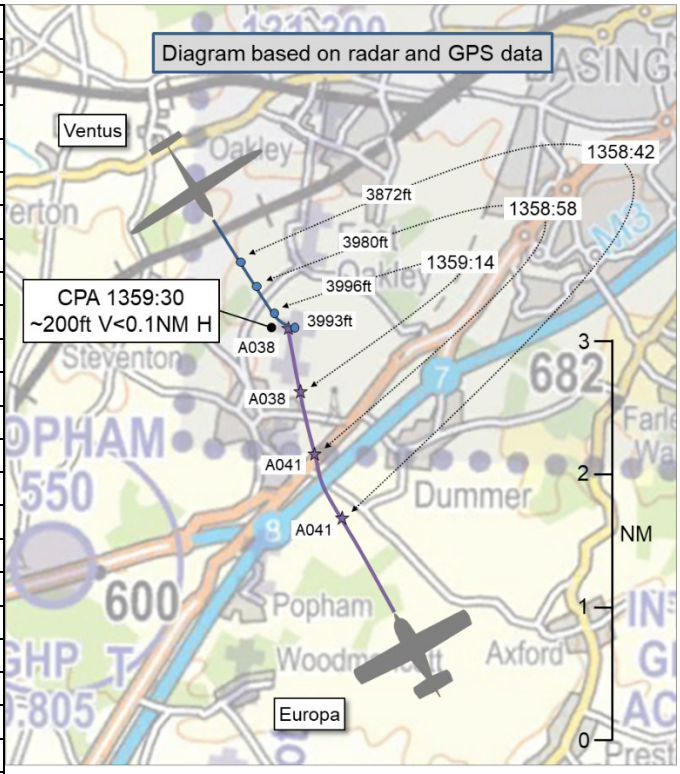
AIRPROX REPORT No 2023093

Date: 28 May 2023 Time: 1359Z Position: 5113N 00111W Location: 2.5NM NE Popham

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Ventus	Europa
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	N/A	London Information
Altitude/FL	3993ft	3800ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White	White
Lighting	Canopy flash	Strobes
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	4060ft	4000ft
Altimeter	QNH (1024hPa)	QNH
Heading	125°	"*NNW*"
Speed	55kt	120kt
ACAS/TAS	PowerFLARM	PowerFLARM
Alert	Information	TA
Separation at CPA		
Reported	110ft V/100m H	50ft V/250m H
Recorded	~200ft V/<0.1NM H	



THE VENTUS PILOT reports that they were tracking 145°, heading 125°, with a wind of 051/15kt. It was hazy, with a possible inversion at 4000ft. They were maintaining a good lookout but did not spot the Europa before their [EC device with ADS-B] gave an audible warning at 800m, 'one o'clock, below'. They banked to the left to avoid, and saw the Europa passing under, and behind, their tail at 3 o'clock, with no obvious sign of course correction.

A subsequent review of FlightRadar24 showed that the Europa pilot appeared to change course over the M3, which was the approximate time of a warning from their [EC device]. The Airprox was approximately 0.5km from the edge of the Lasham temporary, 5NM-radius, NOTAM for glider competition activity. The red canopy-flash was operating on their glider, with continuous, low-frequency flashes in normal flight, and high-frequency flashes for [EC device] warnings.

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

THE EUROPA PILOT reports that they had pre-briefed a return leg [to their destination] using their portable IT equipment. They were aware of the Lasham competition and the [likelihood] for gliders to be travelling west, towards Salisbury, and returning to Lasham. There was also a NOTAM for Highclere where a parachute-drop was notified.

A quick glance at FlightRadar24 confirmed multiple glider contacts, all moving west below Salisbury Plain, and so it was not unreasonable to assume, as it was a competition and the gliders were on the FlightRadar24 display, that [a popular EC device for glider pilots] and ADS-B were in use as conspicuity devices.

[The Europa pilot] carried an [EC device] which transmits and receives [this particular type of EC signal], as well as ADS-B and Mode-C alerts. They also had another device which receives ADS-B.

They had been seeing both ADS-B and [other] traffic on their displays along the route, confirming that their conspicuity devices were functioning. They routed via Butser Hill toward Popham, avoiding Southampton airspace by being slightly east of Popham at 4000ft, and also then routing slightly east of the Kingsclere mast to avoid the Highclere parachute activity. Most of the GA activity around Popham [is usually] 2000-3000ft above Popham for passing traffic, overhead joins etc. and so, [as they had been at] 4000ft, they had expected other GA traffic to be lower. This would have taken them over the stub of the Odiham MATZ and also clear of Lasham which was to their east by approximately 5-7NM. Their aircraft was tracking the autopilot, leaving them monitoring their position by ground reference, and maintaining a lookout scan.

They were monitoring London Information and, initially, Solent Radar with a listening squawk, and then monitored Farnborough and London Information from abeam Arlesford VRP. There was little traffic on the display, and most of that was some distance away, until an urgent alert on their [cockpit display] unit indicated a target off their port side, same level and a risk of collision. There was no time to react as the glider was immediately in their field of vision, and it had been head-on which is a very difficult aspect to see a glider approaching. It passed overhead.

Whilst their conspicuity devices were fully installed in the aircraft, and have been shown to provide good coverage, [the Europa pilot opines that] they are at the mercy of the other aircraft having [compatible] conspicuity devices. They are aware that some glider pilots carry a battery-powered unit which, depending on antenna location, can have very limited range in the cruise, although are fine for use in thermal activity.

During their previous use of Farnborough Radar in that area, and occasionally Solent, when transiting their airspace, they have received reports of 'Multiple glider contacts in the area' but no specific traffic avoidance advice had been available. Farnborough Radar was unavailable due to a comms failure announced on London Information.

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

Factual Background

The NOTAM for a parachute display at Highclere:

H2562/23 NOTAMN
Q) EGTT/QWPLW/IV/M /W /000/045/5119N00121W003
A) EGTT B) 2305281000 C) 2305291600
D) 1000-1600
E) PARACHUTE DISPLAY WI 2NM RADIUS: 511926N 0012115W (HIGHCLERE, HAMPSHIRE). FOR INFO 07766 203104. OPS CTC 129.905MHZ.
2023-05-0606/AS3.
F) SFC G) 4500FT AMSL

The NOTAM for a glider competition at Lasham:

H2841/23 NOTAMN
Q) EGTT/QWGLW/IV/M /W /000/070/5103N00145W035
A) EGTT B) 2305281100 C) 2305281800
E) GLIDING COMPETITION ACFT ROUTING:
511528N 0010353W (BASINGSTOKE)
504831N 0022837W (CERNE ABBAS)
511731N 0022645W (RADSTOCK)
505929N 0014518W (DOWNTON ROUNDABOUT)
511417N 0012045W (WHITCHURCH HAMPSHIRE)
511110N 0010159W (LASHAM AD ARP)
80 GLIDERS TRANSITING AT 1000-6000FT AGL WI 5NM OF ROUTE.
TIMINGS, HGT AND ROUTE ARE APRX AND MAY CHANGE DUE TO WX OR OTHER REQUIREMENTS.
GLIDERS MAY MONITOR COMPETITION FREQ 130.405. FOR LATEST INFO

WWW.GLIDINGTASKS.CO.UK OR 07436 408791.
F) SFC G) 7000FT AMSL

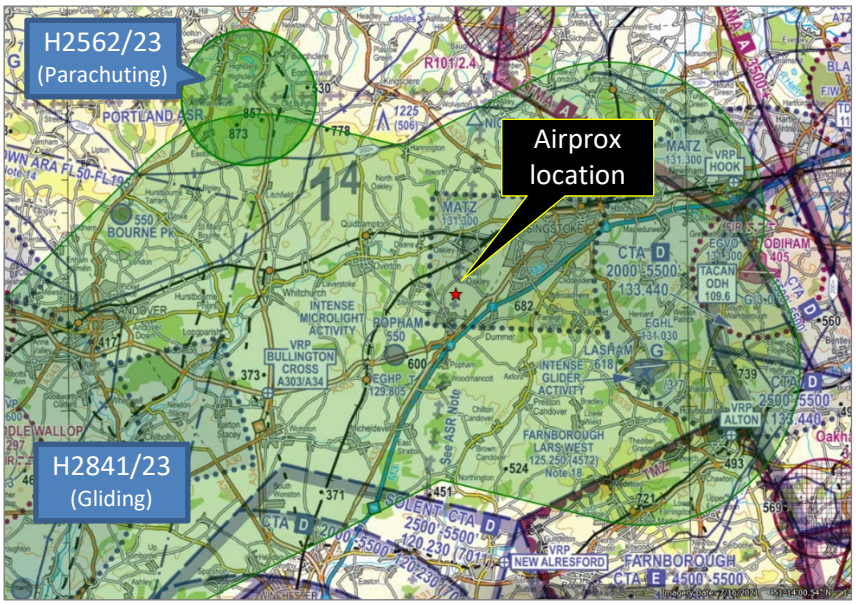


Figure 1 – The areas covered by NOTAMs

The weather at Odiham was recorded as follows:

METAR EGVO 281350Z AUTO 05009KT 9999 NCD 21/05 Q1022

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the Europa could be positively identified from Mode S data (see Figure 2). The pilot of the Ventus kindly supplied GPS track data for their flight. The aircraft positions could not be accurately plotted from the radar returns. Consequently, the diagram has been constructed, and the separation at CPA determined, from the GPS data and an interpolation of the radar data.

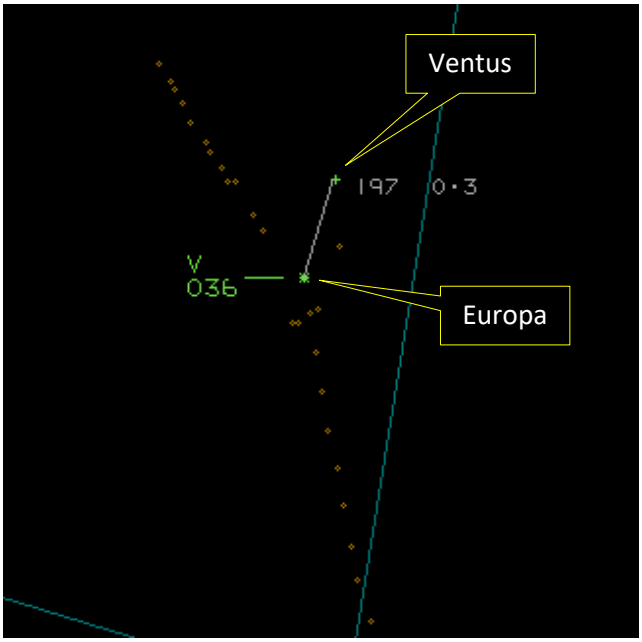


Figure 2 - CPA at 1359:30.

The Ventus and Europa 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

This Airprox shows how commonality of Electronic Conspicuity equipment can assist pilots to avoid mid-air collisions.

BGA

It's encouraging that the compatible EC equipment fitted to both aircraft provided an actionable proximity warning to the Ventus pilot, even though the warning received by the Europa pilot gave them no time to react. The BGA encourages the widespread use of traffic and collision warning systems, including the proprietary EC equipment that provided the warnings in this instance. However, there is evidence that some EC antenna installations are not as effective as they could be. Operators are encouraged to use the available range-testing tools to check the effectiveness of their EC antenna installation, and take steps to optimise it where necessary.

Summary

An Airprox was reported when a Ventus and a Europa flew into proximity 2.5NM northeast of Popham at 1359Z on Sunday 28th May 2023. Both pilots were operating under VFR in VMC, the Ventus pilot not in receipt of an ATS and the Europa pilot listening out on the London Information frequency.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and GPS track data. 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 Ventus. The recorded track of the Ventus suggested to members that the pilot had been on a 'final glide' to their destination. Members noted that the pilot of the Ventus had not sighted any conflicting traffic but had suddenly received an alert from their electronic conspicuity (EC) equipment to the presence of the Europa (**CF2**). In consideration of the timing of that alert, members calculated that it had provided less than 10sec 'advance warning'. As such, members concluded that the situational awareness that the alert had provided had been late (**CF1**). Consequently, it was agreed by members that the Europa had been visually acquired late (**CF3**). Nevertheless, the quick reaction of the pilot of the Ventus to have initiated an avoiding manoeuvre was commended.

Turning their attention to the actions of the pilot of the Europa, members noted that, at the time of this encounter, it had not been possible to have been in receipt of a LARS from Farnborough Radar. Members were in agreement that traversing this particularly busy airspace without a surveillance-based ATS had placed even more emphasis on the imperative to have maintained a thorough and effective lookout. Members commended the consideration that the pilot of the Europa had given to having equipped their aircraft with additional EC devices, and were heartened that they had been aware of the general traffic situation on the day in question. Members were pleased that there had been compatibility with the EC equipment as fitted to the Ventus. Notwithstanding, members were disappointed that, whilst an alert had been provided to the Europa pilot on the presence of the Ventus (**CF2**), the relative tardiness of the alert had meant that the acquisition of situational awareness had also been late (**CF1**), and that there had not been enough time for the pilot of the Europa to have taken avoiding action. It

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.

was agreed that, as the pilot of the Europa had not sighted the Ventus until the moment of CPA, that that had effectively constituted a non-sighting (**CF4**).

Summarising their discussions, members agreed that it had been the effective non-sighting of the Ventus by the pilot of the Europa, and the late alert provided to the pilot of the Ventus to the presence of the Europa that had reduced safety in this encounter to much below the norm. It was agreed that there had been a risk of collision (**CF5**) and it had largely been the last minute avoiding action by the pilot of the Ventus that had increased the separation between the aircraft. As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2023093			
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	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
3	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
4	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			
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: B.

Safety Barrier Assessment[3]

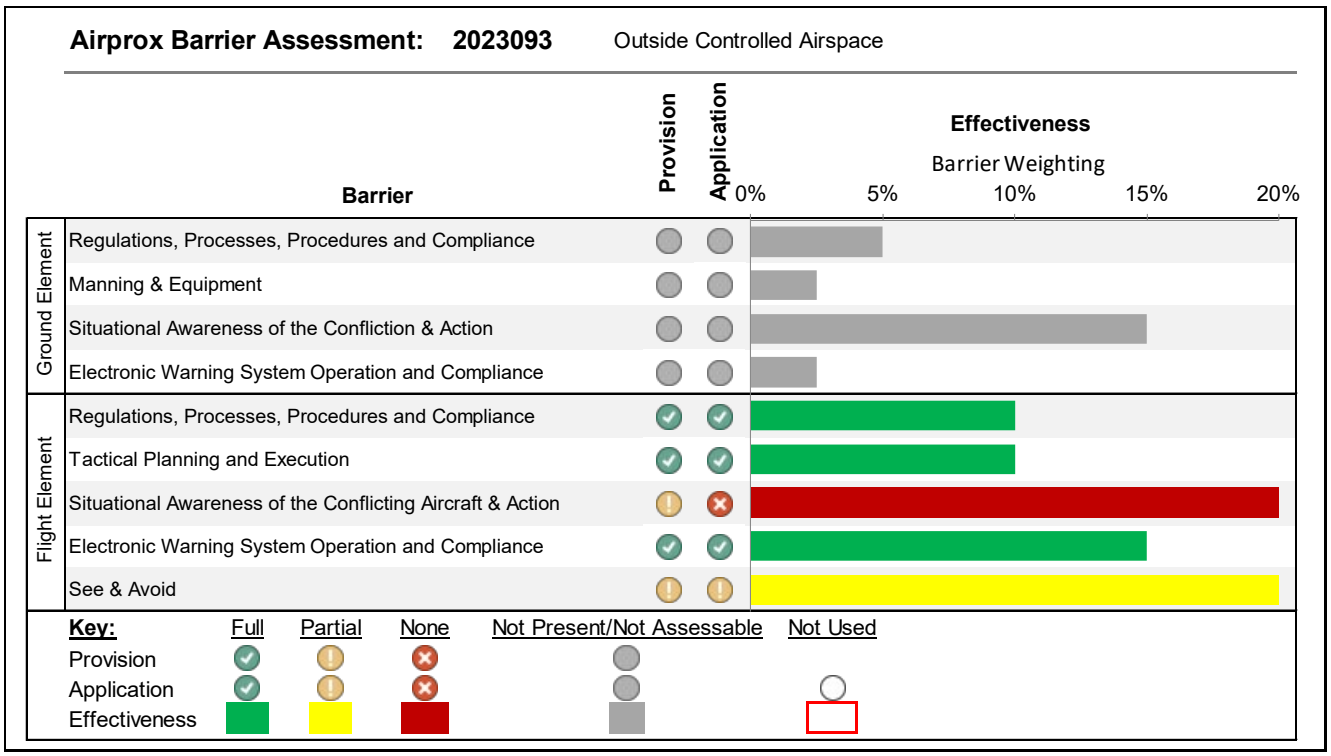
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the pilot of the Europa had garnered situational awareness of the presence of the Ventus too late to have been able to have taken avoiding action.

See and Avoid were assessed as **partially effective** because the pilot of the Ventus had taken late action to have avoided the Europa.

[3] 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: 2023093
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