

AIRPROX REPORT No 2023099

Date: 28 May 2023 Time: 1308Z Position: 5205N 00130W Location: IVO Shenington

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASW20	SR22
Operator	Civ Gl'd	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Establishing contact
Provider	N/A	Turweston
Altitude/FL	3463ft	3364ft
Transponder	Off	A, C, S+
Reported		
Colours	White	Silver, Red
Lighting	None	HISLs, Strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3474ft	3150ft
Altimeter	QFE	QNH (1017hPa)
Heading	Thermalling left	100°
Speed	50kt	130kt
ACAS/TAS	FLARM	TAS
Alert	None	None
Separation at CPA		
Reported	3-500ft V/500m H	200ft V/100m H
Recorded	~100ft V/0.1NM H	



THE ASW20 PILOT reports that they had just conducted their 2nd winch launch of the day. They connected with a thermal at 1600ft AMSL to the north, on the airfield, within the airfield boundary. Climbing at ~3kt, drifting SW. The visibility was good with the cloudbase estimated in excess of 4000ft. They continued to thermal and climb through 3400ft AMSL, having now drifted over the Edgehill ridge. On one rotation they spotted a fast moving GA aircraft travelling from the west towards the airfield, about 1km away, tracking to the south of their thermal, and 300-500ft below. They continued the thermalling turn by which time the aircraft had passed them and was over the airfield. They called Shenington base to advise of the Airprox and advise of the overflight of the airfield.

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

THE SR22 PILOT reports that they had been using a Traffic Service from Birmingham but unfortunately had just changed to Turweston. Although keeping a VFR lookout, they noticed the glider very late, in their 10 o'clock, as its slim profile was difficult to see against cloud. They may also have been preparing the avionics for approach at the time. They identified the glider late and could not increase the separation. They noted that there had possibly been insufficient attention to the VFR chart where the gliding site was marked. They avoided Bidford gliding, but did not do the same for Shenington. Their aircraft has a built-in Garmin GTS 800 TAS which gave no indication of the glider, probably because it was not equipped with a transponder. The combination of a Traffic Service and the TAS usually allows traffic to be detected, as a backup to the VFR lookout. They opined that the main cause therefore, was failure of the VFR lookout to detect the glider in good time (and presumably vice versa) and secondary cause was failure of the TAS system to detect the glider.

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

THE TURWESTON AGO reports that they believe that the pilot of the SR22 had just left the Birmingham frequency but had not yet made contact with the Turweston AGO when the incident occurred.

Factual Background

The weather at Birmingham was recorded as follows:

METAR EGBB 281250Z 03007KT 340V090 9999 SCT030 19/11 Q1024=

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken. The SR22 could be seen on the radar replay and at 1307 could be seen heading east, indicating FL032 (radar QNH 1023hPa, giving an approximate altitude of 3500ft) see Figure 1. The ASW20 could not be seen on the radar, however, both pilots supplied a GPS file, from which the diagram at the top of the report could be compiled.

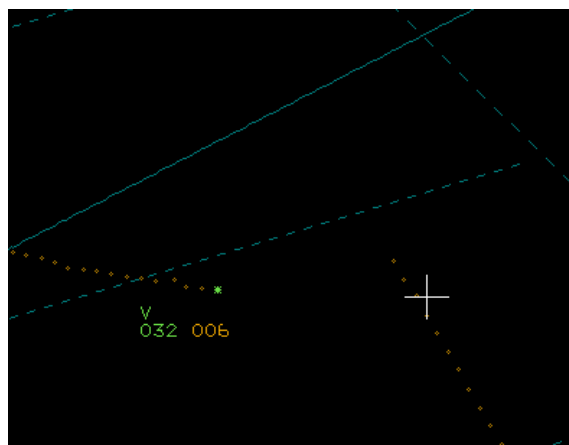


Figure 1 – 1307:40, the white cross is the approximate position of Sherington

From analysis of the GPS tracks, the Airprox occurred at around 1308:10. As this time the SR22 was indicating FL031, see Figure 2.

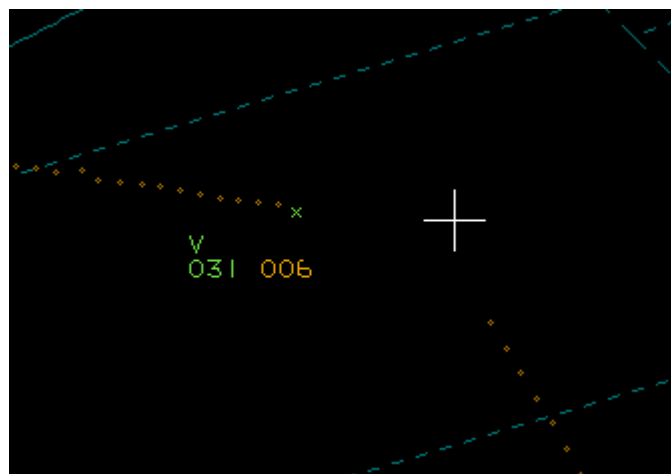


Figure 2 1308:10 approximate CPA

The ASW20 and SR22 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 head-on or nearly so then both pilots were required to turn to the right.² If the

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

incident geometry is considered as converging then the SR22 pilot was required to give way to the ASW20.³

Comments

AOPA

Participation by both pilots is of great benefit to the investigative process, in this case it is heartening to see the pilots' safety points to avoid the situation occurring in the future.

BGA

The SR22 pilot is to be commended for their awareness of likely glider activity when flying close to a gliding site. UK glider launch sites are listed in UK AIP ENR 5.5 and labelled on the 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, and at any altitude up to cloud-base.

If the glider's transponder had been switched on, it may have registered on the SR22's TAS, warning the crew of the impending conflict. Given recent rapid advances in rechargeable battery technology, owners of transponder-equipped gliders may wish to re-equip with higher-capacity batteries that allow them to run their transponders for longer in flight.

Summary

An Airprox was reported when an ASW20 and an SR22 flew into proximity 1NM west of Shenington at 1308Z on Sunday 28th May 2023. Both pilots were operating under VFR in VMC, neither was in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs and GPS data, and a report from the AGO 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.

The Board first looked at the actions of the ASW20 pilot, they had been circling in a thermal in order to gain height and as such would have had limited opportunity to see the approaching SR22 as the glider continuously turned. The Board noted that the EC fitted to the glider had not been compatible with that in the SR22 and therefore had been unable to detect the other aircraft (**CF3**). The ASW20 pilot had therefore received no prior situational awareness that the SR22 had been in the vicinity (**CF2**). Noting that the TAS in the SR22 would have been able to detect a transponder, members thought that in not turning on the transponder fitted to the glider, there had been a missed opportunity (**CF1**). Reiterating the BGA comments on improved battery technology, members urged glider pilots to consider the ramifications of leaving a transponder switched off and thereby denying other pilots the opportunity of detecting the glider. The glider pilot had reported that they had first seen the SR22 at a range of around 1km, but that they had continued in the thermal until they had subsequently seen it after the SR22 had passed by and had been to the southeast of their position. Members thought that the glider pilot's assessment of the separation had been based upon their first sighting, at range, and they noted that the SR22 had been on a continuous descent and only a few seconds prior to CPA had been at the same altitude as the glider. Members therefore thought that the ASW20 pilot perhaps could have taken action when they had first seen the SR22 to ensure separation, rather than remaining in the thermal and allowing the vertical separation to close to around 100ft (**CF5**).

Turning to the actions of the SR22 pilot, they had just changed from an ATS that may have provided Traffic Information, to establish contact with a unit that definitely could not. Although members

³ (UK) SERA.3210 Right-of-way (c)(2) Converging.

acknowledged that the pilot had needed to switch frequency at some point, some members wondered whether the pilot could have remained with Birmingham and called Turweston on a second radio. Their aircraft had been fitted with a TAS that had been unable to detect the glider's EC and had been defeated by the glider's transponder being switched off (CF3) and so the SR22 pilot had received no situational awareness that the glider had been in the vicinity (CF2). Members noted that the glider would have been difficult to spot whilst turning, particularly when head-on or from behind, and would only have been in planform for a few seconds on each revolution. It was therefore not surprising that the pilot had seen the glider late (CF4). Although the SR22 had been above the winch launch height of Shenington, members urged pilots to consider giving gliding sites a wide berth, and also noted that, as in this case, gliders were more likely to be found in close proximity to the gliding sites at all altitudes up to cloudbase. Pilots should therefore operate in the vicinity of gliding sites with caution and when doing so concentrate on a good lookout.

When determining the risk, members took into consideration the reports from both pilots together with the GPS data. They noted that the glider pilot had assessed the risk of collision as 'low', but thought that this had been based on their estimation, from seeing the SR22 at range, that there had been 300-500ft separation. In fact the vertical separation had been around 100ft and for this reason some members thought that there had been a risk of collision. However, others countered that with 0.1NM horizontal separation, even though neither pilot had taken any action, safety had been degraded, but there had not been a risk of collision. The latter view prevailed and the Board agreed Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023099			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	Human Factors	• Transponder Selection and Usage	An event involving the selection and usage of transponders	
• 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, inaccurate 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
5	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

Degree of Risk: C.

Safety Barrier Assessment⁴

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

Flight Elements:

⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

Tactical Planning and Execution was assessed as **partially effective** because the transponder on the ASW20 had been selected off.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had any situational awareness that the other aircraft had been in the area.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the TAS on the SR22 would have been able to detect the transponder on the glider, if it had been switched on.

See and Avoid were assessed as **partially effective** because, although the ASW20 pilot had seen the SR22 at range, they had not taken any action, meanwhile, the SR22 pilot had seen the glider at a late stage.

Airprox Barrier Assessment: 2023099		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	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	■	■	■	■	□			