicted to the controller.

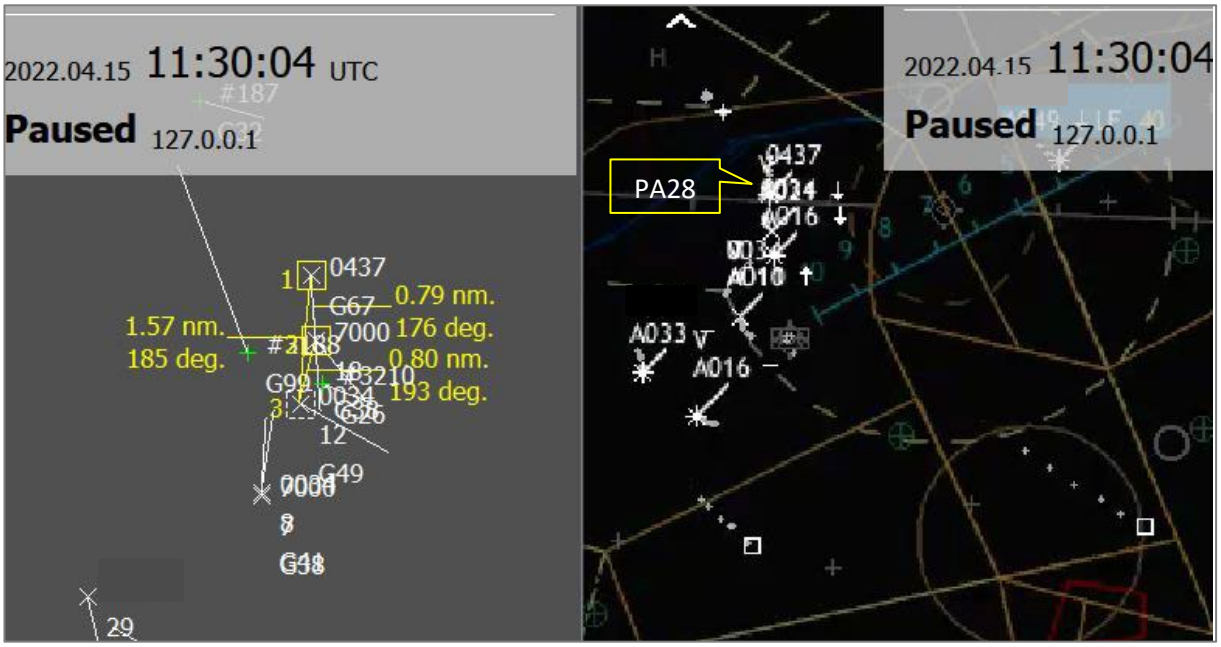


Figure 2 – 1130:04

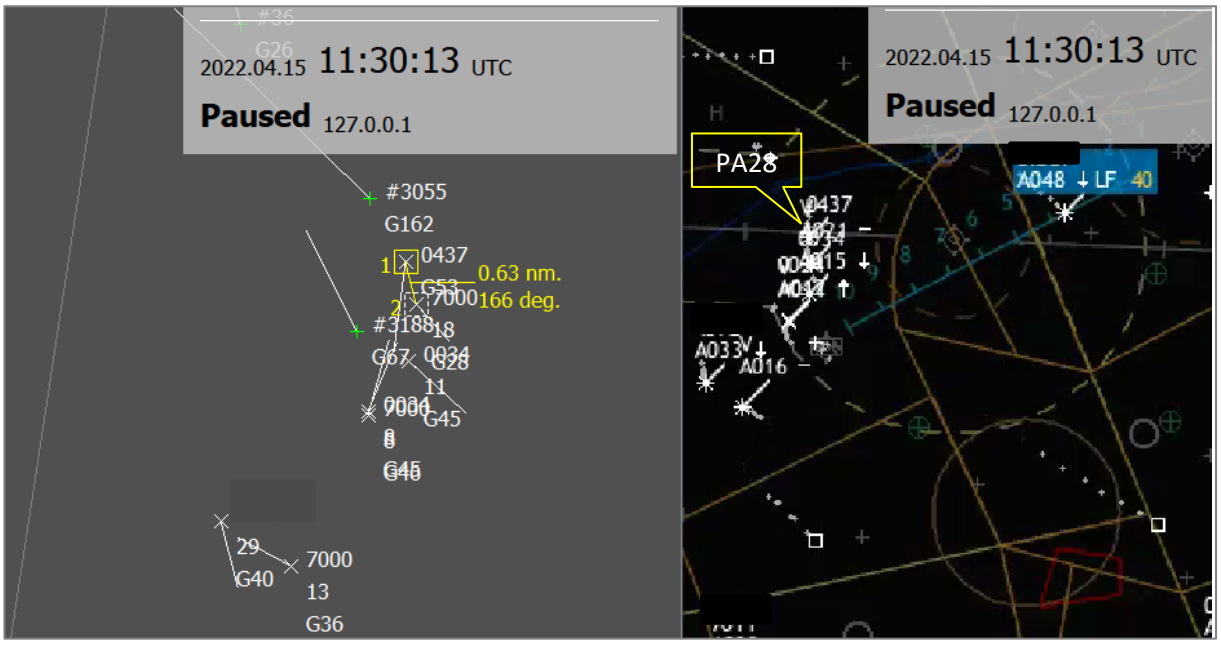


Figure 3 – 1130:13

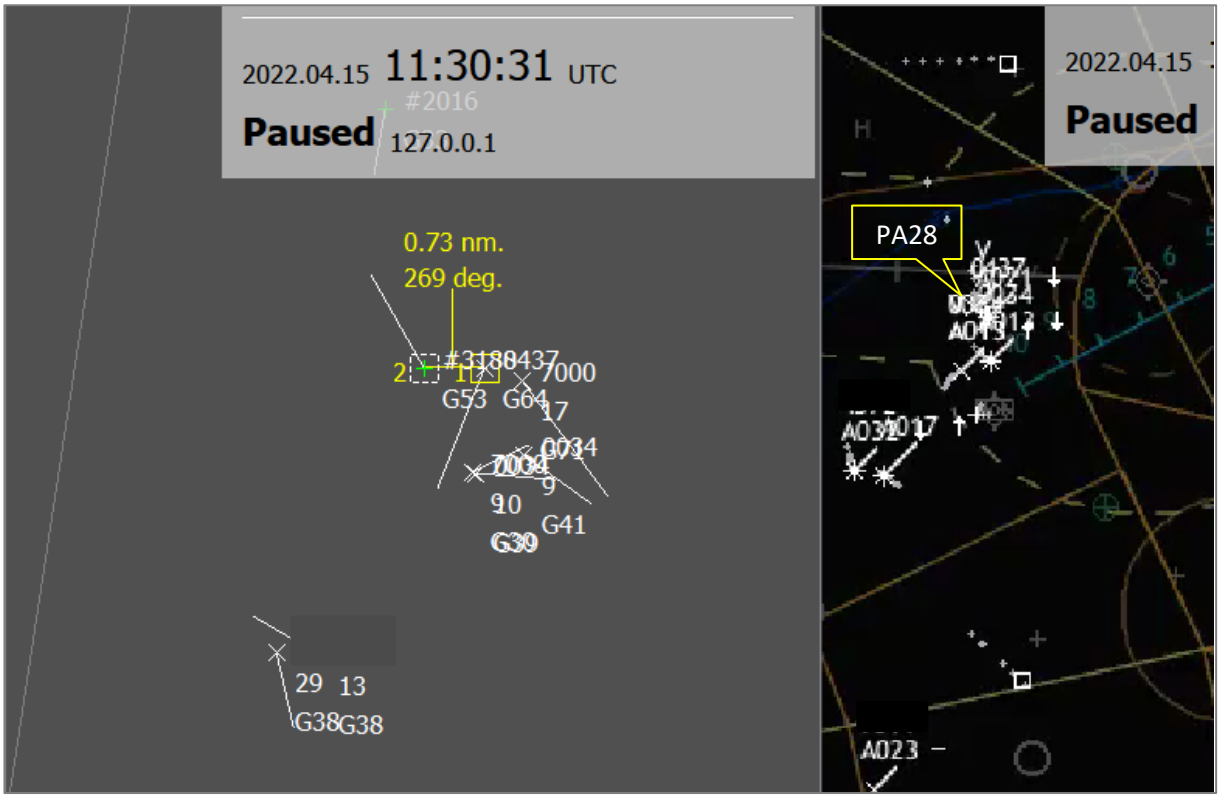


Figure 4 – 1130:31

At **1131** [The PA28] came into close proximity with what is believed to be gliding traffic – track number 3795 (Figure 5).

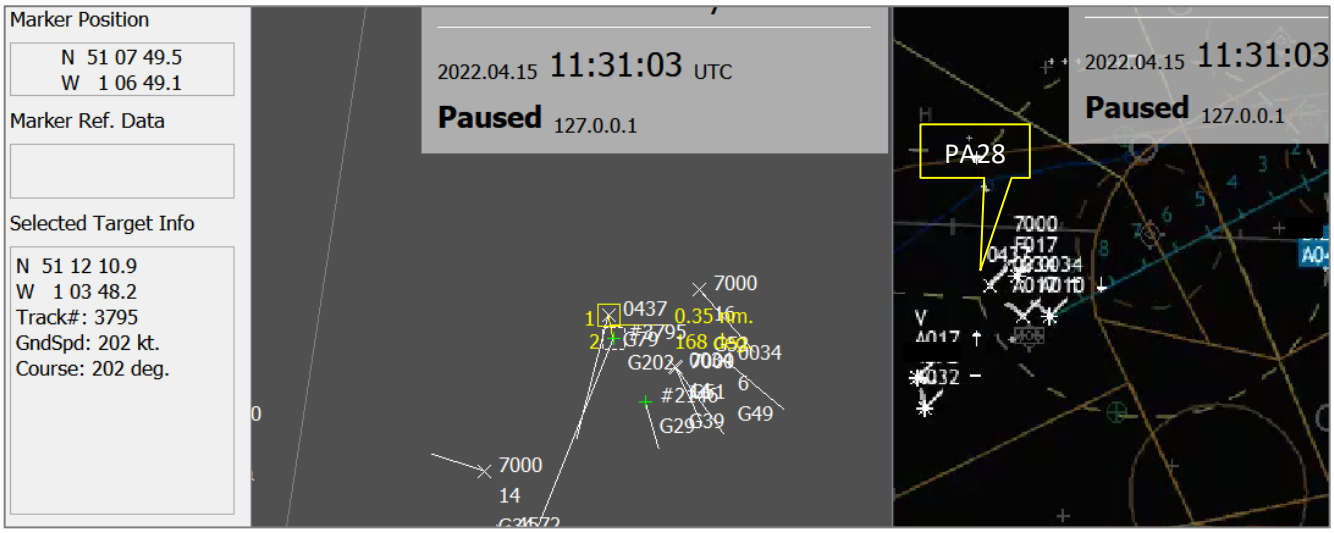


Figure 5 – 1131:03

As can be seen from the density and nature of traffic at Lasham at this time, it has not been possible to positively identify the conflict as reported in the submitted Airprox.

The radar replay, EFPS and RT recordings have been reviewed. The controller report and initial investigations have been completed and reviewed. CAP774 and the AIP have been reviewed.

Farnborough LARS West was working as a standalone function on 125.250MHz; the frequency was busy, with high traffic loading.

Lasham gliding site was notified by AIP as active and multiple contacts could be seen on the Farnborough PSR, Heathrow 10cm SSR and Heathrow green ethernet radars. Dependent on workload, normal practice would incorporate information on Lasham if the controller was aware that the aircraft's track would route in the vicinity of Lasham.

[The PA28 pilot] was under a Basic Service with Farnborough LARS West. They were issued a squawk of 0437 routing from [departure airfield] to [destination airfield]. The routing that [the PA28 pilot] used was WOD-VAPID. VAPID is an IFR reporting point and is not shown on the radar map; [the PA28 pilot] was operating under VFR.

The airspace outside CAS was busy, particularly around Lasham. [The PA28 pilot] requested and was given a transit of the Odiham MATZ, within which Lasham is based.

No verbal warning was given by the controller about activity at Lasham as they issued a MATZ transit approval, which may have been pertinent. However, the activity is promulgated in the AIP and [the PA28 pilot] was operating under a Basic Service. The controller – as previously mentioned – was working high traffic loading with multiple aircraft calling on and leaving the frequency during the time of the replay.

CAP774 States that:

> 2.5 Given that the provider of a Basic Service is not required to monitor the flight, pilots should not expect any form of traffic information from a controller/FISO. A pilot who considers that they require a regular flow of specific traffic information shall request a Traffic Service.
>
> 2.6 However, where a controller/FISO has information that indicates that there is aerial activity in a particular location that may affect a flight, **in so far as it is practical**, they should provide traffic information in general terms to assist with the pilot's situational awareness. This will not normally be updated by the controller/FISO unless the situation has changed markedly, or the pilot requests an update.

CAP 774 also states:

> 2.9 Whether traffic information has been provided or not, the pilot remains responsible for collision avoidance without assistance from the controller.

UKAB Secretariat

An analysis of the NATS area radar replay and GPS log files from both aircraft was undertaken. Although the NATS area radars detected numerous primary-only contacts in the vicinity of Lasham, none of these correlated with the position of the LS8 glider. However, both pilots were able to supply GPS log files from the flights and this data has been used to construct the diagram and measure the CPA.

The LS8 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 converging then the PA28 pilot was required to give way to the LS8.[3] If the incident geometry is considered as overtaking then the LS8 pilot had right of way and the PA28 pilot was required to keep out of the way of the other aircraft by altering course to the right.[4]

Comments

AOPA

It is incumbent on all pilots to keep a good lookout whilst flying, especially in this known choke point of airspace. It is heartening to see pilots making use of the CAA's EC rebate scheme, doing the correct thing by replanning when in receipt of NOTAMs and, when available, requesting the appropriate ATC service which may have helped in this event. The PA28 pilot is to be commended for their honest report and analysis which is also useful for other airspace users.

BGA

Over 220 gliders are based at Lasham airfield, which is home to one of the largest gliding clubs in the world. On a good cross-country soaring day, 20-40 pilots launch from the airfield in the late morning, each thermalling locally for several tens of minutes to gain height before setting off on cross-country flights. In February 2020 new areas of Farnborough Class D controlled airspace were created immediately to the east of Lasham airfield; this has created a choke point by funnelling through the Lasham area any north/south transit traffic that chooses (or is restricted) to remain in Class G airspace above 2000ft AMSL. The controlled airspace simultaneously concentrates local Lasham glider traffic into this same area. An increased frequency of Airprox involving gliders near Lasham is the likely result.

The PA28 pilot is to be commended for their open and honest reporting, including how to avoid or mitigate such an encounter in the future, and for subsequently fitting Electronic Conspicuity equipment that includes the [same protocol as the majority of gliders]; this provides a highly effective additional safety barrier.

Summary

An Airprox was reported when an LS8 and a PA28 flew into proximity 1.5NM NW of Lasham at 1131Z on Friday 15th April 2022. Both pilots were operating under VFR in VMC, the LS8 pilot listening-out on the Lasham Gliders frequency and the PA28 pilot in receipt of a Basic Service from Farnborough LARS West.

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging.
[4] (UK) SERA.3210 Right-of-way (c)(3) Overtaking.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, a report from the air traffic controller involved and a report from the appropriate operating authority. 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 discussed the location of the Airprox and a pilot member stated that this is an extremely busy area of airspace where a variety of different types of operation take place simultaneously. Members agreed that there could be a channelling or funnelling effect in this area due to the local airspace structure and pilots often fly through the area because an alternative routing through controlled airspace may not be always possible.

In this context, the Board then considered the actions of the LS8 pilot. Members noted that the glider had been transponder-equipped but that the pilot had not selected the transponder to 'on'. The Board heard from a glider pilot member that the management of battery power on a cross-country flight is difficult to achieve and, for this reason, glider pilots only use the transponder when they deem it absolutely necessary because the transponder demands a lot of power. The Board understood this rationale, but nonetheless in this case – where the glider pilot had been operating in a known area of congestion – members considered that they may have been better served by operating their transponder for a short while before departing on their cross-country flight. This may have enabled the Farnborough controller to more easily detect the glider and potentially detect the proximity of the PA28 to the glider. Therefore, the Board agreed that the LS8 pilot not operating their transponder around the time of the Airprox had been a contributory factor (**CF3**). Members then discussed the performance of the Electronic Warning System barrier and noted that the glider pilot had been carrying EC equipment that would have been expected to detect transponding traffic; however, in this case the lack of Mode C signals from the PA28's transponder had led to the EC equipment on board the LS8 being unable to detect the PA28 and thus members agreed that this had also been contributory to the Airprox (**CF5**). Without any on-board indication of the presence of the PA28, and without any form of ATS where a controller may have been able to alert them to the presence of the other aircraft, the Board agreed that the LS8 pilot had not had any situational awareness of the approaching PA28 (**CF4**). This had left the LS8 pilot relying on their lookout to detect potential threats to their aircraft, and members agreed that they had not sighted the PA28 in sufficient time to have been able to materially increase the separation between the 2 aircraft (**CF6**).

Turning to the actions of the PA28 pilot, the Board noted that they had considered the surface wind at their departure aerodrome and had re-planned their intended track to pass to the west of Lasham in the belief that Lasham would have been operating on their easterly RW and therefore they expected that the highest concentration of glider traffic would have been to the east of Lasham. The Board heard from a glider pilot member that Lasham is certainly the busiest glider site in the UK, and probably the busiest in Europe, and that glider pilots launching from Lasham would seek lift anywhere in the vicinity of the airfield, irrespective of launch direction, before departing on their cross-country flights. The member further stated that, due to the proximity of controlled airspace to the east of Lasham, the preference is for glider pilots to seek that lift to the north, west or south of the airfield. The Board agreed that this may not be common knowledge amongst pilots that are unfamiliar with gliding operations and therefore wished to highlight to pilots the very high level of gliding activity that takes place at and around Lasham airfield. Returning to the Airprox itself, the Board noted that the PA28 pilot had sought a Basic Service from Farnborough LARS but that they had not received any Traffic Information with respect to the LS8. Once again, the Board wished to highlight to pilots that they should not expect any form of Traffic Information under a Basic Service and, if assistance from the controller in detecting other aircraft is required, a higher level of ATS – such as a Traffic Service – should be requested. The Board was grateful to the PA28 pilot for their self-analysis of this event and noted that, since this incident, they will always endeavour to secure a surveillance-based air traffic service and have equipped themselves with an EC device that is compatible with the EC devices carried by the majority of gliders. Noting that none of this had been available to the PA28 pilot at the time, the Board agreed that they had only had generic situational awareness of the presence of gliders in the vicinity of a glider site (**CF4**) and therefore had also been relying on their lookout for the detection of other aircraft. Members agreed that the PA28 pilot

had not seen the LS8 in time to make any control inputs to increase their separation from the glider (**CF6**).

The Board then briefly considered the actions of the Farnborough LARS West controller and quickly agreed that there had been little that they could have done to prevent the Airprox – the LS8 pilot had not selected their transponder to 'on' (essentially rendering their aircraft invisible to the Farnborough controller) and the controller had been providing a Basic Service to the PA28 pilot where they had not been required to monitor the flight (**CF1**). The Board also wondered if the Short Term Conflict Alert (STCA) that had been available to the Farnborough LARS West controller might have been activated in this case had the LAS8 pilot selected their transponder to 'on' *and* the PA28's Mode C been serviceable. An ATC advisor informed the Board that, irrespective of the in-cockpit selections of the LS8 pilot and the serviceability of the PA28's Mode C, the 2 aircraft involved had been operating below the lowest altitude at which the STCA is configured to alert. Therefore, the Board agreed that the Ground Elements Electronic Warning System barrier had not been used in this case (**CF2**).

Finally, the Board considered the risk involved in this event. The Board noted that both pilots had judged this to be an extremely close encounter and had reported a minimal separation. The Board was grateful to both pilots for having supplied their GPS log files for their respective flights because, given the paucity of recorded radar information, this data greatly enhanced the Board's understanding of the Airprox geometry and, ultimately, the proximity. Members noted that measured CPA had been extremely close and that neither pilot had sighted the other aircraft in time to materially increase this separation. Therefore, the Board agreed that providence had played a major part in events and that a serious risk of collision had existed (**CF7**). Accordingly, the Board assigned a Risk Category A to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022052			
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
	• Electronic Warning System Operation and Compliance			
2	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			
	• Tactical Planning and Execution			
3	Human Factors	• Transponder Selection and Usage	An event involving the selection and usage of transponders	
	• 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	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
	• See and Avoid			
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: A

Safety Barrier Assessment[5]

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 Farnborough controller was not required to monitor the flight of the PA28 under the terms of a Basic Service.

Electronic Warning System Operation and Compliance were assessed as **not used** because, irrespective of the transponder selections of the pilots of the 2 aircraft, the Airprox took place outside the select frame of the STCA in use on the Farnborough LARS West position.

Flight Elements:

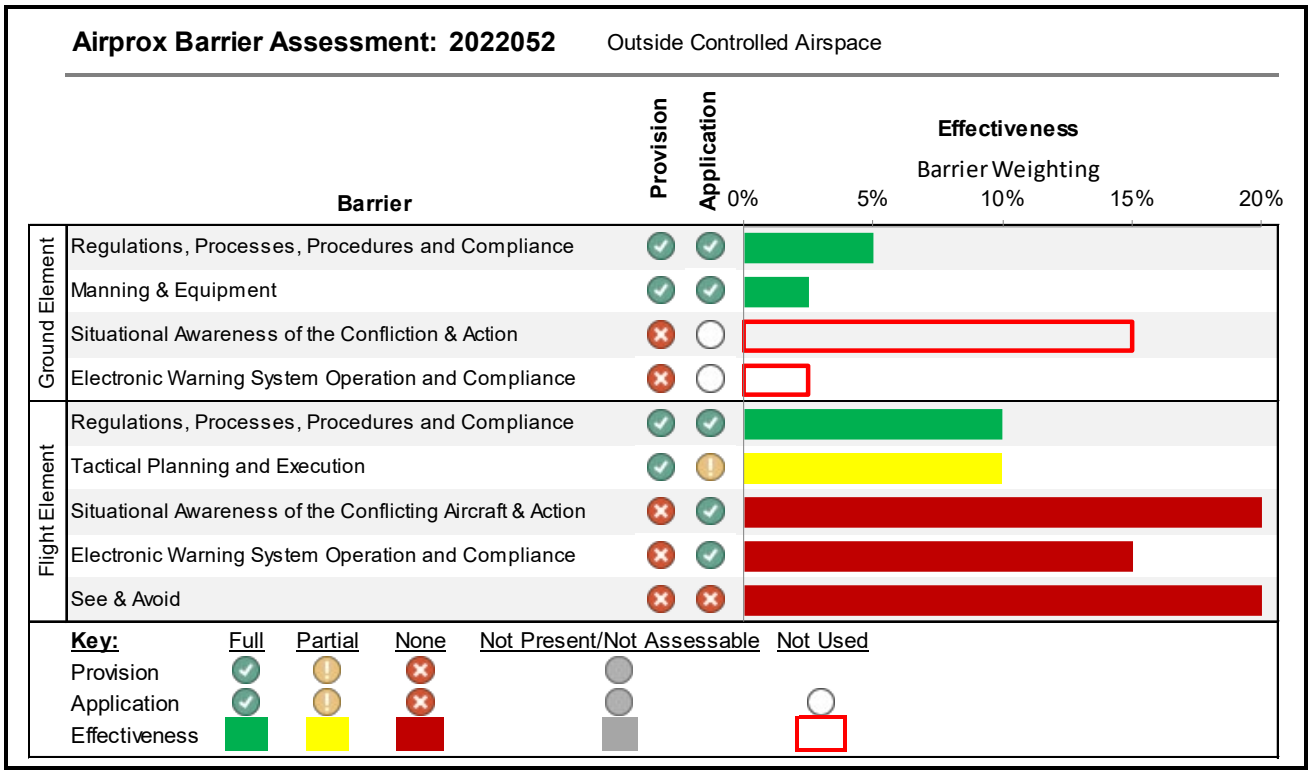
Tactical Planning and Execution was assessed as **partially effective** because the PA28 pilot assumed that a south-easterly wind at their departure airfield would mean that gliders from Lasham would be more concentrated to the east of the airfield, and the LS8 pilot chose not to turn on their transponder, thus rendering their aircraft effectively invisible to the Farnborough controller.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the PA28 pilot had only generic situational awareness that gliders would be operating in the vicinity of Lasham, and the LS8 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 fitted to the glider could not detect the transponder signals from the PA28 without the PA28's Mode C being serviceable.

See and Avoid were assessed as **ineffective** because neither pilot sighted the other aircraft in time to materially increase the separation.

[5] 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: 2022052
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 Confliction & 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