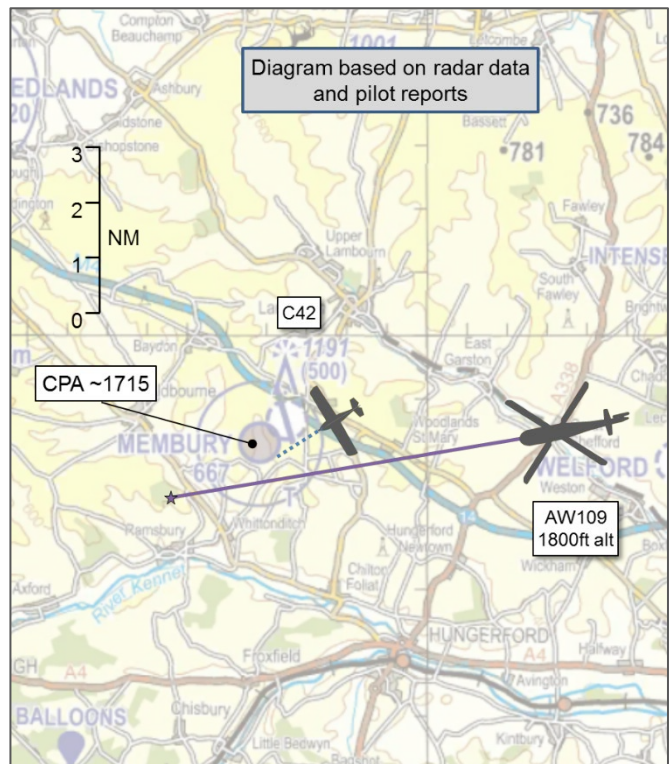


**AIRPROX REPORT No 2019253**

Date: 29 Aug 2019 Time: 1715Z Position: 5128N 00126W Location: 7nm SE Swindon

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	C42	AW109
Operator	Civ FW	Civ Helo
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	Listening Out
Provider	Popham	Brize
Altitude/FL	NK	1800ft (approx. 1150ft aal)
Transponder	Not fitted	A, C, S
Reported		
Colours	White, Green	Grey
Lighting		Anti-Cols, Strobes, Nav
Conditions	VMC	VMC
Visibility	15km	>10km
Altitude/FL	1800ft	1800ft
Altimeter	QNH (1021hPa)	NK
Heading	230°	260°
Speed	65kt	148kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	None
Separation		
Reported	80ft V/20m H	Not Seen
Recorded	NK	



**THE C42 PILOT** reports that he was approaching Membury airfield from the direction of Lamborn/Eastbury to the northwest. He was flying at around 1200ft agl when a blue helicopter, which looked like an Agusta, flew beneath him at speed. Vertical separation was uncomfortable and lateral separation was even more so. He was on a heading of about 230° and the helicopter was on a heading of about 200°, traveling approximately twice his airspeed. By the time he was aware the danger had passed. He opined that it was possible that the other pilot saw him and left what the pilot judged to be a safe enough margin but he was concerned the pilot was unaware of the Airprox, close to an airfield traffic pattern.

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

**THE AW109 PILOT** reports that neither pilot saw the other aircraft at any time.

**Factual Background**

The weather at Brize Norton was recorded as follows:

METAR EGVN 291150Z 24008KT 9999 SCT036 SCT060 BKN250 19/11 Q1020 NOSIG RMK BLU BLU=

## Analysis and Investigation

### UKAB Secretariat

The AW109 is visible on the NATS radars, indicating 1800ft as it transits to the south of Membury airfield. Membury airfield elevation is 667ft, putting the helicopter at approximately 1133ft aal. The C42 is not visible on the radar and therefore the exact separation is not known.

The C42 and AW109 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>. An aircraft operated on or in the vicinity of an aerodrome shall conform with or avoid the pattern of traffic formed by other aircraft in operation<sup>2</sup>.

### Summary

An Airprox was reported when a C42 and a AW109 flew into proximity in the vicinity of Membury, at 1715hrs on Thursday 29th August 2019. Both pilots were operating under VFR in VMC, neither pilot was in receipt of an ATS.

### **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available consisted of reports from the pilots of both aircraft 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 looked at the actions of the C42 pilot. He was making an approach to Membury airfield when he saw the AW109 pass beneath him. Without a CWS or an ATS he had no way of knowing the AW109 was in the vicinity (**CF6, CF7**) and because it approached from behind him, he couldn't see it until it was too late to take any avoiding action (**CF8**). The Board agreed that there was very little more he could have done to avoid the Airprox.

Turning to the AW109 pilot, members noted that he was transiting through the area without an ATS so also couldn't receive any situational awareness from ATC. They also noted that his TAS couldn't detect the non-squawking C42, and so had no knowledge that the C42 was there (**CF6, CF7**). Noting that he was listening out on the Brize frequency, members wondered why he hadn't called them; without doing so, any situational awareness would be limited to what he could hear on the radio but a controller may have been able to see the C42 on his radar and have given Traffic Information (**CF5**). Members with experience of flying the AW109 noted that the visibility from the cockpit wasn't as good as in other helicopters, making an ATS all the more valuable. The Board noted that Membury airfield was prominently displayed on the charts and members thought that the pilot should have planned to route either further to the south, avoiding the airfield altogether, or at a higher altitude, above any circuit traffic (**CF2, CF3**); it was for him to avoid the pattern of traffic formed by aircraft in the Membury circuit (**CF1, CF4**). As it transpired, he did not have any situational awareness about the C42, did not see it and so was unable to take avoiding action (**CF8**).

Although Membury was marked on the charts, it did not have the protection of an ATZ. Members noted that they had previously made a recommendation to the CAA that they investigate options to afford additional protection to traffic operating out of busy minor aerodromes that do not have an ATZ, and had been told that the CAA would conduct a review that was due to be initiated in Q1 2020<sup>3</sup>.

In assessing the risk of the Airprox, members thought that this had been a situation where providence had played a major part in events, neither pilot had seen the other in time to take any avoiding action and separation had been reduced to the minimum. Accordingly they assessed the risk as Category A, a serious risk of collision.

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

<sup>2</sup> SERA.3225 Operation on and in the Vicinity of an Aerodrome.

<sup>3</sup> Recommendation for Airprox 2018319, issued May 2019.

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

	2019253		
CF	Factor	Description	Amplification
	<b>Flight Elements</b>		
	<b>• Regulations, Processes, Procedures and Compliance</b>		
1	Human Factors	• Flight Crew ATM Procedure Deviation	Regulations/procedures not complied with
	<b>• Tactical Planning and Execution</b>		
2	Human Factors	• No Decision/Plan	Inadequate planning
3	Human Factors	• Action Performed Incorrectly	Incorrect or ineffective execution
4	Human Factors	• Aircraft Navigation	Did not avoid/conform with the pattern of traffic already formed
5	Human Factors	• Communications by Flight Crew with ANS	Appropriate ATS not requested by pilot
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
6	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	<b>• Electronic Warning System Operation and Compliance</b>		
7	Technical	• ACAS/TCAS System Failure	Incompatible CWS equipment
	<b>• See and Avoid</b>		
8	Human Factors	• Monitoring of Other Aircraft	Non-sighting or effectively a non-sighting by one or both pilots

**Degree of Risk:** A.

**Safety Barrier Assessment<sup>4</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:**

**Regulations, Processes, Procedures and Compliance** were assessed as **ineffective** because the AW109 pilot did not avoid the pattern of traffic in the Membury circuit.

**Tactical Planning and Execution** was assessed as **ineffective** because the AW109 pilot should have known Membury airfield existed (it is marked on the charts) and therefore could have planned to route further south, away from the airfield, or at a higher altitude above any circuit traffic.

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot had any situational awareness that the other was there.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the TAS on the AW109 could not detect the non-squawking C42.

**See and Avoid** were assessed as **ineffective** because the AW139 pilot did not see the C42 and the C42 pilot did not see the AW139 in time to take any avoiding action.

<sup>4</sup> 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: 2019253** 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	⊗	⊗					
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	●	●	⊗	●				
Application	●	●	⊗	●	○			
Effectiveness	■	■	■	■	□			