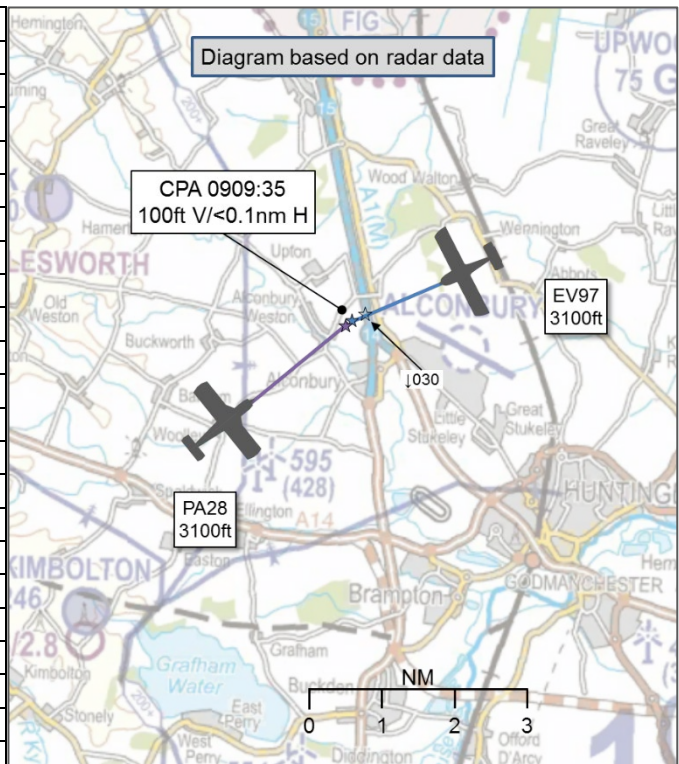


**AIRPROX REPORT No 2019283**

Date: 23 Sep 2019 Time: 0909Z Position: 5222N 00015W Location: Alconbury

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	EV97	PA28
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Provider		
Altitude/FL	3100ft	3000ft
Transponder	A, C, S	A, C
<b>Reported</b>		
Colours	Silver	Blue, White
Lighting	Nil	
Conditions	VMC	VMC
Visibility	30km	N/R
Altitude/FL	3000ft	3000ft
Altimeter	QNH (1011hPa)	QNH
Heading	270°	065°
Speed	80kt	100kt
ACAS/TAS	Not fitted	Not fitted
<b>Separation</b>		
Reported	100ft V/100m H	2-300ft V/0m H
Recorded	100ft V/<0.1nm H	



**THE EV97 PILOT** reports that he was overhead Alconbury when he saw a low-wing aircraft about 250m away, on a reciprocal track, and approximately 100ft above. It was too late to take avoiding action, although he believed the other pilot saw him at the same time because the aircraft appeared to start a turn to the left.

The pilot assessed the risk of collision as ‘High’.

**THE PA28 PILOT** reports that he was conducting an instructional flight in the Grafham Water area and was in the process of changing frequency from Cranfield to Conington when the student reported seeing traffic in the 12 o’clock. It was heading west and 2-300ft below. They hadn’t seen it earlier due to the scattered cloud at 1800ft. The instructor took control of the aircraft, he could see the traffic was slightly to the right of them and it passed below. He saw the other pilot look up as he passed below, so he thought it might have been the first time he had seen them.

The pilot assessed the risk of collision as ‘Medium’.

**Factual Background**

The weather at Cambridge was recorded as follows:

METAR EGSC 230850Z 22011KT 9999 FEW012 16/12 Q1011=

**Analysis and Investigation**

**UKAB Secretariat**

Although neither pilot was receiving an ATS, the Airprox could be seen on the NATS radar recording. Figure 1 shows the two aircraft when 3.2nm apart, both are indicating 3100ft. The two aircraft close

with each other and, at 0909:31 (Figure 2), when 0.3nm apart, the EV97 Mode C indicates 3000ft. CPA occurs between radar sweeps as the two aircraft cross 100ft apart.

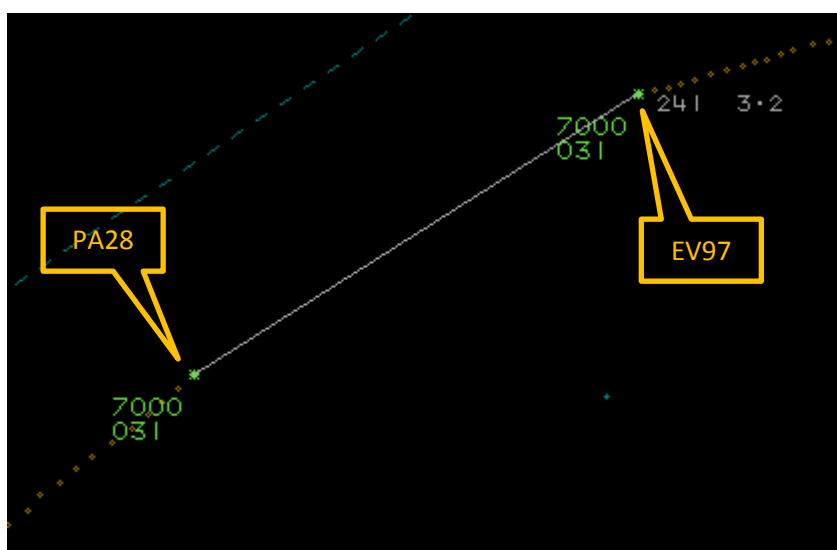


Figure 1: 0908:42

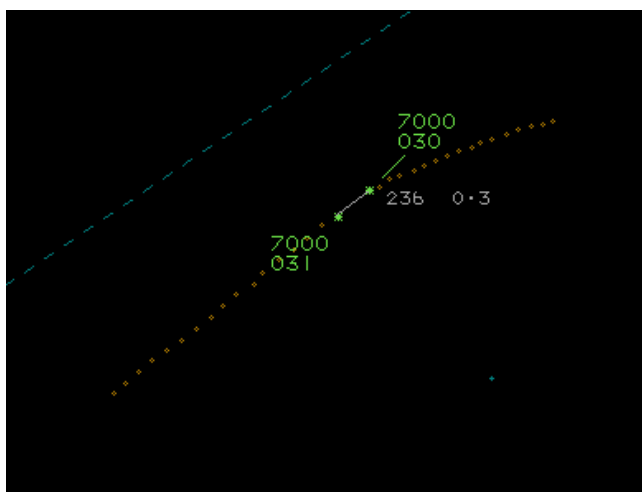


Figure 2: 0909:31

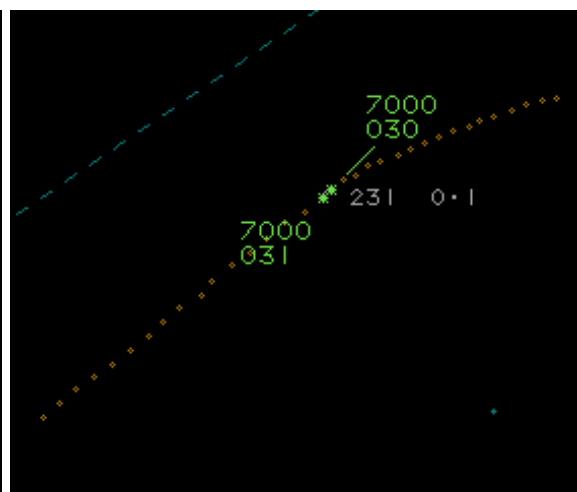


Figure 3: 0909:35

The EV97 and PA28 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> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>2</sup>

## Summary

An Airprox was reported when an EV97 and a PA28 flew into proximity near Alconbury at 0909hrs on Monday 23<sup>rd</sup> September 2019. Both pilots were operating under VFR in VMC, neither were 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.

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

<sup>2</sup> SERA.3210 Right-of-way (c)(1) Approaching head-on.

Due to the exceptional circumstances presented by the coronavirus pandemic, this incident was assessed as part of a 'virtual' UK Airprox Board meeting where members provided a combination of written contributions and dial-in/VTC comments. Although not all Board members were present for the entirety of the meeting and, as a result, the usual wide-ranging discussions involving all Board members were more limited, sufficient engagement was achieved to enable a formal assessment to be agreed along with the following associated comments.

The Board began by discussing the actions of both pilots. Members noted that the lack of availability of a radar-based surveillance service in that particular part of the UK had been discussed in numerous previous meetings, which probably explained why neither pilot was in receipt of an ATS. Furthermore, because neither aircraft was equipped with a CWS, neither pilot had any prior situational awareness about the other (**CF1**). Members noted that both aircraft were displaying a serviceable transponder on the NATS radars, and so a CWS would likely have provided a warning in this case. The PA28 pilot reported that he hadn't seen the EV97 earlier due to scattered cloud (**CF2**), and, although the exact structure of the cloud could not be known, some members commented that this highlighted the dangers of flying close to cloud. Ultimately, see-and-avoid had been the last remaining barrier to avoiding MAC, but both pilots only saw the other at the very last minute (**CF3**) rendering avoiding-action impossible.

When determining the risk, members were in unanimous agreement that this had been a very close encounter indeed. Neither pilot had managed to take avoiding action, and the PA28 pilot had described being close enough to see the EV97 pilot 'look-up'. That there was 100ft vertical separation was considered to be entirely providential and so, with separation reduced to the bare minimum, the risk was assessed as Category A, a serious risk of collision.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2019283		
CF	Factor	Description	Amplification
	<b>Flight Elements</b>		
	<b>• Situational Awareness of the Conflicting Aircraft and Action</b>		
1	Contextual	• Situational Awareness and Sensory Events	Generic, late, no or incorrect Situational Awareness
	<b>• See and Avoid</b>		
2	Contextual	• Poor Visibility Encounter	One or both aircraft were obscured from the other
3	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>3</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:**

**Situational Awareness of the Conflicting Aircraft and Action** were assessed as **ineffective** because neither pilot was aware of the other aircraft prior to becoming visual.

<sup>3</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

**See and Avoid** were assessed as **ineffective** because neither pilot saw the other in time to take effective avoiding action.

<b>Airprox Barrier Assessment: 2019283</b>		Outside Controlled Airspace		<b>Effectiveness</b>				
<b>Barrier</b>		<b>Provision</b>	<b>Application</b>	0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	○	○	[Bar chart: 5% effectiveness]				
	Manning & Equipment	○	○	[Bar chart: 5% effectiveness]				
	Situational Awareness of the Confliction & Action	○	○	[Bar chart: 15% effectiveness]				
	Electronic Warning System Operation and Compliance	○	○	[Bar chart: 5% effectiveness]				
Flight Element	Regulations, Processes, Procedures and Compliance	✓	✓	[Bar chart: 10% effectiveness]				
	Tactical Planning and Execution	✓	✓	[Bar chart: 10% effectiveness]				
	Situational Awareness of the Conflicting Aircraft & Action	✗	✓	[Bar chart: 20% effectiveness]				
	Electronic Warning System Operation and Compliance	○	○	[Bar chart: 15% effectiveness]				
	See & Avoid	✗	✗	[Bar chart: 20% effectiveness]				
<b>Key:</b>		<u>Full</u>	<u>Partial</u>	<u>None</u>	<u>Not Present/Not Assessable</u>	<u>Not Used</u>		
Provision	✓	○	✗	○				
Application	✓	○	✗	○				
Effectiveness	■	■	■	■	□			