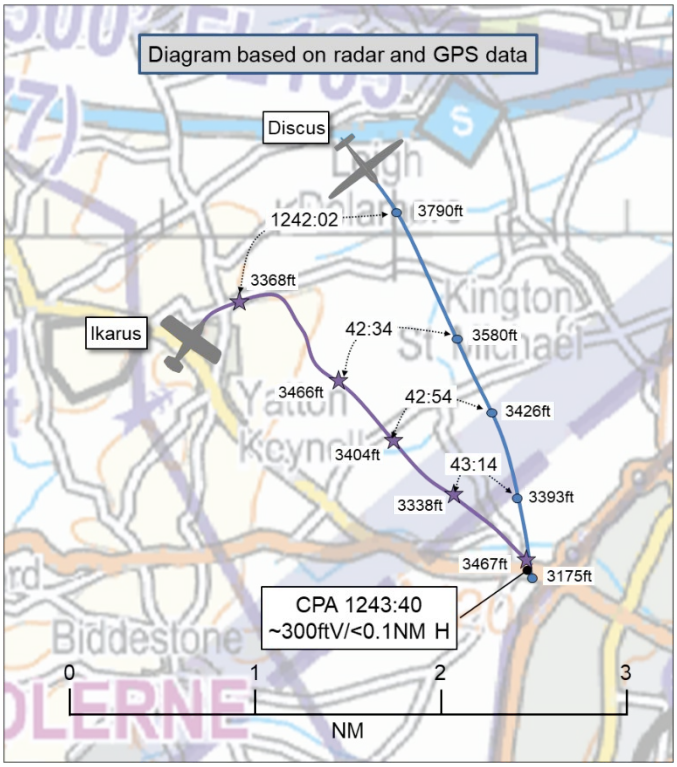
AIRPROX REPORT No 2024218

Date: 17 Aug 2024 Time: 1244Z Position: 5128N 00209W Location: NW of Chippenham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Discus	Ikarus
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	Brize Radar[1]
Altitude/FL	3175ft	3467ft
Transponder	Not fitted	A, C, S[2]
Reported		
Colours	White	White
Lighting	None	Strobes
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	3169ft	2000ft
Altimeter	QNH	QNH
Heading	168°	180°
Speed	74kt	70kt
ACAS/TAS	SkyEcho & FLARM	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	<100ft V/<50m H	200ft V/200m H
Recorded	~300ft V/<0.1NM H	



THE DISCUS PILOT reports that they were flying cross-country to their turning point at Melksham. They had been gliding on track at about 4000ft, just below the 'corner' of Bristol Airspace, and were heading for Chippenham flying more or less straight and level. Approaching Chippenham, they looked to their right-hand side to see the other aircraft alarmingly close and closing. [They stated that] being in a glider with a relatively limited roll rate they chose to lower the nose and increase vertical separation by accelerating. After passing in front of the other aircraft, they regained as much of their lost height as possible and continued towards Chippenham/Melksham. They did not see the other aircraft manoeuvre to avoid them, and as they continued on track the other aircraft continued above them and on their left-hand side. Eventually, the other aircraft turned left and headed off towards the east. They had not seen the other aircraft before this incident but believed it had approached from behind their right-hand wing. If so, then [they believed] they should have been visible in the other aircraft's 11 o'clock position.

[The pilot noted that] despite [carrying two types of electronic conspicuity equipment] their flight had not shown on [the ADS-B data source that they checked] so they did not have a better way of telling the minimum separation than their impression at the time. If they had not dived away they believed there was a high risk of collision.

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

THE IKARUS PILOT reports that they were on a first training flight with an ab-initio student. [The student] reported seeing a glider on the left side of the aircraft. They [the instructor] initiated an immediate climb. They only saw the glider when it passed onto the right side of the aircraft, by which

[1] The pilot reported listening out on the Brize frequency. The aircraft transponder displayed a Bristol frequency monitoring code up until 30sec before CPA, after which there had been no code displayed.
[2] Mode C had stopped displaying 30sec prior to CPA, and was not detected at or after CPA.

time it was comfortably below. It may well have dived to maintain separation. The new student was unable to give any accurate estimate of [the glider's] initial distance and relative height, so it was hard to estimate the risk involved.

The pilot reported they were listening-out on Brize Radar, and had commented that they generally monitor SafetyCom when operating at low level or Brize Radar when at higher altitudes, often with a Basic Service, mentioning that Brize Radar offers an excellent LARS and will often give timely airspace and traffic advice to aircraft on a Basic Service. They mentioned that Bristol Radar is much more focused on commercial aviation and no longer offers a LARS. They would not usually monitor Bristol Radar east of Bath and would prefer to use Brize.

They also reported that they had been flying into sun.

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

Factual Background

The weather at Bristol was recorded as follows:

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METAR EGGD 171220Z AUTO 28008KT 260V320 9999 BKN045 18/08 Q1015
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Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the Ikarus was positively identified using Mode S data. No primary returns could be seen that might correlate to the Discus (Figure 1).

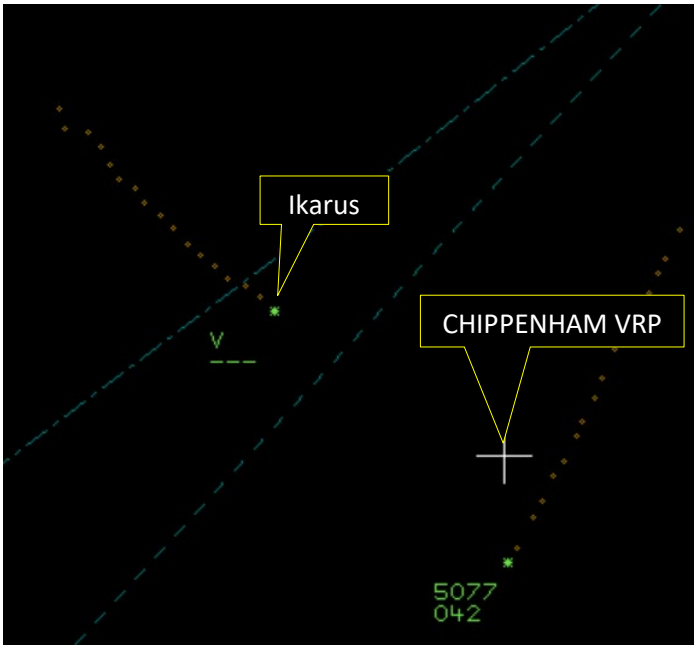


Figure 1 – Time 1243:34 Ikarus approaching Chippenham

Analysis of an ADS-B data source positively identified the Discus. There was no ADS-B data return shown for the Ikarus (Figure 2).

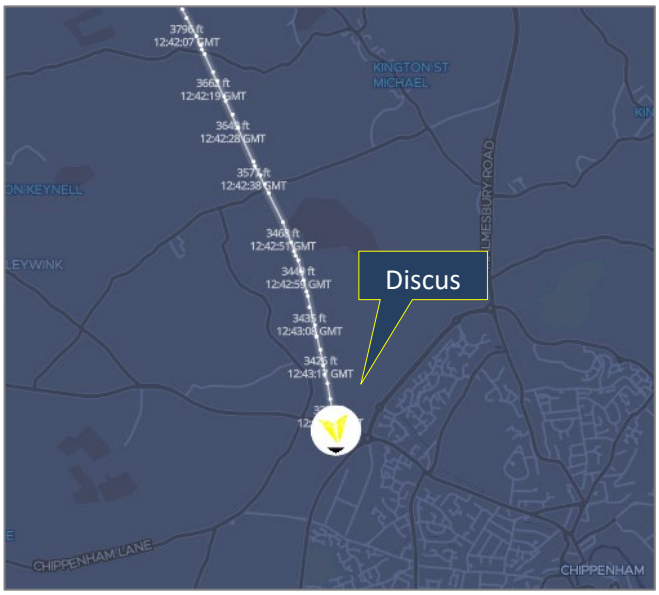


Figure 2 – Time 1243:34 Discus approaching Chippenham

The radar and ADS-B data were backed up with GPS data from both aircraft, and combined to show a CPA at 1243:40. Mode C data from the Ikarus was not available from 1243:10, which had been indicating 3400ft and 3500ft on radar over the previous minutes. However, comparable GPS data was available and used as a direct comparison. Therefore, separation at CPA was assessed to be approximately 300ft vertically and 0.1NM horizontally and it was seen that, immediately prior to this, the Discus had descended approximately 200ft and the Ikarus climbed approximately 100ft within the same time frame, creating greater vertical separation as their tracks crossed.

The Discus and Ikarus pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[3] If the incident geometry is considered as converging then the Ikarus pilot was required to give way to the Discus.[4]

Comments

AOPA

It is unfortunate that in this area of airspace the safety feature provided by air traffic control was removed in 2018 when the contract held by Bristol ATC was not renewed.

BGA

With no interoperable electronic conspicuity between the Discus and Ikarus, and neither in receipt of an ATS, see-and-avoid was the only operating MAC safety barrier here. However, this incident once again highlights the difficulty of seeing an aircraft approaching at a similar altitude on a near-constant relative bearing. It's also likely that the Ikarus was hidden from the glider pilot by the glider's starboard (right) wing for at least some of the time as the two aircraft flew on converging courses for about a minute before CPA.

Summary

An Airprox was reported when a Discus and an Ikarus flew into proximity northwest of Chippenham at 1244Z on Saturday 17th August 2024. Both pilots were operating under VFR in VMC, the Discus pilot not in receipt of a Flight Information Service and the Ikarus pilot listening-out on the Brize Radar frequency.

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

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports and GPS data from both pilots, radar photographs/video recordings, and ADS-B data. 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 Discus pilot, and some members wondered if the pilot's view had been obscured by their right wing as the paths of the two aircraft converged. Notwithstanding, the Board agreed that the Discus pilot had had a timely sighting of the Ikarus but had been concerned about its proximity (**CF4**) so had descended their glider to create greater vertical separation. The Board was encouraged that the Discus pilot had had access to two forms of electronic conspicuity (EC) equipment but nonetheless found it disappointing that the equipment had been unable to detect that of the Ikarus (**CF2**) which appeared not to have been transmitting any electronic signals at the time of CPA. Members agreed that the lack of alert from either of the EC units had meant that the Discus pilot had had no situational awareness of the position or presence of the Ikarus (**CF1**) prior to sighting it.

Turning their attention to the actions of the Ikarus pilot, the Board noted that there had been some confusion over which frequency the pilot had been 'listening-out' on as they had been flying beneath the Bristol CTA, to the north of Bath, displaying a Bristol listening squawk just prior to CPA, but the pilot had assumed that they had been listening to Brize when completing their report. Some members thought that talking to Brize with a Traffic Service may have been a better option, however, the Board agreed that, should this have been available to the Ikarus pilot, it would have served little purpose with respect to improving their situational awareness of the presence or position of the Discus, which had not displayed on radar. The Board determined, therefore, that the Ikarus pilot had had no situational awareness of the status of the Discus (**CF1**). The Board also noted that the Ikarus instructor had had a suboptimal view of the left side of their aircraft but had reacted to the student's observation of the Discus instead, and that they had had a late sighting of the Discus (**CF3**), with the instructor seeing it as it had passed to the right of the Ikarus.

In concluding their discussion, the Board considered that it was unfortunate that Bristol no longer provided a LARS in that area, acknowledging that it may not have helped to prevent this incident. Members also wondered why a training aircraft had not been fitted with electronic conspicuity equipment and reasoned that if their lookout had been task-distracted then some additional mitigation was needed. Members did, nonetheless, acknowledge and appreciate the imperfections of EC but encouraged pilots to consider fitting this equipment. In assessing the risk, members felt that, although safety had been degraded, the Discus pilot had executed a timely and effective avoiding action, which had provided sufficient separation to prevent their aircraft from coming into close proximity with the Ikarus. As such the Board determined that there had been no risk of collision and assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024218			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
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
	• Electronic Warning System Operation and Compliance			
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
	• See and Avoid			

3	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
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[5]

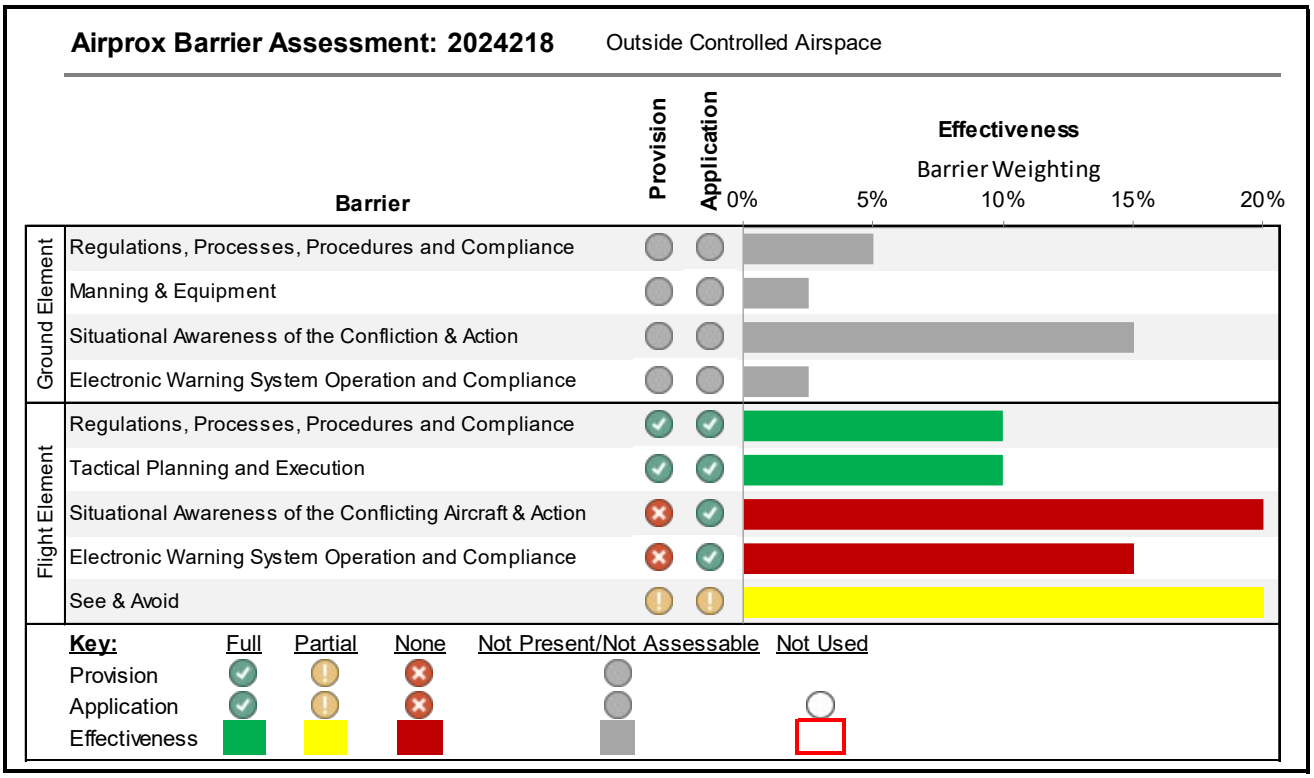
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the Discus pilot nor the Ikarus pilot had had situational awareness of the presence or position of the other's aircraft prior to sighting it.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the electronic conspicuity equipment in the Discus had been unable to detect any emissions from the Ikarus.

See and Avoid were assessed as **partially effective** because both the Discus pilot and the Ikarus pilot had had a late sighting of the other's aircraft.



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