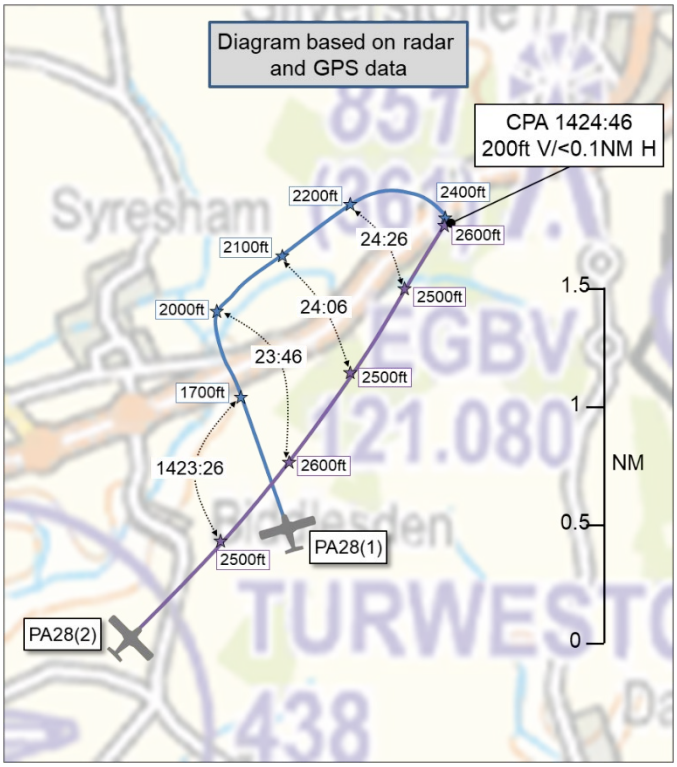
AIRPROX REPORT No 2024274

Date: 12 Nov 2024 Time: 1425Z Position: 5205N 00102W Location: 1NM SW Silverstone

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28(1)	PA28(2)
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	Basic
Provider	Turweston Radio	Cranfield Approach
Altitude/FL	2400ft	2600ft
Transponder	A, C, S	A, C, S
Reported		
Colours	White and Red	White
Lighting	Strobes, ldg, nav.	Standard
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	2500ft	NK
Altimeter	QNH (1035hPa)	QNH
Heading	130°	NK
Speed	80kt	100kt
ACAS/TAS	Other SafeSky	Not fitted
Alert	None	N/A
Separation at CPA		
Reported	0ft V/25m H	0ft V/NK H
Recorded	200ft V/<0.1NMH	



THE PA28(1) PILOT reports that they were just airborne from RW09 at Turweston, S-turning and climbing to altitude 2700ft to commence a navigation exercise starting over Silverstone. At 2500ft a white PA28 loomed front-on from their right at about their 2:30 position, very close. Avoiding action was taken. The separation was estimated at 25m, and the position 1.5NM west of Silverstone, that is 2.5NM northeast of Turweston. The Turweston Air/Ground [operator] was informed. The other traffic was not communicating with Turweston but [the Air/Ground operator] informed them of the other aircraft's registration.

This was an instructional flight with broken cloud at about 3000ft and good visibility. The other aircraft's front profile was seen, and crossing from their right-to-left. The other pilot did not appear to have seen them and made no attempt at avoiding action.

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

THE PA28(2) PILOT reports that the flight was a practical skills test for a Private Pilot Licence (PPL) applicant. During the general handling phase, the Pilot-in-Command (PIC) conducted a lookout, identified another aircraft on a perpendicular course at a similar altitude, and initiated a pitch-up manoeuvre to avoid a potential midair collision. Prior to this, the other aircraft was not observed.

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

THE TURWESTON AIR/GROUND OPERATOR reports that, at 1425, [the PA28(1) pilot] notified them that they had taken evasive action to avoid collision with another aircraft to the northeast of the airfield. They identified the aircraft through two separate [ADS-B] sources.

Details were notified of the aircraft and passed on to the instructor of [the PA28(1)] and they also informed [them of the flight school it operated from]. Unofficial information obtained from [one of the

ADS-B data sources] was also passed as to the location of the aircraft after the initial Airprox to inform the instructor of its estimated location to avoid further conflict.

THE CRANFIELD APPROACH CONTROLLER reports that they had no recollection of this event.

Factual Background

The weather at Cranfield Airport was recorded as follows:

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METAR EGTC 121420Z 02012KT 9999 FEW029 BKN035 10/06 Q1036
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Analysis and Investigation

Cranfield Investigation

Details of the investigation completed: All Flight Progress Strips (FPS) were checked for the day of the event, R/T recordings listened to, and 'Test ADS-B' equipment reviewed.

[PA28(2) was on] a local flight and was in receipt of a Basic Service with Cranfield Approach from 1355 until transferred back to Cranfield Tower at 1457. The FPS and relevant R/T recordings show that the other subject aircraft was not in communication with Cranfield ATC. Neither of the listed aircraft were conspicuous on ADS-B equipment (currently under test away from the controller working position) at Cranfield.

CAA ATSI

Neither the Turweston AGO nor the Cranfield ATCO would have been aware of the presence of the other aircraft.

Cranfield has no surveillance system. Any reference to FIDS should be disregarded. They do not have a system approved for use by the CAA. The display referred to by the manager is used by them alone to assist them in incident investigation and is not authorised by the CAA.
ATSI was, otherwise, satisfied with the Cranfield investigation report.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were positively identified using Mode S data. At 1423:26 PA28(1) passed in front of PA28(2) from its right to left at 800ft below in a continuous climb. At 1423:46 PA28(1) turned right, placing it to the left of PA28(2) and slightly converging. This was followed by a further right turn towards PA28(2).

CPA was assessed to have occurred at 1424:46 with 200ft separation vertically and less than 0.1NM lateral separation (Figure 1).

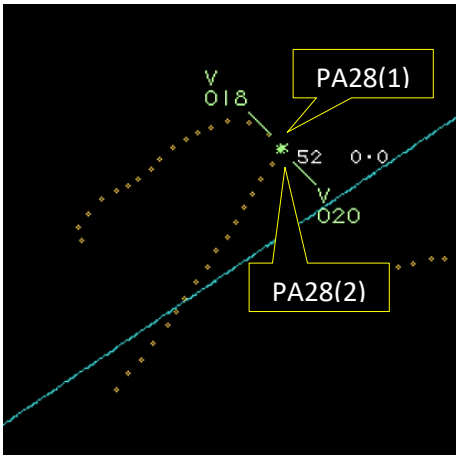

Figure 1 Time 1424:46 CPA 200ft vertical and less than 0.1NM lateral separation.

The PA28(1) and PA28(2) 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 PA28(1) pilot was required to give way to the PA28(2).[2]

Summary

An Airprox was reported when PA28(1) and PA28(2) flew into proximity 1NM southwest of Silverstone at 1425Z on Tuesday 12th November 2024. The PA28(1) pilot was operating under VFR in VMC in receipt of an AGCS from Turweston Radio, and the PA28(2) pilot was operating under VFR in VMC in receipt of a Basic Service from Cranfield Approach.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the Air Ground operator and Approach controller involved and a report from the appropriate operating authority. 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(1) pilot departing Turweston, and members wondered why the pilot had not sighted the PA28(2) during their climbout as it had initially approached from left-to-right above them. The Board agreed that the electronic conspicuity device carried in PA28(1), which had been capable of detecting the emissions from the PA28(2)'s transponder, had not alerted them to the PA28(2)'s presence as would have been expected (**CF4**) and that, therefore, the pilot had not had any situational awareness of the presence of the PA28(2) (**CF3**). Members agreed that the PA28(1) pilot had sighted the PA28(2) late (**CF5**) as they had been continuing their climbing turn to the right while positioning to start their navigation exercise.

Turning their attention to the actions of the PA28(2) pilot, the Board was disappointed that the pilot had not communicated their routeing through the Turweston overhead to the Turweston Radio operator (**CF2**). Members agreed that this would have enhanced situational awareness of the PA28(2)'s position for all on frequency, while some members with particular knowledge of the area also wondered if the PA28(2) pilot had considered communicating with Oxford Radar for a surveillance-based ATS in preference to a Basic Service from Cranfield whilst operating in the open FIR (acknowledging that Oxford Radar is not a LARS provider). Furthermore, members were also disappointed to observe that the PA28(2) had not had additional electronic conspicuity equipment fitted, which members felt was an important safety device for improved situational awareness, particularly in aircraft utilised in a training environment. Members agreed that the pilot had not had any situational awareness of the presence or position of the PA28(1) (**CF3**) and also agreed that the PA28(2) pilot had sighted the PA28(1) at a late stage (**CF5**).

The Board then discussed the actions of the Turweston Air Ground operator and noted that they had assisted the pilot of PA28(1) in the identification of PA28(2) with the aid of ADS-B-sourced data after the Airprox had occurred, but had not provided any information beforehand as they had not had any knowledge of the PA28(2)'s presence.

Finally, in reviewing the service provided to the PA28(2) pilot, the Board agreed that the Cranfield Approach controller had not been required to monitor the aircraft under the terms of a Basic Service (**CF1**). The Board then discussed the use of unapproved FIDs and, whilst acknowledging the CAA ATSI comment regarding the use of unapproved surveillance equipment, applauded both Turweston and Cranfield for having provided their FIS units with supplementary information from ADS-B sourced data in an effort to provide improved situational awareness.

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

In concluding their discussions the Board agreed that communication was a key factor in the provision of situational awareness and that neither pilot had had situational awareness of the other aircraft. Members noted that separation had been reduced to the minimum, but both the PA28(1) pilot and the PA28(2) pilot had taken last minute avoiding action averting a likely collision (**CF6**). The Board agreed that safety had not been assured and that the aircraft proximity resulted in safety margins being much reduced below the norm and, as such, the Board assigned a Risk Category B to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024274			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Contextual	• ANS Flight Information Provision	Provision of ANS flight information	The ATCO/FISO was not required to monitor the flight under a Basic Service
	Flight Elements			
	• Tactical Planning and Execution			
2	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
	• Situational Awareness of the Conflicting Aircraft and Action			
3	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			
4	Human Factors	• Response to Warning System	An event involving the incorrect response of flight crew following the operation of an aircraft warning system	CWS misinterpreted, not optimally actioned or CWS alert expected but none reported
	• See and Avoid			
5	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			
6	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[3]

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Situational Awareness of the Confliction and Action were assessed as **not used** because the Cranfield Approach controller was not required to monitor the PA28(2) under the terms of a Basic Service.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the PA28(2) pilot could have called Turweston as they were passing overhead the airfield.

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

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because neither the PA28(1) pilot nor the PA28(2) pilot were aware of the presence or position of the other's aircraft.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because PA28(1)'s electronic conspicuity equipment, capable of detecting emissions from the PA28(2)'s transponder, had not alerted them to the PA28(2)'s presence.

See and Avoid were assessed as **partially effective** because both pilots had sighted the other aircraft at a late stage.