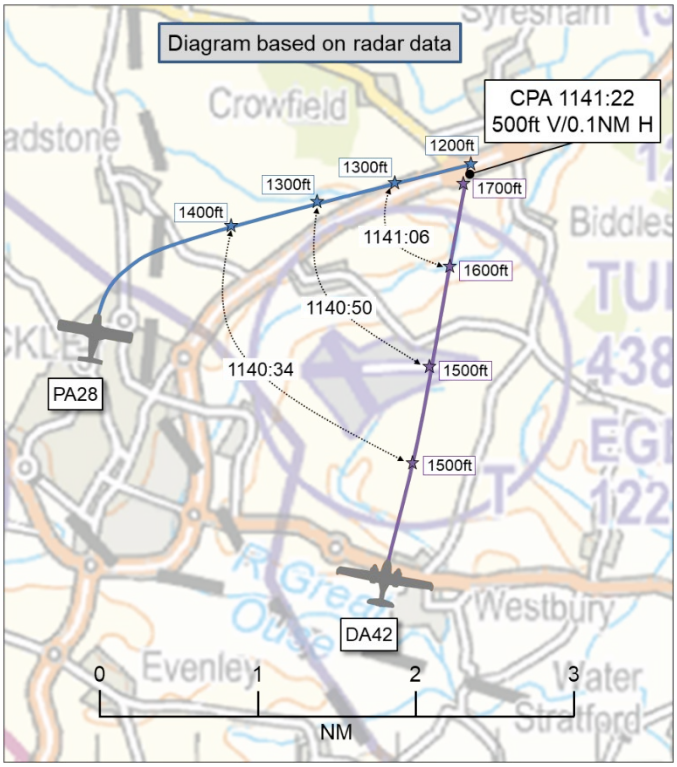
AIRPROX REPORT No 2024279

Date: 15 Nov 2024 Time: 1141Z Position: 5204N 00105W Location: 1.2NM N of Turweston

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	PA28	DA42
Operator	Civ FW	Civ FW
Airspace	London FIR	London FIR
Class	G	G
Rules	VFR	VFR
Service	AGCS	Basic
Provider	Turweston Radio	Oxford Radar
Altitude/FL	1200ft	1700ft
Transponder	A, C, S+	A, C, S+
Reported		
Colours	Dark blue	White
Lighting	Landing & strobes	Nav & strobes
Conditions	VMC	VMC
Visibility	5-10km	>10km
Altitude/FL	900ft	1800ft
Altimeter	QFE (1013hPa)	QNH (1028hPa)
Heading	090°	020°
Speed	90kt	140kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	Alert
Separation at CPA		
Reported	300ft V/0ft H	300ft V/0.1NM H
Recorded	500ft V/0.1NM H	



THE PA28 PILOT reports that, shortly after making their downwind call to Turweston [Radio], they noticed a DA42 aircraft approaching from the right side of their aircraft only 300-400ft above them. They had heard no calls on the radio of the approaching aircraft and were ready to take avoiding action if that aircraft were to get any closer. The downwind checks were completed just before their downwind call and the landing lights were on, so [the PA28] should have been quite visible to the encroaching DA42.

The pilot further reported that they were under solo supervision and had estimated the cloud ceiling to be 1300ft AAL. [The Turweston Air/Ground operator] attempted to call the DA42 [pilot] but no reply was received. [The Air/Ground operator] informed them of the approaching traffic.

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

THE DA42 PILOT reports they were conducting a CPL skills test profile starting with a VFR navigation exercise. The cloudbase was broken at 1500ft and a cruising altitude of 1700-1800ft had been chosen. There was a separation from the cloudbase in case of any aircraft descending through cloud from above. The track was not intended to fly overhead Turweston but they could tell the aircraft had drifted left. They saw Turweston ahead and advised the student that there is no ATZ but check for aircraft on approach at both ends of the runway and also downwind and also to climb as high as possible, safely, while maintaining VMC. As they informed the student, they checked as mentioned and indeed saw an aircraft downwind. They also had a TCAS [sic] advisory and Oxford radar advised of the traffic [to which they] replied *"traffic sighted"*. Even though under a Basic Service, Oxford Radar quite often provides Traffic Information and they thought this the better service to have. Having already been in visual contact with the traffic and assessed there was no risk of collision, they thought the best course of action was to hold heading and altitude. They passed overhead and possibly slightly ahead of the traffic.

The pilot assessed the risk of collision as 'None'.

THE TURWESTON AIR/GROUND OPERATOR reports that, while [the PA28] was operating in the circuit as a student solo flight, the DA42 that had been reported was observed over the runway, flying south-to-north at approximately 1500ft above the aerodrome. Since they had no radio contact with [the DA42 pilot] they informed the PA28 student, who was early downwind, of the traffic appearing to be higher than them and to cross right-to-left in front of them. The student acknowledged the traffic and reported visual in a calm manner and continued their flight without change.

The CFI came to the tower and was briefed on the event that took place.

THE OXFORD RADAR CONTROLLER reports they were made aware via email notification that an Airprox was reported by [the pilot of the DA42, they believed] during a time when they were the Oxford Approach controller. They were unaware of this incident and had no recollection of it, or whether [the DA42 pilot] was in receipt of an ATS at the time. [The DA42 pilot] did not make any verbal report of an Airprox at the time of the incident or subsequently which would have made them aware of it sooner. They had not viewed any radar or RTF recordings at the time of making this initial report.

Factual Background

The weather at Cranfield Airport was recorded as follows:

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METAR EGTC 151120Z 22009KT 9999 SCT015 08/05 Q1027
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Analysis and Investigation

Oxford Airport Safety Manager

Summary of events

At 1130 [the DA42 became] airborne from RW19 to the east and was given a Basic Service with no level restriction which was read back. At 1139 [the DA42] was south of Turweston by 2NM indicating 1500ft northbound. [The PA28 became] airborne and appeared to be in the right-hand circuit. [The DA42] routed directly overhead Turweston still indicating 1500ft and [the PA28] appeared to be downwind in the circuit. At this point [the DA42] had [the PA28] in their approximate 11 o'clock position at half a mile, converging, and indicating 200ft below.

They believe the Airprox occurred at around 1141 when [the DA42] was a mile north of Turweston and [the PA28] was downwind in the circuit. The blips merged, at which point [the DA42's] Mode C indicated 1600ft and [the PA28's] Mode C indicated 1200ft.

In the immediate few minutes before the Airprox occurred, the Radar controller was involved in a phone call with the Tower controller about a D129 transit, one aircraft called for re-join, Traffic Information was passed to another aircraft on the Radar frequency and another phone call was made to the Tower controller with a pre-note inbound. As soon as the Radar controller spotted the confliction between [the DA42] and [the PA28], Traffic Information was passed immediately with [the DA42 pilot] being told *"traffic just off your left-hand side, just under the wing indicating 1300ft"*. After a pause, [the DA42 pilot] reported that they were visual with the traffic. Nothing was mentioned by the student or the instructor about an Airprox and they changed to [their enroute] frequency.

The Unit Assessor review of this incident had been completed with the following outcome:

They were content that there was no controller input with this Airprox. [The DA42] was under a Basic Service], so their flight was not required to be monitored, and as soon as the confliction was seen 'duty of care' Traffic Information was passed by the Radar controller.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were identified using Mode S data. The PA28 became visible on the radar display at 1140:30. CPA was assessed to have occurred at 1141:23 with a separation of 500ft vertically and 0.1NM laterally (Figure 1).

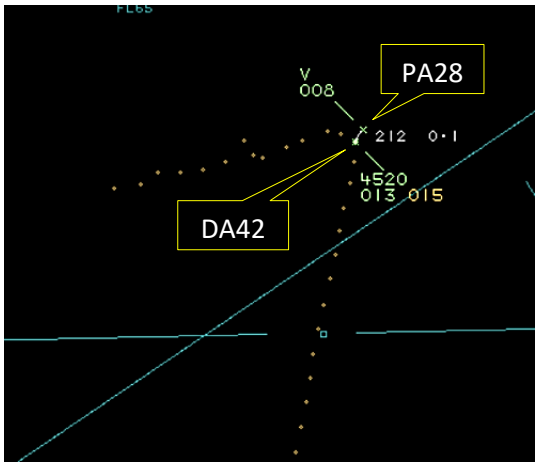


Figure 1 Time 1141:22 separation at CPA 500ft and 0.1NM

Further analysis of ADS-B data depicted both the PA28 and DA42 throughout the time period leading up to the Airprox.

The PA28 and DA42 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] 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.[2]

Summary

An Airprox was reported when a PA28 and a DA42 flew into proximity 1.2NM north of Turweston at 1141Z on Friday 15th November 2024. The PA28 pilot was operating under VFR in VMC in receipt of an AGCS from Turweston Radio, and the DA42 pilot was operating under VFR in VMC in receipt of a Basic Service from Oxford Radar.

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 Radar 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 turned their attention to the actions of the PA28 student pilot flying solo in the Turweston circuit, and was heartened that the student had managed to remain calm and continue their flight without change after sighting the DA42 on a converging heading. Nonetheless, members agreed that the student pilot in the PA28 had had no situational awareness of the presence of the DA42 (**CF9**) until they had sighted it, and that the PA28 pilot had then been concerned by the proximity of the DA42 (**CF12**).

Turning their attention to the actions of the DA42 pilot, members wondered if the instructor had considered alternative actions to improve the training exercise, particularly taking into account that a CPL skills test profile which had drifted off-track towards the overhead of a training airfield may have had an influence on the outcome of the test. Some members felt that the instructor, at the point of

[1] (UK) SERA.3205 Proximity.
[2] (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

sighting Turweston, could have either introduced a diversion away from the area or made a courtesy call to the Turweston Air/Ground operator, informing them of their presence and intentions and improving the overall situational awareness of all on frequency. Members agreed, therefore, that the DA42 pilot had not communicated their intentions to fly through the overhead of Turweston airfield (**CF3**), nor had they adequately adapted their plan (**CF5**) to remain clear of an active training aerodrome and had missed an opportunity to demonstrate appropriate threat and error management (**CF8**). Members also agreed that the DA42 pilot had flown through airspace where it could have been reasonably expected to have encountered training aircraft (**CF4**) and, in doing so, they had not avoided the pattern of traffic already formed by the PA28 in the Turweston circuit (**CF6**).. Furthermore, the Board noted that the DA42's TAS had alerted the pilot to the position and proximity of the PA28 (**CF10**), and members were in agreement that the DA42 pilot had flown close enough to the PA28 to have caused them some concern despite having had situational awareness of it (**CF7**). Members also felt that the DA42 pilot had not appreciated the risk of flying across the circuit pattern at Turweston, particularly in proximity of a solo student or other inexperienced pilot (**CF11**).

The Board then considered the actions of the Turweston Air/Ground operator and remarked that they had been conscientious in providing a service to the PA28 pilot in the circuit, but that there had been nothing that they could have done to further warn the PA28 pilot of the presence of the DA42.

Finally looking at the actions of the Oxford Radar controller, the Board agreed that the controller had exceeded the provisions of a Basic Service, inasmuch as they had passed Traffic Information on the PA28 to the DA42 pilot as soon as it had become apparent that it may have been a factor, albeit the passage of that Traffic Information had been too late for the pilot to be able to take any action based upon it (**CF1**). Members agreed that the Radar controller had had late situational awareness of the PA28 (**CF2**) as they had been occupied speaking with the pilots of two other aircraft and in communication with Oxford Tower moments before the Airprox, but had initiated a call to the DA42 pilot as soon as they had seen the PA28 on the radar display.

Concluding their discussion, members reiterated the importance for all pilots operating in the vicinity of training aerodromes to remain situationally aware of other traffic by effective use of the R/T and recommended that pilots call the pertinent frequency when flying close to those areas where training aircraft can be expected. In this event, the Board agreed that safety had been degraded but, because the PA28 pilot had sighted the DA42 and monitored it without any need to take avoiding action, there had not been a risk of collision. As such, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2024279			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Situational Awareness and Action			
1	Human Factors	• ANS Traffic Information Provision	Provision of ANS traffic information	TI not provided, inaccurate, inadequate, or late
2	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	Flight Elements			
	• Tactical Planning and Execution			
3	Human Factors	• Accuracy of Communication	Events involving flight crew using inaccurate communication - wrong or incomplete information provided	Ineffective communication of intentions
4	Human Factors	• Aircraft Navigation	An event involving navigation of the aircraft.	Flew through promulgated and active airspace, e.g. Glider Site

5	Human Factors	• Insufficient Decision/Plan	Events involving flight crew not making a sufficiently detailed decision or plan to meet the needs of the situation	Inadequate plan adaption
6	Human Factors	• Monitoring of Environment	Events involving flight crew not to appropriately monitoring the environment	Did not avoid/conform with the pattern of traffic already formed
	• Situational Awareness of the Conflicting Aircraft and Action			
7	Human Factors	• Lack of Action	Events involving flight crew not taking any action at all when they should have done so	Pilot flew close enough to cause concern despite Situational Awareness
8	Human Factors	• Mentoring	Events involving the mentoring of an individual	
9	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			
10	Contextual	• Other warning system operation	An event involving a genuine warning from an airborne system other than TCAS.	
	• See and Avoid			
11	Human Factors	• Lack of Individual Risk Perception	Events involving flight crew not fully appreciating the risk of a particular course of action	Pilot flew close enough to cause concern
12	Human Factors	• Perception of Visual Information	Events involving flight crew incorrectly perceiving a situation visually and then taking the wrong course of action or path of movement	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C.

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:

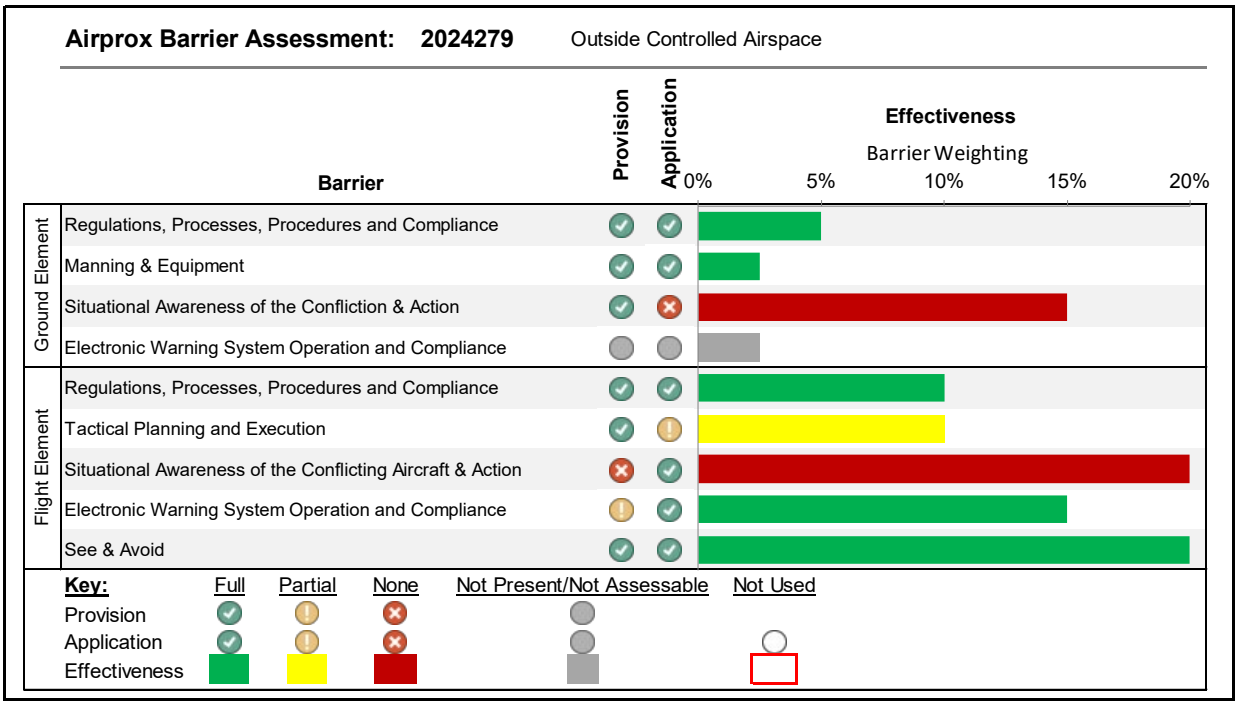
Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Oxford Radar controller acquired late situational awareness of the PA28 and had, therefore, provided Traffic Information too late for the DA42 pilot to make use of it.

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the DA42 pilot had flown through the overhead of a training aerodrome without fully avoiding the pattern of traffic already formed and without communicating with Turweston Radio.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the DA42 pilot continued on track despite a TAS warning of the presence of the PA28, and the PA28 pilot had no situational awareness of the presence of the DA42.

[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: 2024279
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