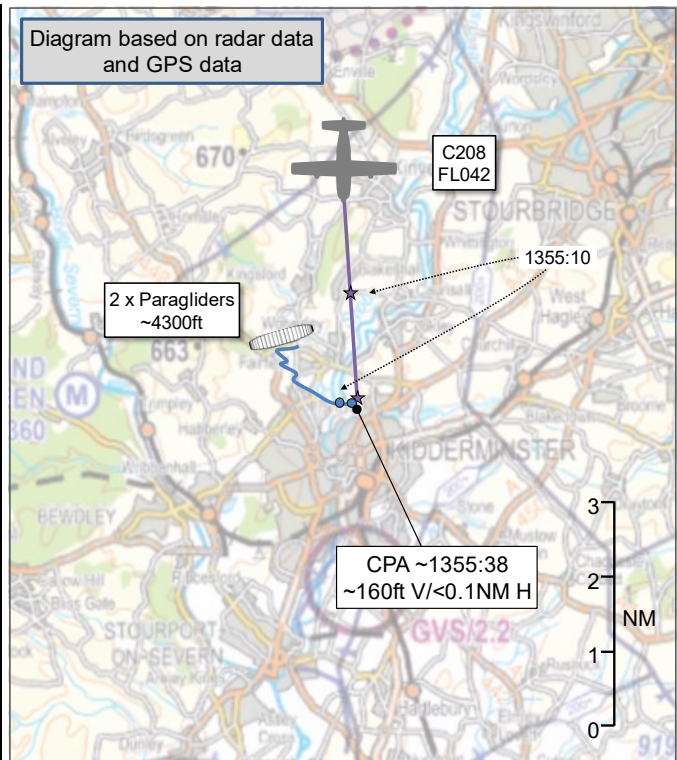


AIRPROX REPORT No 2023183

Date: 16 Aug 2023 Time: ~1356Z Position: 5224N 00214W Location: Kidderminster

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Paraglider	C208
Operator	Civ Hang	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Traffic
Provider		Birmingham
Altitude/FL	4360ft	FL042
Transponder	Not fitted	A, C, S+
Reported		
Colours	Blue	
Lighting	Nil	
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	1416m (4645ft)	4300ft
Altimeter	NK	NK
Heading	100°	180°
Speed	21kt	164kt
ACAS/TAS	FLARM	TCAS I
Alert	None	None
Separation at CPA		
Reported	70ft V/50m H	Not Seen
Recorded	~160ft V/<0.1NM H	



THE PARAGLIDER(A) PILOT reports that they were flying with another paraglider pilot, both BHPA rated, they both launched from Worcester Beacon in the Malvern Hills planning to fly a 100km triangle roughly, Malvern-Kidderminster-Alcester-Malvern. Visibility was very good with large cumulus and a minimal amount of overdevelopment in places. Following a thermal up to approximately 1552m at 1352:42 they headed on glide at about 100°. They were both clear of cloud both during, and immediately following, the thermal. At approximately 1356:03 the other paraglider pilot was approximately 30m below them and 80m to their ENE. About 3sec before the plane passed between them, they noticed it due to engine noise. The plane was approximately 15m below them and 40m in front when it passed. They did not have time to alert the other pilot or take evasive action. The plane was travelling fast but they could not estimate the airspeed. They could not say exactly how close the plane was to the other paraglider but they thought that it was closer to them than their own. During and following the plane's passing they did not see the plane deviate from its bearing which they estimated to have been 180° straight and level. They did not have time to note the plane's ID number. The plane was white, high wing with stays, a blue patch on the side of the fuselage (although this may have just been the lettering of the ID number). Following the passing of the plane both pilots braced and readied for any wash but did not experience any turbulence. They estimated that the collision risk was high given the proximity and apparent lack of awareness from the pilot of the plane. The altitude, time and bearing/position information included above has been taken from the tracklogs based on their note of the time for the incident. The other information such as distances are all estimated.

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

THE PARAGLIDER(B) PILOT reports that they concur with paraglider(A) pilot's report and agree with everything written. They were flying approximately 30m below paraglider(A) when a small Cessna-type aircraft passed above by 10-15m vertically and in front by 20m.

THE C208 PILOT reports that they were not aware of an Airprox until they were notified by the UKAB. From memory they thought that they had been receiving a service from Birmingham, but that no Traffic Information had been provided.

THE BIRMINGHAM CONTROLLER reports that they had no recollection of the incident.

Factual Background

The weather at Birmingham was recorded as follows:

METAR EGBB 161350Z VRB04KT CAVOK 21/11 Q1021=

Analysis and Investigation

CAA ATSI

Birmingham ATC did not submit a unit investigation. A review of the NATS Radar and RTF recordings was undertaken. Birmingham controllers utilise their own primary radar alongside either the NATS Clee Hill or Claxby SSR. The paraglider did not display on the NATS radars, however, paragliders are very small targets that are often not detected by primary radars and are therefore not displayed on controller displays. That said, it cannot be confirmed that this was the case with the Birmingham radar on this particular day. The controller report simply states that the controller had no recollection of the event.

At 1349:50 the C208 pilot made initial RTF contact with the Birmingham controller and a Traffic Service was agreed. The controller was busy vectoring VFR control zone transits and IFR inbounds, and at one point passed Traffic Information to the C208 pilot on an unrelated aircraft. There were no further comms between the pilot and controller in the lead-up to the reported time of the Airprox (1356) and nothing was said about an Airprox or close encounter after this time.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the C208 could be identified using Mode S data, displaying a Birmingham squawk, indicating FL042 and heading south. The paragliders did not display on the radar, but by comparing the GPS data supplied by the paraglider pilots, it was estimated that CPA occurred at approximately 1355:38.

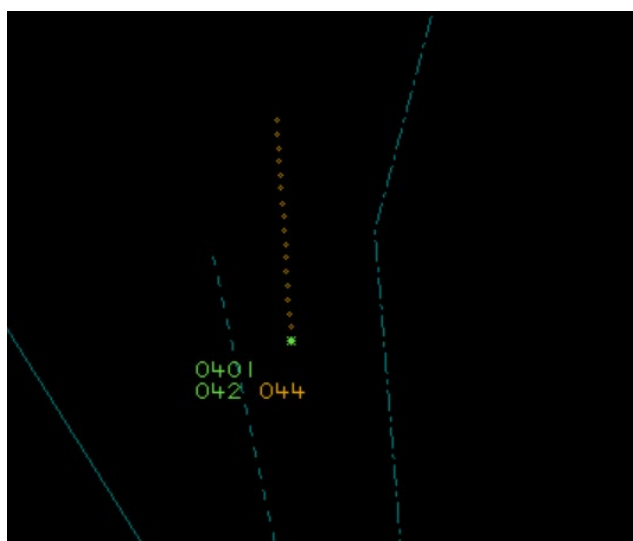


Figure 1 – 1355:38 CPA

The Paraglider and C208 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 C208 pilot was required to give way to the paraglider.² If the incident geometry is considered as overtaking then the paraglider pilot had right of way and the C208 pilot was required to keep out of the way of the other aircraft by altering course to the right.³

Comments

AOPA

When flying in Class G airspace, see and avoid is the primary mitigation against mid-air collision, until commonality in electronic conspicuity has been established or mandated. Paragliders are notoriously difficult to see due to their size, together with canopies merging into the background of the ground below. Furthermore, if on a constant relative bearing, the paragliders would have been virtually impossible to see.

BHPA

The BHPA is very relieved that this Airprox did not result in a more serious outcome. None of the aircraft involved had any warning of the impending Airprox, neither visually nor electronically. Although the paraglider pilots heard the C208, with only 3sec of warning there would not have been anything they could have done to avoid it if the aircraft had been on a collision course. Yet again, we see issues of non-interoperability between various EC devices and, as paraglider pilots carry very little in the way of radar-reflective material, it is also unsurprising that they were not seen by ATC either. It seems only a sadly-lacking effective lookout by all pilots involved may have prevented this 15m near-miss. Having said that, there would be little in the way of evasive manoeuvres that the paraglider pilots could have initiated to avoid an aircraft travelling at 160+ knots so close to them.

Summary

An Airprox was reported when a pair of paragliders and a C208 flew into proximity at Kidderminster at around 1356Z on Wednesday 16th August 2023. Both pilots were operating under VFR in VMC, the C208 pilot in receipt of a Traffic Service from Birmingham and the paraglider pilots not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs, GPS data, a report from the air traffic controller involved and reports from the appropriate operating authorities. 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 paraglider pilots. Members were informed by the BHPA member that the pilots would have been busy looking for lift, monitoring their variometers and keeping track of each other; consequently, their ability to conduct an effective lookout scan would have been limited. Members opined that whilst it was understood that all of these actions would have been necessary, still it was vital in Class G airspace, where see and avoid is the main mitigation against MAC, that pilots conducted an effective scan, particularly given that paraglider pilots had very limited ability to take avoiding action yet were notoriously difficult to be seen by other pilots. The paraglider pilots had been carrying CWS equipment that was not compatible with the TCAS on the C208 (**CF3**) and so it could not have provided any prior situational awareness (**CF2**). Members discussed whether the paraglider pilots could have carried a form of CWS that was more broadly compatible with fixed-wing aircraft; gliding members noted that paragliders could often be found ridge soaring alongside

¹ (UK) SERA.3205 Proximity.

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

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

gliders and so it was vital that any CWS was compatible with that more generally carried by gliders. Still, members thought that, although it may not have helped in this particular incident, carrying equipment with some form of ADS-B component would broaden the scope for being detected by other pilots, and increasingly by air traffic controllers too. Members also wondered whether the paraglider pilots could have carried some sort of radio in order to alert ATC that they had been operating in the area, but were told that many paraglider pilots did not possess a FRTOL and that battery life and weight would all make it difficult for paraglider pilots to carry an air-band radio. In this incident, the point at which the paraglider pilots had seen the C208 had been too late for them to have taken any avoiding action making this effectively a non-sighting (**CF4**).

Members then further discussed the training that paraglider pilots receive with regard to lookout and effective scan, noting that paraglider training was outwith any regulatory oversight by the CAA. The BHPA member kindly volunteered to write an article for the paraglider magazine, Skywings, highlighting the need for effective lookout. Members expressed their gratitude for this, but felt that it may only have a limited reach and therefore resolved to make a recommendation to the BHPA that they review their training material with a view to including a structured lookout/scan technique.

Turning to the C208 pilot, they had been receiving a Traffic Service from Birmingham ATC, but had not received any Traffic Information and their TCAS could not have detected the non-transponding paragliders (**CF3**). Consequently, the pilot had received no situation awareness about the paragliders (**CF2**). Noting that paragliders were difficult to see, particularly when set against the backdrop of the ground, members thought it had not been surprising that the pilot had not seen the paragliders at all (**CF4**). Nevertheless, they noted that this incident served as a salutary reminder that pilots should be cognisant of the possibility of encountering paragliders in Class G airspace and ensure that they focused their lookout accordingly.

The Board briefly looked at the actions of the Birmingham controller. Although they had been providing a Traffic Service to the C208 pilot, it was highly likely that the paragliders had not been detected by the radar and so the controller would have had no knowledge of the paragliders and could not have provided any Traffic Information (**CF1**). However, members noted that it would have been useful if Birmingham ATC had conducted an investigation to definitively answer the question of whether or not the radar had detected the paragliders.

When determining the risk, members considered the reports from both pilots together with the GPS and radar data. Comparing the GPS data with the radar data confirmed that the aircraft had been in close proximity. The pilots' reports indicated that the C208 pilot had not seen the paragliders at all, whilst the paraglider pilots had seen the C208 too late to take any avoiding action. The Board therefore agreed that safety had been reduced to the bare minimum and there had been a serious risk of collision (**CF5**); Risk Category A.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023183			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	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, inaccurate or only generic, Situational Awareness
	• Electronic Warning System Operation and Compliance			

3	Technical	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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				
5	Contextual	<ul style="list-style-type: none"> 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.

Recommendation: The BHPA reviews training material with a view to including a structured lookout/scan technique.

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:

Ground Elements:

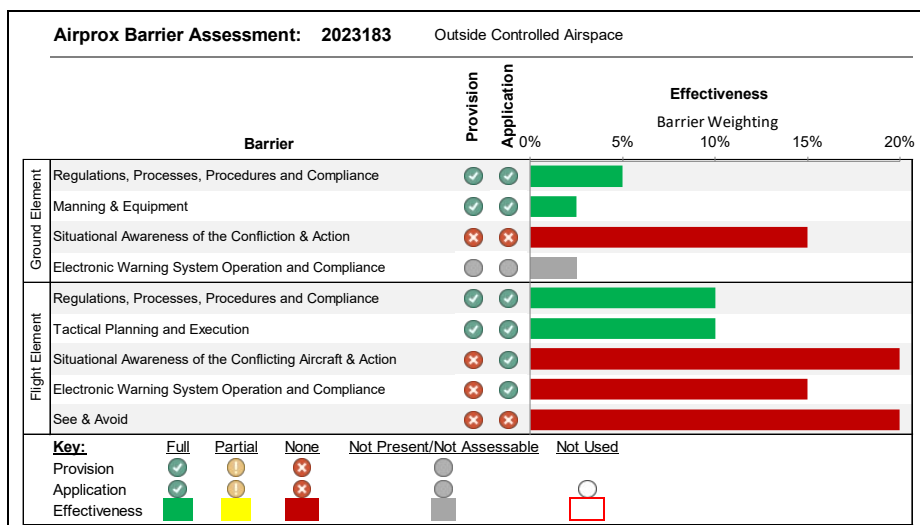
Situational Awareness of the Confliction and Action were assessed as **ineffective** because the paragliders had probably not been visible on the Birmingham controller’s radar.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had known that the other aircraft had been operating in the vicinity.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the CWS carried by the paraglider could not detect the transponder on the C208 and the TCAS I on the C208 could not detect the paragliders’ CWS.

See and Avoid were assessed as **ineffective** because neither pilot had seen the other aircraft in time to take effective avoiding action.



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