AIRPROX REPORT No 2021052

Date: 07 May 2021 Time: 1030Z Position: 5212N 00032W Location: 2.5NM NW Bedford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Discus	PA28
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Basic
Provider	NA	London Information
Altitude/FL	~2950ft	3200ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White	White and Maroon
Lighting	Nil	Strobes, Beacon
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	2975ft	2900ft
Altimeter	NK	QNH
Heading	240°	030°
Speed	80kt	110kt
ACAS/TAS	FLARM	TAS
Alert	None	None
Separation		
Reported	50ft V/0m H	200ft V/0.5NM H
Recorded	~250ft[1] V/<0.1NM H	

THE DISCUS PILOT reports that they were flying a westerly leg of a cross-country task. They were cruising wings level at about 80kts when they noticed a light aircraft approaching from the 10 o'clock position, only 150-200m away. It was also wings level, and passed directly overhead, close enough so that the under-wing markings appeared large and easy to read. They estimated the vertical separation to have been about 50ft. They noted that it had been a late sighting, and, because no avoiding action was taken, they suspected it was also a late or non-sighting by the other pilot. As the Discus was slightly below the other aircraft, they thought it may have been more difficult to see from the PA28.

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

THE PA28 PILOT reports that the Instructor was current and had flown approximately 30hrs in the last month and there were no fatigue issues. Workload was normal for the flight conditions, however it was bumpy. The autopilot had been selected in order to show how it can reduce workload and increase capacity. The TCAS was functioning and so was the aural call out. However, from recollection, no TA was received from the glider in question. A good lookout was being maintained. Cranfield was NOTAM'd as closed, they gave a quick call on the frequency to confirm this, then called London Information for a Basic Service. Once the instructor saw the glider, the glider was assessed as passing below and to the starboard side of the aircraft. They turned their aircraft to the left, in order to further increase separation from the glider. Following this, the instructor selected the landing light on for the next ten minutes, to make the aircraft more visible to other traffic. Sackville Farm had been identified as a potential threat from gliders. The flight was planned to ensure at least 500ft separation was maintained above the height of any winch launching in progress. The autopilot was also used in order to reduce workload and increase lookout.

[1] Height separation calculated by comparing GPS and radar data.

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

THE LONDON INFORMATION FISO reports that they were providing a Basic Service to the PA28 pilot. They were informed retrospectively that the PA28 was involved in an Airprox with a glider. They had no recollection of the pilot mentioning anything on frequency.

Factual Background

The weather at Luton was recorded as follows:

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METAR EGGW 071020Z AUTO 30011KT 250V330 9999 SCT047 11/M00 Q1016=
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Analysis and Investigation

NATS Investigation

The PA28 pilot reported onto the London Flight Information Service (FIS) frequency at 10:25:33 (all times UTC). The pilot reported just north of Cranfield at 3100ft with the aircraft tracking approximately 030° and the FIS Officer (FISO) requested the pilot select Mode-A 1177 (displayed as FIS) with a Basic Service agreed. [The PA28 C/S] continued to track north-east at an indicated 3000-3200ft. The FIS frequency had numerous aircraft established on frequency with several examples of crossed transmissions.

There were several primary returns operating to the south of BEDFO, with one sporadic return displaying, the nature consistent with a glider; believed to be [Discus C/S], as the aircraft tracks neared, see Figure 1.

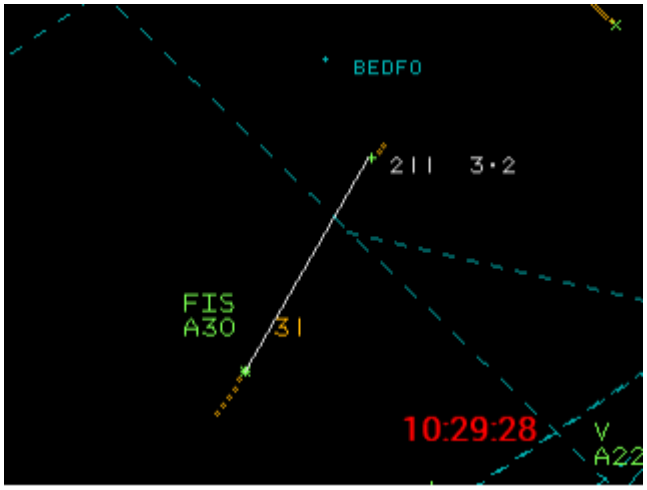


Figure 1

The Airprox report from the PA28 pilot detailed that upon sighting the glider and assessing it as passing below and to the right of their aircraft, [PA28 C/S] was turned left to further increase separation and the pilot assessed the risk of collision as 'low.' At 10:30:22, the PA28 was observed to initiate a left then right turn as the radar returns came into proximity. Closest Point of Approach occurred at 10:30:38 and was recorded on Multi-Track Radar as 0.1NM with no height value, see Figure 2. The Airprox report from the pilot of [Discus C/S] stated that the PA28 passed approximately 50ft overhead.

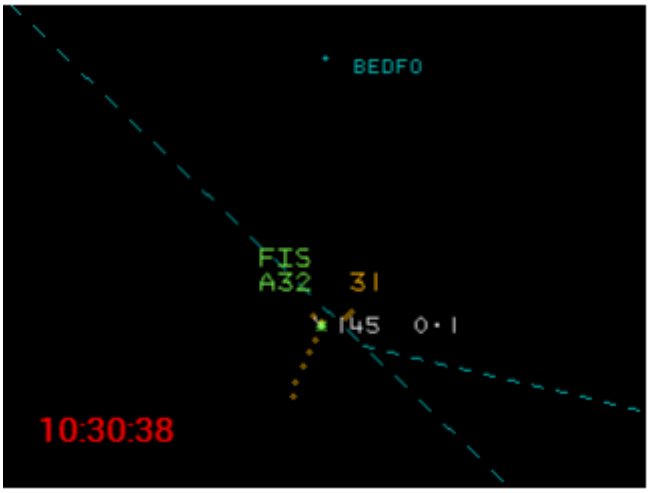


Figure 2

Note: Given the sporadic primary radar return nature with displayed jitter, there was inherent uncertainty in its displayed position and the associated lateral value against [PA28 C/S]. The pilot made no reference to any potential confliction on the R/T prior to changing frequency at 10:40:38. London Information provides Basic and Alerting Services only and does not use radar. The pilot of [Discus C/S] was not in contact with London Information, therefore the FISO was unaware of [Discus C/S].

CAP774 – UK Flight Information Services, Chapter 2 Paragraph 1 defines a Basic Service as: 'A Basic Service is an ATS provided for the purpose of giving advice and information useful for the safe and efficient conduct of flights. This may include weather information, changes of serviceability of facilities, conditions at aerodromes, general airspace activity information, and any other information likely to affect safety. The avoidance of other traffic is solely the pilot's responsibility.'

The Airprox occurred when [PA28 C/S] operating outside Controlled Airspace, flew into proximity with a glider. The pilot of [Discus C/S] submitted an Airprox report reference this encounter. Closest Point of Approach occurred at 10:30:38 and was recorded on Multi-Track Radar as 0.1NM with no displayed height value. The pilot of [Discus C/S] estimated that [PA28 C/S] passed approximately 50ft overhead.

UKAB Secretariat

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.[2] If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.[3] If the incident geometry is considered as converging then the PA28 pilot was required to give way to the glider.[4]

Comments

BGA

It is pleasing to read that the PA28 Instructor was aware of the hazards of overflying glider winch launch sites. Given the large differences in reported and recorded separations it is possible that the glider seen by the PA28 was not that involved in the airprox. This is another example of an incident where compatible EC systems would likely have increased everyone's SA.

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.
[4] (UK) SERA.3210 Right-of-way (c)(2) Converging.

Summary

An Airprox was reported when a Discus and a PA28 flew into proximity 2.5NM NW Bedford at 1030Z on Friday 7th May 2021. Both pilots were operating under VFR in VMC, the Discus pilot was not in receipt of an ATS and the PA28 pilot was in receipt of a Basic Service from London Information.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments.

The Board first looked at the actions of the glider pilot, they reported that they were on a cross country track and cruising with wings level when they saw the PA28 pass overhead. The FLARM on the Discus could not detect the TAS on the PA28 (**CF3**) and without an ATS either, the glider pilot had no prior knowledge that the PA28 was in the vicinity (**CF2**). The pilot reported seeing the PA28 around 200m away and they did not take avoiding action (**CF4**).

The PA28 pilot was receiving a Basic Service from London Information, who operate without a radar (**CF1**) and therefore the pilot did not receive any Traffic Information on the glider. Members noted that it was unfortunate that Cranfield were closed on the day, because without them, there was no other ATC unit to call that could provide a better service in the area. The TAS on the aircraft could not detect the FLARM on the glider (**CF3**) and so they did not have any prior situational awareness about the glider (**CF2**). Members debated whether the pilot had seen this glider or another one because the lateral separation reported, at 0.5NM, was so different to that indicated by the radar/GPS data. Some wondered whether the pilot had seen the glider at range and was reporting that distance, rather than the closest separation as the glider passed down the right hand side of the aircraft, certainly the pilot reported turning left to increase the separation and that was indicated on the area radar at the time of the Airprox. Eventually members decided that the balance of probability was that the PA28 had seen the glider in question. Members commended the pilot for their prior planning to counter the threat of encountering gliders, the height chosen, potential hotspots for gliders identified and use of the auto-pilot to free up time for look-out. They noted the pilot had turned on the landing light after the event and opined that having the landing light on at all times was now considered to be best practice.

When determining the risk of the Airprox members took into consideration the description from both pilots. The separation assessed by the glider pilot was closer than that indicated by the comparison of the GPS and radar data, but members noted that it was not ideal when comparing two data sources, especially given that the radar would round the height of the PA28 to the nearest 100ft, giving the potential for the two aircraft to be closer than the 250ft indicated. Nevertheless, given that the PA28 pilot had taken action to increase the separation and both pilots were visual with each other, albeit at a late stage, they assessed that safety had been degraded, Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2021052			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			

1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
	Flight Elements			
	• 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 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 Assessment[5]

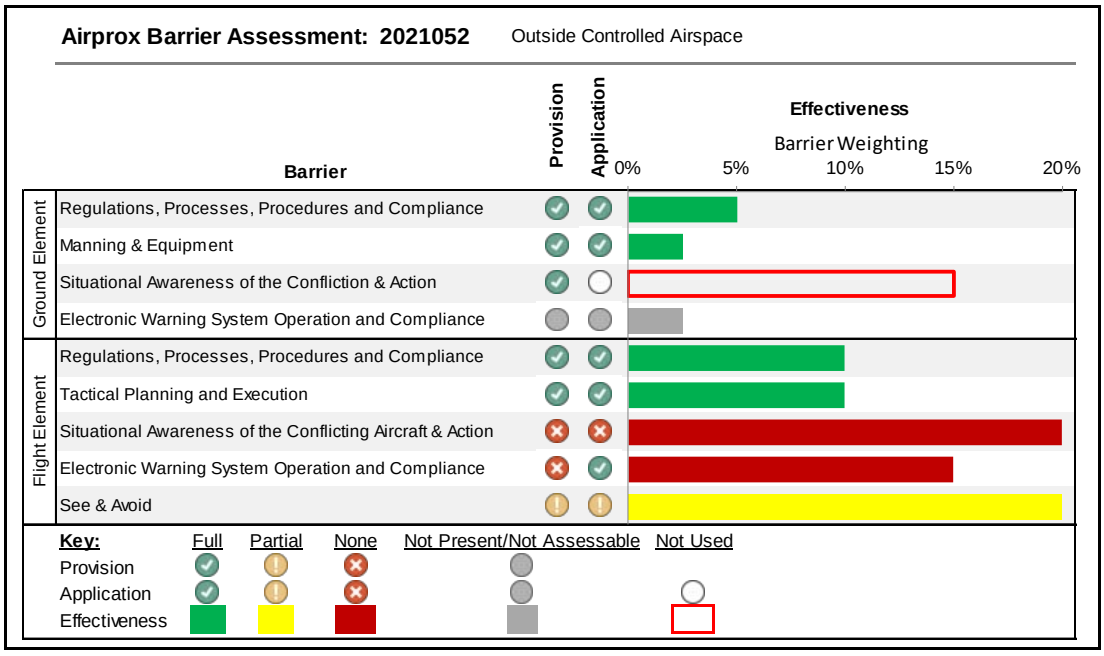
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any prior situational awareness about the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the FLARM on the Discus could not detect the PA28 and the TAS on the PA28 could not detect the glider.

See and Avoid were assessed as **partially effective** because it was a late sighting by both pilots.



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