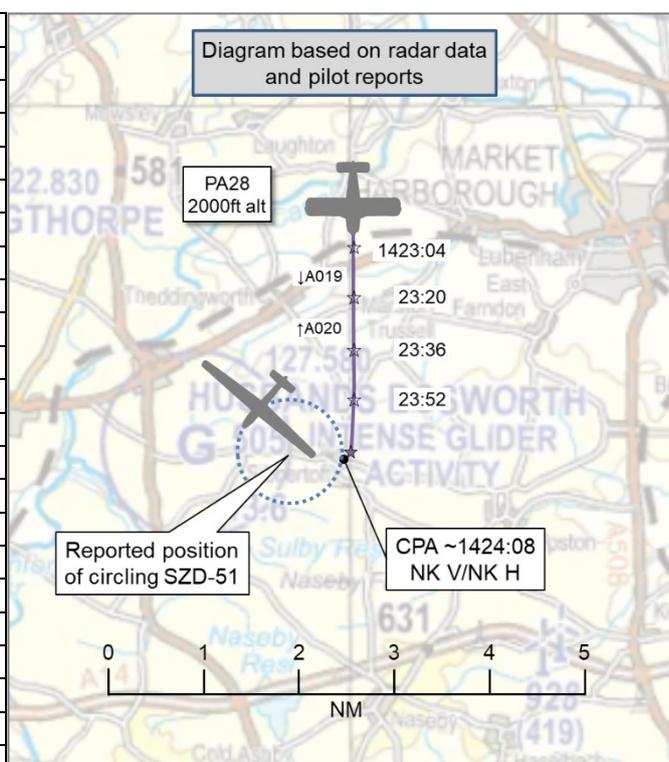


AIRPROX REPORT No 2020159

Date: 04 Nov 2020 Time: 1424Z Position: 5226N 00100W Location: 4NM SW Market Harborough

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	SZD-51 Junior	PA28
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider		Luton Radar ¹
Altitude/FL	NR	A020
Transponder	Not fitted	A, C, S
Reported		
Colours	White	Red/white
Lighting	NR	Tail beacon
Conditions	VMC	VMC
Visibility	10km	30km
Altitude/FL	1500ft	2200ft
Altimeter	QFE	QNH (1034hPa)
Heading	290°	180°
Speed	45kt	110kt
ACAS/TAS	FLARM	PilotAware
Alert	None	None
Separation		
Reported	30ft V/0m H	100ft V/300m H
Recorded	NK V/NK H	



THE SZD-51 JUNIOR PILOT reports that they had been released from an aerotow and were circling at around 1500ft and approximately 1½NM to the east of Husbands Bosworth glider site when they heard a loud engine noise. They glanced to their right and below to see the top of a fuselage pass immediately beneath them. They continued their turn and were able to see a low-wing single-engine aircraft flying to the south at approximately the same height as them. The glider pilot proceeded to join the circuit and land.

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

THE PA28 PILOT reports that they were flying level to the east of Husbands Bosworth overhead, which they saw was quite busy with circuit traffic. They had read about cable winch-launching and that was in their mind. They did not see the glider until it was in their 4 o'clock, by which time they did not deem it to be a threat as it was flying away from them. They had no knowledge of the glider's position until they saw it.

They had selected the Farnborough North frequency with the intention of requesting a Basic Service. As they were listening, they were under the impression that controller workload was high, so they elected to at least listen out as they would hear position reports from other aircraft and they deemed that to be satisfactory with the weather being clear. They subsequently selected the Luton frequency and noted that the controller was also busy, so they selected Mode A code 0013 on their transponder for their route past Luton's airspace to the west. They were flying with PilotAware, which usually gives an indication of other aircraft in the vicinity if they are equipped with FLARM or ADS-B. On this occasion,

¹ The PA28 pilot reported listening out on the Farnborough LARS N frequency at the time of the Airprox. However, the transponder code observed on the PA28 was set to the Frequency Monitoring Code for Luton Radar (which the PA28 pilot also reported as using during the flight).

there was no indication from the PilotAware of the presence of the other glider which, they assume, would have been equipped with FLARM.

The pilot did not make an assessment of the risk of collision.

Factual Background

The weather at Wittering was recorded as follows:

```
METAR EGXT 041350Z 31006KT 9999 FEW021 BKN026 10/06 Q1033 BLU=
METAR EGXT 041450Z 30005KT 9999 SCT033 SCT060 10/06 Q1033 BLU=
```

Analysis and Investigation

UKAB Secretariat

The SZD-51 Junior glider pilot was contacted and requested to provide a GPS log of the aircraft's flight if possible. Unfortunately, the trace only recorded the initial portion of the flight – up until approximately 1405Z – and so did not show the glider in the lead-up to and during the Airprox. Analysis of the NATS radar replay was undertaken but no indication of the presence of any aircraft, other than the PA28, could be seen in the vicinity of Husbands Bosworth glider site at the time of the reported Airprox. Figure 1 below is a screenshot of the NATS radar at the estimated time of CPA (1424:08); the PA28 passed 1.5NM to the east of the centre of the glider site at an altitude of 2000ft.

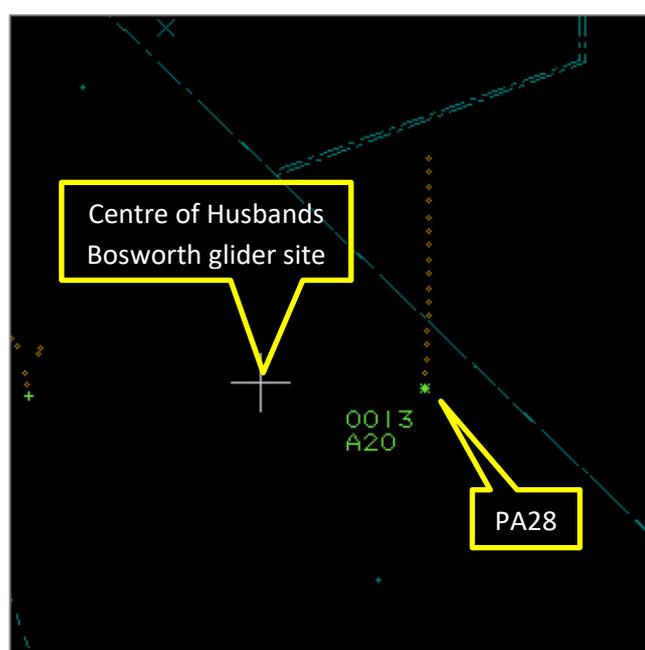


Figure 1

The SZD-51 Junior glider 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 Junior glider.⁴

² SERA.3205 Proximity.

³ SERA.3210 Right-of-way (c)(1) Approaching head-on.

⁴ SERA.3210 Right-of-way (c)(2) Converging.

Comments

BGA

It is most unfortunate that an equipment glitch meant that the log file of the SZD-51 was not available. This glitch might also explain why the SZD-51 did not appear on the PA28 pilot's PilotAware display.

It is gratifying to see that the PA28 pilot was aware of the hazards associated with getting close to glider winch-launch sites. Husbands Bosworth has a dedicated radio frequency, printed on the chart, and an information call on this frequency when passing would have improved everyone's SA.

Summary

An Airprox was reported when an SZD-51 Junior glider and a PA28 flew into proximity 4NM SW of Market Harborough at ~1424Z on Wednesday 4th November 2020. Both pilots were operating under VFR in VMC, the SZD-51 Junior glider pilot was not in receipt of an Air Traffic Service and the PA28 pilot was listening out on the Luton Radar frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots and radar photographs/video recordings. 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 considered the actions of the SZD-51 pilot and heard from a glider pilot member that the FLARM unit carried by the glider pilot had ceased to function correctly some 15-20min prior to the Airprox occurring. The Board quickly agreed that this equipment malfunction (**CF3**) had contributed to the Airprox, and that the pilot had not had any other means available for gaining situational awareness of the approaching PA28 (**CF2**). This had left the pilot relying on visual detection of any approaching traffic, which is widely known to have its own limitations. As it was, the SZD-51 pilot had first heard the approaching PA28 (members agreed that this in itself was an indication of how close the encounter had been) and then saw the PA28 passing beneath their aircraft, but this had been too late for the SZD-51 pilot to take any action to materially increase the separation (**CF5**).

The Board then considered the actions of the PA28 pilot and was heartened to hear of their consideration for the winch-launching around glider sites and their decision to navigate far enough to the east of Husbands Bosworth so as to avoid the possibility of interfering with winch-launching gliders. Furthermore, members also agreed that the PA28 pilot had sought to increase their situational awareness through selecting the Luton and Farnborough radio frequencies to enable them to gain an understanding of the traffic density in their area of operation. However, the Board felt that, in this particular case where there is little-to-no practical low-level radar coverage in the area, the PA28 pilot may have been better served by calling the Husbands Bosworth frequency as they had transited south past the glider site. Whilst this would not have given them specific situational awareness of the location of the SZD-51 glider, it may have alerted the SZD-51 pilot to the presence and intentions of the PA28 pilot (**CF1, CF2**). The Board also agreed that the FLARM malfunction on-board the glider had led to the non-detection of the glider by the PA28 pilot's PilotAware equipment (**CF3**), further hindering the PA28 pilot's ability to gain situational awareness on the glider. Members agreed that, as with the glider pilot, the PA28 pilot had had only See-and-Avoid as a viable barrier in this Airprox and that they had only managed to gain visual acquisition of the glider after the 2 aircraft had already passed each other (**CF5**).

Turning to the risk involved in this encounter, the Board noted that the glider had not been detected by the NATS radars and lamented the fact that the glider's FLARM GPS file had been unavailable, as this would have aided their understanding of the geometry of the encounter and, ultimately, the separation between the 2 aircraft. The Board took into account both pilot's estimations of separation, noting that

the PA28 pilot had only seen the glider after they had already passed it, and the fact that the glider pilot had reported being particularly shaken after the event. Members agreed that, with neither pilot seeing the other aircraft until it was either too late to take any avoiding action or until after the aircraft had already passed, the separation between the aircraft had been entirely providential and that a serious risk of collision had existed (**CF4**). Accordingly, the Board assigned a Risk Category A to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2020159			
CF	Factor	Description	Amplification
Flight Elements			
• Tactical Planning and Execution			
1	Human Factors	• Accuracy of Communication	Ineffective communication of intentions
• Situational Awareness of the Conflicting Aircraft and Action			
2	Contextual	• Situational Awareness and Sensory Events	The pilot had generic, late or no Situational Awareness
• Electronic Warning System Operation and Compliance			
3	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
• See and Avoid			
4	Contextual	• Near Airborne Collision with Aircraft, Balloon, Dirigible or Other Piloted Air Vehicle	Piloted air vehicle
5	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

Degree of Risk: A

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 PA28 pilot did not choose to call on the Husbands Bosworth radio frequency as he transited to the east of the site.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the SZD-51 pilot had no prior warning of the presence of the PA28, and the PA28 pilot only had the generic situational awareness of the presence of the glider site.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the glider's FLARM equipment was unserviceable and so the PilotAware equipment on the PA28 could not detect the presence of the glider.

See and Avoid were assessed as **ineffective** because neither pilot saw the other aircraft in time to materially affect separation.

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

Airprox Barrier Assessment: 2020159

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 Confliction & 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	■	■	■	■	□			