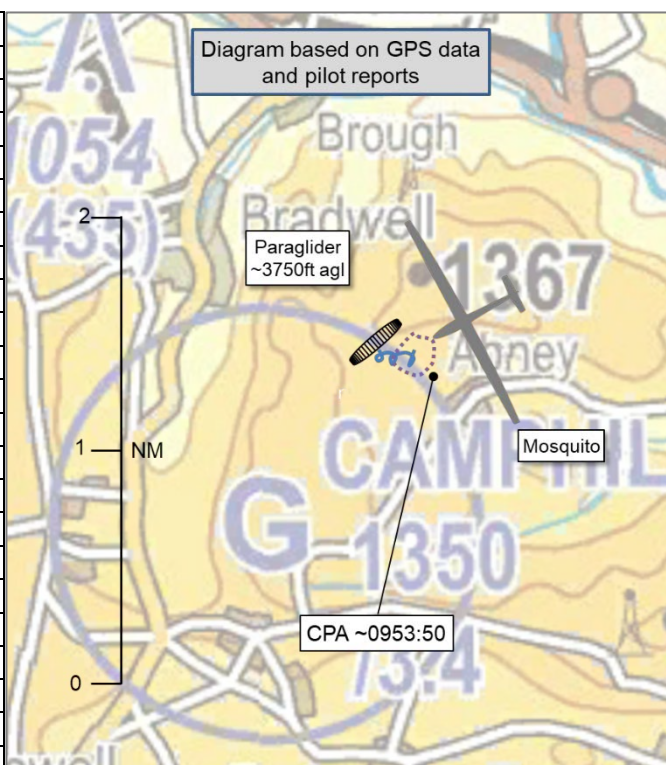


**AIRPROX REPORT No 2021054**

Date: 02 May 2021 Time: 0953Z Position: 5319N 00142W Location: Bradwell Edge, Peak District

**PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

Recorded	Aircraft 1	Aircraft 2
Aircraft	Paraglider	Mosquito glider
Operator	Civ Para	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider		Camphill
Altitude/FL	~3750ft	NK
Transponder	Not fitted	Not fitted
<b>Reported</b>		
Colours	Red, Yellow	White
Lighting	None	None
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3598ft	~1500ft agl
Altimeter	QNH (1013hPa)	QFE
Heading	Thermalling	Thermalling
Speed	19kt	40kt
ACAS/TAS	Not fitted	FLARM
Alert	N/A	None
<b>Separation</b>		
Reported	20ft V/0m H	Not Seen
Recorded	NK	



**THE PARAGLIDER PILOT** reports that they were thermalling in a tight gaggle (around 100m diameter) with other paragliders. A sailplane had been thermalling with the paragliders for some minutes - definitely in excess of the 2.5min since the paraglider pilot joined the thermal. Up until this point, the sailplane had been making circles around the paragliders estimated diameter 500+ m. At 0953:03 the sailplane's orbit coincided with the gaggle of paragliders. The sailplane passed through the gaggle of paragliders with 20ft separation.

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

**THE MOSQUITO GLIDER PILOT** reports that they were in a thermal with a constant rate right-hand turn and were aware of paragliders within the thermal. They were subsequently informed that they had had an Airprox with one of the paragliders. They were not aware of the incident at the time. They recalled that they were the only glider around and so were taking advantage of a thermal and the lift gained from the gully by Bradwell Edge (which is too close to the airfield to use when other gliders are around). There were a number of paragliders airborne and more getting airborne all the time, all lower than the glider and turning tighter circles within their own turning circle. Aware that the paragliders could gain lift more quickly than the glider, the pilot recalled keeping what they thought was a good look-out at the paragliders below. From subsequent conversations with the other pilot, they thought that the paraglider in question had joined the thermal from the moor at a similar height to the glider, but they were unaware of this at the time and did not see the Airprox.

**Factual Background**

The weather at Manchester was recorded as follows:

METAR COR EGCC 020920Z AUTO VRB03KT 9999 FEW016 09/03 Q1020 NOSIG=

METAR COR EGCC 020950Z AUTO VRB03KT 9999 FEW025 SCT040 09/02 Q1020 TEMPO SHRA=

## Analysis and Investigation

### UKAB Secretariat

The paraglider pilot provided the UKAB with a copy of their video footage, see Figure 1 for a still image taken from that footage.



Figure 1

The Paraglider and Mosquito pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>1</sup>

## Comments

### Camphill CFI

The paraglider pilot promptly reported the incident to Derbyshire and Lancashire Gliding Club (DLGC) Committee Chair via the Derbyshire Soaring Club<sup>2</sup> (DSC) Committee Chair and the video footage was shared. The two pilots were put in touch with each other and they had an initial telephone conversation. A "zoom" meeting was arranged by the DSC Chief Coach. The DLGC Safety Officer completed an incident report as part of the DLGC "Safety Lessons Log" system. A "Safety Message" was shared with the DLGC pilot membership entitled "Soaring with paragliders". The document reminded our pilots about the demands of joining, leaving and sharing thermals with other aircraft. It not only draws attention to the effects of the significantly different flying and soaring characteristics of the two aircraft types but also the different flying and soaring techniques adopted by their pilots. It is thought that DSC have shared a similar safety message with their own pilots.

DLGC and DSC pilots often share the ridge and thermal soaring opportunities provided by the west facing ridge called Bradwell Edge. The southern end of Bradwell Edge is adjacent to the boundary of the gliding airfield and the paraglider pilots launch further along the edge, to the north. A working agreement was established many years ago between the two clubs which attempts to facilitate safe

<sup>1</sup> (UK) SERA.3205 Proximity.

<sup>2</sup> The para-gliding club.

mutual flying. Conversations between the club officials take place occasionally and, in normal times, DSC members use DLGC facilities for briefings and meetings as "affiliate" members.

The discussions following the incident helped to interpret the images shown in the video recording. Sailplane pilots and paraglider pilots are used to sharing thermals safely and co-operatively. A group of aircraft sharing a thermal is described as a "gaggle". Generally, the sailplanes fly in a wider concentric circle around the paragliders. Paragliders can turn tighter than sailplanes and make use of the stronger lift in the centre of a thermal. Sailplanes will usually follow each other around a circular path within the thermal. Paragliders, on the other hand, have the manoeuvrability to form more than one "gaggle" within the thermal. This happens because different paraglider pilots have the wherewithal to adopt different soaring techniques and make best use of the lift within the thermal. It is likely that such gaggles were created in the time leading up to the incident.

## **BGA**

This incident illustrates the vital importance of keen lookout when operating in close proximity to other aircraft, particularly when they are of significantly differing performance. We are pleased to hear that there has been a review and refresh of the safety messages to pilots operating in this area.

## **BHPA**

Having viewed the incident video, the BHPA is pleased to see the paraglider pilot keeping a good lookout and notes that they frequently look to see where the sailplane is whilst concentrating on centring the thermal. However, due to the vast difference in turning circle radii and speed, there will inevitably be times when the two aircraft are unable to circle whilst keeping the other in constant view. Furthermore, thermals in their early stages usually consist of multiple cores until they reach higher altitudes where the cores consolidate and become one larger rising airmass. Although paraglider pilots have the advantage of seeking out the stronger cores of a thermal and adjusting their flight paths accordingly whilst still maintaining a good lookout, ample separation and due consideration to all other aircraft/pilots within the thermal mass, the paraglider pilot in the video does appear to be maintaining a constant circle and not significantly altering their flight path.

The BHPA noted that the fact that the PG pilot makes an oral exclamation before the sailplane has flown underneath, suggests that they knew exactly where the sailplane was and was actually looking to their right to keep it in view. The PG pilot would have assumed that the sailplane pilot had visually acquired them beforehand and intended to pass by with sufficient clearance but it is clear from the video that the sailplane pilot had not seen this particular PG pilot. It is extremely fortuitous that the sailplane narrowly avoided hitting the PG pilot and you can hear the fear and surprise in their voice knowing that they are helpless and unable to avoid the expected collision.

It has been discussed before that the paraglider has limited manoeuvrability and its slow airspeed which, whilst thermalling, would have been somewhere between 15-18 knots against the sailplane's airspeed of 50-60knots. It would have been impossible for the PG pilot to have taken any evasive action. Paraglider canopies are also sometimes prone to taking partial collapses induced by the turbulent edge of a thermal or incorrect pilot actions which can result in a sudden loss of altitude. Had the PG pilot in this incident taken such a collapse moments before the CPA, there would have been a collision. The BHPA also wishes to point out that although sailplanes are very low drag aircraft, the induced drag from its flying surfaces at that close range could have caused the paraglider to collapse after it had passed by. It should also be noted that even if both aircraft had been equipped with FLARM or another EC device, it is unlikely that this would have helped within a busy thermal containing sailplane and paraglider gaggles due to clutter.

The BHPA is pleased to note that the incident pilots and respective clubs were able to offer their points of view and take steps to minimise such near misses in the future. Nevertheless, the vital importance of maintaining a good lookout – especially when flying with different aircraft types in close proximity – cannot be over-emphasised.

## Summary

An Airprox was reported when a Paraglider and a Mosquito flew into proximity at Bradwell Edge at 0953Z on Sunday 2<sup>nd</sup> May 2021. 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, reports from the air traffic controllers 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.

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 looked at the actions of the paraglider pilot. They had joined the thermal along with other paraglider pilots and were visual with the glider and, as this was a normal occurrence at this particular ridge, were unconcerned by its presence. However, members heard from the BHPA representative that the vastly differing performance of the types within the stack, meant that the paragliders were reliant on being seen by the glider pilots because, although they could climb faster and were able to respond quickly to the thermal, they could not out-maneuvre a glider to get out of the way, and the danger of a canopy collapse was a very real one. The Board therefore agreed that, although it had become normal practise at this location, the mixing of the aircraft types within the thermal and in particular the number of aircraft in the thermal, had been a contributory factor to this Airprox (**CF4**). Some members wondered whether the paraglider pilot would be aware of how close they were to the glider site, they were reassured that not only was this an experienced pilot who was very much used to flying in the area, but that most paraglider pilots carried a vario used for height and GPS information and additionally had software downloaded to their smart phones so that when flying cross-country they could keep a track of the airspace around them.

Turning to the glider pilot, the Board heard from the BGA member that the mixing of paragliders and gliders in a thermal was a common occurrence, and that normally the gliders would turn in larger circles around the outside of the stack, whilst the lighter paragliders circled in the centre. They noted that this was an experienced pilot who was well aware that the paragliders would be operating in that position and therefore had generic information about the paragliders (**CF1**), but in focusing on the other paragliders below and to their right had simply not seen the one directly ahead (**CF3**). Members noted that this was a salutary lesson to all that look-out should never be focused in one direction and some wondered whether, given the nature and number of paragliders in the thermal, the pilot would have been better just leaving it completely. The FLARM on the glider could not detect the paragliders (**CF2**), although some members opined that even if it had, the close proximity of the aircraft in the thermal would have meant that it would be continually alerting and therefore be of limited use. Members were heartened to hear about the actions from the respective clubs post-incident, and hoped that the subsequent raising of awareness and education would ensure a greater understanding by all concerned.

In determining the risk, members were quick to agree that in the less manoeuvrable paraglider, the pilot could have done little to increase the separation, even though they were visual with the glider as it approached from behind, and that because the glider pilot had not been visual with the paraglider, it had been providential that the two aircraft had enough separation to avoid a collision. They therefore assigned the highest category, Risk Category A (**CF5**).

**PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK****Contributory Factors:**

2021054				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
1	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late or only generic, Situational Awareness
<b>• Electronic Warning System Operation and Compliance</b>				
2	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
<b>• See and Avoid</b>				
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
<b>• Any other events</b>				
4		• Any other event	Any other event not listed elsewhere within the event types list.	The mixing of aircraft types in the thermal
<b>• Outcome Events</b>				
5	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 Assessment<sup>3</sup>**

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 **partially effective** because the glider pilot had generic information that the paragliders were in the vicinity.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the FLARM on the glider could not detect the paraglider.

**See and Avoid** were assessed as **ineffective** because the glider pilot did not see the paraglider and the paraglider pilot did not see the glider in time to be able to take avoiding action.

<sup>3</sup> 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: 2021054** 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	●	●					
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	●	●	●	●				
Application	●	●	●	●				
Effectiveness	■	■	■	■	□			