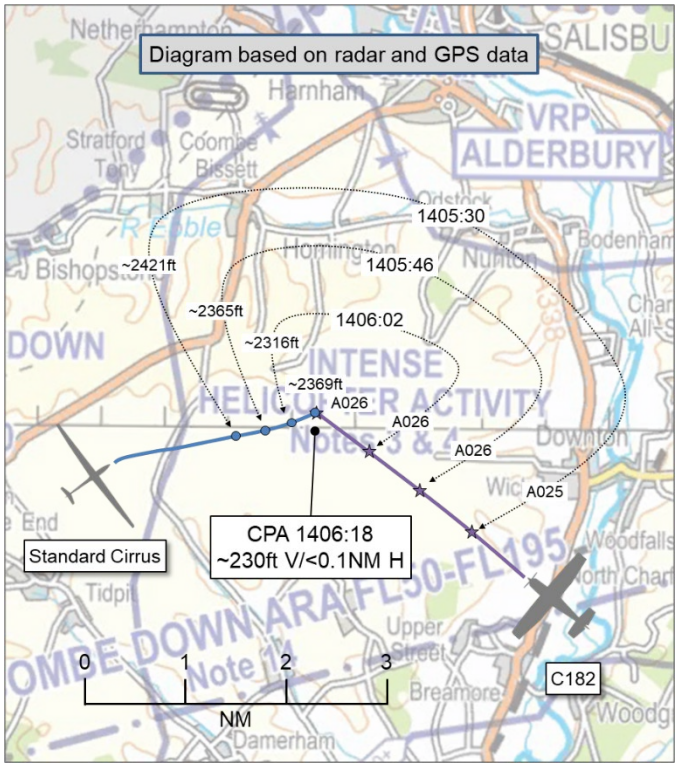
AIRPROX REPORT No 2024042

Date: 30 Mar 2024 Time: 1406Z Position: 5100N 00150W Location: 4.5NM SSW Salisbury

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	Standard Cirrus	C182
Operator	Civ Gld	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	Listening Out	None
Provider	Lasham	N/A
Altitude/FL	~2369ft[1]	2600ft
Transponder	Not fitted	A, C, S
Reported		
Colours	White	White
Lighting	None	Strobes, beacon
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2400ft	2400ft
Altimeter	QNH	QNH
Heading	090°	315°
Speed	55kt	140kt
ACAS/TAS	FLARM	SkyEcho
Alert	None	None
Separation at CPA		
Reported	10ft V/15m H	50ft V/0m H
Recorded	~230ft V/<0.1NM H	



THE STANDARD CIRRUS PILOT reports that a cross-country flight was in progress and they were about 43NM out of gliding range from their place of take-off [they recall]. The weather conditions were calm, however updrafts were beginning to deteriorate in the area meaning the workload to stay airborne was higher than usual. They were heading approximately 080° when they noticed (in the 2 o'clock position) a high-wing Cessna 210 [they believe] that was flying head-on to them. By that time, they had very little time to react and had only managed to do minor actions to avoid a collision (forward pressure on the control stick in order to lower the nose). They believe the Cessna pilot did initiate some action with some pitch-up.

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

THE C182 PILOT reports that they had flown from [take-off airfield] to [the south coast] via the Lasham area. Farnborough Radar had been very busy and, although they had been unable to make a call, they selected a listening squawk and noted that dense glider activity was reported in the Lasham area. No competitions had been notified on the competition web. After transiting the area, giving it a wide berth and looking out intensively, they decided that they would return to [their take-off airfield], via the south coast, away from the Lasham area.

They had flown under the Bournemouth [Solent] CTA south-to-north via Stoney Cross using their listening squawk and frequency. Once clear, they climbed to 2400ft on the given QNH and were changing the frequency to Boscombe Zone 126.700MHz when they noticed a glider on the port side. It was already descending when they saw it. Before they could initiate any useful action, [the glider] had flown under them.

[1] GPS-derived altitude.

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

Factual Background

The weather at Boscombe Down was recorded as follows:

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METAR EGDM 301420Z AUTO 17008KT 9999 NCD 13/04 Q0994
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Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the C182 was positively identified from Mode S data. Four seconds before CPA, the C182 transponder squawk changed from the Bournemouth Frequency Monitoring Code (0011) to the VFR conspicuity code (7000) (Figure 1). The Standard Cirrus was not observed on radar.

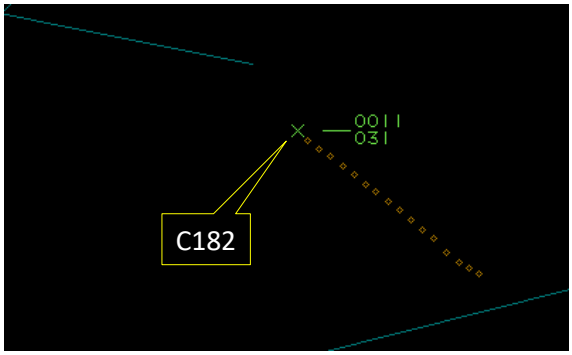

Figure 1 - 1406:14

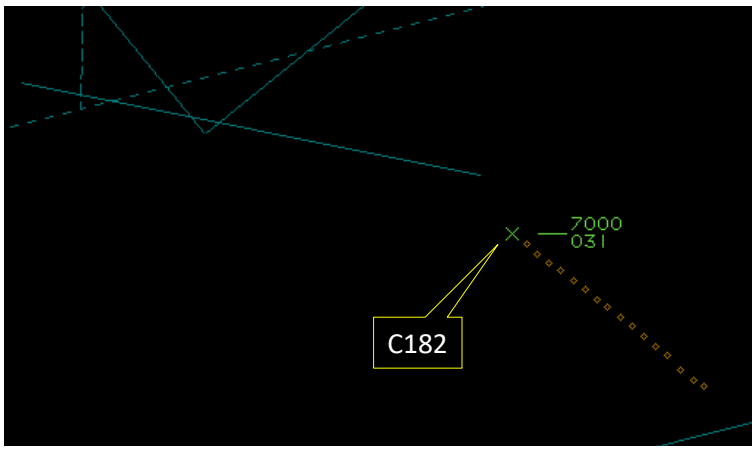

Figure 2 – CPA at 1406:18

Both pilots kindly supplied GPS track data for their respective flights. It was by combining the various data sources that the diagram was constructed and the separation at CPA determined.

The Standard Cirrus and C182 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 C182 pilot was required to give way to the Standard Cirrus.[3]

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

Comments

AOPA

This Airprox is another example of where the incompatibility of electronic conspicuity devices led to no alert for the respective pilots.

This Airprox also shows how ineffective it had been to have remained tuned to a VHF frequency where no service can be provided due to the range from the base unit.

BGA

With no interoperable Electronic Conspicuity between the glider and C182, and neither in receipt of an ATS, see-and-avoid was the only operating MAC safety barrier here. However, this incident once again highlights the difficulty of seeing an aircraft approaching at a similar altitude on a constant relative bearing.

The TAS fitted to the C182 can be configured to receive transmissions from the EC equipment carried by almost all gliders (including the Standard Cirrus) and display nearby glider traffic via participating EFB applications. Using this option could provide a useful additional safety barrier in airspace where gliders operate.

Summary

An Airprox was reported when a Standard Cirrus and a C182 flew into proximity 4.5NM south-southwest of Salisbury at 1406Z on Saturday 30th March 2024. Both pilots were operating under VFR in VMC, the Standard Cirrus pilot listening-out on the Lasham frequency and the C182 pilot not in receipt of an ATS.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, GPS data and radar photographs/video recordings. 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 Standard Cirrus and it was noted that they had tuned their radio to the Lasham frequency. Members agreed that listening-out on that particular frequency would not have provided any useful information on the traffic situation for the area in which they had been flying at the time of the encounter with the C182. A member with particular knowledge of gliding operations explained that, even without making any transmissions, simply monitoring a frequency would have consumed some (resource-limited) battery power. Nevertheless, members were in agreement that, if the consumption of battery power had not been a concern, it would have been far more prudent to have monitored a more appropriate frequency. Further, that if the pilot of the Standard Cirrus had held a FRTOL, that it may have been most prudent to have been in receipt of a service from an appropriate ATSU.

It was agreed that the EC equipment fitted to the Standard Cirrus would not have been expected to have detected the presence of the C182 (**CF2**). It was further agreed that, without a common frequency in use between the pilots, that Standard Cirrus pilot had not had situational awareness of the presence of the C182 in the area (**CF1**). Notwithstanding, members noted that the C182 had been visually acquired moments before CPA and that urgent avoiding action had been initiated. It was therefore agreed that the pilot of the Standard Cirrus had sighted the C182 late (**CF3**) but that their last-minute actions had increased separation between the aircraft.

Turning their attention to the actions of the pilot of the C182, members noted that they had been monitoring the Bournemouth frequency and had selected the Bournemouth Frequency Monitoring Code. Noting that the pilot of the C182 had subsequently reverted to squawking the VFR conspicuity code and had been in the process of tuning their radio to a new frequency, members agreed that it had been unfortunate that they had not been in receipt of a suitable service in the moments leading up to

CPA. Members noted that the C182 had been fitted with an EC device but agreed that it would not have been expected to have detected the presence of the Standard Cirrus (**CF2**). It was therefore agreed that the pilot of the C182 had not had situational awareness of the Standard Cirrus in the area (**CF1**). Members noted that the Standard Cirrus had been visually acquired at the moment of CPA and that the pilot of the C182 had not had time to have taken any avoiding action. It was therefore considered by members to have, effectively, been a non-sighting (**CF4**).

Members considered the recorded separation between the aircraft at CPA. A member with particular knowledge of data-recording explained that the altitudes taken from the device fitted to the Standard Cirrus had been internally-calculated from a GPS source (as opposed to having been derived from barometric measurements) and that the altitudes observed on the radar replay (taken from the Mode C transmissions from the transponder fitted to the C182) had both some degree of tolerance and inherent inaccuracy. It was therefore agreed by members to give greater weight to the assessment of separation as reported by the pilots. Both pilots had assessed that the separation had been significantly closer than the approximation of 230ft that the recorded data had suggested.

Concluding their discussion, members summarised their thoughts. It was agreed that neither pilot had had situational awareness of the other aircraft and that neither pilot had sighted the other in time to have taken early action to increase separation. Members were in agreement that safety margins had been much reduced below the norm and that there had been a risk of collision (**CF5**). It was agreed that the actions of the pilot of the Standard Cirrus, which had increased separation at the last minute, may have averted a far more serious outcome. As such, the Board assigned Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024042			
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	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			
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[4]

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

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 neither pilot had situational awareness of the presence of the other aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment fitted to each aircraft would not have been expected to have detected the presence of the other aircraft.

See and Avoid were assessed as **partially effective** because the pilot of the C182 had not visually acquired the Standard Cirrus until the moment of CPA.