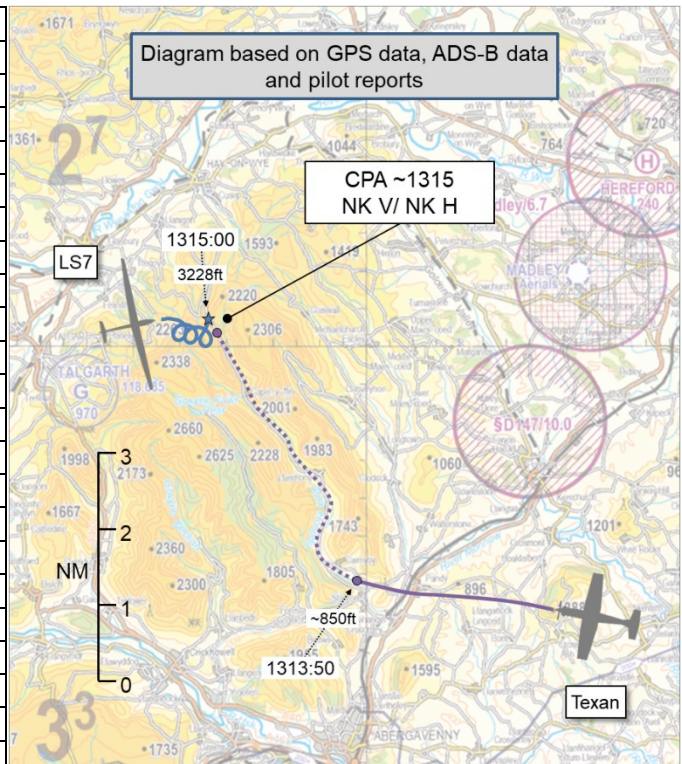


AIRPROX REPORT No 2023159

Date: 21 Jul 2023 Time: ~1315Z Position: 5201N 00307W Location: 4NM ENE Talgarth

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	LS7	Texan
Operator	Civ Glid	HQ Air (Trg)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	Talgarth Traffic	Low Level Common
Altitude/FL	3228ft	NK
Transponder	Stby	A, C, S+
Reported		
Colours	White	Black, yellow
Lighting	None	NR
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3270ft	250ft
Altimeter	QNH	RPS
Heading	300°	270°
Speed	55kt	240kt
ACAS/TAS	FLARM	TCAS I
Alert	None	None
Separation at CPA		
Reported	"Not seen"	NK V/NK H
Recorded	NK V/NK H	



THE LS7 PILOT reports that they were ridge-soaring along the westerly side of the Black Mountains, and thermalling up to cloudbase in the Talgarth local area. Whilst exiting a thermal above Gospel Pass, they heard a fast-moving, propeller-driven aircraft pass them from behind and, they assume, below them. They did not see the aircraft approach, and could not see the aircraft after the incident. There were four other gliders operating along the ridge at the same time. Their transponder was set to 7000 and 'standby' and they had [an additional EC device]. They were listening out on the Talgarth frequency, but did not hear radio contact by the other aircraft on that frequency. The pilot of the LS7 estimates that the separation between the aircraft had been 500ft vertically and 150m horizontally.

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

THE TEXAN PILOT reports that they were the rear-seat QFI for a low-level navigation sortie. For part of the sortie they needed to cover valley flying and were routing via the Talgarth/Hay Bluff flow arrow. Prior to entering the Black Mountains, they held a discussion in the cockpit noting the presence of gliders in the area (noted on "Spot the Glider" pre-outbrief) and their most probable operating areas. They routed following what they are now know is called Gospel Pass, from southeast to northwest. As they were reaching the exit of the Gospel Pass, 3 gliders were visually identified and judged to be approximately 700ft above, and appearing to be sequencing in a thermal or for an approach to Talgarth glider site. Other than the gliders above, no other aircraft were seen by either crew. Five days after the event, they were notified that an Airprox had been filed. The latitude and longitude given in the Airprox [notification] suggested that it occurred at the entrance to the Black Mountain area. Neither crew member was visual with another aircraft at that point. Of note, an attempt was made to review tapes prior to filing their DASOR. Due to a technical issue, no HUD footage was available through their debriefing tool.

[The Texan pilot commented that,] from the rear seat of the Texan, the forward view is slightly limited due to the student and front seat headbox. The forward view from the front seat is not obstructed in the same way.

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

Factual Background

The UK Military Low Flying Handbook provides the following extract of a diagram of Low Flying Area 7, with a 'Uni-directional flow between two restrictions' in the area of the Talgarth glider site (marked as GS48).

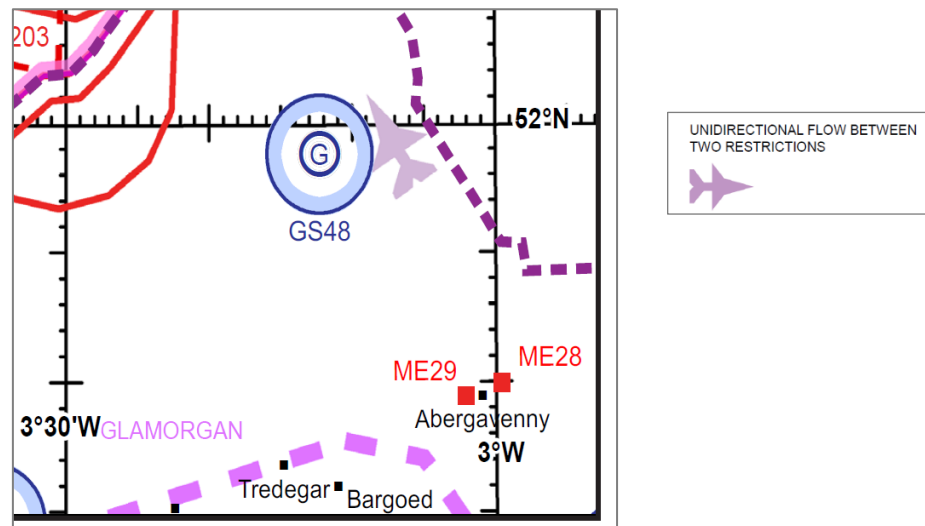


Figure 1 – UK Military Low Flying Area 7

The weather at Gloucestershire Airport was recorded as follows:

METAR EGBJ 211320Z 27009KT 9999 FEW038 SCT045 19/10 Q1014

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. Neither aircraft was observed on radar at the time of CPA. The pilot of the LS7 kindly supplied GPS track data for their flight. The UKAB Secretariat has obtained partial ADS-B track data for the Texan pilot's flight. Approximations of the actual tracks have been shown where there had been no available track data. The diagram was constructed from an integration of the different data sources and the pilot's narrative reports. The exact moment of CPA and the separation of the aircraft could not be determined.

The LS7 and Texan 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 Texan pilot was required to give way to the LS7.² If the incident geometry is considered as overtaking then the LS7 pilot had right of way and the Texan pilot was required to keep out of the way of the other aircraft by altering course to the right.³

¹ (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

² (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

³ (UK) SERA.3210 Right-of-way (c)(3) Overtaking. MAA RA 2307 paragraph 14.

Comments

HQ Air Command

The Talgarth/Hay Bluff gap, as described in the UK Military Low Flying Handbook (UKMLFHB), should be flown in a north-westerly direction by military aircraft at low-level. This document also warns of ridge soaring activity when the wind is from the north-west. The reason for such directional flow systems is to reduce the MAC risk between military aircraft when flying down prominent valleys or between airspace restrictions. The Texan crew was compliant with this regulation, and expected gliding activity at the site, confirmed by their visual acquisition of gliders as they passed. Given the prevalence of Airprox reports here, measures have been taken to increase liaison between military aircrew and glider operators in the Black Mountains. Changing the Low-Level Common frequency to VHF has increased the potential for all airspace users to communicate on a radio, but it does not necessarily help at this location, as gliders are unlikely to be listening out on Low-Level Common. Further liaison is planned, including a visit to the Talgarth site by the RAF, and review of the procedures in the UKMLFHB to try and reduce the risk of MAC in the Black Mountains area. It should be recognised that all aircraft involved have differing needs when accessing this airspace and it's not simple to balance the risk of MAC through regulation. A mutually agreeable compromise should be reached to complete this in the safest possible way.

BGA

If the glider's transponder had been switched to "Alt", it may have registered on the equipment carried by the Texan, warning the crew of the impending conflict. Given recent rapid advances in rechargeable battery technology, owners of transponder-equipped gliders may wish to re-equip with higher-capacity batteries that allow them to run their transponders for longer in flight.

The ridge-line shown in Figure 2 between Talgarth gliding site (515848N 0031215W) and Hay Bluff (520122N 0030610W) is one of several in this area used by gliders and paragliders, either of which may be found soaring this ridge during daylight hours in even the lightest of winds between northerly and westerly. Gliders routinely fly close to these ridges and across the mouth of Gospel Pass at various altitudes. Low-flying military aircraft are frequently observed crossing Gospel Pass south-to-north, and there have been at least two previous Airprox here in similar circumstances (Airprox reports 2015123 and 2022239).

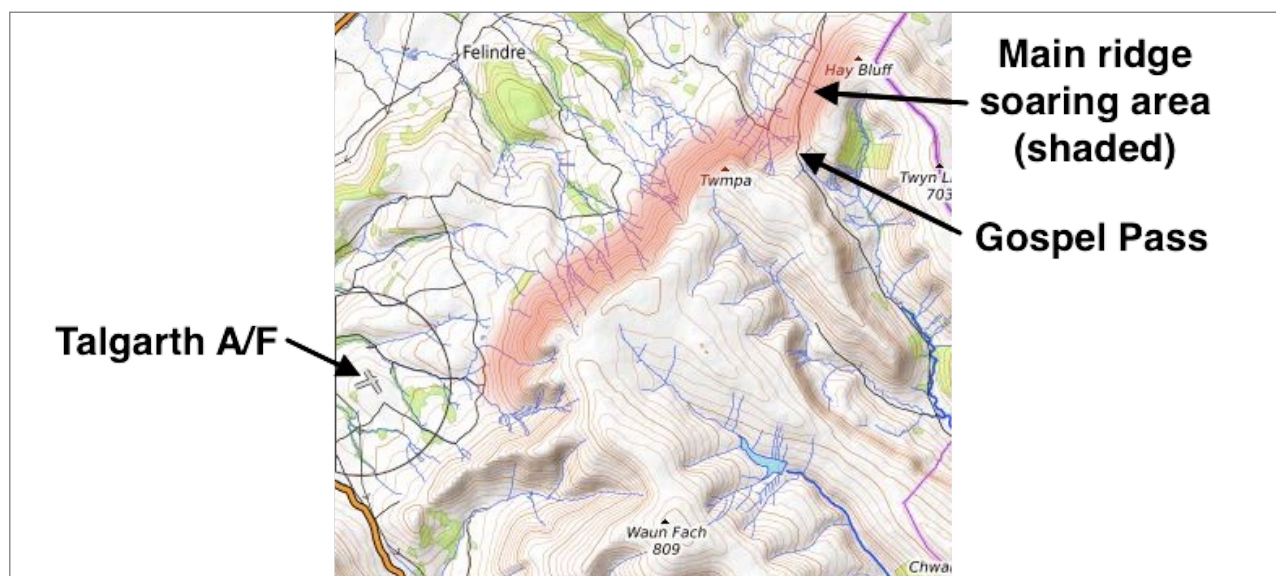


Figure 2 – Ridgeline between Talgarth and Hay Bluff

Summary

An Airprox was reported when an LS7 and a Texan flew into proximity 4NM east-northeast of Talgarth at approximately 1315Z on Friday 21st July 2023. Both pilots were operating under VFR in VMC, the

LS7 pilot listening-out on the Talgarth Traffic frequency and the Texan pilot listening-out on the Low Level Common frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data 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 discussed the actions of the pilot of the LS7. A member with particular knowledge of gliding operations explained that the most favourable conditions for glider and paraglider pilots occur when the wind is blowing from any direction in a clockwise arc from west to north along the Black Mountains ridge, as it had been on the day in question. It was noted that the area may attract many pilots when such conditions are present, particularly from the nearby Talgarth gliding site, but also visiting pilots too. Members noted that there had been several previous Airprox incidents that had occurred in the vicinity.

Turning their attention to the circumstances of this particular Airprox, members noted that the pilot of the LS7 had heard, but had not seen, an aircraft pass by. Reviewing the GPS track data of the LS7, and the elevation of the terrain, members noted that the pilot of the LS7 had been thermalling approximately 1000ft above the ridge at the reported time of the Airprox.

In consideration of the aspect of EC, members noted that the LS7 had been equipped with a transponder, although it had been switched to the Standby mode. Some members wondered why the unit had not been switched on or, indeed, had not been switched off. It was proffered that, anecdotally, many glider pilots limit the use of a transponder (if fitted) to times when they are operating in areas with a higher concentration of powered aircraft in order to preserve battery life. Although the exact reason for the unit to have been set to Standby in this case was not available to members, it was noted that the EC equipment fitted to the LS7 would not have been expected to have provided an alert to the presence of the Texan. Consequently, members agreed that the pilot of the LS7 had had generic situational awareness of the Texan, albeit late, on account of having heard an aircraft approaching (**CF2**). It was noted that the pilot of the LS7 had not visually acquired the Texan during the encounter (**CF5**). Members appreciated that to have heard, but not to have sighted, a passing aircraft had been a significant concern (**CF3**).

Members next considered the actions of the pilot of the Texan. A member with particular knowledge of military flight planning explained that military pilots conduct their flight planning for operations below 2000ft AGL by reference to military aeronautical charts and in accordance with the UK Military Low Flying Handbook. It was noted that a 'flow arrow' is marked on the relevant chart in the area immediately to the east of the Talgarth gliding site. The flow-arrow symbol represents a one-way flow of traffic for the purpose of mitigating 'head-on' encounters between military aircraft. Some members wondered why the flow-arrow had been placed in that particular location, such that it might appear to 'funnel' military aircraft along a narrow route toward an area popular with pilots engaged in ridge-soaring activities. Members felt that the current military procedures had not fully addressed the specific risks presented at that location (**CF1**) but were heartened to learn that personnel from the RAF Safety Centre had already engaged with key stakeholders from the gliding community to better understand the issues involved.

Noting that the pilot of the Texan had tuned their radio to the Low Level Common frequency, one member wondered whether it may have been prudent to have communicated their intentions on the Talgarth gliding frequency. It was proffered that, although the pilot of the Texan had passed within 2NM of the Talgarth gliding site, and could have communicated their intentions as suggested, the topography of the area and the low altitude at which the Texan pilot had been operating might have meant that firstly, their call may not have propagated sufficiently to be of much benefit, and secondly, that any potential conflicting aircraft might have been obscured from view until the last moment when the pilot of the Texan had exited the valley feature. The exact altitude of the Texan during this incident had not

been known, but members agreed that it would have been at least 250ft AGL, thereby suggesting a separation between the aircraft of approximately 500-750ft.

Members next noted that the EC equipment fitted to the Texan would not have been expected to have detected the presence of the LS7 given that the transponder fitted to the LS7 had not been switched on (**CF4**). However, members noted that the pilot of the Texan had been aware of the presence of gliding activity in the vicinity, and agreed that they had assimilated generic situational awareness of the traffic situation (**CF2**). Members noted that the pilot of the Texan had sighted 3 gliders, but could not determine whether they had visually acquired the LS7 specifically. Based upon the Texan pilot's narrative report that they had not seen a glider at the precise moment that the pilot of the LS7 had reported they had heard an aircraft approach, members concluded that the pilot of the Texan had not visually acquired the LS7 (**CF5**).

The discussion concluded, and member's attention turned to the determination of risk. Some members suggested that there had been insufficient information available with which to make a determination, whilst others suggested that the encounter had presented no risk of collision. The former view prevailed and the Board agreed Risk Category D.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023159				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Regulations, Processes, Procedures and Compliance				
1	Organisational	• Flight Operations Documentation and Publications	Flight Operations Documentation and Publications	Inadequate regulations or procedures
• 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
3	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft
• Electronic Warning System Operation and Compliance				
4	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				
5	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

Degree of Risk: D.

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:

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

Flight Elements:

Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the procedures in the UK Military Low Flying Handbook had not fully addressed the risks presented in the vicinity of the Black Mountains.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the pilot of the Texan had generic situational awareness of the presence of gliding activity.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would not have been expected to have detected the presence of the other.

Airprox Barrier Assessment: 2023159		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 Conflicting & 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:		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	⚠	✗	●				
Application	✓	⚠	✗	●	○			
Effectiveness	■	■	■	■	■			