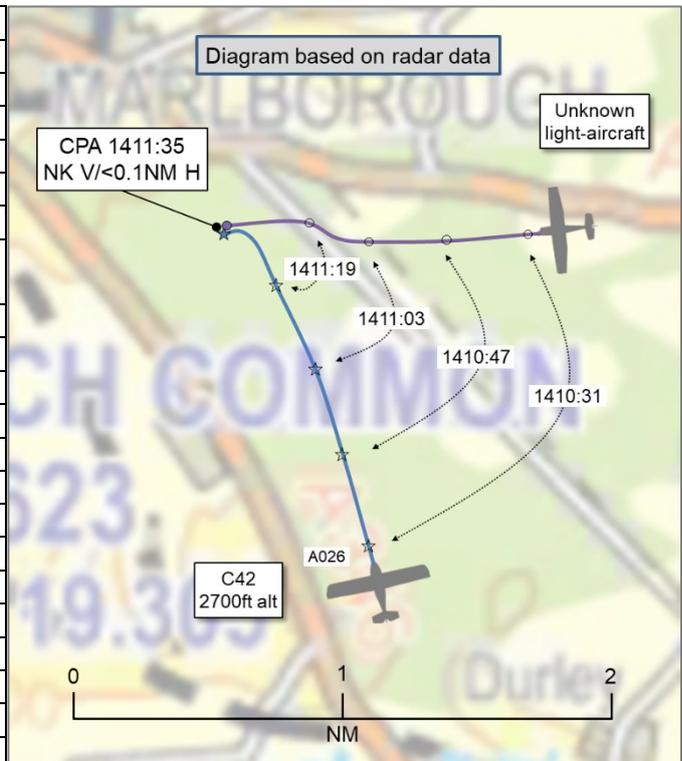


AIRPROX REPORT No 2022218

Date: 21 Sep 2022 Time: 1412Z Position: 5124N 00142W Location: 1.5NM SE Marlborough

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C42	Unk Light-aircraft
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	NK
Service	Listening Out	NK
Provider	SafetyCom, Boscombe Down	N/A
Altitude/FL	2700ft	NK
Transponder	A, C, S	None
Reported		
Colours	White, Green	NK
Lighting	Strobe	NK
Conditions	VMC	NK
Visibility	>10km	NK
Altitude/FL	2689ft	NK </td
Altimeter	QNH (1026hPa)	NK
Heading	342°	NK
Speed	83kt	NK
ACAS/TAS	SkyEcho	Unknown
Alert	None	N/A
Separation at CPA		
Reported	15ft V/10m H	N/A
Recorded	NK V/<0.1NM H	



THE C42 PILOT reports that they were flying a return leg from [departure airport] to [destination airfield], with good visibility and were flying straight and level over Savernake Forest, to the east of Clench Common. Their radio was tuned to SafetyCom, 135.480MHz, with Boscombe Zone 126.700MHz on dual-watch. Their passenger, though not a pilot, was aviation aware and, as usual, they had briefed them to watch out for other traffic. They observed other aircraft both [visually and on their EC equipment] and were attempting to maintain situational awareness by listening to Boscombe. The [Airprox] aircraft (maybe a Skyranger) appeared from their right at a similar level, and immediate severe avoiding action was taken, with a sharp turn to the left. After an orbit and resuming course, they saw the other aircraft at similar level about 2NM miles to the west.

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

THE UNKNOWN LIGHT-AIRCRAFT PILOT could not be traced.

Factual Background

The weather at Boscombe Down was recorded as follows:

METAR EGDM 211350Z 16006KT CAVOK 20/08 Q1025 NOSIG RMK BLU BLU
 METAR EGDM 211420Z 17007KT 9999 SCT049 19/08 Q1024 NOSIG RMK BLU BLU

Analysis and Investigation

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and the C42 was detected and identified using Mode S data. The unknown light-aircraft was detected as a primary-only radar contact with no associated data to enable identification. Extensive and exhaustive efforts were made to trace the unknown light-aircraft, which involved attempting to identify either the departure or destination airfield; however, the primary-only radar return faded and so this was not possible. Airfields in the locality of the Airprox were contacted, none had had any aircraft movements that could have been the unknown light-aircraft.

The C42 pilot's reported left turn avoiding action was detected and recorded by the radar one radar sweep, 4secs, before CPA, and their reported orbit was observed after CPA.

The primary-only return of the unknown light-aircraft was subject to a small amount of radar jitter and, although the trace shows a track adjustment prior to CPA this may not be entirely representative of the aircraft's actual flight path.

The C42 and unknown light-aircraft 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 converging then the C42 pilot was required to give way to the unknown light-aircraft.²

Summary

An Airprox was reported when a C42 and an unknown light-aircraft flew into proximity 1.5NM southeast of Marlborough at 1412Z on Wednesday 21st September 2022. The C42 pilot was operating under VFR in VMC, not in receipt an ATS and the unknown light-aircraft pilot could not be traced.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of a report from the C42 pilot 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 C42 pilot and was encouraged that the pilot had had EC equipment with them, however, noted that, as the other aircraft had not been detected on radar, it had likely not been carrying any compatible equipment and so the EC equipment had not alerted (**CF2**). Members discussed that the C42 pilot had been listening-out on both the Boscombe frequency and SafetyCom, and wondered whether the pilot may have been better served by a different ATC agency, however, it was agreed that the pilot's selections had been appropriate. The Board agreed that the C42 pilot had not had any mechanism to build awareness of the presence of the unknown light-aircraft and had therefore had none (**CF1**). A GA pilot member stated that, with the absence of any prior awareness of the presence of the unknown light-aircraft, the C42 pilot had demonstrated good lookout skills in becoming visual with it, however, members agreed that this has been at a later than optimum stage (**CF3**).

Next, members discussed the unknown light-aircraft and were disappointed that, despite the efforts made, the tracing action had been unsuccessful. However, members studied the radar data available showing the lateral flight path of the aircraft, and noted the apparent slight course adjustment prior to CPA. Unfortunately, the Board was unable to determine whether or not this had been a form of avoiding action, a track adjustment for another reason or radar jitter.

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(2) Converging.

Finally, in assessing the risk of collision, the Board agreed that, although the C42 pilot had been carrying EC equipment, this had likely been incompatible with any equipment the unknown light-aircraft pilot had carried, and so it had not issued an alert. Members commented that whilst the C42 pilot had become visual with the unknown light-aircraft, this had been at a later than optimum point, meaning they had had to take emergency avoiding action. Members agreed that, in this case, safety had not been assured and that there had been a risk of collision (**CF4**). Accordingly, the Board assigned a Risk Category B to this Airprox.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2022218				
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
• Outcome Events				
4	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 Assessment³

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 C42 pilot had not had any awareness of the presence of the unknown light-aircraft prior to sighting it.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the EC equipment carried by the C42 pilot had been unable to detect, and had therefore been incompatible with, equipment carried (if carried) on the unknown light-aircraft.

See and Avoid were assessed as **partially effective** because, although the C42 pilot had become visual with the unknown light-aircraft, this had been at a later than optimum time.

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: 2022218		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								