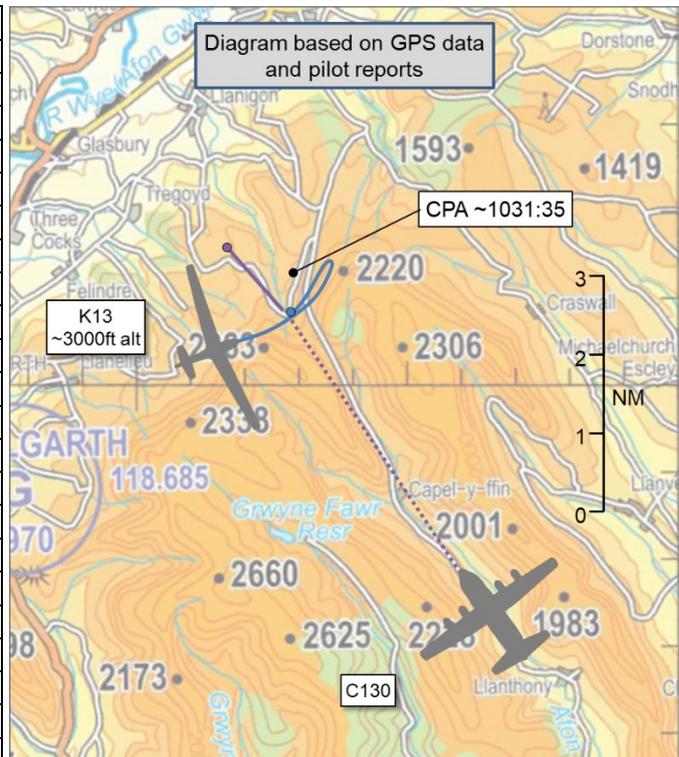


**AIRPROX REPORT No 2022239**

Date: 10 Oct 2022 Time: 1031Z Position: 5200N 00306W Location: 3NM NE Talgarth

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	K13	C130
Operator	Civ Gld	HQ Air (Ops)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Altitude/FL	~3000ft	NK
Transponder	Not fitted	A, C, S
<b>Reported</b>		
Colours	White, Yellow	Green
Lighting	None	Nav, Strobes
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	2900ft	250ft
Altimeter	amsl	msd
Heading	290°	034°
Speed	50kt	210kt
ACAS/TAS	FLARM	TCAS II
Alert	None	None
<b>Separation at CPA</b>		
Reported	200-500ft V/0m H	600ft V
Recorded	NK	



**THE K13 PILOT** reports that they were flying along the ridge between the Black Mountains Gliding Club and Hay Bluff with a student at the controls. They were at height of between 1700ft and 2300ft QFE. When crossing the Gospel Pass from an east-to-west direction at just below 2000ft and around 50kts, they spotted a 4-engined military aircraft out to the right side. The aircraft had passed them before they had spotted it, so no avoiding action was taken. They contacted BMGC base by radio to identify the aircraft as they considered the risk of collision was high.

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

**THE C130 PILOT** reports that whilst conducting low-flying to complete an Air Load Master (ALM) role check, the aircraft transited south to north in a valley in the Talgarth/Hay Bluff flow arrow en-route to its next simulated event. The routing choice was clear of the glider site, with potential for other traffic briefed during crew brief and at authorisation. The aircraft was climbed to exit the valley at its most northerly point with the intention to pass through an elevated saddle at the end of the valley. Conducting a slightly early climb to improve lookout, the aircraft had reached a height to comfortably generate 250ft MSD through the saddle when the ALM under examination indicated a glider above and to the right of the aircraft. Although not sighted with the glider, the aircraft was immediately manoeuvred to the left and descended to 250ft MSD to avoid the indicated aircraft. Having manoeuvred the aircraft the pilot became visual with a glider travelling in a westerly direction above their height. The glider passed above and to the right of their aircraft.

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

**Factual Background**

The weather at Cardiff was recorded as follows:

METAR EGFF 101020Z AUTO 35008KT 320V030 9999 NCD 14/08 Q1020=

METAR EGFF 101050Z AUTO 33009KT 9999 NCD 14/09 Q1020=

## Analysis and Investigation

### UKAB Secretariat

Analysis of the NATS radar replay was undertaken. The C130 could be identified through Mode S information, but disappeared from the radar 2min prior to the Airprox. Further analysis of a data analyser tool also showed the C130 2min prior to the Airprox with the aircraft fading and reappearing just after the Airprox. The K13 pilot supplied the UKAB secretariat with a GPS track. Therefore, using the data available, a representation of the Airprox was constructed for the diagram at the top of this report, but exact separation could not be measured.

The K13 and C130 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup> If the incident geometry is considered as converging then the C130 pilot was required to give way to the K13.<sup>2</sup>

## Comments

### HQ Air Command

The C130 crew chose a routing to keep clear of the glider site and, with good weather conditions, noted the potential for increased glider traffic in this area in their pre-sortie brief and at authorisation. With neither aircraft receiving a LARS or ATS, and with incompatible EC, see-and-avoid was the only barrier to MAC in this instance. The terrain had masked the glider up until towards the end of the valley feature and an early climb allowed improved lookout; it was a good spot by the Air Load Master. Terrain and flight level permitting, VHF Low Level (LL) Common (130.490MHz) can be used to improve the Situational Awareness amongst, and to aid deconfliction between, civilian and military aircraft operating in the UK Low Flying System when not in receipt of an ATS. However, getting a LARS, or an ATS, should always take priority over the use of LL Common.

### BGA

The ridge-line shown in Figure 1 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 within a couple of hundred feet of these deserted hill-faces, using an exemption to SERA.3105 and SERA.5005(f)<sup>3</sup> that permits a hill-soaring glider to fly below 500ft AGL or closer than 150m (500ft) to any person, vessel, vehicle or structure (always provided that it does not recklessly endanger life or property of others). Low-flying military aircraft are frequently observed crossing Gospel Pass south-to-north at the same altitude, and there has been at least one previous Airprox here in near-identical circumstances (Airprox report 2015123).

With no interoperability between the Electronic Conspicuity equipment fitted to the K13 and C130, and neither in receipt of an ATS, see-and-avoid was the only operating MAC safety barrier in this incident.

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<sup>1</sup> (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

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

<sup>3</sup> Official Record Series 4 No 1496, <http://publicapps.caa.co.uk/ORS4NO1496>

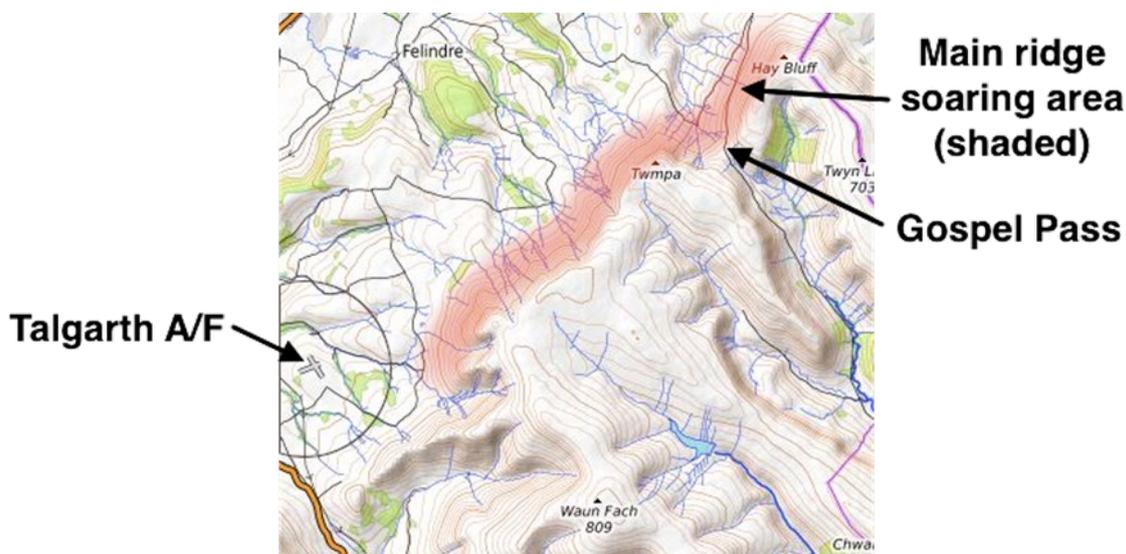


Figure 1

## Summary

An Airprox was reported when a K13 and a C130 flew into proximity 3NM northeast of Talgarth at around 1031Z on Monday 10<sup>th</sup> October 2022. Both pilots were operating under VFR in VMC, neither was 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 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 location of the Airprox. The glider pilot had been ridge flying in the Black Mountains, and the BGA advisor informed the Board that this particular ridge was the main one used by the gliders based at Talgarth. They reminded members that gliders are exempt from the 500ft rule when hill-soaring, in order to allow gliders to fly low over the mountain ridges. The advisor had spoken to operators at Talgarth, who noted that there had been a near identical Airprox at Gospel Pass some years ago<sup>4</sup> and also commented that there appeared to have been a recent increase in military low-flying in the area. Talgarth operators were therefore keen to liaise with the MOD to prevent future occurrences and military members were happy to facilitate this, with the USAFE representative asking that USAFE also be included in any discussions. Members were encouraged to hear that future liaison would take place.

Turning to the actions of the glider pilot, it was noted that the CWS fitted to the glider could not detect the C130 (**CF2**) and with no ATS available in that location, the glider pilot had been without any situational awareness that the C130 had been approaching along the valley (**CF1**). The glider pilot described first seeing the C130 on their right, going away, and members thought that this indicated that the pilot had seen the C130 after CPA (**CF3**) and had been concerned by its proximity (**CF4**).

Prior to getting airborne, the C130 crew had briefed on the likelihood of encountering gliders in this vicinity and had therefore primed crew members to be vigilant. Nevertheless, despite this generic awareness, the C130 crew had not had any specific situational awareness that the glider had been in the vicinity (**CF1**) and the TCAS on board could not detect the non-transponding glider, nor had it been compatible with the EC equipment on the glider (**CF2**). However, when a crew member spotted the glider, the pilot had taken swift action to remain clear, and reported seeing the glider shortly afterwards.

<sup>4</sup> [Airprox 2015123](#)

Members spent some time discussing possible mitigations to this Airprox, noting that whilst both aircraft had been equipped with EC, this had been incompatible and had not provided any situational awareness to either pilot. Noting that the C130 crew had been on the Low-Level common frequency, some members wondered whether the glider pilot could have also monitored it, but were told by the BGA advisor that pilot workload would have precluded it. Further discussion followed around whether Talgarth could monitor the Low-Level common frequency, but members thought it likely that the topography in the region would mask most calls anyway. Members therefore referred back to their previous discussion, noting that liaison would be key in preventing a similar occurrence.

When assessing the risk, with the limited radar coverage, members had only the pilots' descriptions of the event. However, both pilots estimated a similar separation of around 500ft, furthermore, the C130 crew was visual with the glider and had taken action to increase the separation, therefore members agreed that although safety had been degraded, there had been no risk of collision; Risk Category C.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

2022239				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
1	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
<b>• Electronic Warning System Operation and Compliance</b>				
2	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
<b>• See and Avoid</b>				
3	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
4	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

### Safety Barrier Assessment<sup>5</sup>

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

### **Flight Elements:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot knew the other aircraft was in the vicinity prior to becoming visual.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the EC on the glider could not detect the C130 and the TCAS II on the C130 could not detect the non-transponding glider.

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

<b>Airprox Barrier Assessment: 2022239</b>		Outside Controlled Airspace					
<b>Barrier</b>	<b>Provision</b>	<b>Application</b>	<b>Effectiveness</b>				
			<b>Barrier Weighting</b>				
			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	✔	✔				
<b>Key:</b>							
	<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✔	ⓘ	✘	○			
Application	✔	ⓘ	✘	○			
Effectiveness							