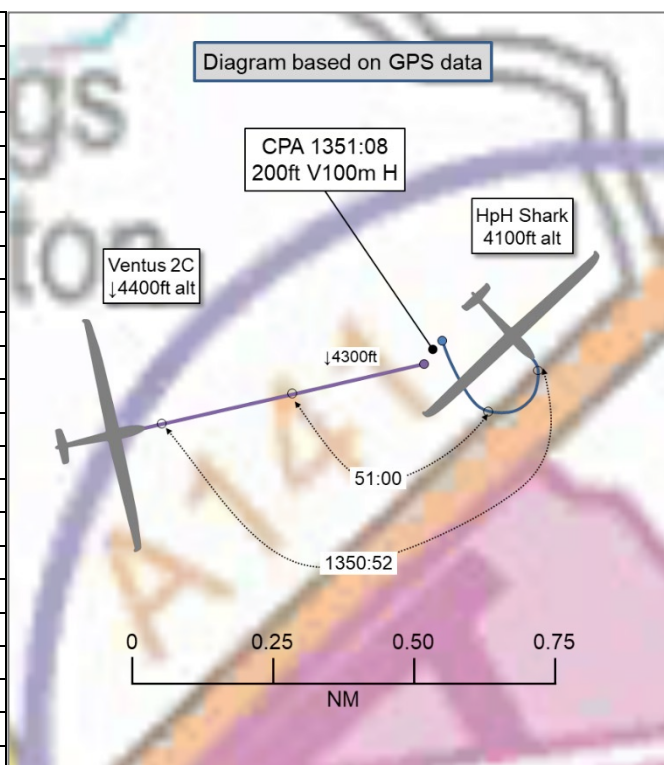


**AIRPROX REPORT No 2020102**

Date: 31 Aug 2020 Time: 1351Z Position: 5222N 00007W Location: Wyton

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	HpH Shark	Ventus 2C
Operator	Civ Gld	Civ Gld
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Provider	N/A	N/A
Altitude/FL	4100ft	4300ft
Transponder	A, C, S	Not fitted
Reported		
Colours	White/orange	White
Lighting	NR	NR
Conditions	VMC	VMC
Visibility	70km	30km
Altitude/FL	4134ft	4300ft
Altimeter	QNH	QNH
Heading	325°	075°
Speed	63kt	95kt
ACAS/TAS	FLARM	FLARM
Alert	Information	Unknown
Separation		
Reported	190ft V/80m H	250ft V/100m H
Recorded	200ft V/100m H	



**THE HPH SHARK PILOT** reports being on a cross-country flight when they stopped to climb in a thermal close to Wyton. They were looking out during the turn, when they received a FLARM traffic alert labelled as [the Ventus 2C] around 0.75km out and with 350ft of vertical separation indicated; this immediately escalated to a red collision warning. They continued their right-hand turn whilst looking for the traffic. They made visual contact with [the Ventus 2C] and moved away to the north out of its path. Due to their climb rate, they estimate that a collision would have been likely without their avoiding action. Afterwards, they returned to the climb and continued on their cross-country flight.

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

**THE VENTUS 2C PILOT** reports that they had turned at Market Harborough and were heading to Earith. As they were approaching RAF Wyton, they saw a glider at their 11 o'clock about 3km away, circling to the right and about 700ft below them. They turned towards it and aimed to join the left-hand side of their thermalling turn, as per normal gliding procedures. They entered the thermal about 250ft above the other glider and slowed slightly in the lift. However, the thermal strength was less than they needed so they then gently accelerated out of the thermal and continued the flight. The glider's wings remained broadly level for the time that they flew through the thermal. The whole event was so unremarkable and normal that they had a hard time even recalling it. At no time did they consider that they came close (in gliding terms) to the other glider and they would never consider this an Airprox event. They estimate that they have between 5 and 20 similar such thermal joining "events" on every cross-country gliding flight.

The pilot assessed the risk of collision as 'None'.

## Factual Background

The weather at Cambridge was recorded as follows:

METAR EGSC 311350Z 02004KT CAVOK 18/04 Q1022=

## Analysis and Investigation

### UKAB Secretariat

Analysis of the NATS radar replay was undertaken which confirmed that both gliders were tracked on the radar – the HpH Shark with both primary and secondary radar and the Ventus 2C as a primary-only contact. A screenshot of the NATS radar picture at 1350:20 (approximately 50sec prior to CPA) is provided at Figure 1 below for context but was not used to assess the CPA as the radar replay cannot measure lateral separations inferior to 0.1NM. The GPS log files provided by the pilots of both gliders were used for the purpose of establishing the CPA as these enabled a more accurate track comparison to be made.

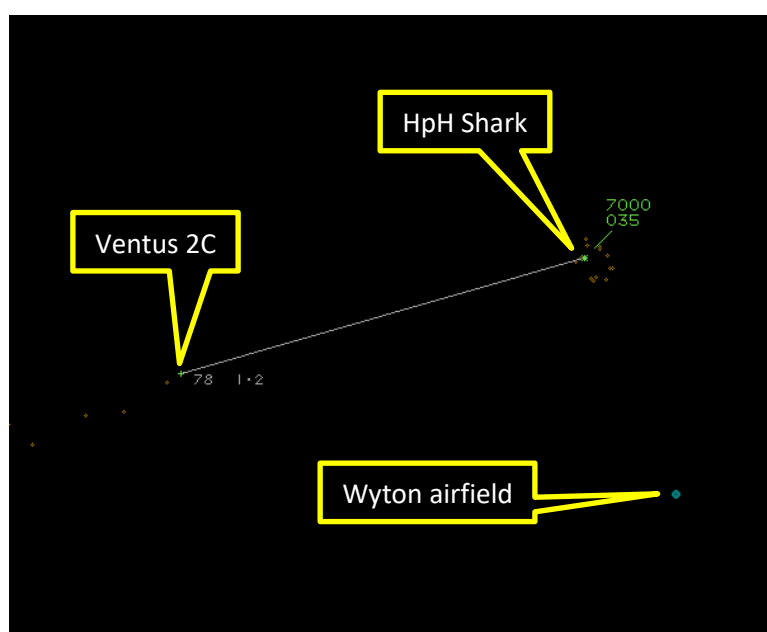


Figure 1

The HpH Shark pilot established in right-hand turns in a thermal at 1348:20 and remained largely over the same point on the ground ( $\pm 0.2$ NM) until 1351:04, when they ceased turning and tracked slightly further north before turning back towards the thermal activity at 1351:12. The Ventus 2C tracked towards the thermal from the west and continued in an easterly direction, entering the area in which the HpH Shark pilot was thermalling at 1351:08 and exiting at 1351:16. CPA was measured at 1351:08 with a vertical separation of 200ft and a horizontal separation of 100m.

The HpH Shark and Ventus 2C glider 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> If the incident geometry is considered as converging then the Ventus 2C glider pilot was required to give way to the HpH Shark glider.<sup>2</sup>

<sup>1</sup> SERA.3205 Proximity.

<sup>2</sup> SERA.3210 Right-of-way (c)(2) Converging.

## Comments

### BGA

A glider joining another in a thermal can produce FLARM warnings; this is the system working as designed, to assist directed lookout. In this case, although the Shark pilot was concerned by the track of the Ventus, the flightpaths and achieved vertical separation were not unusual.

## Summary

An Airprox was reported when an HpH Shark glider and a Ventus 2C glider flew into proximity over Wyton at 1351Z on Monday 31<sup>st</sup> August 2020. Both pilots were operating under VFR in VMC; neither pilot was in receipt of an Air Traffic Service.

## **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 discussed the actions of the two glider pilots, and heard from a glider pilot member that this encounter could be considered to be quite normal in gliding terms. The member informed the Board that FLARM units will transmit a calculation of a predicted track based upon the flight parameters at the time of transmission. On this occasion, the Ventus pilot would have lowered the nose of their aircraft to accelerate towards the thermal, which would have then generated a flight vector within the FLARM calculations that would have put the Ventus into conflict with the Shark and generated the collision alarm (**CF1**); the FLARM algorithms cannot account for the fact that, on reaching the thermal, the Ventus pilot would then have raised the nose of their aircraft again in order to reduce forward speed and remain in the thermal activity. The Board agreed that the Ventus pilot had been following the standard gliding procedures for joining a thermal; however, and given the concern on the part of the Shark pilot regarding the proximity of the Ventus (**CF3**), some members thought that the Ventus pilot should have generated more lateral separation between the two aircraft. The Board judged that the Ventus pilot clearly believed that they had allowed enough separation (**CF2**), but the Shark pilot was not content with what they perceived as a conflict and so had had to take action to extend out of the thermal to generate more separation.

Turning to the risk involved in this event, the Board was grateful to both pilots for supplying their GPS log files as this had permitted an accurate assessment of the relative tracks, altitudes and the collision risk to be made. The Board noted that, in absolute terms, this had been a relatively close encounter (200ft vertical and 100m horizontal separation). However, this event had involved two gliders operating in accordance with standard procedures, where the Ventus pilot joining the thermal had simply positioned themselves a little too close to the Shark aircraft already established in the thermal for the Shark pilot to be comfortable. Members agreed that 'safe separation' can often be a subjective matter, but in this case it had been clear to the Board that no risk of collision had existed because the Ventus pilot had been visual with the Shark from a range of approximately 3km. Members agreed that normal safety standards and parameters for glider operations had pertained and that this Airprox warranted a Risk Category E.

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

Contributory Factors:

2020102			
CF	Factor	Description	Amplification
<b>Flight Elements</b>			
<b>• Electronic Warning System Operation and Compliance</b>			
1	Contextual	• Other warning system operation	Warning from a system other than TCAS
<b>• See and Avoid</b>			
2	Human Factors	• Perception of Visual Information	Pilot perceived there was no conflict
3	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft

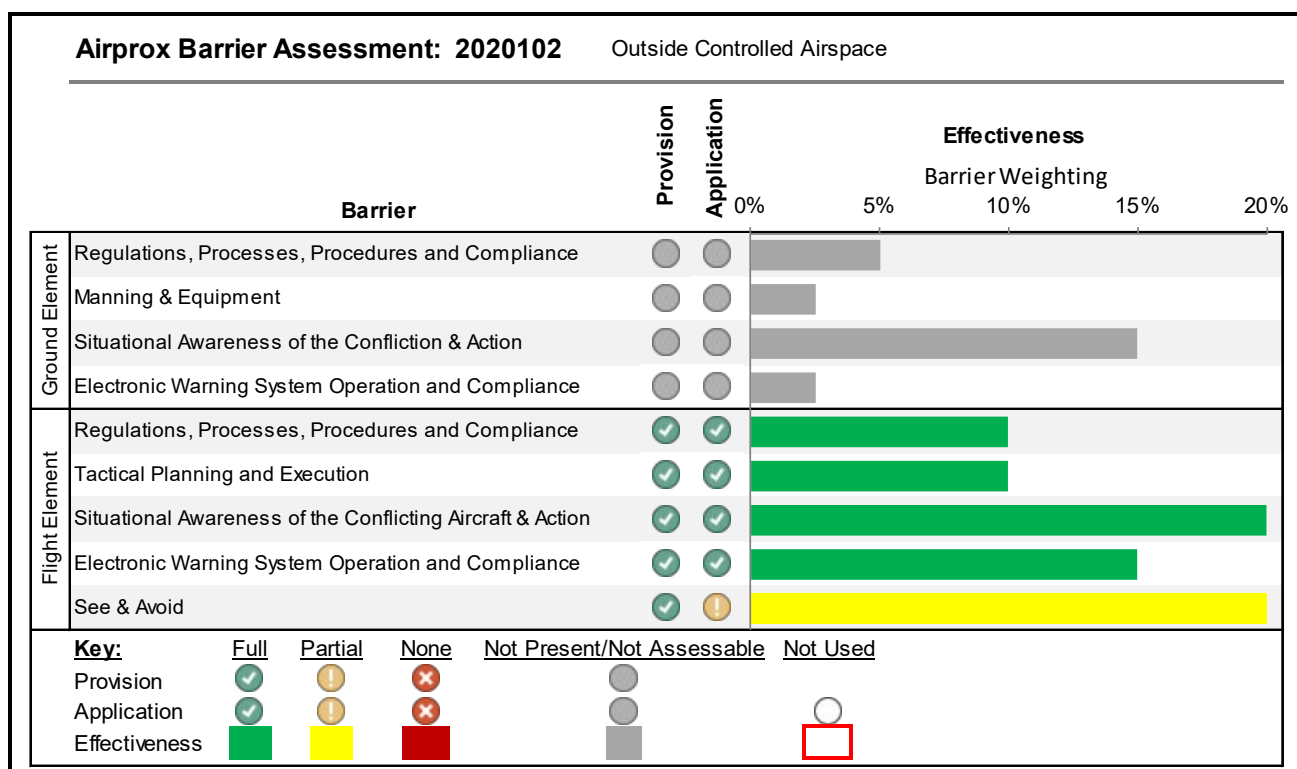
Degree of Risk: E

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:**

**See and Avoid** were assessed as **partially effective** because, although the Ventus 2C pilot had visually acquired the HpH Shark at a reported range of 3km, they flew close enough to cause concern to the pilot of the HpH Shark.



<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](#).