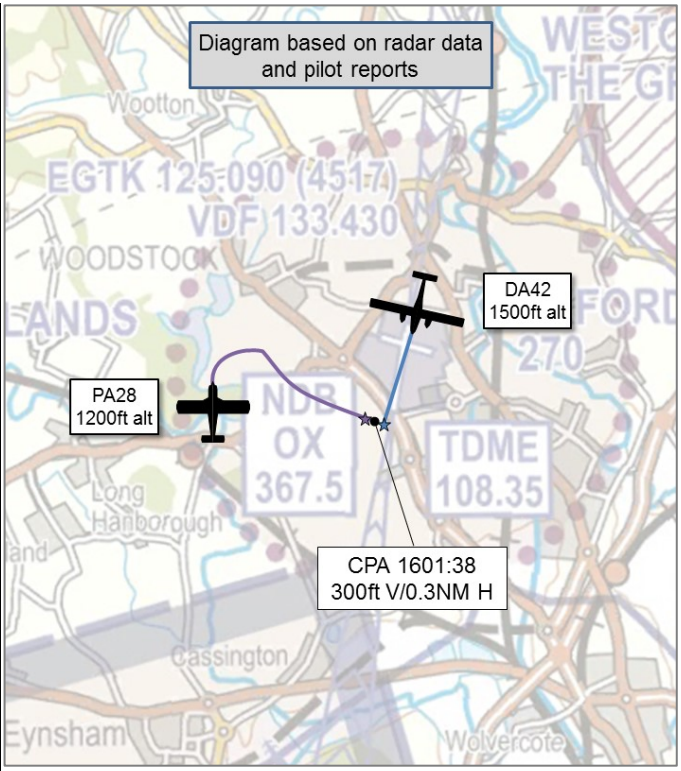
AIRPROX REPORT No 2020002

Date: 08 Jan 2020 Time: 1601Z Position: 5149N 00119W Location: Oxford Airport ATZ

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA42	PA28
Operator	Civ FW	Civ FW
Airspace	Oxford ATZ	Oxford ATZ
Class	G	G
Rules	IFR	VFR
Service	ACS	ACS
Provider	Oxford	Oxford
Altitude/FL	1500ft	1200ft
Transponder	A, C, S	A, C
Reported		
Colours	White	Blue, White
Lighting	HISL	NK
Conditions	VMC	VMC
Visibility	>10km	NK
Altitude/FL	1300ft	1500ft
Altimeter	NK (1022hPa)	QNH (NK hPa)
Heading	190°	090°
Speed	100kt	90kt
ACAS/TAS	TAS	Not fitted
Alert	TA	N/A
Separation		
Reported	Slightly below V/<300m H	300ft V/1NM H
Recorded	300ft V/0.3NM H	



THE DA42 PILOT reports that they were on a procedural NDB/DME approach for RW19 after having flown a number of holds over the OX NDB. The PA28 joined from the northwest for a standard overhead join for RW19. The DA42 crew were informed about the PA28 while on the approach, Traffic Information was passed reciprocally. At 780ft agl (MDA+50) the DA42 crew initiated a go-around for a missed approach. At this point the PA28 seemed to be at the end of the upwind leg on the dead side about to turn crosswind to cross to the circuit side, eastbound. The Oxford controller asked the PA28 pilot if he was visual with the DA42, a negative was given. The controller instructed the PA28 pilot to make an orbit. When the PA28 pilot was flying crosswind again he progressively got closer to the DA42. Initially, based on the R/T communication between ATC and the PA28 pilot, the DA42 pilot was not convinced that the PA28 pilot was visual with the DA42 at any time. When the PA28 pilot was a lot closer he did report visual but gave no indications of trying to avoid them. He believes the PA28 was at ~1300ft circuit altitude, with the DA42 just climbing through the same level, near the threshold of RW01. The distance between the aircraft was estimated to be around 300m and closing in at a 90° angle. Being slightly higher than the other aircraft, the DA42 student decided to initiate a maximum rate climb to avoid, a decision supported by the instructor as the only option. No avoiding action was seen on the other aircraft. In hindsight, a collision would probably have been unlikely, but [the DA42 instructor believed that] both aircraft came uncomfortably close. An indication of the conflicting traffic was given on the TAS system although the captain cannot recall the distance indicated.

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

THE PA28 PILOT reports that Oxford ATC cleared them to join the visual circuit overhead, descend deadside, and then crosswind once visual with the DA42 performing a missed approach. The instructor says it was a high workload, joining the visual circuit and talking the student through it. They were visual with the DA42, so positioned to pass behind as instructed by ATC with no risk of collision. [He thought

that] the pilot of the DA42 appeared to be startled on the radio, maybe due to transfer from IFR approach to VFR.

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

THE OXFORD TOWER CONTROLLER reports that he was working a medium VFR circuit. The PA28 prenoted in from the west for a standard overhead join. He told the PA28 pilot to report overhead and that the circuit was active. Another [locally based] aircraft was also joining from the west and told to join right-base for RW19. The DA42 pilot, inbound on the ILS, was told to continue the approach as number 3, and passed Traffic Information on the circuit and one in the overhead. The PA28 pilot reported in the overhead and the controller asked him to report ready to descend. When the PA28 pilot reported ready to descend the controller believed he had already commenced a partial descent. The controller asked the PA28 pilot to report descending deadside. When the PA28 pilot was descending deadside the controller realised he would conflict with the low-approach traffic as he turned crosswind, the controller instructed the PA28 pilot to make one right-hand orbit in his present position before crossing the RW and passed the PA28 pilot Traffic Information on the DA42 who would be departing into the local area. He cleared the DA42 pilot for the low-approach and passed traffic on the locally based aircraft who was upwind. After the PA28 pilot had completed the orbit, the controller cleared the PA28 pilot to cross over the RW01 numbers and then asked if he was visual with the DA42. The PA28 pilot said no and the controller instructed him not to cross the RW01 numbers unless he was visual with the DA42, to which the PA28 pilot then replied 'visual', which was acknowledged by the controller. A few minutes later the DA42 pilot made mention of the PA28, the controller explained that the PA28 was turning crosswind but did have the DA42 visual. The DA42 pilot said the aircraft had passed close to him and that he had had to take avoiding action. The DA42 pilot did not declare an Airprox.

Factual Background

The weather at Oxford was recorded as follows:

```
METAR EGTK 081550Z 27001KT 9999 FEW020 10/06 Q1022
```

Analysis and Investigation

Oxford Investigation Report

The Oxford SATCO debriefed the ATCO. Both the SATCO and an OJTI witnessed the event and were happy that the ATCO followed the correct procedures and passed relevant Traffic Information.

UKAB Secretariat

The DA42 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.[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]

At 1601:33 the DA42 was on the approach and the PA28 was routing to cross the RW01 numbers; the aircraft are separated by 100ft vertically and 0.5NM horizontally (Figure 1). This appeared to be when the DA42 instructor stated that the student decided to climb to avoid the PA28.

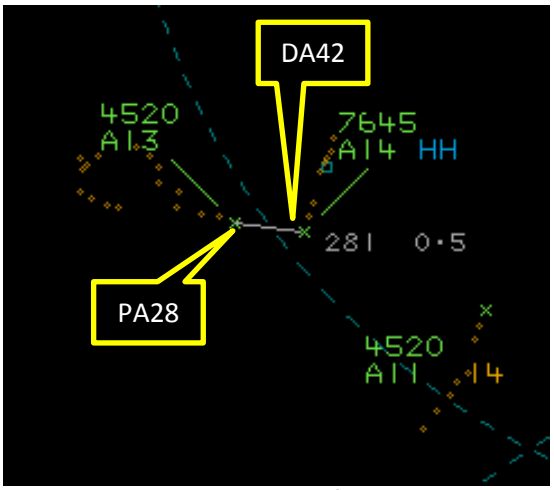


Figure 1

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

The DA42 can be seen to be climbing in figure 2, the aircraft were separated by 300ft vertically and 0.3NM horizontally at that time.

When the DA42 had passed in front of the PA28 the aircraft were separated by 400ft vertically and 0.2NM horizontally (Figure 3).

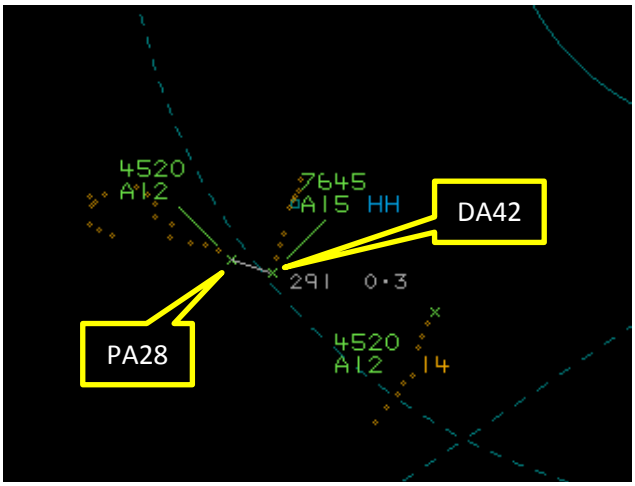


Figure 2

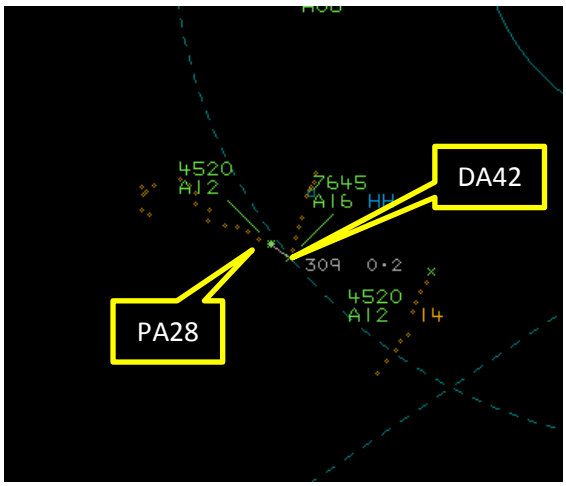


Figure3

Summary

An Airprox was reported when a DA42 and a PA28 flew into proximity in the Oxford Airport ATZ at 1601hrs on Wednesday 8th January 2020. The DA42 pilot was operating under IFR in VMC and the PA28 pilot was operating under VFR in VMC, both pilots were in receipt of an Aerodrome Control Service from Oxford Tower.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings and reports from the air traffic controller involved. 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.

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 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 looking at the actions of the DA42 pilot. He had started his go-around but, when he reached the RW threshold, was concerned that the PA28 pilot had turned towards the RW, and the DA42 before becoming visual with the DA42 going around from the instrument approach (**CF5 & 7**). He opted to increase the climb to increase the separation from the PA28.

The Board then turned to the actions of the PA28 pilot. He had not been visual with the DA42 initially but, as he rolled out of the orbit, he became visual and tracked to route behind, members said that he could have given a greater margin to pass behind the DA42 who was flying an Instrument Approach (**CF3 & 4**) and it was this close proximity that had resulted in the DA42 student increasing his climb rate when going around (**CF8**).

Next, the Board looked at the actions of the Oxford controller. Although he had passed Traffic Information to the aircraft, the PA28 pilot reported that he was not visual with the DA42, so the controller instructed the PA28 pilot to carry out one orbit. The controller then passed Traffic Information on the

DA42 and cleared the PA28 pilot to cross the RW but before the PA28 pilot reported being visual with the DA42. Although the controller separated the aircraft initially by putting the PA28 into an orbit he then did not fully control the situation by allowing the PA28 pilot to cross the RW01 Threshold before the PA28 pilot had reported visual with the DA42. Members opined that either a conditional clearance, to cross the RW01 threshold and pass behind the DA42 when visual (**CF1 & 2**), or an instruction to carry out a further orbit would have prevented the aircraft coming into confliction.

Members agreed that aircraft on an Instrument Approach still have a responsibility not to operate in such proximity to other aircraft as to create a collision hazard but it was also noted that Air Traffic endeavour to allow aircraft on instrument training to complete an approach and go-around to allow the student to complete the required training and, as such, should ensure the aircraft are adequately sequenced and separated.

Finally, the Board discussed the Risk. Both pilots were visual with the other aircraft, but the Board members felt that the PA28 pilot could have ensured a greater margin of separation from the DA42 than he did. Regardless, the aircraft were separated by 300ft at CPA and there was no risk of collision, a Risk Category C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTOR(S) AND RISK

Contributory Factor(s):

	2020002		
CF	**Factor**	**Description**	**Amplification**
	Ground Elements		
	• Situational Awareness and Action		
1	Human Factors	• Conflict Resolution- Inadequate	
2	Human Factors	• Inappropriate Clearance	The ANS clearance contributed to the Airprox
	Flight Elements		
	• Tactical Planning and Execution		
3	Human Factors	• Insufficient Decision/Plan	Inadequate plan adaption
	• Situational Awareness of the Conflicting Aircraft and Action		
4	Human Factors	• Lack of Action	Pilot flew close enough to cause concern despite Situational Awareness
5	Human Factors	• Situational Awareness and Sensory Events	Pilot was concerned by the proximity of the other aircraft
	• Electronic Warning System Operation and Compliance		
6	Contextual	• ACAS/TCAS TA	
	• See and Avoid		
7	Human Factors	• Perception of Visual Information	Pilot was concerned by the proximity of the other aircraft
8	Human Factors	• Lack of Individual Risk Perception	Pilot flew close enough to cause concern

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 **partially effective** because the Oxford controller did not fully resolve the conflict.

Flight Elements:

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

Tactical Planning and Execution were assessed as **partially effective** because the PA28 pilot did not arrange his flight to give adequately separate from the DA42.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the PA28 pilot flew close enough to the DA42 to cause its pilot concern despite situational awareness of the aircraft.

See and Avoid were assessed as **partially effective** because, although the PA28 pilot was visual with the DA42, he flew close enough to the DA42 to cause its pilot concern.