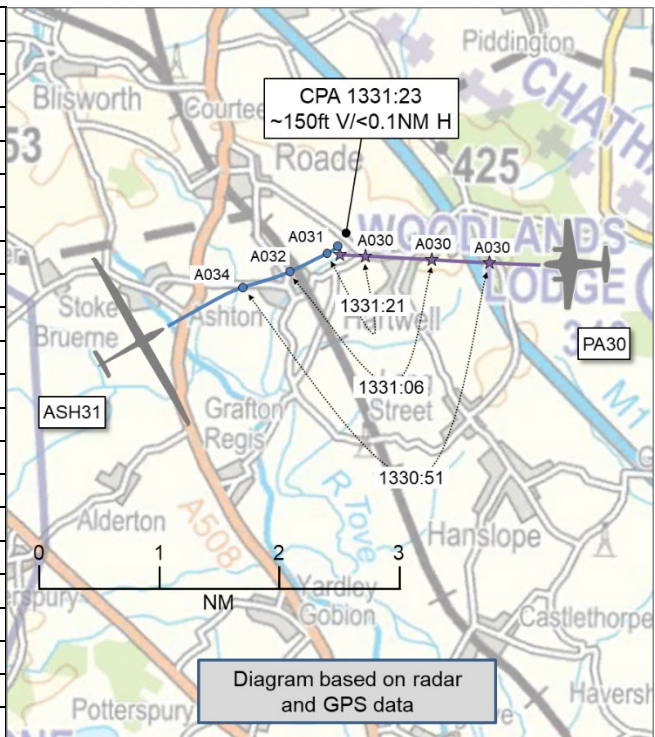


AIRPROX REPORT No 2022113

Date: 22 Jun 2022 Time: 1331Z Position: 5209N 00052W Location: 7NM NE Silverstone

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASH31	PA30
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Altitude/FL	~3150ft	3000ft
Transponder	Not fitted	A, C, S+
Reported		
Colours	White	White, blue
Lighting	None	Beacon, strobes
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3300ft	3000ft
Altimeter	QFE (NK hPa)	QNH (NK hPa)
Heading	080°	260°
Speed	90kt	144kt
ACAS/TAS	PowerFLARM	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	0ft V/0m H	25ft V/30m H
Recorded	~150ft V/<0.1NM H	



THE ASH31 PILOT reports that on a flight from [departure airfield] to [destination airfield] via Silverstone, they were leaving Silverstone area heading east-northeast at 3300ft AGL straight-and-level. Being a glider pilot they are always looking out to assess conditions and find lift. They heard something, looked right and saw a twin-engined aircraft (Piper/Cessna, metal, old type 210 or similar), range 20-50m, converging from the right. Luckily they were flying at 95kts and could pitch hard up. Engine and right wingtip passed under their cockpit at less than 3m below. They braced for impact and were amazed that they had missed. After the incident, they turned towards the direction that the other aircraft was heading expecting them to turn but they just bored on apparently oblivious to what had happened and would guess that they never knew they were there. Their [EC device] did not alert to their presence.

They honestly do not know how they avoided a collision as their height was identical, and braced for a bang and any distance between the aircraft was gained by them pitching up.

The ASH31 pilot stated that as a current display pilot (display flying for 15 years) who flies in a formation team, and is used to being in close formation with other aircraft, they are probably better than most at judging height and distance at close range.

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

THE PA30 PILOT reports that the glider appeared to be in transit and not soaring and that this was a very late visual contact due to a small head-on profile. As a contributory factor, the PA30 pilot stated that the Pilot Handling was looking out whilst they were changing frequency from Cranfield to Oxford, and the glider was sighted when they looked up.

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

THE CRANFIELD CONTROLLER reports that they had no knowledge of this Airprox having taken place.

THE CRANFIELD SUPERVISOR reports that they had listened to the R/T, checked Flight Progress Strips (FPS) and had spoken to the ATCO on duty.

The ATCO had no recollection of the event. The R/T recordings indicated no aircraft on frequency at the time of the event that may have been related to it, and no transit aircraft at all in the preceding and succeeding 10min and 5min respectively. FPS indicated no aircraft on frequency around the time of the event that may have been involved, although [the PA30] had been to Cranfield earlier that day for an instrument approach, and several gliders had received a service throughout the day (although none that matched the callsign of the subject aircraft). Cranfield has no surveillance radar.

[UKAB note: the time of the Airprox was subsequently determined to be 26 minutes later than that given in the initial Airprox report]

Factual Background

The weather at Cranfield was recorded as follows:

METAR EGTC 221320Z VRB05KT CAVOK 25/10 Q1013=

Analysis and Investigation

UKAB Secretariat

An analysis of a GPS data file supplied by the ASH31 pilot and of the NATS radar replay was undertaken. The ASH31 could not be identified from the radar replay.

The radar replay identified several aircraft in the vicinity of the reported Airprox at the time given although only one was a twin-engine aircraft (a PA30). The PA30 was observed to turn left to head northwest (the direction assessed by the ASH31 pilot during the Airprox) approximately 10NM from Silverstone (see Figure 1).

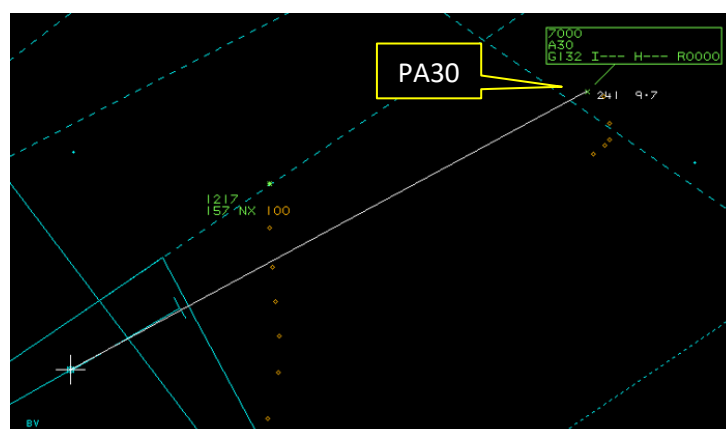


Figure 1: 1329:59 – The PA30 turned NW, 9.7NM from Silverstone

The radar replay showed that the track of the PA30 crossed the GPS track of the ASH31 and the diagram and CPA were determined from these two data sources (see Figure 2).

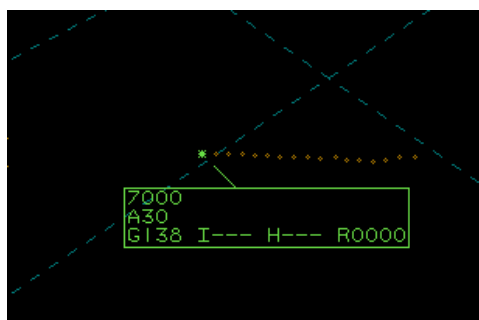


Figure 2: CPA at 1331:23

The ASH31 and PA30 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 converging then the PA30 pilot was required to give way to the ASH31.²

AOPA

Pilots are reminded to report Airprox on an ATC frequency. This is made easier if already in contact with an ATC unit where available, and also checks that the transponder is accurate and working. An EC rebate³ is available until March 2023 and it is recommended to take this up to fit an EC device, remembering that not all EC devices are compatible. Individual pilots should ensure the most suitable EC for their operation is used. It is recommended, where possible, when flying, to keep all lights on to aid conspicuity and to weave whilst straight-and-level assisting in an effective lookout.

BGA

It's concerning that the glider's [EC equipment] apparently did not warn its pilot of the PA30's proximity, based on the latter's Mode S transmissions. It would be helpful to understand why this barrier did not function.

Many pilots now opt to permanently switch on forward-pointing high-intensity landing lights, even in full daylight, to aid visual conspicuity.

Summary

An Airprox was reported when an ASH31 and a PA30 flew into proximity 7NM northeast of Silverstone at 1331Z on 22nd June 2022. Both pilots were operating under VFR in VMC, the ASH31 pilot not in receipt of an ATS and the PA30 pilot in receipt of a Basic Service from Cranfield.

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.

The Board first considered the actions of the ASH31 pilot and noted that this glider could not be identified on any radar recordings and had not been carrying a transponder. The Board discussed the track-logging data that had kindly been provided by the ASH31 pilot to the UKAB Secretariat. It was acknowledged that the recording of altitude from such sources may be subject to varying degrees of

¹ (UK) SERA.3205 Proximity.

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

³ 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. Further details of the scheme can be found on the CAA website: <https://www.caa.co.uk/general-aviation/aircraft-ownership-and-maintenance/electronic-conspicuity-devices/>

inaccuracy, and, although the ASH31 pilot's narrative described an extremely small vertical separation between the aircraft, that the Secretariat could not confirm a more precise measurement at the CPA. It was suggested by the Board that had the pilot of the ASH31 made a call on the Cranfield frequency they may have been passed some useful information on traffic in the vicinity to aid their situational awareness because, in the event, the ASH31 pilot had not had any situational awareness of the presence of the PA30 (CF1). The Board noted that despite the carriage of an EC device that would have been expected to detect the presence of the conflicting traffic in this instance, no warning had been reported as presented to the ASH31 pilot (CF2). Notwithstanding the very late sighting of the PA30 (CF3), it was acknowledged that the ASH31 pilot had reacted quickly to prevent a collision.

The Board's attention then turned to the actions of the PA30 pilot and members were a little disappointed that such a brief report of the incident had been provided. It was presumed that the PA30 pilot had not seen the glider until the very last moment, effectively making this a non-sighting (CF3). Having considered how the geometry of the two flightpaths may or may not have had an influence on the conspicuity of each aircraft, it was concluded that this only emphasises the importance of an effective lookout. It was noted by the Board that the PA30 pilot had been in the process of changing Air Traffic Service providers at the CPA and, consequently, there would have been reduced situational awareness available to the PA30 pilot at that time (CF1).

When determining the risk, the Board discussed that neither pilot saw the other aircraft in time to materially affect the separation and therefore concluded that providence had played a major part in events 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:

	2022113			
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	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• 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 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:

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

Electronic Warning System Operation and Compliance were assessed as **ineffective** because, although the EC device in the ASH31 aircraft would have been expected to detect the transponder in the PA30, no alert was received by the ASH31 pilot.

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

Airprox Barrier Assessment: 2022113		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: ■ ■ ■ ■ ■ □								

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