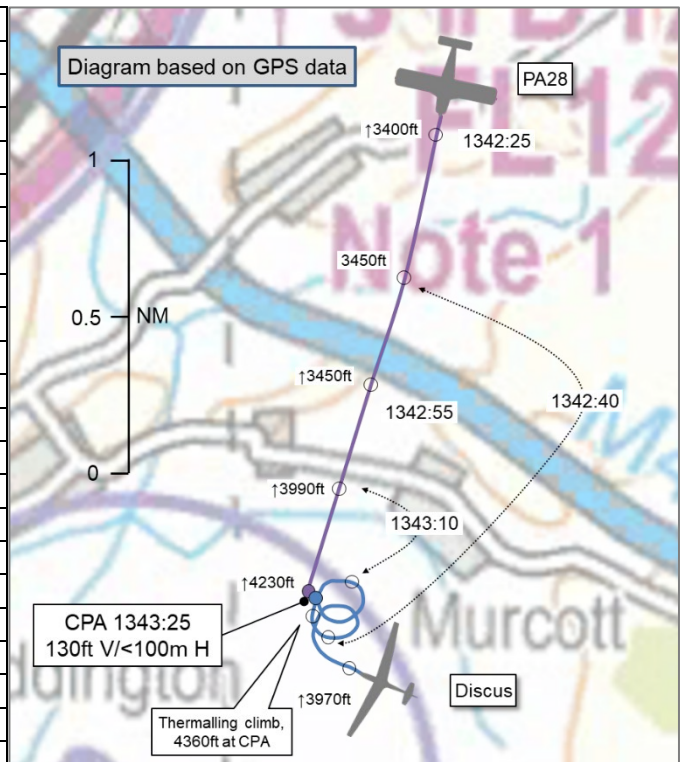


AIRPROX REPORT No 2022087

Date: 22 May 2022 Time: 1343Z Position: 5150N 00110W Location: 4NM S Bicester

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Discus	PA28
Operator	Civ Gl'd	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	None
Provider	Gliding IFSA ¹	N/A
Altitude/FL	4360ft	4230ft
Transponder	Not Fitted	A, S ²
Reported		
Colours	White	White, Blue
Lighting	None	Strobe
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	4400ft	3000ft
Altimeter	QFE (NK hPa)	QNH (NK hPa)
Heading	'NE'	180-190°
Speed	50kt	100kt
ACAS/TAS	FLARM	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	0ft V/15m H	Not seen
Recorded	130ft V/<100m H	



THE DISCUS PILOT reports that approximately 6km southeast of Weston-on-the-Green, they were circling clockwise in a climb, looking ahead of their circle and above for any conflicting traffic (usually other gliders). While established in this climb a white, low-wing, single-engine aircraft passed by them extremely close to their right. It was within their turning circle. It was so close that they could clearly see the pilot stare in surprise at them, and that the aircraft was fully occupied. It was a fleeting sighting. The other aircraft seemed to be in a shallow climb as it passed by exceedingly close. They have absolutely no doubt that [the other pilot] had not seen them [up until that point] and that if they were just a few more degrees around their turn they would have collided.

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

THE PA28 PILOT reports that they didn't see the aircraft. They were traveling to [destination airfield] for a few hours. They have looked at the GPS and were straight and level abeam Weston and, shortly after, to the south, climbed to 5000ft. It was a nice day with thermals (hence the glider being out) and the decision to climb was based on their passenger getting a little uncomfortable at that height so they climbed to try and smooth it out. They recall that the day was pretty clear with a bit of cloud around but nothing very heavy.

Factual Background

The weather at Oxford was recorded as follows:

METAR EGTK 221350Z 22008KT 140V290 9999 FEW045 22/11 Q1011

¹ In flight Situational Awareness.
² No Mode C recorded from transponder.

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay has been undertaken and only the PA28 aircraft was detected. However, both pilots were able to supply the UKAB Secretariat with GPS data files for their flights and so this data has been used to construct the diagram and determine CPA. The Discus pilot had been airborne for some time prior to the Airprox and, as they describe, their GPS data showed them in a tight, right-hand, thermalling climb in the lead-up to the event. The GPS file provided by the PA28 pilot was also consistent with their report and, at the time of the Airprox they were in the process of climbing to 5000ft as described.

The Discus and PA28 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 head-on or nearly so then both pilots were required to turn to the right.⁴ If the incident geometry is considered as converging then the PA28 pilot was required to give way to the Discus.⁵ If the incident geometry is considered as overtaking then the Discus pilot had right of way and the PA28 pilot was required to keep out of the way of the other aircraft by altering course to the right.⁶

Comments

AOPA

This area is a known glider hotspot area and operation in class G airspace where there is no radar service available reduces the management of the MAC threat to lookout, communication and EC. EC relies on compatible equipment which wasn't available in this situation. Communication with Bicester in this case may have given the glider pilot SA. Effective lookout is therefore the main management of a MAC avoidance, which could have been slightly compromised by the distraction of the passenger comfort issues, in addition to approaching the glider in plan-view on a constant relative bearing making it more difficult to spot.

BGA

This incident once again highlights the difficulty of seeing an aircraft approaching head-on and co-altitude when thermalling in a glider. Many pilots now opt to permanently switch on forward-pointing high-intensity landing lights, even in full daylight, to aid head-on visual conspicuity.

Summary

An Airprox was reported when a Discus and a PA28 flew into proximity at 4NM south of Bicester at 1343Z on Sunday 22nd May 2022. Both pilots were operating under VFR in VMC, neither pilot in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and GPS position 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 a gliding pilot member commented that, when in a thermalling climb, glider pilots are extremely busy managing their flight path and maintaining a good lookout. It was stated that a glider will typically complete a full 360° turn in as little as 20sec which, whilst allowing for a 360° lookout, only allows any given portion of the sky to be visible for a short

³ (UK) SERA.3205 Proximity.

⁴ (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

⁵ (UK) SERA.3210 Right-of-way (c)(2) Converging.

⁶ (UK) SERA.3210 Right-of-way (c)(3) Overtaking.

period of time. Members had been encouraged that the Discus pilot had been equipped with an EC device however this had been incompatible with, and therefore unable to detect, the transponder carried on the PA28 (CF2). Because the Discus pilot had not received an EC alert and there had been no other information available to them regarding the presence of the PA28, the Board agreed that the Discus pilot had not had any awareness of the PA28 prior to sighting it (CF1).

Next, the Board considered the actions of the PA28 pilot and members noted that, although they had not been in receipt of a service, there had been surveillance-based FIS options available, which may have aided their situational awareness. However, it was agreed that there had been no requirement for the PA28 pilot to be in contact with an ATSU in that location. Members also agreed that the pilot had not had any mechanism to build situational awareness of the Discus and therefore had no knowledge of it (CF1). The Board noted that the PA28 pilot had not become visual with the Discus at any point (CF3) and a GA pilot member stated that visibility ahead of, and below, a PA28 can be restricted by the engine cowling and that they would recommend occasional weaving or the lowering of the nose to facilitate lookout in this direction. It was also stated that leaving landing lights switched on for the duration of a flight can improve the visual conspicuity of aircraft. The Board wished to highlight to pilots that additional funding has been made available for electronic conspicuity devices through the CAA's Electronic Conspicuity Rebate Scheme, which has been extended until 31st March 2023.⁷

Finally, in assessing the risk of collision, the Board noted that neither pilot had had any prior situational awareness regarding the presence of the other. The PA28 pilot had not become visual with the Discus and although the Discus pilot had become visual with the PA28, it had not been early enough to have enabled them to have taken any avoiding action to materially increase separation. Therefore, the Board concluded that providence had played a major part in events, that the separation that had existed had been fortuitous and the bare minimum, and that there had been a serious risk of collision (CF4). As such, the Board assigned a Risk Category A to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2022087				
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	• 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
• Outcome Events				
4	Contextual	• Near Airborne Collision with Aircraft	An event involving a near collision by an aircraft with an aircraft, balloon, dirigible or other piloted air vehicles	

Degree of Risk: A

Safety Barrier Assessment⁸

⁷ <https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

⁸ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

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 had any prior awareness of the presence of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC device carried by the Discus pilot had been incompatible with the transponder on the PA28.

See and Avoid were assessed as **ineffective** because the PA28 pilot did not become visual with the Discus and the Discus pilot only became visual with the PA28 when it had been too late for them to have taken effective avoiding action.

Airprox Barrier Assessment: 2022087		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 Aircraft & 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: ■ ■ ■ ■ □								