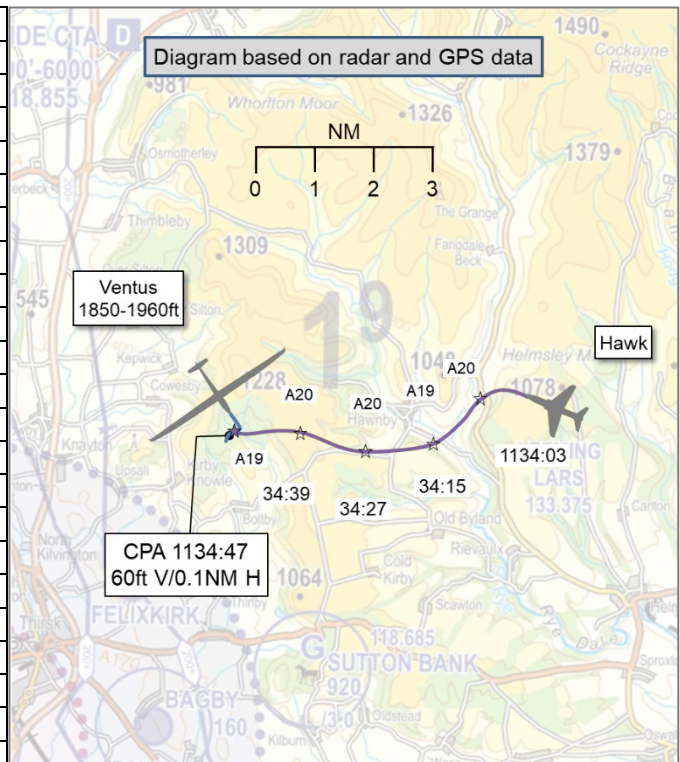


AIRPROX REPORT No 2023233

Date: 03 Oct 2023 Time: 1135Z Position: 5418N 00115W Location: 4NM NNE Sutton Bank

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Ventus	Hawk
Operator	Civ Gld	HQ Air (Trg)
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	None ¹
Provider	'Sutton Base'	LL Common
Altitude/FL	1960ft	1900ft
Transponder	Not fitted	A, C, S+
Reported		
Colours	White	Black
Lighting	Strobe	NR
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1470ft	2000ft
Altimeter	QNH (1015hPa)	NR (NR hPa)
Heading	Circling	NR
Speed	55kt	NR
ACAS/TAS	FLARM	TCAS II
Alert	None	None
Separation at CPA		
Reported	100ft V/ 300ft [~90m] H	'1000ft'
Recorded	60ft V/0.1NM H	



THE VENTUS PILOT reports flying up and down the ridge to the west of Sutton Bank gliding site in a 15kt westerly wind, heading north/south up to five miles from the gliding site. At a point 5 miles north of the gliding site, and as they were circling, they saw a Hawk jet which passed to the north of them at about the same level. It rolled and descended to below the ridge height heading towards the west.

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

THE HAWK PILOT reports returning to RAF Leeming from a Low-Level Introduction sortie when a glider was observed. To telegraph that the glider had been observed, a descent of about 500ft was made to pass below and to the right of the glider. Following in-brief after the sortie it was reported that the glider pilot had reported an Airprox.

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

THE LEEMING CONTROLLER AND SUPERVISOR reports they did not observe the Airprox on radar. The radar replay showed a fast-jet [the Airprox Hawk] exit low-level to the northeast of Sutton Bank by 5NM and track west at about 2000ft. As it did so, the Hawk dropped 500ft in one sweep when about 5NM north of Sutton Bank. No Airprox was reported on any Leeming frequency.

¹ The Hawk pilot reported in receipt of a Basic Service from Leeming Approach but the tape transcript showed that R/T contact was made with Leeming shortly after the Airprox occurred.

Factual Background

The weather at Leeming was recorded as follows:

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METAR EGXE 031150Z 25017KT 9999 FEW028 16/10 Q1013 TEMPO 27018G28KT RMK BLU TEMPO BLU=  
METAR EGXE 031120Z 25017KT 9999 FEW028 16/10 Q1013 TEMPO 26018G28KT RMK BLU TEMPO BLU=
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Analysis and Investigation

Military ATM

An Airprox occurred on 3 Oct 23 at approximately 1133, to the north of Sutton Bank Gliding Club. The glider was ridge flying north to south and, whilst not in receipt of an Air Traffic Service, was listening out on the Sutton Bank Glider site frequency. The Hawk was conducting a Low-Level Introduction training sortie, listening out on the UK Low Level Common frequency.

The Glider was not conclusively identified on either the NATS radar recording or local unit radar recording. Traffic Information regarding potential glider traffic was passed to the Hawk pilot whilst on recovery but this did not align with the Airprox event.

The Airprox is believed to have occurred prior to the Hawk pilot exiting the low-level system and contacting Leeming ATC for recovery because the 500ft descent reported by the Hawk was observed as the Hawk exited to the northeast of Sutton Bank.

As a result of the Airprox occurring whilst within the low-level system and the glider not being conclusively identified on radar, there was no requirement for local investigation or 2 Gp BM Analysis.

UKAB Secretariat

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

Comments

HQ Air Command

The Hawk pilot had visual SA and avoided the glider involved in this Airprox, albeit in a manner that clearly alarmed the glider pilot. There are broader lessons that can be identified through examination of the event. Low Level Common procedures are published in the UK Military Low Flying Handbook and the Civilian AIP. Whilst glider pilots should be aware of the AIP content, it is unlikely they will operate on the frequency for several reasons and other pilots should be made aware of this. When approaching Leeming it may have been more appropriate for the Hawk pilot to obtain a LARS, or an earlier recovery call for SA on local traffic. That said, line of sight radio comms with Leeming may have been troublesome in this airborne exercise and location, and the glider was not overtly visible to ATC on radar. ATC tries to retain SA on glider traffic by monitoring FLARM on a separate display. Incompatibility of FLARM with other forms of EC is an ongoing issue and this Airprox builds further evidence towards the requirement for a technological solution. More broadly, Leeming has an active relationship with Sutton Bank, augmented by the Regional Airspace Users' Working Group. It's not clear if likely glider operations on the westerly ridge were understood by the Hawk pilot on that day, but this occurrence should serve as a timely reminder to understand the varying needs of each

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

³ (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

⁴ (UK) SERA.3210 Right-of-way (c)(3) Overtaking. MAA RA 2307 paragraph 14.

aircraft when sharing an area of Class G airspace. In some cases, it is safer to simply avoid a known area of gliding activity due to the issues highlighted above, although recovery to Leeming from low-level to the east can make that practice troublesome.

BGA

When westerly winds exceed 15kt, the western edge of the North Yorks Moors between Sutton Bank Airfield (5413N 00112W) and the A19/A172 Tontine interchange (5424N 00119W) becomes very busy with gliders exploiting the resulting 'ridge lift'. At these times up to 15 gliders continuously fly along this ridge line, typically below 1500ft AGL (see Figure 1 below). ATSU's near this and other busy gliding areas may wish to install Flight Information Displays that provide instantaneous SA on aircraft carrying the EC system fitted to almost all gliders (including this Ventus).

Leeming ATC was informed of the planned activity from Sutton Bank gliding site by email at 0744 on the day of the Airprox:

'Launching today will be by winch and aerotow towards the west. Ridge soaring on the west facing ridges of the North Yorks Moors and some wave soaring are likely with cross-country flying possible.'

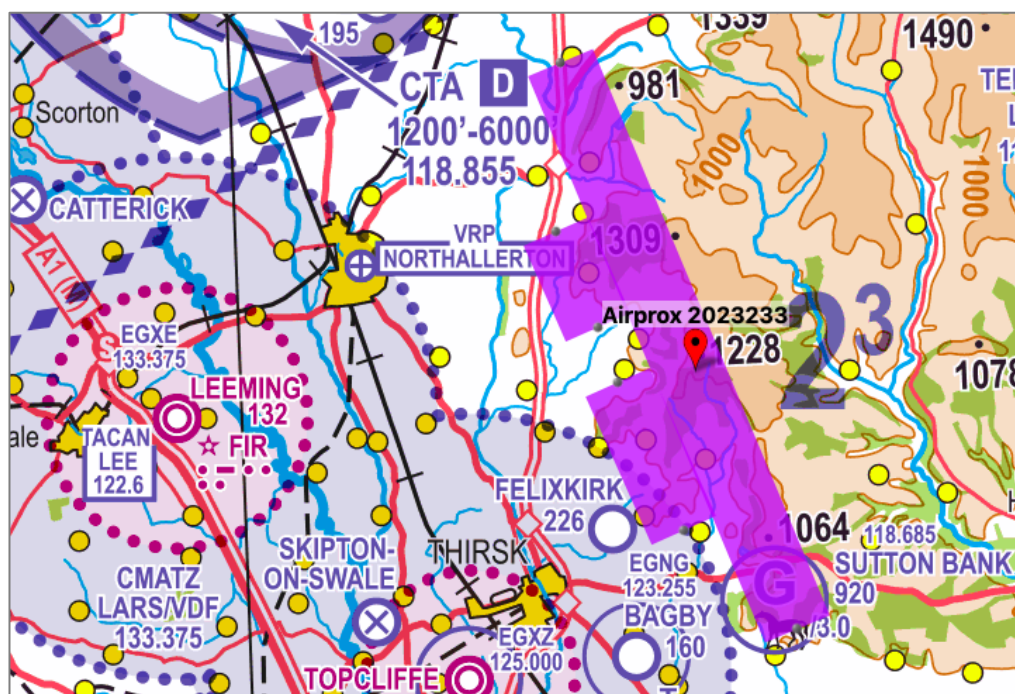


Figure 1: Ridge soaring area between Sutton Bank Airfield and Tontine interchange

Summary

An Airprox was reported when a Ventus and a Hawk flew into proximity 4NM north-northeast of Sutton Bank gliding site at 1135Z on Tuesday 3rd October 2023. Both pilots were operating under VFR in VMC, the Hawk pilot not in receipt of a FIS and the Ventus pilot listening out on the 'Sutton Base' frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS data, a report from the air traffic controller 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.

Without a surveillance based service for either pilot and with EC that was not compatible (CF3) mitigations to mid-air collision (MAC) or loss of safe separation (LOSS) had been afforded solely by see-and-avoid or the application of available situational awareness. In this case the Hawk pilot had had

information regarding the likely operating area of local gliding activity, albeit only generic in nature (CF2), but the glider pilot had had no situational awareness of the Hawk pilot's routeing (CF2). Given that the glider pilot's routeing had been constrained by the energy provided by ridge lift, it appeared to the Board that a simple mitigation would have been for the Hawk pilot to have avoided the area notified to Leeming that morning (CF1). The Board also recognised that the Hawk crew had been free to manoeuvre in Class G airspace but wondered whether they had fully risk assessed the available barriers to MAC/LOSS and, given that the remaining barrier had been see-and-avoid, the likelihood of timely visual acquisition. In the event, each pilot had seen the other aircraft at a late stage (CF4) and the Hawk pilot had taken avoiding action. The aircraft had passed in close proximity, which some members felt warranted a Risk of B, safety much reduced, but the Board voted by a majority to assign a risk rating of C, risk of collision averted but safety nonetheless degraded.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2023233				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	Human Factors	• Pre-flight briefing and flight preparation	An event involving incorrect, poor or insufficient pre-flight briefing	
• 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
• See and Avoid				
4	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 Assessment⁵

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

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the Hawk pilot routed through a notified area of intense gliding activity.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the Ventus pilot had no situational awareness on the Hawk and the Hawk pilot only had generic situational awareness of 'gliders in the area'.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because each aircraft was equipped with EC that was incompatible with the other.

⁵ 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 each pilot saw the other aircraft at a late stage.

Airprox Barrier Assessment: 2023233		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	○	○					
	Manning & Equipment	○	○					
	Situational Awareness of the Conflicition & 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	■	■	■	■	□			