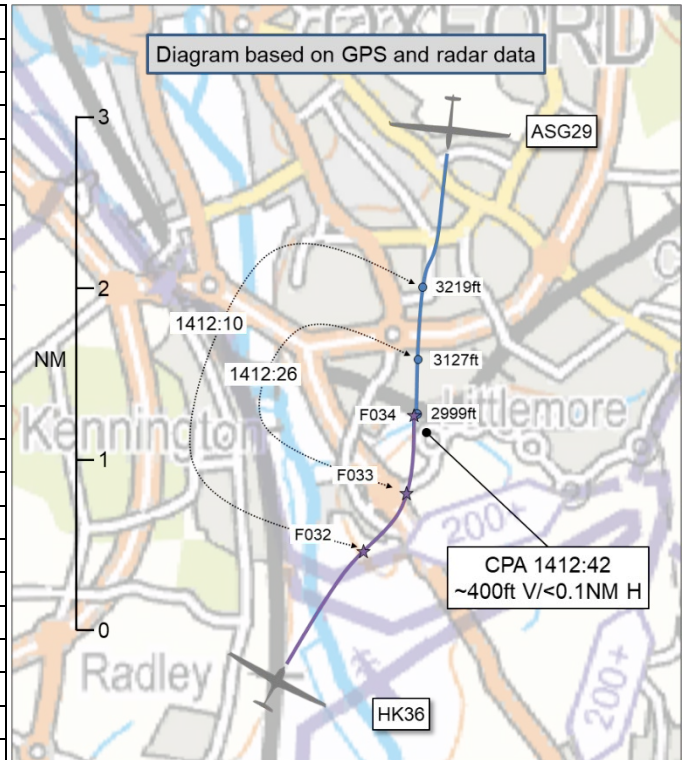


AIRPROX REPORT No 2024201

Date: 11 Aug 2024 Time: 1413Z Position: 5143N 00113W Location: IVO Oxford

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ASG29	HK36
Operator	Civ Gld	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	"changing freq."
Provider	N/A	None
Altitude/FL	2999ft	FL034
Transponder	Not fitted	A, C, S
Reported		
Colours	White	White
Lighting	None	Anti-col
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3143ft	3400ft
Altimeter	QNH	QNH (1018hPa)
Heading	180°	360°
Speed	95kt	90kt
ACAS/TAS	FLARM	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	"minimal" V/0ft H	NK
Recorded	~400ft V/<0.1NM H	



THE ASG29 PILOT reports that, just south of Oxford [city], they were working out a route home (via the cumulus clouds) and something drew their eyes directly forward. They realised it was a fast-moving light-aircraft and they dived to avoid it. There were a lot of grey/white clouds around and assume that, with its relatively small head-on profile, they didn't pick it up with their usual lookout. Their [EC device] didn't pick it up and, they assume, the other plane didn't have a [similar EC device] fitted. Once they saw it, they dived underneath (there was no time to turn). They should have spotted it earlier but, despite scanning all of the next clouds on their track, they hadn't picked it up until quite late.

[The pilot of the ASG29 opined that] it would have been a direct head-on collision. They were flying straight and level (as much as a glider can) and assessing options for their next climb. The aeroplane appeared very quickly in front of them. They may have been just below the nose [of the powered aircraft] so maybe the [other pilot] didn't see them as they were out of sight.

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

THE HK36 PILOT reports that, on their outbound leg, they had requested an overflight of Oxford Kidlington and were given clearance but were advised [that there would be] no radar cover. They had been listening to Farnborough Radar with a listening Squawk (4572). [The pilot of the HK36 noted that] Farnborough Radar was very busy and unable to provide a Traffic Service to most callers. They did not request a service but used their QNH setting. As they approached Oxford city, they changed squawk code to 7000 and the radio frequency to Oxford. The Airprox must have occurred at about the time of their frequency change. As they looked up from the radio, they were aware of a flash of white on the starboard side, appearing from behind the instrument binnacle. They had no idea what it was but thought it might have been a gull, having had a near-miss with one earlier in the flight. If it was an aircraft, it would have emerged from their 'blind' area below the engine cowling. They cannot remember their exact altitude at that point but, because Oxford Radar was inoperative, they were flying as high as

possible for the transit. They reported their altitude to the Oxford controller, who reported no known conflicting traffic.

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

Factual Background

The weather at Oxford Kidlington was recorded as follows:

METAR EGTK 111420Z 11009KT 080V150 9999 SCT044 27/16 Q1018

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the HK36 could be positively identified from Mode S data (Figure 1).



Figure 1 – CPA at 1412:42

The pilot of the ASG29 kindly supplied GPS track data for their flight. The ASG29 was identified by reference to the track data and their narrative report. The diagram was constructed and the separation at CPA determined by combining the various data sources.

The ASG29 and HK36 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

Comments

AOPA

In a non-radar environment, electronic conspicuity can be a great asset to have on board, especially when both parties have it fitted. However, until the Department for Transport mandates its use or there is commonality in standard, radar surveillance and lookout are the prime barriers to a mid-air

¹ (UK) SERA.3205 Proximity.

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

collision. In this case radar wasn't available. This event also shows the importance of breaking down even the simple task of changing a frequency into parts with a lookout in between those parts.

BGA

The difficulties of sighting another aircraft approaching head-on with little relative motion are well-known, especially a predominantly white aircraft against a field of white clouds. Forward-pointing "canopy flashers" using low-current, high-intensity LEDs have recently become available for field installation in modern high-performance gliders and may increase a glider's conspicuity in this direction.

The EC equipment fitted to almost all gliders warns of impending conflicts with other similarly equipped aircraft. Although this system has proved effective at mitigating the risk of Airprox with other gliders, basic installations do not detect aircraft equipped only with transponders, as the HK36 was in this case. Recent versions of this EC equipment can optionally add a 1090MHz receiver subsystem, and thereby warn of the proximity of co-altitude transponder-equipped aircraft, albeit without any direction information. Updating glider EC hardware to add such a 1090MHz receiver subsystem might provide an additional safety barrier in airspace with a high density of transponder-equipped aircraft.

Summary

An Airprox was reported when an ASG29 and an HK36 flew into proximity in the vicinity of Oxford city at 1413Z on Sunday 11th August 2024. Both pilots were operating under VFR in VMC, neither in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and GPS data from the track of the ASG29. 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 pilot of the ASG29. Noting that they were in possession of a FRTOL, members suggested that it may have been prudent to have been in receipt of a ATS (**CF1**), particularly during their transit of congested airspace. Members next noted that the ASG29 had been fitted with an EC device but agreed that it would not have been expected to have detected the presence of the HK36 (**CF3**). Consequently, members were in agreement that the pilot of the ASG29 had not had situational awareness of the presence of the HK36 until it had been visually acquired (**CF2**). Members noted the ASG29 pilot had estimated that the separation between the aircraft had been 'minimal' and, in the narrative report of their actions, had described a somewhat urgent dive to increase the separation. Members assessed the available data and agreed that, approximately 30sec before CPA, the altitudes of the aircraft had indeed been similar. However, members noted that the HK36 had been in a gentle climb and, in addition to the separation generated by the actions of the pilot of the ASG29, the aircraft had been approximately 400ft apart at the point of CPA. Nevertheless, members appreciated that to have suddenly acquired the HK36 directly ahead had caused considerable concern and concluded that the sighting had been late (**CF5**).

Members next considered the actions of the pilot of the HK36. It was noted that they had not been in receipt of an ATS but had instead selected the Farnborough FMC and had been listening out on the Farnborough Radar frequency. Members agreed that monitoring the Farnborough frequency would not have provided the pilot of the HK36 with the most pertinent information on the traffic situation at their location and agreed that it may have been more prudent to have been in receipt of an appropriate ATS (**CF1**). Notwithstanding, members noted that the pilot of the HK36 had been in the process of selecting the Oxford frequency. Members agreed that, as the HK36 had not been fitted with an EC device capable of detecting the ASG29, the pilot of the HK36 had not had situational awareness of the presence of the ASG29 in the area (**CF2**). One member wished to highlight the importance of maintaining a thorough and effective visual scan, particularly in areas where a high density of traffic might be expected. Further,

they suggested that the action of selecting a frequency could have been broken down into several steps interspersed with a return to look out of the window. Although acknowledging that it may, perhaps, have been a case of unfortunate timing, members were in agreement that the tuning of their radio had been a distraction to the pilot of the HK36 to such an extent that they had not maintained an effective lookout (**CF4**). Members noted that they had not sighted the ASG29 until the moment of CPA (and indeed, had not identified the 'flash of white' that they had seen). Members agreed that that effectively constituted a non-sighting (**CF6**).

Concluding their discussion, members agreed that neither pilot had had situational awareness of the presence of the other aircraft. It was also agreed that the pilot of the HK36 had been distracted from their lookout and had not visually acquired the ASG29 until the moment of CPA. However, members agreed that avoiding action taken by the pilot of the ASG29 had increased separation at the last minute.

Some members suggested that the positive action by the pilot of the ASG29 had essentially averted the risk of collision. However, other members proffered that the safety margins of the encounter had been reduced much below the norm. A vote was conducted and the latter view, that safety had not been assured, prevailed. The Board concluded that there had been a risk of collision (**CF7**) and assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2024201				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	Human Factors	• Communications by Flight Crew with ANS	An event related to the communications between the flight crew and the air navigation service.	Pilot did not request appropriate ATS service or communicate with appropriate provider
• 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	• Distraction - Job Related	Events where flight crew are distracted for job related reasons	
5	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
6	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				
7	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: B.

Safety Barrier Assessment³

³ 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:

Tactical Planning and Execution was assessed as **partially effective** because it may have been prudent for each pilot to have requested an appropriate ATS.

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

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC device fitted to the ASG29 would not have been expected to have detected the presence of the HK36.

See and Avoid were assessed as **partially effective** because the pilot of the HK36 had not visually acquired the ASG29 until the moment of CPA.

Airprox Barrier Assessment: 2024201		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 Conflication & 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	■	■	■	■	□			