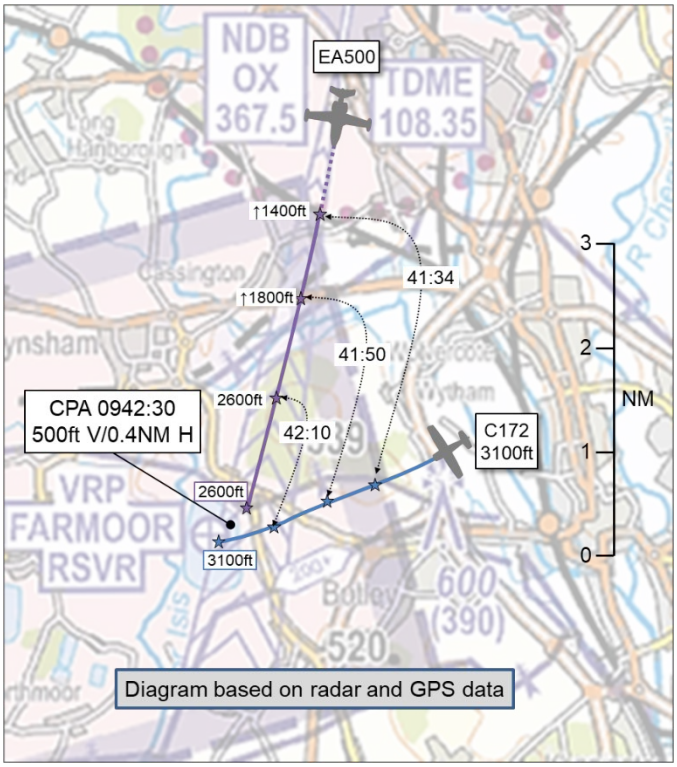
AIRPROX REPORT No 2025118

Date: 20 Jun 2025 Time: 0943Z Position: 5145N 00121W Location: Farmoor Reservoir

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C172	EA500
Operator	Civ FW	Civ Comm
Airspace	Brize Norton CTR	Brize Norton CTR
Class	D	D
Rules	VFR	IFR
Service	Radar Control	Radar Control
Provider	Brize Zone	Oxford Radar
Altitude	3100ft	2600ft
Transponder	A, C, S	A, C, S
Reported		
Colours	Beige	White/Orange
Lighting	Beacon & strobes	Stb, taxi/ldg, nav
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	3000ft	~1500ft climbing
Altimeter	QNH (1023hPa)	QNH
Heading	NK	190°
Speed	110kt	165kt
ACAS/TAS	SkyEcho	TCAS I
Alert	Information	Information
Separation at CPA		
Reported	600ft V/<500m H	300ft V/3m H
Recorded	500ft V/0.4NM H	



THE C172 PILOT reports that, on a flight leg between [point A] and [point B], they were receiving a Basic Service from Brize Radar and requested a Brize Zone transit to avoid the need to climb to 4000ft to remain clear of controlled airspace on the next leg. They were asked to make their request to Brize Zone. Following contact, they were cleared to cross between Farmoor Reservoir and Faringdon, not below 3000ft 1023hPa. They were notified of, and acknowledged, a Radar Control Service on entry to the zone and remained at 3000ft or slightly above. They first identified the other aircraft on [their navigation software] map, identified it visually and monitored closely, but were surprised by the speed and proximity of its approach. After it had passed, they asked the controller if the conflicting aircraft was under their control, but were told only that it was an Oxford departure.

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

THE EA500 PILOT reports that the day in question was clear skies, VFR, and that they use Oxford very regularly and are extremely familiar with all the procedures. When they called for start, their clearance was RW19 hold B1, after departure right turn heading 315°, climb to 2500ft, squawk 5474, that was duly acknowledged and they were held at the holding point for about 10min. The airspace was particularly crowded. They believed there was some sporting event in the south of England and there were quite a lot of helicopter movements, as well as training light-aircraft, and normal commercial air traffic. Subsequently, they were cleared for take-off and, as they went through 1000ft, they believed that Oxford Radar called them and told them to hold climb at 1500ft as they said there was traffic. They thought [the controller] said 3NM ahead, 300ft above and they duly complied. Their TCAS picked up the traffic, they thought their range was set up to 10NM on the TCAS. They soon became visual with the traffic and, to be frank, it was close enough. They [informed the controller that the] traffic passed down their starboard side and subsequently they were cleared by Oxford to climb, turn right, etc. They noted that, clearly if Oxford Radar had not picked up the traffic, the conflict could have been more serious. Their departure was IFR.

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

THE BRIZE ZONE CONTROLLER reports that they were training in Zone with 2 aircraft requesting a CTR transit. [The C172] was routeing east-to-west at 3000ft, squawk 3702, on a Basic Service. They gave them a clearance to cross Farmoor to Faringdon, VFR, not below 3000ft. Oxford called with Traffic Information. They pointed out [the Brize] traffic, 3702 and stated they had an IFR departure climbing to 4000ft. Their two aircraft then entered the CTR and were given Radar Control, and another called requesting a transit. They called the [Oxford] traffic to [the C172 pilot] as north, 2NM, tracking south, 500ft below and climbing, at which point their Mode C indicated no longer climbing. The Airprox was not reported on frequency, however, the [C172] pilot asked who the aircraft was under the control of. They replied that it was an Oxford departure. [The C172] continued to Faringdon.

The controller perceived the severity of the incident as 'Low'.

THE BRIZE NORTON SUPERVISOR reports that they were present in the Approach Control Room (ACR). Oxford released an aircraft off RW19 which entered the Brize CTR without liaising with Brize Approach first, as per standard operating procedures. Once the confliction was resolved, they spoke to the Oxford controller; they stated they had released the aircraft without calling first and that they [the Oxford controller] would be submitting a Mandatory Occurrence Report (MOR). At no time was an Airprox declared on frequency.

THE OXFORD RADAR CONTROLLER reports that the traffic situation was busy, as was the FIR. All the traffic they were working was Approach traffic, and traffic and RTF loading was high. The Tower controller had several aircraft at the hold backed up, and the EA500 was released straight ahead into the Brize Control Zone climbing 4000ft. There was a late spot on traffic working Brize between Brize and Benson routeing westbound at 3000ft. Traffic Information from Brize was sought and it was established that it was a VFR Zone transit, so the departing EA500 was stopped at 2500ft when the Tower controller passed the airborne call. They noticed the selected level had not changed when the aircraft checked-in on frequency. The aircraft was placed under a Radar Control Service, stopped at 2500ft and Traffic Information passed on the VFR aircraft 500ft above its cleared level. They were well aware that they did not need to separate the aircraft *per se* as IFR verses VFR inside CAS, but exercised duty of care in stopping the EA500 500ft below the level of the traffic at 3000ft. They chose 2500ft as this also provided a Terrain Safe Level should the aircraft not be able to climb until clear of [minimum safe altitude].

Factual Background

The weather at Brize Norton was recorded as follows:

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METAR EGVN 200950Z 14007KT CAVOK 24/14 Q1023 NOSIG RMK BLU BLU
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Analysis and Investigation

BM HQ 2Gp

The Brize Norton Zone controller was under training and providing an Air Traffic Service to 3 aircraft conducting Brize Norton CTR transits.

At 0933:27, the C172 [pilot] made initial contact with Brize Norton Zone requesting a CTR crossing. This was acknowledged by the Brize Norton Zone controller who issued a Basic Service.

At 0937:01, the C172 [pilot] was given the clearance to cross the CTR. *"cleared to cross Brize Norton controlled airspace, routeing Farmoor Reservoir – Faringdon, VFR, not below altitude 3000ft".*

At 0940:52, Brize Norton Zone received a call from an Oxford controller requesting Traffic Information on the C172. The Brize Norton Zone controller confirmed it was a VFR Zone transit and

Oxford informed them they had a Cirrus jet getting airborne, that would be climbing straight ahead to altitude 4000ft.

At 0941:31, the C172 entered the CTR, the controller issued Radar Control and instructed the pilot to remain VMC (Figure 1).

Figure 1 0941:31 C172 entering CTR

At 0942:08, the Brize Norton Zone controller provided the C172 [pilot with] Traffic Information regarding the EA500 "*traffic north, 2-miles, tracking south indicating 500ft below climbing*." The C172 [pilot] responded with "*copied*" (Figure 2).

Figure 2 – Time 0942:08 Traffic information passed to C172 pilot.

CPA occurred at 0942:30, with a separation of 0.3NM laterally and 500ft vertically.

A local investigation was conducted by Brize Norton following the event to identify the ATS-related causal and aggravating factors, of which none were identified.

2 Gp BM Analysis: On review of the radar replay, whilst Traffic Information was provided by the trainee controller, it was described incorrectly in terms of range and when the C172 and EA500 were within 5NM of each other. However the Traffic Information was provided at the earliest opportunity after another pilot transmitted, and the trainer had prompted the trainee to provide Traffic Information. The assumption of both the trainer and trainee controller was that the EA500 would remain clear of the C172 as the Oxford controller was aware of the C172's routeing and intentions to cross the Brize Norton CTR.

Oxford Airport

The following is a summary of the Oxford Investigation report:

This report recounts the events surrounding an Airprox incident involving an EA500 departing Oxford and a C172 transiting Brize Norton CTR. The situation unfolded due to a misunderstanding by the Oxford controller regarding runway operations at Brize Norton, which led to a clearance being issued without proper coordination.

The Oxford controller believed Brize Norton was operating on RW25, which would have allowed for autonomous release of aircraft into the CTR. However, Brize was actually using RW07, which required explicit coordination in accordance with an Oxford Airport/Brize Norton LoA. This misjudgement resulted in the EA500 being cleared into controlled airspace without the necessary release.

At the time, a C172 was already cleared to transit the Brize Norton CTR from east to west at 3000ft under VFR. To mitigate the potential conflict, the Oxford controller instructed the EA500 pilot to stop their climb at 2500ft, maintaining a 500ft vertical separation. The oncoming RAD2, preparing to open their position, instead assisted the Oxford controller by making the telephone communications to Brize Norton on their behalf.

Although no formal separation is required between IFR and VFR flights in Class D airspace, controllers are expected to provide sufficient Traffic Information to help pilots avoid collisions. However, the Traffic Information passed to Brize Norton, which had been delivered by the RAD2, was not entirely accurate as they had passed the EA500's initial climb clearance, which may have led to a misunderstanding of the conflict's severity. On attempting to reconnect with Brize Norton ATC to update them of the EA500's renewed stop altitude to 2500ft, the RAD2 had been unable to receive a timely response from them to provide the update.

The Oxford controller later acknowledged that they had rushed the clearance due to traffic pressure and had mistakenly assumed Brize was operating on RW25. Despite the error, they took steps to ensure safety and reported the incident proactively. The closest point of approach between the aircraft was 600ft vertically and 0.25NM laterally.

Following the incident, the EA500 was re-cleared to climb to 5000ft and turned left to avoid further conflict. The event highlighted several causal and contributory factors, including cognitive bias, high workload, and communication challenges.

Ultimately, while no loss of prescribed separation occurred, the incident underscored the importance of accurate situational awareness, reliable communication, and adherence to coordination protocols. It serves as a reminder of the need for robust procedures and support systems to help controllers manage complex and high-pressure environments.

Causal Factors [were assessed as follows]:

Degraded Distributed situational awareness amongst:

The Oxford Radar controller –an incorrect mental model of runway configurations led to the clearance of an IFR departure [the EA500] into the Brize Norton CTR without a clearance to do so. Reduced situational awareness equated to a late noticing of the potential conflict with an inbound VFR Brize Norton CTR transit [the C172].

The Brize Norton controller – Traffic Information passed by the Oxford Radar controller meant this controller was under the impression that [the EA500] was climbing to 4000ft, whereas the Oxford Radar controller had in fact stopped [the EA500] at 2500ft.

The [C172 pilot] – inferred that the Brize Norton controller had passed Traffic Information on [the EA500] claiming this aircraft was climbing to 4000ft, whereby the Oxford Radar controller had in fact stopped [the EA500] at 2500ft.

Contributory Factors [were assessed as follows];

High workload and task saturation at the Oxford Radar position, including a busy departure sequence, FIR traffic, and increasing RTF demand.

Delayed or incomplete task division, with RAD2 (DIR) not formally open despite rising workload (note, the oncoming RAD2 controller was, however, deemed to aid the Oxford controller despite the task not being formally split, TRM in this respect was deemed an effective barrier in this occurrence).

Cognitive bias and assumption, with the controller operating under the mistaken belief that Brize Norton was on RW25, leading to reliance on autonomous procedures and bypassing co-ordination that would have improved situational awareness.

Inaccurate Traffic Information passed to Brize Norton controller and inferred such information was passed to [the C172 pilot]. This likely led to an assumption that there was a greater level of conflict than actually existed. Issues with communication infrastructure between Oxford and Brize Norton, contributing to reluctance or delay in initiating co-ordination. Perceived pressure from Tower to aid in 'clearing' the busy departure sequence.

UKAB Secretariat

An analysis of the NATS radar replay was undertaken and both aircraft were positively identified using Mode S data. The C172 GPS navigation data provided by the pilot correlated with the radar tracks. CPA was assessed to have been at 0942:30 with 500ft vertical and 0.4NM lateral separation (Figure 3).

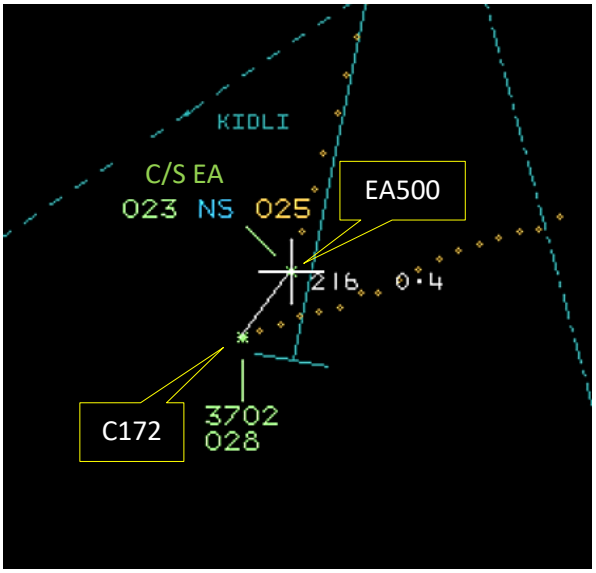

Figure 3 CPA at 0942:30

The C172 and EA500 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 C172 pilot was required to give way to the EA500.[2]

Summary

An Airprox was reported when a C172 and an EA500 flew into proximity at Farmoor Reservoir at 0943Z on Friday 20th June. The C172 pilot was operating under VFR in VMC in receipt of a Radar Control Service from Brize Zone, and the EA500 pilot was operating under IFR in VMC in receipt of a Radar Control Service from Oxford Radar.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, GPS track data from the C172, 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.

The Board first considered the actions of the C172 pilot, and was pleased to note that the pilot had received information from their electronic conspicuity (EC) equipment which had alerted them to the presence of the EA500. Members agreed that the EC equipment had detected the EA500 (**CF10**) and that this had enhanced the pilot's situational awareness. The Board noted that the C172 pilot had been provided with Traffic Information on the EA500, albeit at or about the same time that it had appeared on their navigation screen from their EC equipment, and members agreed that the C172 pilot had, therefore, had late situational awareness of the presence of the EA500 (**CF9**). The Board further noted that, on becoming aware of the other aircraft, the pilot had identified it visually and *'monitored closely, but were surprised by the speed and proximity of its approach'* and had subsequently made a call to the Brize Norton controller asking *'who the aircraft was under the control of.'* Members agreed, therefore, that the C172 pilot had been concerned by the proximity of the EA500 (**CF11**).

Considering the actions of the EA500 pilot the Board noted that the pilot followed the instructions from Oxford ATC and would have had no knowledge of whether ATC procedures had been followed. The Board further noted that the pilot had received Traffic Information from the Oxford controller and that their TCAS had also provided them with information on the same C172 traffic and that this had occurred during their climb-out from Oxford Airport. Given that the EA500 pilot had been given a 'stop-climb' instruction as they received Traffic Information, members agreed that the EA500 pilot had had late situational awareness of the C172's relative position to them (**CF9**). The Board noted that, once the pilot had received the Traffic Information and altered climb clearance, they had become visual with the C172, stating that '*they soon became visual with the traffic and, to be frank, it was close enough.'* Members agreed that the EA500 pilot had been concerned by the proximity of the C172 (**CF11**).

Turning their attention to the actions of the Brize Zone controller, the Board noted that they had initially been unaware of the EA500 departure as they had not been informed prior to its departure clearance from Oxford. The Board further noted that the controller had received a telephone call from the Oxford RAD2, shortly after the clearance, and had been incorrectly informed of the EA500's initial climb clearance. Some members had wondered why, seemingly, the clearance altitude had not been a concern for the Brize Zone controller. However, the Board noted that any potential altitude conflict had been resolved by the Oxford Radar controller by reducing the EA500's climb clearance to pass beneath the C172 in any case. Although members noted that the information referring to the stop-climb at 2500ft had arrived with the Brize Zone controller too late for them to have made a difference, the controller and trainee had assumed *'that the EA500 would remain clear of the C172 as the Oxford controller was aware of the C172's routeing and intentions to cross the Brize Norton CTR.'* The Board acknowledged that it had not been the Brize Zone controller's responsibility to provide the C172 VFR traffic with separation from IFR traffic in Class D airspace, but that they may provide Traffic Information (which

[1] (UK) SERA.3205 Proximity. MAA RA 2307 paragraphs 1 and 2.

[2] (UK) SERA.3210 Right-of-way (c)(2) Converging. MAA RA 2307 paragraph 12.

they had). However, it was further noted that the C172's track and subsequent position had been such that the Brize Zone controller had been required to provide Oxford ATC with Traffic Information in accordance with their LoA, and that this had been achieved by virtue of a call from Oxford to them. Members questioned whether the Brize Norton and Oxford LoA had been reviewed recently and felt that this Airprox may have provided them with an opportunity to consider doing so.

The Board then turned their attention to the actions of the Oxford Radar controller, and noted that the controller had cleared the EA500 to depart into the Brize Norton CTR without having contacted the Brize Zone controller beforehand, as had been required by the Oxford ATC procedures in accordance with an LoA with Brize Norton ATC. Members agreed, therefore, that an initial inappropriate clearance had been issued to the EA500 pilot (**CF6**). The Board also noted that the clearance error had been due to the controller having made an incorrect assumption regarding the runway in use at Brize Norton and members questioned whether a procedure had been in place to allow the Oxford Radar controller to have had that information easily available to them. Members agreed that the Oxford Radar controller had not fully complied with procedures (**CF1**) but had done their best to mitigate any issues by accepting assistance from the RAD2 controller, who had spoken with Brize ATC on the telephone regarding the EA500 departure, prior to setting up their position. However, the Board felt that it may have been prudent to have had the RAD2 controller in place earlier, to have enabled the positions to be split and alleviate the current controller's workload. Members agreed that the Oxford controller had been experiencing a high workload and that an additional radar position being open may have likely relieved the situation (**CF2**). The Board noted that, with the workload as it was, the Oxford Radar controller had later acknowledged that they had rushed the clearance due to traffic pressure, and members agreed that the controller had been too busy to assimilate the presence of the C172 whilst being engaged in other tasks (**CF7**). The Board noted that, as the controller had not seen the C172, they had not realised the potential conflict and, even if they had seen it, they could not have been certain that the C172 would have maintained their course. Without the required Traffic Information from the Brize Zone controller, members agreed that the Oxford Radar controller had detected the conflict between the C172 and the EA500 only after the EA500 had departed (**CF4**) and that they had subsequently provided late conflict resolution (albeit as soon as they had recognised the impending conflict) to the EA500 pilot (**CF5**) by giving them a stop-climb of 2500ft. The Board noted that there had been an alert from the STCA (**CF8**) and that this had likely not been sufficiently early enough to have assisted with an earlier intervention. The Board had previously noted that the RAD2 had contacted Brize Norton ATC to inform them of the EA500 departure, but that they had passed incorrect altitude information and had later been unable to pass the renewed stop-climb clearance of 2500ft in a timely manner. Members agreed that the ATM coordination effort had been incorrectly communicated by the RAD2 controller to Brize Norton ATC (**CF3**).

On concluding their discussion, the Board noted that both the C172 and EA500 pilots had gained late situational awareness of the other aircraft from information provided by either on-board EC equipment or ATC, and both pilots had seen the other aircraft. Members noted that there had initially been a fast closure rate and both pilots had been concerned by the proximity of the other aircraft. The Board agreed that, although safety had been degraded, the EA500 pilot had maintained the lower stop-climb clearance with 500ft vertical separation and that there had been no 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:

	2025118			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
1	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
	• Manning and Equipment			
2	Organisational	• ATM Staffing and Scheduling	An event related to the planning and scheduling of ATM personnel	

	• Situational Awareness and Action			
3	Human Factors	• ATM Coordination	Coordination related issues (external as well as internal)	
4	Human Factors	• Conflict Detection - Detected Late	An event involving the late detection of a conflict between aircraft	
5	Human Factors	• Conflict Resolution - Provided Late	An event involving the late provision of conflict resolution	
6	Human Factors	• Inappropriate Clearance	An event involving the provision of an inappropriate clearance ~~that led to an unsafe situation~~	
7	Human Factors	• Task Monitoring	Events involving an individual or a crew/ team not appropriately monitoring their performance of a task	Controller engaged in other tasks
	• Electronic Warning System Operation and Compliance			
8	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
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	• 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:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the Oxford controller had not followed correct procedures as laid out in the LoA with Brize Norton.

Manning and Equipment were assessed as **partially effective** because the Oxford RAD2 position could have been opened sooner, thus reducing the Oxford Radar controller's workload.

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the conflict was detected late and coordination between Brize Norton and Oxford ATC was neither correctly communicated nor in accordance with their LoA.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **partially effective** because the C172 pilot had late situational awareness of the EA500 from the Traffic Information provided from the Brize Zone controller and their EC equipment, and the EA500 pilot had late situational awareness of the C172 based on TCAS information.

[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: 2025118 Within Controlled Airspace