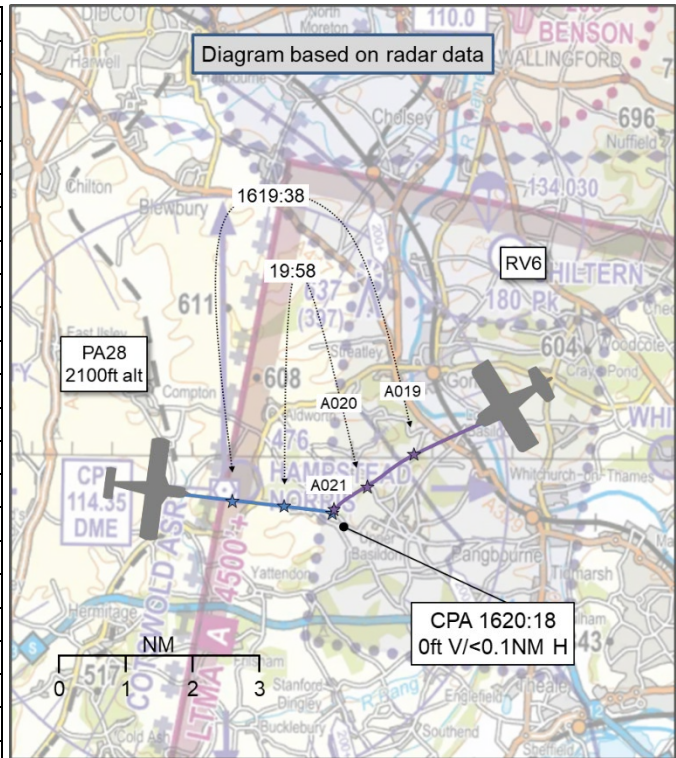


**AIRPROX REPORT No 2022064**

Date: 02 May 2022 Time: 1620Z Position: 5129N 00110W Location: 2NM E CPT VOR

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	Vans RV6
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	None	None
Altitude/FL	2100ft	2100ft
Transponder	A, C, S	A, C, S
<b>Reported</b>		
Colours	White	White, Blue
Lighting	Strobes, Nav	'Standard'
Conditions	VMC	VMC
Visibility	>10km	5-10km
Altitude/FL	2100ft	1200ft
Altimeter	QNH (1020hPa)	QNH
Heading	090°	W/SW
Speed	105kt	120kt
ACAS/TAS	Not fitted	SkyEcho
Alert	N/A	None
<b>Separation at CPA</b>		
Reported	30ft V/50m H	Not Seen
Recorded	0ft V/<0.1NM H	



**THE PA28 PILOT** reports that conditions were poor, despite [visibility] being 10km plus and a relatively high cloudbase. Their student was struggling with workload and procedures, especially with regard to RT. As a result, the instructor had advised them to temporarily focus on flying and sort the radio when they had time. Unfortunately, they had Brize tuned as they had just closed the frequency, prior to tuning to Farnborough West. Normally, the instructor would have had a Farnborough Basic Service, or at least a listening squawk at this point. The other aircraft was seen late approaching 11 o'clock, low, converging, the instructor pulled up and right to avoid it. They believed that had avoiding action not been taken they would have narrowly avoided contact, but it would have been very close. They did not believe the other pilot saw them as no action was taken, and the other pilot appeared to be looking straight ahead.

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

**THE RV6 PILOT** reports that they were unaware of the incident. They had planned a local flight to Popham, but observing an apparent raincloud to the northwest over Benson, they elected to conduct a short local flight before returning to base.

**Factual Background**

The weather at Benson was recorded as follows:

METAR EGUB 021550Z AUTO 33002KT 9999 BKN042/// 14/07 Q1020=

## Analysis and Investigation

### UKAB Secretariat

An analysis of the NATS radar was undertaken. Neither pilot was receiving an ATS, however both aircraft were displaying on the NATS radars, both squawking 7000, with unverified Mode C indicating that the PA28 was at 2100ft and the RV6 was in a climb to 2100ft. At Figure 1, both aircraft were on a converging heading with an indicated 100ft vertical separation. Radar CPA occurred at Figure 2, with both aircraft indicating 2100ft. Actual CPA would have occurred between radar sweeps as the two aircraft crossed.

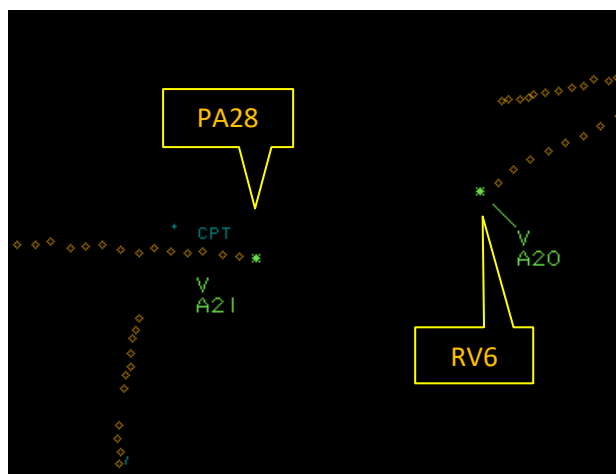


Figure 1 - 1619:44

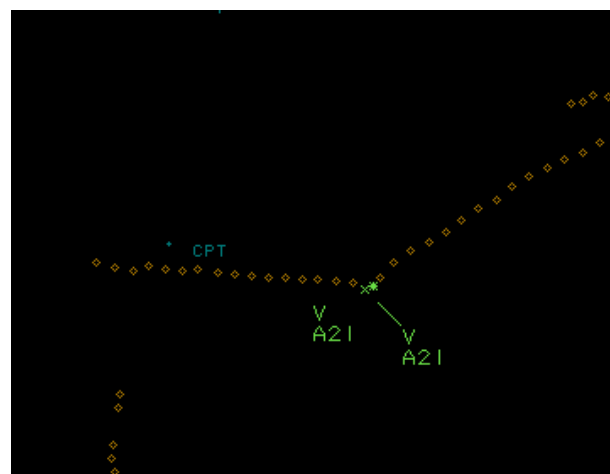


Figure 2 - 1620:18 Radar CPA

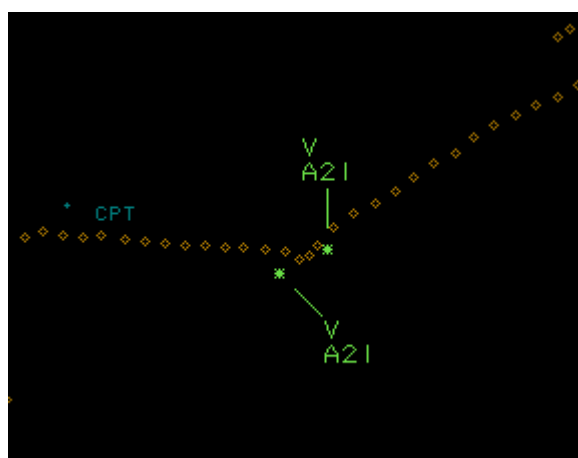


Figure 3 - 1620:22

PA28 avoiding action can be seen on the radar

The PA28 and RV6 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 converging then the RV6 pilot was required to give way to the PA28.<sup>2</sup>

### Summary

An Airprox was reported when a PA28 and an RV6 flew into proximity 2NM east of CPT VOR at 1620Z on Monday 2<sup>nd</sup> May 2022. Both pilots were operating under VFR in VMC, neither was in receipt of an ATS.

<sup>1</sup> (UK) SERA.3205 Proximity.

<sup>2</sup> (UK) SERA.3210 Right-of-way (c)(2) Converging.

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

Information available consisted of reports from both pilots 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 discussed the actions of the PA28 pilot. The instructor reported that the student had been struggling with the workload and so they had returned to the principles of 'aviate, navigate, communicate', and therefore had not called the onward ATC agency for a service once Brize ATC had closed. The Board agreed that this had been the appropriate action, it was therefore unfortunate that at that time, when without an ATS, the two aircraft had been in close proximity. The PA28 had not been fitted with a CWS, and so without an ATS or a CWS the pilot had had no means of receiving prior situational awareness that the RV6 had been approaching (**CF1**). Members noted that the RV6 had been on a constant relative bearing to the PA28 and would therefore have been difficult to see until it had 'bloomed' in the windscreen. As a result the PA28 pilot had seen the RV6 late (**CF3**), but had managed to take avoiding action.

The RV6 pilot was also not receiving an ATS and members commented that, whilst acknowledging it had been a bank holiday and some of the usual ATC units would have been closed, still they thought that it would have been wise to have called Farnborough for a LARS. The CWS carried by the RV6 pilot had not been able to detect the PA28 (**CF2**), consequently, like the PA28 pilot, the RV6 pilot had had no situational awareness that the PA28 had been in the vicinity (**CF1**). Furthermore, the RV6 pilot did not see the PA28 at all (**CF4**).

When determining the risk of the Airprox, members considered the reports from both pilots together with the NATS radar data. Notwithstanding normal radar and transponder tolerances, the radar data indicated that both aircraft had been at the same height, which accorded with the PA28 pilot's estimate that the two aircraft had only been 30ft apart. Therefore, members agreed that safety had been much reduced (**CF5**), but that the last minute avoiding action from the PA28 pilot had increased the separation; Risk Category B.

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

### Contributory Factors:

2022064				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
<b>Flight Elements</b>				
<b>• Situational Awareness of the Conflicting Aircraft and Action</b>				
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
<b>• Electronic Warning System Operation and Compliance</b>				
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
<b>• See and Avoid</b>				
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
<b>• Outcome Events</b>				
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<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 had any prior situational awareness that the other aircraft was there.

**Electronic Warning System Operation and Compliance** were assessed as **ineffective** because the EC device on the RV6 could not detect the PA28.

**See and Avoid** were assessed as **partially effective** because although the RV6 pilot had not seen the PA28, the PA28 pilot saw the RV6 with enough time to take avoiding action, albeit late.

Airprox Barrier Assessment: 2022064		Outside Controlled Airspace		Effectiveness				
Barrier		Provision	Application	Barrier Weighting				
				0%	5%	10%	15%	20%
Ground Element	Regulations, Processes, Procedures and Compliance	○	○	[0% to 5%]				
	Manning & Equipment	○	○	[0% to 2.5%]				
	Situational Awareness of the Confliction & Action	○	○	[0% to 15%]				
	Electronic Warning System Operation and Compliance	○	○	[0% to 2.5%]				
Flight Element	Regulations, Processes, Procedures and Compliance	●	●	[0% to 10%]				
	Tactical Planning and Execution	●	●	[0% to 10%]				
	Situational Awareness of the Conflicting Aircraft & Action	⊗	●	[0% to 20%]				
	Electronic Warning System Operation and Compliance	⊗	●	[0% to 15%]				
	See & Avoid	⚠	⚠	[0% to 20%]				
<b>Key:</b>		Full	Partial	None	Not Present/Not Assessable	Not Used		
Provision	●	⚠	⊗	○	○			
Application	●	⚠	⊗	○	○			
Effectiveness	■	■	■	■	□			

<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](#).