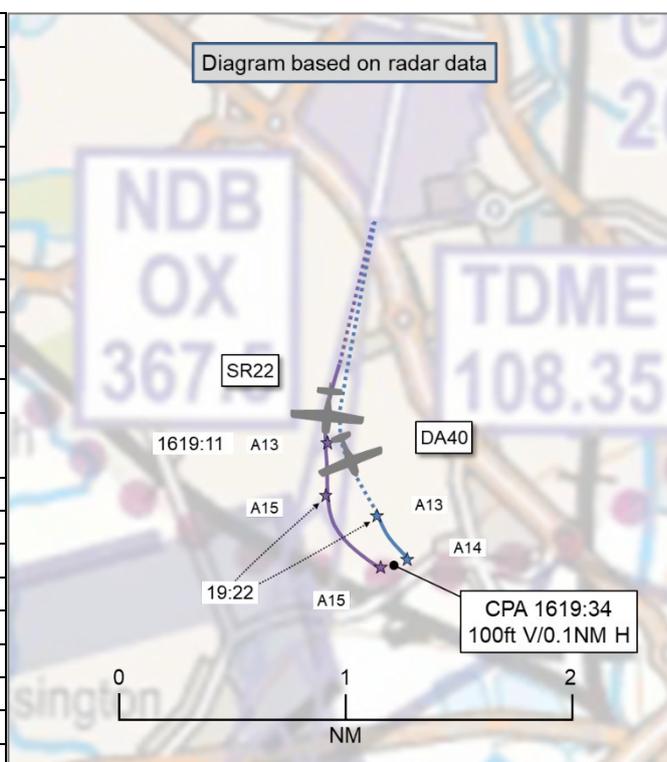


AIRPROX REPORT No 2022026

Date: 09 Mar 2022 Time: 1620Z Position: 5148N 00118W Location: 2NM S Oxford Airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	DA40	SR22
Operator	Civ FW	Civ FW
Airspace	Oxford ATZ	Oxford ATZ
Class	G	G
Rules	VFR	VFR
Service	ACS	ACS
Provider	Oxford Tower	Oxford Tower
Altitude/FL	1400ft	1400ft
Transponder	A, C, S+	A, C, S+
Reported		
Colours	White	White
Lighting	Strobes	Nav, strobes, landing
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	1500ft	1200ft
Altimeter	QNH (1014hPa)	QNH (1014hPa)
Heading	090°	090°
Speed	95kt	90kt
ACAS/TAS	Not fitted	TAS
Alert	N/A	None
Separation at CPA		
Reported	0ft V/50-100m H	0ft V/200ft H
Recorded	100ft V/0.1NM H	



THE DA40 INSTRUCTOR reports that they felt that the SR22 taxied very close behind all the way to the holding point for RW19. They were cleared for take-off and followed the standard circuit pattern, as the flight lesson required. The SR22 was cleared for take-off afterwards, climbed and attempted to overtake on the right at circuit height on the crosswind leg. They were advised by ATC that the other aircraft was attempting this and they also 'had [them] in sight'. They saw them passing on the right in the 5 to 4 o'clock at a range of about 150ft. They then turned towards them, they assumed in an attempt to avoid infringing the Brize airspace to the south. They started an evasive turn to the left, away from the other aircraft. The DA40 pilot noted that if a solo student had been flying, [in the left seat] they would not have seen or been able to avoid the other aircraft.

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

THE SR22 PILOT reports flying with an experienced airline Captain and GA pilot, on a planned VFR trip to [another airfield] to carry out some instrument approaches for training. Oxford airport was busy with traffic and they were number 2 at the holding point for RW19. They were held for about 5 minutes before receiving an instruction, "after the departing aircraft, line up and wait runway 19". A short while later they were given the instruction "cleared for take-off, aircraft ahead is turning left into the circuit". They had the departing DA40 in sight the whole time and as they knew they would likely catch him up with their higher speed, they discussed a modified departure brief with the other pilot passenger; take off as normal, rotate at 70kt and track to the right of the centreline to ensure they were not on the same track as the departing aircraft ahead and keep it in sight at all times. The pilot passenger acknowledged and agreed to act as a 'second pair of eyes'. They took off and after some right bank accelerated to about 90kts to reach 750ft QNH, which is the height at which the CAPS parachute system in the Cirrus is active, a key safety consideration on take-off. At that height they throttled back as they realised they were accelerating towards the DA40 and wanted to stay behind and to the right, keeping it in sight at

all times. By this time they would have expected the DA40 to have turned left onto the crosswind leg of the 1500ft left-hand circuit, but it continued to climb slowly beyond 1000ft. They continued to track to the right of the DA40, behind and slightly lower. Eventually the DA40 started a slow turn to the left, at about 1300-1400ft. Mindful that by this time they were getting close to the edge of the Brize Zone, they followed around to the left with the intention to then accelerate and climb to the east. When the DA40 levelled out from the left turn on the crosswind leg, its pilot then noticed the SR22 some 100-200ft to the right and now level. The DA40 pilot took action with a further turn to the left and the SR22 pilot accelerated away, climbing to 2000ft. The SR22 pilot noted that the DA40 pilot only saw them in those last seconds and was surprised to see them where they were, while they had the DA40 in sight at all times and stayed a safe distance and track away from it. There was no risk of collision. Their decision to take off when they did, and not delay after the take-off clearance, was made after short consideration between the two pilots, under the assumption that the DA40 would make a left turn into the circuit at the normal height of about 750ft QNH. In the end it did not, but instead made a slow and shallow turn at over 1000ft and thus they ended up closer to it than would have been desirable. With hindsight, they should have held on the runway for longer to allow for greater separation but there were also other landing aircraft on final and so this might have complicated ATC conditions further. The SR22 pilot stressed that they did not lose sight of the DA40 at any time and were going to continue to track it to their left, and with it above. In their view there was no risk of collision because they had options to avoid at all times but this was not an ideal situation, with heavy traffic, and lessons could be learned.

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

THE OXFORD CONTROLLER reports that the DA40 took off at 1617, intending to fly a left hand VFR circuit. The SR22 took off at 1618, intending to depart VFR to the southeast. Traffic information was passed to the SR22 pilot on the DA40, explaining that the DA40 was about to turn left, and vice versa. They had good visual contact from the Tower and saw the SR22 overtake the DA40 on the right, allowing the DA40 to make its crosswind turn. The DA40 pilot questioned what the SR22 was doing. The controller confirmed that the SR22 pilot had the DA40 in sight and kept the SR22 on the Tower frequency until clear of the visual circuit. After landing, the DA40 pilot phoned the tower to inform ATC that they would be filing an Airprox.

Factual Background

The weather at Oxford was recorded as follows:

METAR EGTK 091620Z 16013KT 9999 FEW039 11/06 Q1014=

Analysis and Investigation

UKAB Secretariat

The DA40 and SR22 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 overtaking then the DA40 pilot had right of way and the SR22 pilot was required to keep out of the way of the other aircraft by altering course to the right.² 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.³

Summary

An Airprox was reported when a DA40 and an SR22 flew into proximity near Oxford Airport at 1620Z on Wednesday 9th March 2022. Both pilots were operating under VFR in VMC, both in receipt of an Aerodrome Control Service from Oxford Tower.

¹ (UK) SERA.3205 Proximity.

² (UK) SERA.3210 Right-of-way (c)(3) Overtaking.

³ (UK) SERA.3225 Operation on and in the Vicinity of an Aerodrome.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

Members first discussed the SR22 pilot's actions and agreed that a short hold before take-off would have been a wiser course of action (**CF1**). Members wondered whether the SR22 pilots were late for a booked instrument approach slot and had rushed their departure. In the event, the higher performance SR22 took off behind the lower performance DA40 and quickly caught up. Members thought that even at that stage, the SR22 pilot could have extended to the south, once clear of the Brize Norton CTR, and away from the DA40 or perhaps used their aircraft's superior performance to climb above circuit altitude (members were also cognisant of the proximity of the Oxford instrument approach hold and missed-approach procedure and recognised that the climbing option may well have been limited). Although the SR22 pilot maintained visual contact with the DA40 throughout, they flew into such proximity as to cause concern to the DA40 instructor (**CF4**) who was not aware of the SR22 pilot's intentions (**CF2**) and was concerned by its proximity (**CF5**). The Board was unable to ascertain why the SR22 TAS did not alert (**CF3**) but were satisfied that, with the SR22 pilot visual with the DA40 throughout, there was no risk of collision but that normal procedures had not pertained, Risk C.

[Post-Board Comment: The SR22 pilot commented that on reading the draft report they checked with the other pilot on board, who confirmed that they had taxied at an appropriate distance behind the DA40. They wondered whether the restricted rearwards view from the DA40 had contributed to a misperception. They confirmed that they had not been in a hurry; in fact they had arrived early for their booking but were accommodated by ATC at that location. Lastly, the SR22 pilot commented that they would personally address the observations of the Board in their future flying, to ensure that such an incident did not reoccur.]

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2022026				
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
Flight Elements				
• Tactical Planning and Execution				
1	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
• Situational Awareness of the Conflicting Aircraft and Action				
2	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				
3	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				
4	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
5	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.

Recommendation: Nil.

Safety Barrier Assessment⁴

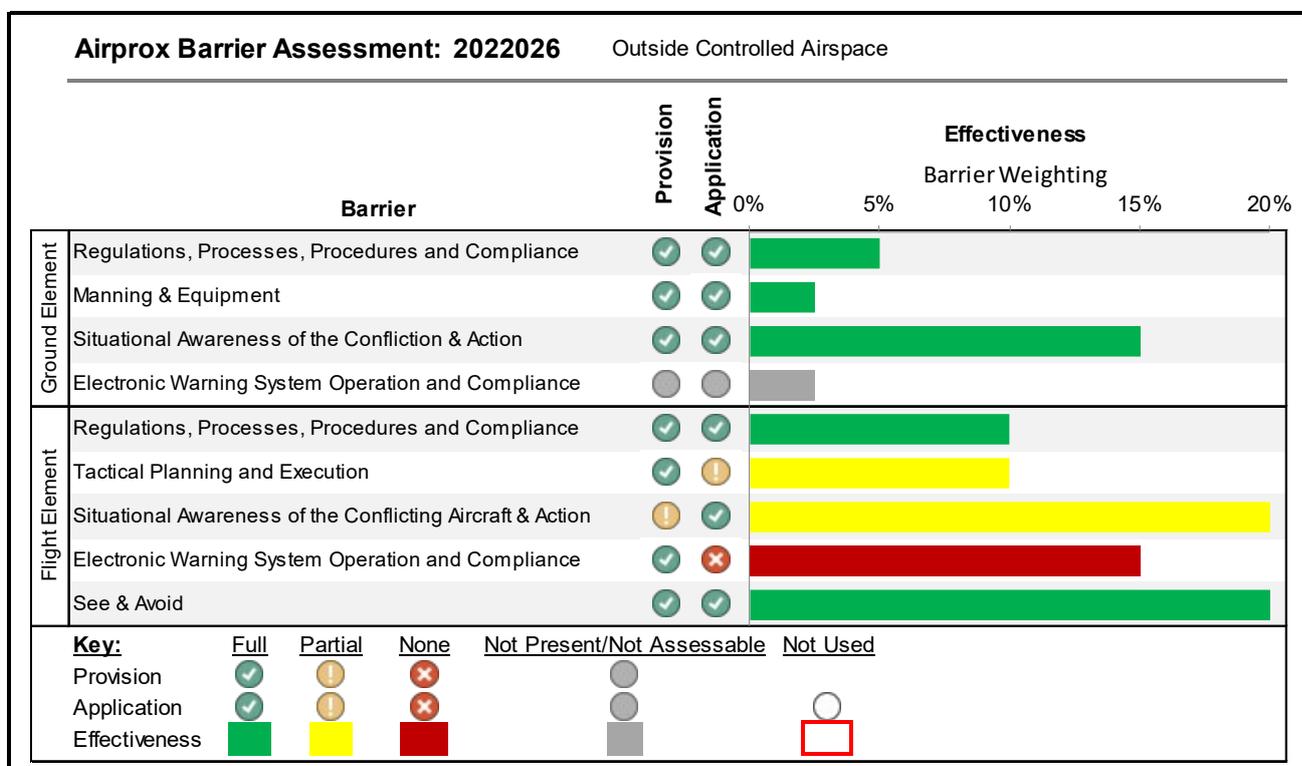
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Flight Elements:

Tactical Planning and Execution was assessed as **partially effective** because the SR22 pilot departed with too little separation from the DA40.

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the DA40 instructor only had generic Situational Awareness on the SR22.

Electronic Warning System Operation and Compliance were assessed as **ineffective** because the DA40 was not equipped with EC and the SR22 TAS did not alert at a separation where that would be expected.



⁴ The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).