

AIRPROX REPORT No 2023236

Date: 07 Oct 2023 Time: 1128Z Position: 5414N 00113W Location: Sutton Bank

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASK21	DA42
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Basic
Provider	Sutton Bank Traffic	Teesside Radar
Altitude/FL	1975ft	1800ft
Transponder	Not fitted	A, C, S+
Reported		
Colours	White, red	White
Lighting	Nil	Strobes
Conditions	VMC	VMC
Visibility	5-10km	5-10km
Altitude/FL	900ft	2000ft
Altimeter	QFE (989hPa)	QNH
Heading	300°	NK
Speed	50kt	140kt
ACAS/TAS	FLARM	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	100ft V/0m H	50ft V/0.25NM H
Recorded	~175ft V/0.1NM H	



THE ASK21 PILOT reports that, while returning to Sutton Bank in an ASK21 training glider, just forward of the working ridge, a DA42 was observed to fly directly underneath by 100-150ft. It appeared to be avoiding orographic cloud on the ridge. [It was] too late for the [pilot of the ASK21] to avoid it, and no avoiding action was observed from the DA42 pilot.

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

THE DA42 EXAMINER reports that they were the PIC of the DA42 and sighted a glider north-west of Sutton Bank gliding site, with which they are very familiar as they are an experienced glider pilot who operates in North Yorkshire. Having acquired the glider visually, they maintained visual contact with it at all times as it passed down their right-hand side. In their opinion, there was, at that time, no risk of collision and therefore no avoiding action was taken.

The glider pilot then turned to their right (meaning that they had turned towards the DA42) which was rather surprising, although [the glider’s] flightpath took it behind them.

[The pilot of the DA42 commented that,] of course, they are not aware when [the glider pilot] first sighted the DA42, and it may only have been after the glider’s turn was commenced. If that was the case, then the glider pilot may have been surprised to see the DA42. [The pilot of the DA42 opined that] there was no risk of collision because they maintained visual reference with the glider until it passed behind.

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

THE TEESSIDE RADAR CONTROLLER reports that they were providing a Basic Service to [the pilot of] the DA42. The pilot had informed them that they were routing northbound to Croft (a point inside Teesside CTR to the west of the airfield) before turning back southbound. Their track, in both directions,

took them through an area of primary-only contacts, assumed to be gliders, around the Topcliffe and Sutton Bank area.

On the northbound leg, from memory, the aircraft routed between the two sites at around 3000ft. They informed the [pilot of the DA42] that both sites were active and passed Traffic Information on contacts that they thought were particularly close.

On the southbound track, they again passed [pilot of the DA42] information that the two sites were active and, again, passed Traffic Information on contacts that they thought were particularly close. This time, the pilot elected to descend to approximately 1700ft and fly through the centre of the Sutton Bank gliding site.

Afterwards, they received a call on the landline from a person in charge at Sutton Bank asking if a DA42 had flown through their area.

Factual Background

The weather at Leeming was recorded as follows:

METAR EGXE 071120Z AUTO 25012KT 9999 BKN021/// 19/15 Q1017

Analysis and Investigation

Teesside Airport Unit Investigation

On the initial call, after being validated and verified, the pilot of [the DA42] was advised that they were in receipt of the requested Basic Service and were informed of glider activity at Topcliffe and Sutton Bank as they transited north towards the Teesside CTA. On the return journey southbound, even though still only in receipt of a Basic Service, the pilot was advised on several occasions of specific Traffic Information and advised again that Sutton Bank was active with gliders. The Teesside ATCO was informed that [the pilot of the DA42] was maintaining a good lookout. Teesside APS had provided the pilot with more than the requirements of a Basic Service.

Following this incident, Bagby, Sherburn-in-Elmet and Leeds East have been contacted with information pages/posters relating to glider activity, and specifically information regarding Sutton Bank, as a reminder to pilots to keep clear of active glider sites.

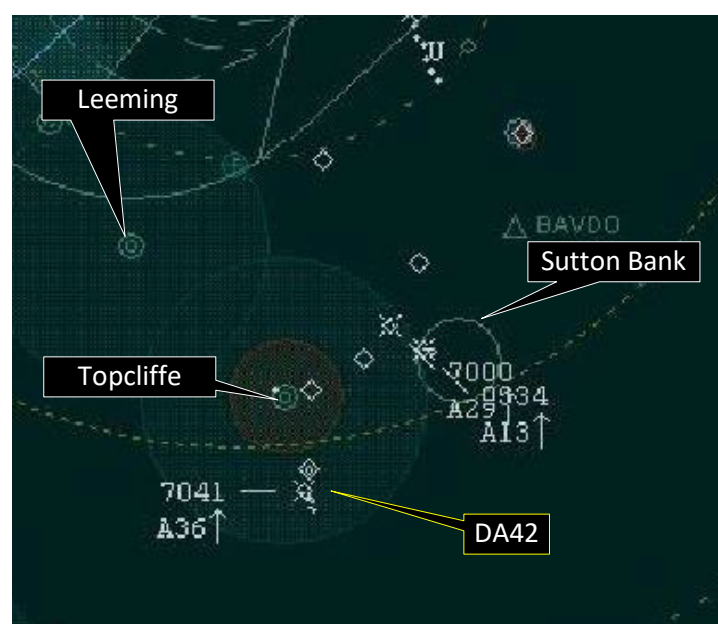


Figure 1 – Aircraft positions at 1111:45 (17min before CPA). The DA42 was observed to have been tracking northbound in a climb.



Figure 2 – Aircraft positions at 1124:10. The DA42 was observed tracking to the southeast. Traffic Information was passed to the DA42 pilot on several contacts ahead of their track.



Figure 3 – Aircraft positions at 1126:24



Figure 4 – Aircraft positions at 1127:18

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the DA42 could be positively identified from Mode S data. The DA42 was depicted on the radar replay as having flown at Flight Levels. A suitable conversion was used to determine its altitude.

Several primary-only returns were observed on radar in the vicinity of the DA42 but the position of the ASK21 could not be verified (Figure 5). The pilot of the ASK21 kindly supplied GPS track data for their flight. It was by combining the separate data sources that the diagram was constructed and the separation determined.

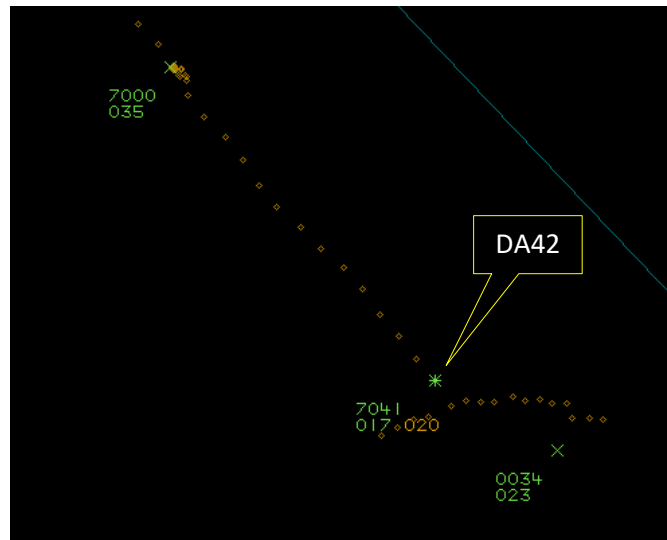


Figure 5 – CPA at 1128:04

The ASK21 and DA42 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 DA42 pilot was required to give way to the ASK21.²

Comments

AOPA

It is heartening to see that the controller went above the requirements for a Basic Service when providing Traffic Information. Before any turns are made, an effective lookout should be undertaken.

BGA

UK glider launch sites (including Sutton Bank) are listed in UK AIP ENR 5.5 and labelled on CAA 1:500,000 and 1:250,000 charts with a "G" symbol, as shown in the chart segment in Part A. A greater density of gliders may be expected nearby at any time during daylight hours. Sutton Bank airfield operates 364 days per year during daylight hours (weather permitting). There were 15,216 aircraft movements there in 2023, including winch launches with a maximum permitted height of 2000ft AAL (2920ft AMSL), as indicated on CAA charts and in UK AIP ENR 5.5. Overflying a winch site below the maximum notified altitude during daylight hours risks encountering high tensile strength cable connecting a launching glider to the winch on the ground.

It's possible that, in the absence of a MATZ penetration 'approval', and believing that the MATZ was operative, the DA42 pilot chose to remain outside the MATZ, and that it was while skirting its eastern

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(2) Converging.

boundary and avoiding low cloud that they overflew Sutton Bank gliding site below maximum notified winch altitude, encountering the ASK21.

Summary

An Airprox was reported when an ASK21 and a DA42 flew into proximity in the vicinity of Sutton Bank at 1128Z on Saturday 7th October 2023. Both pilots were operating under VFR in VMC, the ASK21 pilot listening-out on the Sutton Bank Traffic frequency and the DA42 pilot in receipt of a Basic Service from Teesside Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data, a report from the air traffic controller involved, a transcript of RT exchanges 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 considered the actions of the pilot of the ASK21. Noting that the EC equipment fitted to the ASK21 would not have been expected to have detected the presence of the DA42 (**CF6**), members agreed that the pilot of the ASK21 had not had situational awareness of the DA42 until it had been visually acquired (**CF5**). The pilot of the ASK21 described in their narrative report that there had not been sufficient time, from the moment that they had first sighted the DA42, to have taken any avoiding action. It was therefore agreed by members that the DA42 had been visually acquired late (**CF7**).

The Board next turned their attention to the actions of the pilot of the DA42 and noted that the flight in question had involved a pilot under examination. Members appreciated that this may have introduced an extra pressure into the cockpit. The DA42 pilot's northbound leg of their journey was considered, and members pondered their interaction with the Teesside Radar controller by examining a transcript of the RT. At 1102:16, the Teesside Radar controller had passed a caution to the pilot of the DA42 that "*Topcliffe and Sutton Bank are active with gliders today*" to which the response had been "*Roger*". The pilot of the DA42 then queried if their transit "*through Topcliffe*" would be coordinated by the Teesside Radar controller. It was apparent to members that the pilot of the DA42 had then attempted to call Leeming by radio but had received no response. A member with particular knowledge of Leeming operations explained that Leeming had not been active that day. The pilot of the DA42 had subsequently attempted to contact Topcliffe by radio but it was not clear to members whether they had been able to establish two-way communication.

Members considered the information available to pilots wishing to penetrate the Leeming Combined Military Aerodrome Traffic Zone (CMATZ) and their attention turned to the entry for MATZ in the UK AIP, and the following excerpts in particular:

ENR 2.1.6

A MATZ is operative when the aerodrome concerned, or in the case of a CMATZ, any one of the aerodromes, is open. Normally, the Controlling Aerodrome ATC Unit for a CMATZ is to remain open while any one of the aerodromes in the CMATZ is open for flying. Alternatively, the Controlling Aerodrome is to delegate overall responsibility to the aerodrome remaining open, including arrangements for operating the CMATZ frequency.

ENR 2.3.1

A MATZ Penetration Service will be available during the published hours of watch of the respective ATS Units. However, as many units are often open for flying outside normal operating hours, pilots should call for the penetration service irrespective of the hours of watch published. If, outside normal operating hours, no reply is received after two consecutive calls, pilots are advised to proceed with caution. [..]

ENR 2.4 Participating Aerodromes

Topcliffe:

Controlling Aerodrome: Leeming
ATSU unit callsign: LEEMING ZONE 133.375Mhz

In the case of both Topcliffe and Leeming, the column in the table under ENR 2.4, listing the hours of applicability of the controlling aerodrome ATSU, contained a dash '-'. Members therefore concluded that, if the pilot of the DA42 had not been able to have made contact with the ATSU at Leeming or Topcliffe, by having heeded the advice provided in ENR 2.3.1, they may have sought to have 'proceeded with caution'.

Notwithstanding, a member with particular knowledge of RAF gliding operations remarked that, although Leeming had not been active on the day in question, Topcliffe had been active, the Topcliffe ATSU had been operational and a holder of a Military Air Ground Radio Operator's Certificate of Competence (MAGROCC) had been present. The member explained that a MAGROCC is, essentially, a military equivalent to the certificate of competence held by a civilian Air/Ground Radio Operator.

It occurred to members that, with Leeming having been closed, the responsibility for the CMATZ penetration service would then have fallen to the Topcliffe MAGROCC holder. However, members pondered the privileges of the MAGROCC and noted that the holder of a MAGROCC may not pass a message that could be construed as an instruction or to have issued a clearance or approval (such as for a MATZ penetration). Whilst acknowledging that observation of MATZ procedures is not compulsory for civilian pilots (ENR 2.1.1), members wished to emphasize that, if the pilot of the DA42 had been able to have made contact with the controlling ATSU, they would have been strongly recommended to have sought an 'approval' for CMATZ penetration.

Members felt that the issue needed further clarification and resolved to make a Recommendation in three parts:

1. Defence to review civilian and military AIP entries to ensure that CMATZ/MATZ hours of operation are specifically defined.
2. Leeming and Topcliffe review their Letter of Agreement to ensure that authority to grant CMATZ/MATZ penetration is defined whenever either aerodrome is operating.
3. MAA to review MAGROCC holders' privileges with respect to the authority to grant CMATZ/MATZ penetration.

Notwithstanding, members continued their deliberation of the actions of the pilot of the DA42 and noted that they had elected to initiate a climb, above the CMATZ, as they proceeded northwards. After turning at a point inside Teesside controlled airspace, the pilot of the DA42 proceeded in a broadly south-easterly direction and members noted that their track took them to the east of the Leeming CMATZ and to the west of the high-ground of the North York Moors. The Leeming METAR, observed at 1120, indicated broken cloud at 2100ft. Members noted that the pilot of the DA42 had gradually descended, and presumed that this had been in order to have maintained VMC.

Members next noted that the pilot of the DA42 had been approximately 11NM from Sutton Bank (and approximately 4min before CPA) when the Teesside Radar controller had started to pass them Traffic Information (on three occasions) on multiple contacts. They had also passed a caution that Sutton Bank had been active with gliders.

Whilst some members remarked that the Traffic Information provided by the Teesside Radar controller had been particularly useful, other members suggested that the pilot of the DA42 should have tuned their radio to the Sutton Bank Traffic frequency and to have relayed their intentions (given that they were to subsequently overfly Sutton Bank). On balance, members agreed that it would have been most prudent, and would have been to the significant benefit of other pilot's situational awareness, for them to have made a position call on the Sutton Bank Traffic frequency (**CF1**). They then could have re-tuned their radio to the Teesside Radar frequency for further Traffic information.

Members assessed that the pilot of the DA42 had been passed ample Traffic Information to have formed a picture of significant traffic ahead of them. They were therefore perplexed as to why they had elected to have continued their track towards Sutton Bank and had not adapted their route to provide separation from the intense glider activity (**CF3**). Further, it was noted that the pilot of the DA42 had continued a descent to approximately 1800ft which, members were keen to point out, had been particularly imprudent as it had resulted in overflying Sutton Bank at less than 1000ft AGL, significantly lower than

the maximum altitude at which a high-tensile steel winch cable might have been encountered. As such, members were in agreement that, despite having situational awareness of the presence of gliders, the pilot of the DA42 had flown through the promulgated airspace of Sutton Bank (CF2) and had caused concern (CF4).

Returning to their discussion on the apparent non-availability of a MATZ penetration service, members agreed that to have 'proceeded with caution' into a MATZ may have been a prudent adaptation of their plan. Although the pilot of the DA42 had described in their narrative report that they had sighted the ASK21, and that they had "*maintained visual reference with the glider until it had passed behind them*", members agreed that they had not appreciated that they had flown close enough to the ASK21 to have caused its pilot concern (CF8).

Members next turned their attention to the role that the Teesside Radar controller had played in events and applauded the passage of Traffic Information to the pilot of the DA42. Acknowledging that there had been little else that they could have done to have influenced the outcome, members recognised that they had provided far more than a pilot in receipt of a Basic Service might have expected.

Concluding their discussion, members agreed that the difficulties that the DA42 pilot had experienced in obtaining a CMATZ penetration on the northbound leg of their journey may have influenced their choice of route for the southbound leg. Additionally, awareness of high ground to the east and the reported cloudbase may have been notable factors. Nevertheless, members determined that the pilot of the DA42 had had situational awareness of intense activity in the vicinity of Sutton Bank and had elected to maintain their track through the Sutton Bank overhead. Members were in agreement that the actions of the pilot of the DA42, and lack of adaptation of their plan, had significantly reduced safety margins during this encounter. Ultimately, members felt that, on this occasion, it had been fortuitous that the separation between the DA42 and the ASK21 had been such that there had not been a risk of collision. As such, the Board assigned Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023236			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Flight Elements			
	• Tactical Planning and Execution			
1	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
2	Human Factors	• Aircraft Navigation	An event involving navigation of the aircraft.	Flew through promulgated and active airspace, e.g. Glider Site
3	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action			
4	Human Factors	• Lack of Action	Events involving flight crew not taking any action at all when they should have done so	Pilot flew close enough to cause concern despite Situational Awareness
5	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			
6	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			
7	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

8	Human Factors	• Lack of Individual Risk Perception	Events involving flight crew not fully appreciating the risk of a particular course of action	Pilot flew close enough to cause concern
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Degree of Risk: C.

Recommendations:

1. Defence to review civilian and military AIP entries to ensure that CMATZ/MATZ hours of operation are specifically defined.
2. Leeming and Topcliffe review their Letter of Agreement to ensure that authority to grant CMATZ/MATZ penetration is defined whenever either aerodrome is operating.
3. MAA to review MAGROCC holders' privileges with respect to the authority to grant CMATZ/MATZ penetration.

Safety Barrier Assessment³

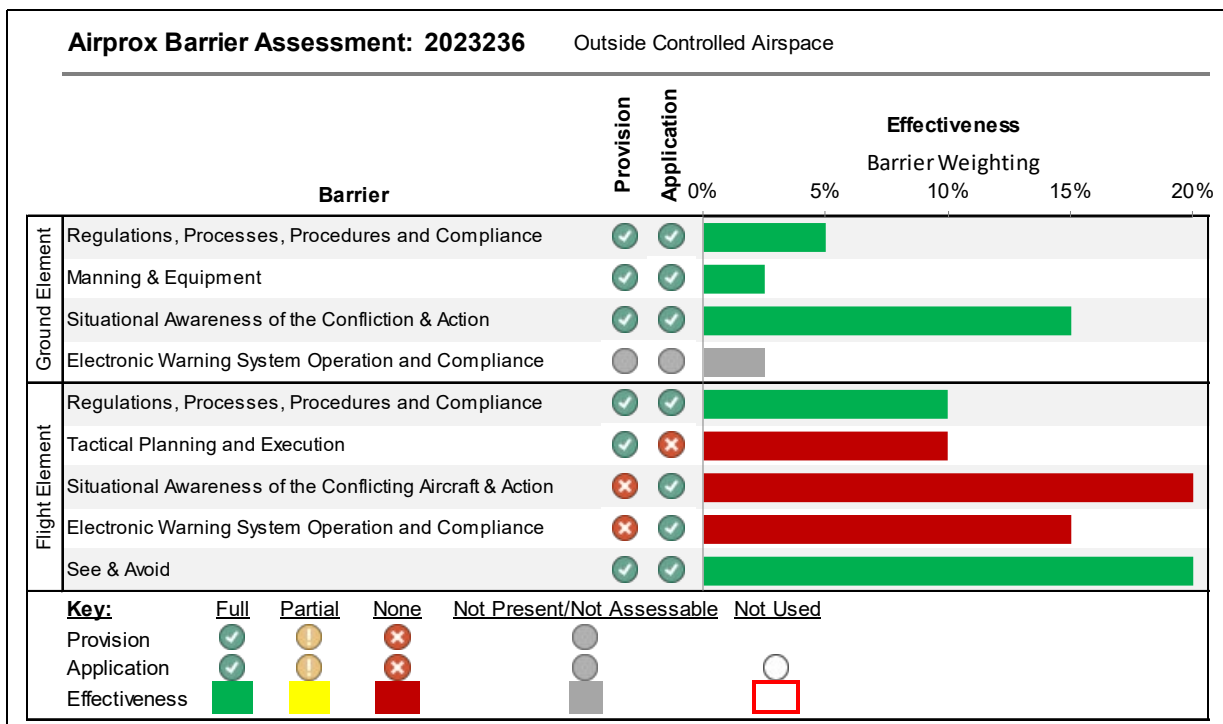
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Tactical Planning and Execution was assessed as **ineffective** because the pilot of the DA42 flew through the promulgated and active airspace of the Sutton Bank gliding site.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the ASK21 had not had situational awareness of the presence of the DA42.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC device fitted to the ASK21 would not have been expected to have detected the presence of the DA42.



³ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).