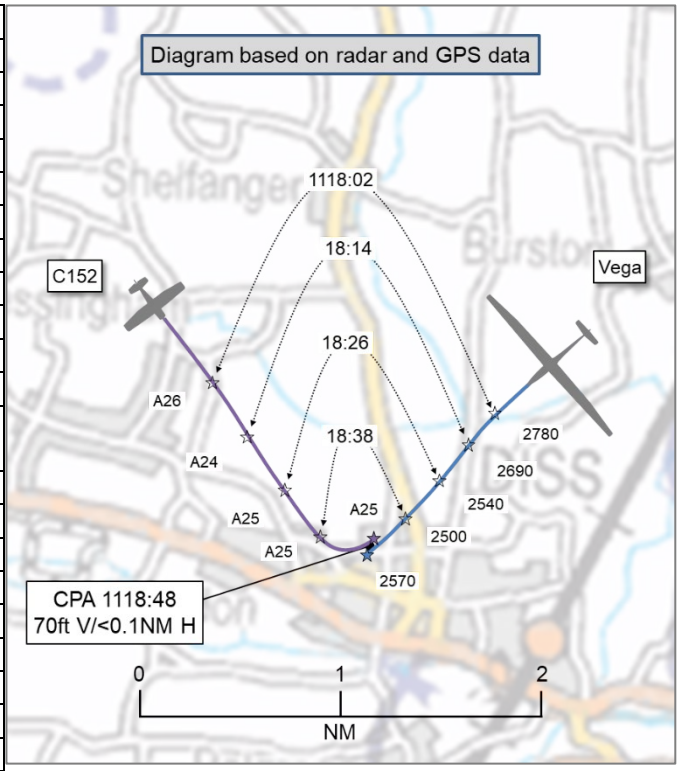
AIRPROX REPORT No 2024168

Date: 17 Jul 2024 Time: 1119Z Position: 5223N 00106E Location: Diss

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Slingsby Vega	C152
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	Listening Out
Provider	(Tibenham)	(Wattisham)
Altitude/FL	2570ft	2500ft
Transponder	A[1]	A, C, S
Reported		
Colours	White	White/blue
Lighting	Not fitted	Land/Taxy, strobe, beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2600ft	2000ft
Altimeter	QNH (1020hPa)	QNH (1020hPa)
Heading	~180°	NR
Speed	65kt	90kt
ACAS/TAS	FLARM	SkyEcho
Alert	None	None
Separation at CPA		
Reported	100ft V/100ft H	Not seen
Recorded	70ft V/<0.1NM H	



THE VEGA PILOT reports on a routine cross-country gliding task, heading to the first turn point at Great Ashfield. The first thermalling climb after starting was to cloudbase, roughly 2800ft QNH. On leaving the thermal they flew directly towards Great Ashfield, routing over Diss. Soon after leaving the thermal, they saw a single-engine, high-wing light aircraft at a range of about ½ a mile, transiting from right-to-left and some 200-300ft below. They felt there was no risk of collision as they were descending slowly as they progressed. They became aware relatively suddenly that the aircraft executed a climbing turn to the left, passing about 100ft below and the same distance horizontally. They deemed avoiding action was not necessary because they were visual with the aircraft, and it was taking avoiding action. They judged the best course was to maintain their direction of travel, as a turn away would have left them unable to see them as they would pass behind.

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

THE C152 INSTRUCTOR reports conducting a general handling lesson in the local area. Lookout was conducted before each manoeuvre and in no situation was a threat identified. However, during the turn overhead Diss a glider was seen midway through the turn, although around 700ft higher and further to their left by about 2NM. The turn was completed onto a reciprocal heading and the flight continued for another 30min before returning to base.

[1] Reported as A, C, S but only Mode A observed on radar replay. Vega altitudes were derived from GPS log information.

Factual Background

The weather at Wattisham was recorded as follows:

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METAR EGUW 171120Z 24005KT 9999 FEW032 20/13 Q1020 NOSIG RMK BLU BLU=
TAF EGUW 171025Z 1712/1721 27008KT 9999 FEW035=
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Analysis and Investigation

UKAB Secretariat

The Vega and C152 pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.[2] If the incident geometry is considered as converging then the C152 pilot was required to give way to the Vega.[3]

Comments

AOPA

Until the Department for Transport decides on a common form of electronic conspicuity system and sufficient funding for a comprehensive LARS system, effective lookout is [often] the only tool left in the pilot's basket for mid-air collision avoidance in Class G airspace, which in this case worked.

BGA

The carry-on CAP 1391 ADS-B based TAS on board the C152 can also be configured to receive transmissions from the EC equipment carried by almost all gliders (including this Vega) and display nearby glider traffic via participating EFB applications. Using this option would provide a useful additional safety barrier in airspace where gliders operate.

The EC equipment fitted to the Vega (and in fact almost all gliders) warns of impending conflicts with other similarly equipped aircraft. This system mitigates the risk of Airprox with other gliders, but basic installations do not detect aircraft equipped only with a transponder or a CAP 1391 ADS-B out device, as was the C152 in this case. However, recent versions of this EC equipment can optionally include a 1090MHz receiver subsystem, and thereby warn of conflicts with transponder and ADS-B out equipped aircraft. Updating glider EC hardware to add such a 1090MHz receiver subsystem would provide a useful additional safety barrier in airspace with a high density of transponder or ADS-B out equipped aircraft.

Summary

An Airprox was reported when a Slingsby Vega and a Cessna 152 flew into proximity near Diss at 1119Z on Wednesday 17th July 2024. Both pilots were operating under VFR in VMC, neither in receipt of a FIS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and GPS 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.

Members first discussed the pilots' actions and noted that the Vega pilot had surmised that the C152 pilot had been taking avoiding action when they had made their climbing left turn, or in other words that the C152 pilot had been visual with them, which transpired not to have been the case. The Board commented that this was a potentially hazardous assumption that could result in a very much reduced

[2] (UK) SERA.3205 Proximity.
[3] (UK) SERA.3210 Right-of-way (c)(2) Converging.

separation at CPA and that, when in close proximity, action based on the assumption that the other pilot had not obtained visual acquisition was perhaps a safer strategy. In the event, the Vega pilot had kept the C152 in sight which allowed them to re-assess collision risk as the C152 pilot unexpectedly turned towards them. The C152 instructor had reported seeing another glider, but this had been at a much larger horizontal separation than that shown on radar and GPS track log between the Vega and C152, and correlated with another glider to the east of Diss. Neither pilot had been in receipt of a FIS, which the Board felt could have helped prevent an Airprox. It was noted that either Marham or Norwich could have provided a LARS and that both aircraft had been equipped for their pilots to take advantage of that potential source of situational awareness (**CF1**). The Board commended the Vega pilot for investing the time and money to fit an SSR transponder, but unfortunately the pilots' TAS equipment had been incompatible (**CF3**) and neither pilot had received an EC-based warning. Members endorsed the BGA comment regarding inclusion of the 1090MHz receiver subsystem within glider pilots' FLARM equipment and expressed their desire for the UK regulator to establish a common EC standard for TAS in the near future. In consequence, neither pilot had had situational awareness of the other aircraft before visual sighting (**CF2**) and see-and-avoid had been the only barrier remaining. The Vega pilot had seen the C152 at a reported range of ½ mile but had incorrectly assumed the C152 pilot had seen the Vega, whereas in fact the C152 pilot had not (**CF4**), thereby weakening the see-and-avoid barrier. The Vega pilot had initially assessed that sufficient separation could be maintained but the C152 pilot's subsequent manoeuvre had significantly reduced separation at CPA and understandably caused the Vega pilot concern (**CF5**). The Board discussed the risk with one member opining that collision had only been avoided by providence, Risk A, because the Vega pilot could only assess the reducing separation at a late stage and lacked the necessary manoeuvrability to effectively avoid the C152 had it been on a collision course at such a reduced range. However, members discussed the situation further, agreed that the C152 had not been on a collision course and felt by a majority that separation at CPA and the non-sighting by the C152 pilot had resulted in a situation where safety had been much reduced, Risk B (**CF6**).

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024168			
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	• 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
5	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft
	• Outcome Events			
6	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[4]

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

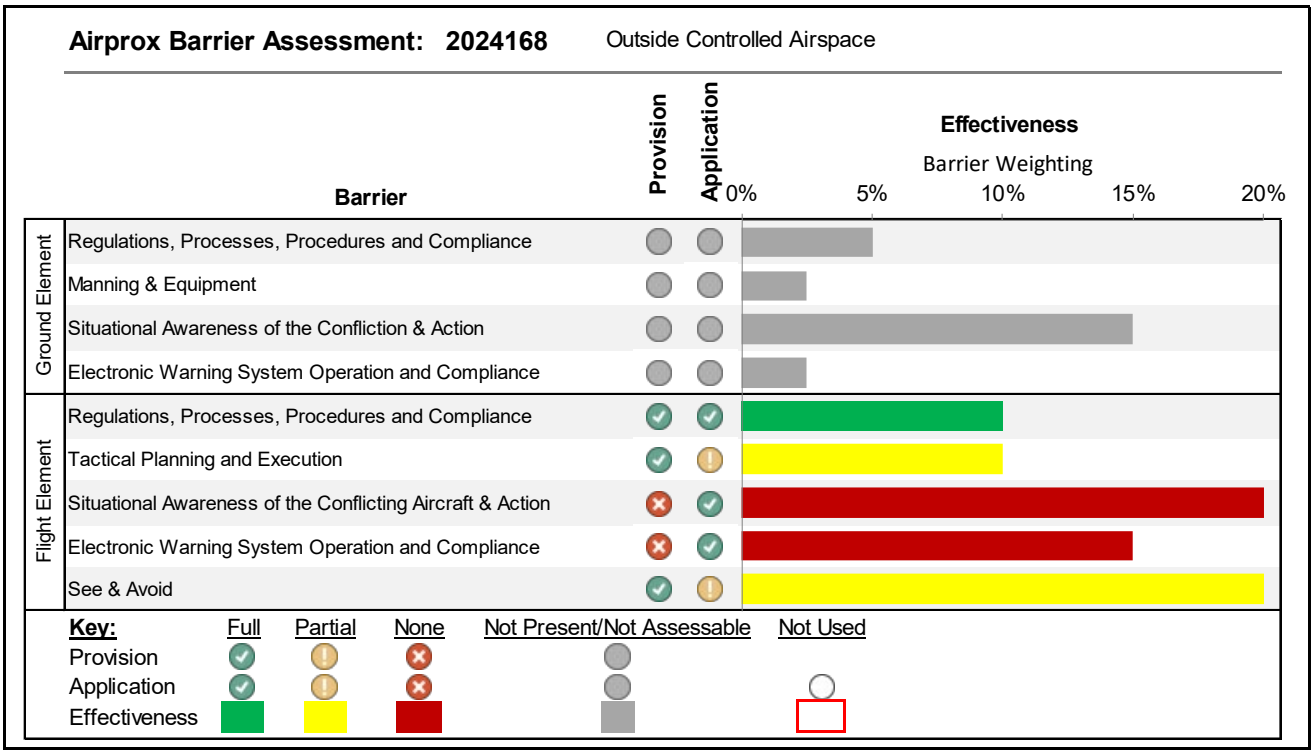
Flight Elements:

Tactical Planning and Execution were assessed as **partially effective** because neither pilot elected to obtain a FIS.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither pilot had situational awareness of the other aircraft before visual sighting.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because neither TAS was compatible with the other.

See and Avoid were assessed as **partially effective** because the C152 pilot had not seen the Vega and the Vega pilot was only able to assess that the aircraft would not collide at a late stage, as the C152 pilot made their manoeuvre.



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