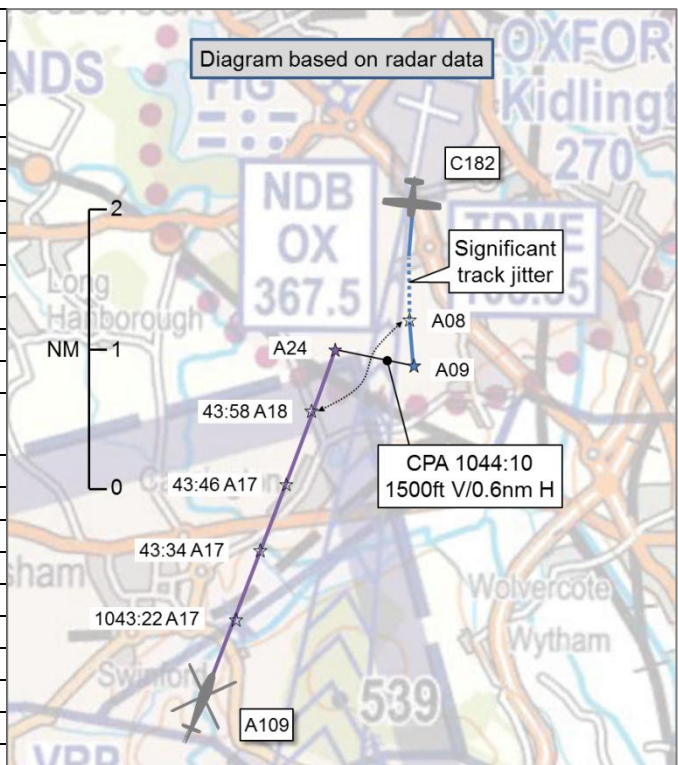


AIRPROX REPORT No 2015075

Date: 21 May 2015 Time: 1044Z Position: 5149N 00120W Location: 1.5nm S Oxford airport

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	C182	A109
Operator	Civ Trg	Civ Comm
Airspace	Oxford ATZ	London FIR
Class	G	G
Rules	VFR	VFR
Service	Aerodrome	Basic
Provider	Oxford Tower	Brize Radar
Altitude/FL	900ft	2400ft
Transponder	A/C/S	A/C/S
Reported		
Colours	White/blue	White/blue
Lighting	NK	Nav, red anti-col, strobes
Conditions	VMC	VMC
Visibility	20km	>10km
Altitude/FL	900ft	1800ft
Altimeter	QNH (1025hPa)	QNH
Heading	192°	025°
Speed	90kt	150kt
ACAS/TAS	Not fitted	Other TAS
Alert	N/A	TA
Separation		
Reported	NK	NK
Recorded	1500ft V/0.6nm H	



THE OXFORD RADAR CONTROLLER reports that at 1041 the Brize Norton Zone controller called with Traffic Information on a 3701 squawk (an A109) transiting his CTR via Farmoor Reservoir to Bicester. On assessing the track, he asked the Brize controller if the helicopter would be routing to the east of D129 in anticipation of a conflict with the Oxford RW19 climb-out. The Brize Zone Controller confirmed that the aircraft would be "routing east of Weston". As the routing from Farmoor Reservoir to east of D129 would keep the A109 outside of the Oxford ATZ, he passed Traffic Information to Brize on a departing Seneca and ended the call. He subsequently passed Traffic Information to Oxford Tower regarding the helicopter. After a period of track observation on the 3701 squawk, it was clear that the subject helicopter was not changing course and was heading directly for the Oxford overhead at 1700ft as displayed on Mode C. A telephone call to Brize Zone was initiated immediately to ascertain the intentions of the traffic, and he was advised that Brize had instructed the pilot to route to the east. Traffic Information was passed to the Brize controller that the Oxford visual circuit was active with multiple aircraft, which was acknowledged. The A109 was observed to continue towards the Oxford ATZ; therefore, further Traffic Information was passed to Oxford Tower because the intentions of the helicopter were now unknown. The Oxford controller stated that the A109 entered the Oxford ATZ at 1044 at 1800ft as displayed on Mode C, into direct conflict with the C182 whose pilot was climbing upwind in the visual circuit passing 800ft as displayed on Mode C. Lateral separation was assessed as 0.25nm, but the C182 pilot did not report visual with the A109. An EC135 in the helicopter training area was also upwind, initially in a head-on geometry with the A109 before turning downwind right-hand, indicating 800ft on Mode C with a lateral separation of 0.5nm. Visual circuit altitude at Oxford is 1500ft based on the Oxford QNH. The A109 was observed to climb rapidly, and a further call to the Brize Zone controller found that the Brize Controller had instructed its pilot to climb, having seen it enter the Oxford ATZ. Due to further traffic entering the OX hold at 3500ft QNH, he requested that the Brize controller limited the climb of the A109 pilot to not above 3000ft. The subject aircraft subsequently called Oxford Radar some 6nm north of the airport, having also flown opposite direction to the RW19 final approach. The A109 pilot left the frequency at

1048, descending into a private landing site near Bicester. At no time did the A109 pilot request entry into the Oxford ATZ, nor was any clearance or approval given to transit the Oxford ATZ. The aircraft entered the ATZ without permission and failed to conform to the pattern of traffic formed at Oxford.

THE BRIZE RADAR CONTROLLER reports that the A109 pilot was cleared to transit the Brize Norton CTR from a private landing site enroute to Bicester via Farmoor Reservoir not above altitude 1800ft Brize QNH. The pilot was asked to confirm that he would be avoiding the Oxford ATZ to which he replied "affirm". Traffic Information was passed to Oxford Radar. As the pilot cleared the Brize CTR he continued to fly towards the Oxford overhead; he was instructed to avoid the ATZ with Oxford traffic in the visual circuit and overhead, he replied that he was climbing to 3000ft to avoid the ATZ. Landline liaison was conducted with Oxford Radar to make them aware of his intentions. The A109 pilot cleared the Oxford ATZ to the north and changed en-route to Bicester, the A109 pilot apologised on frequency for the confusion.

He perceived the severity of the incident as 'Low'.

THE A109 PILOT reports that he was transiting the Brize Zone via the Farmoor Reservoir. On entering the Zone he asked Brize to negotiate a transit through the Oxford ATZ. Brize came back saying that Oxford did not have traffic to affect. As he passed to the north of the Farmoor reservoir he asked if he could change to Oxford. Brize did not respond and he presumed they were negotiating a clearance for him to cross the ATZ. As he got closer to the ATZ he asked for a climb to fly over the top of the ATZ because he had a couple of TAS contacts in the ATZ at low level. Brize released him to climb to 3000ft, which he expedited due to the proximity of Oxford. He was then released by Brize and spoke to Oxford. By this stage he was well above the ATZ.

He assessed the risk of collision as 'Low'.

THE C182 PILOT reports that he was on the climb-out from RW19, on the upwind leg, turning onto the crosswind leg. Just before turning onto crosswind, the Tower warned them of a helicopter that seemed to be heading towards the Oxford ATZ and that they had not been able to make contact with its pilot. All three of them in the aircraft kept a very good look-out, especially to the south in the direction of Brize Norton's airspace. He took control momentarily to lift the wings, to see if he could see the helicopter. At no point were they visual with the helicopter.

Also in the circuit was an EC135 pilot on a training flight. He reported that he was not involved in Airprox and had no recollection of any conflicting traffic in the circuit or transiting. He was giving instruction at the time. Radar recordings show that the minimum separation between the A109 and the EC135 was 1500ft vertically and 1.2nm horizontally.

Factual Background

The Oxford weather:

EGTK 281020Z 25009KT 220V280 9999 FEW039 16/08 Q1026

The Oxford ATZ is a circle, 2nm radius, centred on the longest notified runway (01/19), with an upper limit of 2000ft. Aerodrome elevation is 270ft.¹

Analysis and Investigation

CAA ATSI

The Oxford Radar and Aerodrome controllers both reported the Airprox because they believed the A109 pilot had entered the Oxford ATZ and come into proximity with two aircraft operating in the Oxford circuit pattern. Prior to the occurrence, co-ordination had been attempted by the Oxford

¹ UK AIP AD 2.EGTK-1

Radar controller with Brize Radar who were working the A109 (SSR code 3701) on a northbound routing. As the A109 pilot approached the Oxford ATZ from the south, no clearance for the A109 pilot to enter the Oxford ATZ had been issued. At 1044:03 the C182 pilot (SSR code 7010) had just departed Oxford and was climbing out to enter the left-hand circuit (Figure 1).

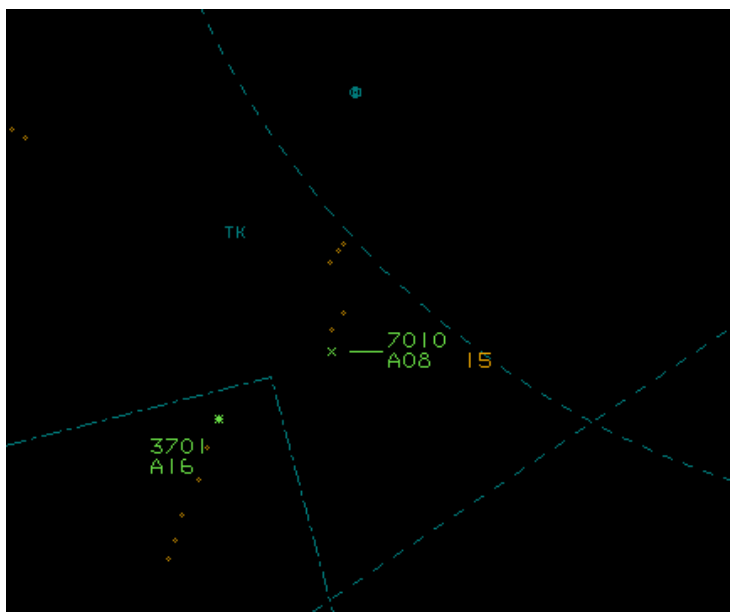


Figure 1 (Swanwick MRT at 1044:03)

Just prior to the Oxford ATZ boundary (and just as the A109 pilot was leaving the Brize Norton CTR), the A109 pilot began a rapid climb from 1600ft to 3000ft to route over the Oxford ATZ. (The pilot reported having TAS contacts at low level ahead). [UKAB Note: as can be seen from the map on page 1, the Oxford ATZ boundary overlaps the Brize CTR, and so the A109 pilot was required to either maintain altitude within the CTR or gain approval from Brize before climbing as he approached the Oxford ATZ]. CPA between the C182 and the A109 was 0.5nm horizontally and 1500ft vertically occurred at 1044:11. (Figure 2.) The A109 was vertically clear of the Oxford ATZ at that point.

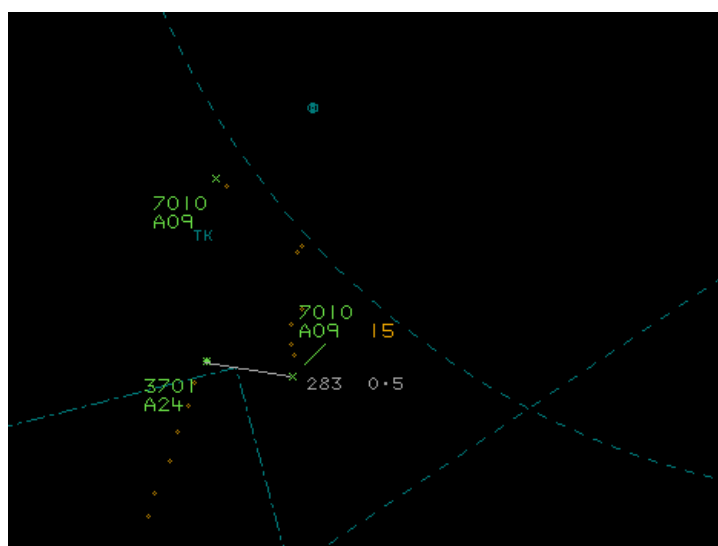


Figure 2 Swanwick MRT at 1044:11

The Aerodrome controller at Oxford had passed appropriate Traffic Information to the C182 pilot (and the EC135 pilot) having been pre-noted of the A109 by Oxford Radar. Neither the C182 or the A109 pilots reported visually sighting the other traffic.

Military ATM

The Radar Analysis Cell captured the incident on the London QNH 1026hPa.

A portion of the Brize tape transcript is below:

From	To	Speech	Time
Brize	Oxford	Farmoor reservoir south west five miles three seven zero one	10.41.11
Oxford	Brize	Contact	10.41.13
Brize	Oxford	He's routing er Farmoor Reservoir then up to Bicester er not above one thousand eight hundred feet one zero two six as he transits the zone	10.41.14
Oxford	Brize	Roger is he routing east of delta one two nine	10.41.20
Brize	Oxford	He will be routing to the east of erm Weston	10.41.25
Oxford	Brize	Okay traffic just airborne off runway one nine is a Seneca will be turning north west bound climbing to three thousand feet	10.41.27
Brize	A109	[A109 C/S] entering Brize controlled airspace radar control	10.41.37
A109	Brize	Radar control service er [A109 C/S] er would you be able to aquiarange a handover to Oxford or should I speak to them on the other box	10.41.41
Brize	A109	[A109 C/S] I've just spoken to Oxford er on the landline er they have departing traffic er but its departing up to the north and west and just confirm you route to the west of Weston on the Green which is active at the moment	10.41.47
A109	Brize	I will indeed [A109 C/S] thanks	10.41.57
Oxford	Brize	Request Traffic Information on your three seven zero one with intentions please	10.43.27
Brize	Oxford	Er he is to route to the east of Weston on the Green has been told	10.43.30
Oxford	Brize	Okay our visual circuit is active runway one nine left-hand as well with multiple aircraft	10.43.34
Brize	A109	[A109 C/S] Oxford have multiple aircraft in their hold and in the visual circuit are you going to avoid their ATZ	10.43.42
A109	Brize	[A109 C/S] that's affirmative I can climb now	10.43.50
Brize	A109	[A109 C/S] roger climb at your discretion clearing Brize controlled airspace Basic Service	10.43.55
A109	Brize	[A109 C/S] climbing to clear the Oxford ATZ	10.43.59
Brize	A109	[A109 C/S] now level two thousand eight hundred feet QSY Oxford	10.44.08
Oxford	Brize	Er Oxford your three seven zero one now infringing our ATZ through our overhead	10.44.08
Brize	Oxford	Yeah I've just told him to climb to get away from that he's just clear of it	10.44.14
Oxford	Brize	Okay not above three thousand feet please something in the hold	10.44.17
Brize	Oxford	Not above three roger	10.44.17
A109	Brize	[A109 C/S] QSY Oxford	10.44.21
Brize	A109	[A109 C/S] climb not above three thousand feet Brize QNH one zero two six	10.44.22
A109	Brize	Sorry I thought you were co-ordinating a clearance through Oxford so that wasn't particularly helpful do you want me to stay with you now?	10.44.38
Brize	A109	You er stay with me but not above three thousand feet	10.44.43
Oxford	Brize	Hi there can I get the details on the three seven zero one I'm going to file on that	10.45.45

Figure 1 outlines the positions of the Brize CTR, Farmoor Reservoir, Oxford airfield and Weston on the Green (D129).



Figure 1: Geography of the area.

The Brize controller placed the A109 pilot under the appropriate types of service for the zone crossing and Class G transit. The controller was working Brize Zone, Approach and Director Frequencies with 2 aircraft in total and a 'medium-to-low' workload. Prior to the Airprox, the controller reminded the pilot of D129 (Weston on the Green parachute site) and the Oxford ATZ. He also passed Traffic Information to Oxford, identifying the A109 by Mode 3A at 1041:11. During the information exchange with Oxford, the Brize controller confirmed that the A109 pilot was routing to the east of D129 and Oxford informed of traffic airborne to the north. However, at 1041:47 (Figure 2), the controller informed the A109 pilot of the traffic and, mistakenly said that he should route to the west of D129.

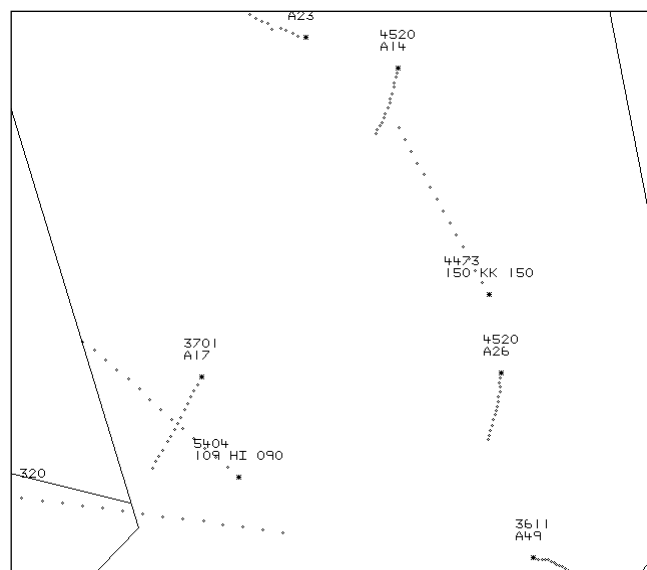


Figure 2: A109 pilot informed to route to west of D129 at 1041:47 (A109 squawk 3701).

The pilot replied with, “*I will indeed*” at 1041:57. Brize had placed the A109 pilot at 1800ft QNH as a standard altitude to avoid their radar pattern traffic; the A109 pilot’s requested transit had been at 2400ft QNH. When Oxford asked for an update at 1043:27, Brize confirmed that the A109 pilot was routing to the east of D129 and Oxford confirmed that the visual circuit was active RW19 left-hand. At 1043:42 (Figure 3), Brize warned the A109 pilot of the traffic in the Oxford ATZ and asked him if he was going to avoid.

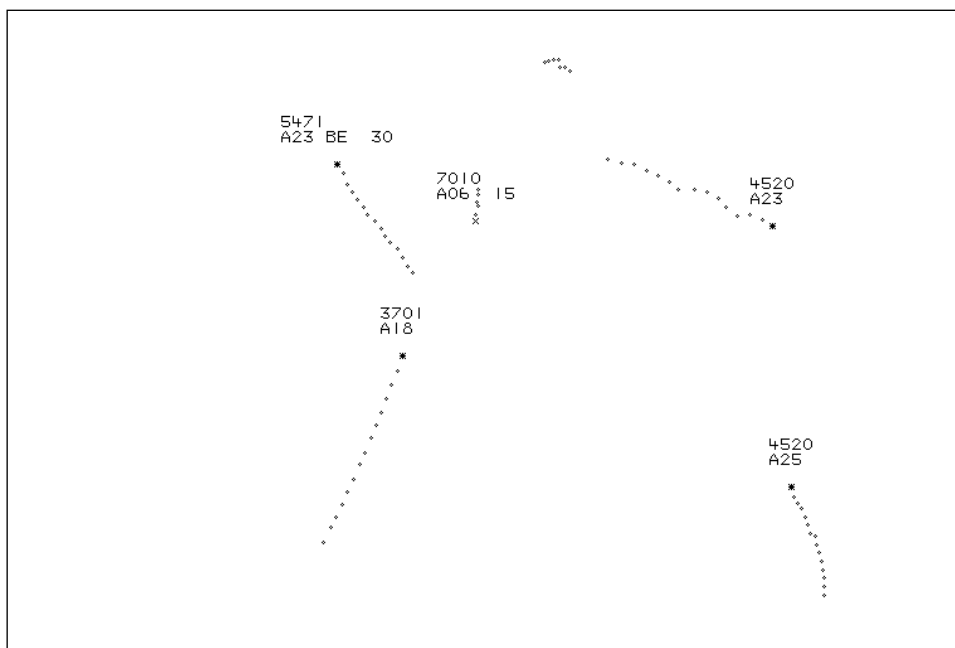


Figure 3: Brize warning of Oxford visual circuit traffic at 1043:42. (A109 squawk 3701; C182 squawk 7010).

The A109 pilot requested a climb and at 1043:55 (Figure 4), Brize confirmed, “*climb at your discretion, clearing Brize controlled airspace, Basic Service.*”

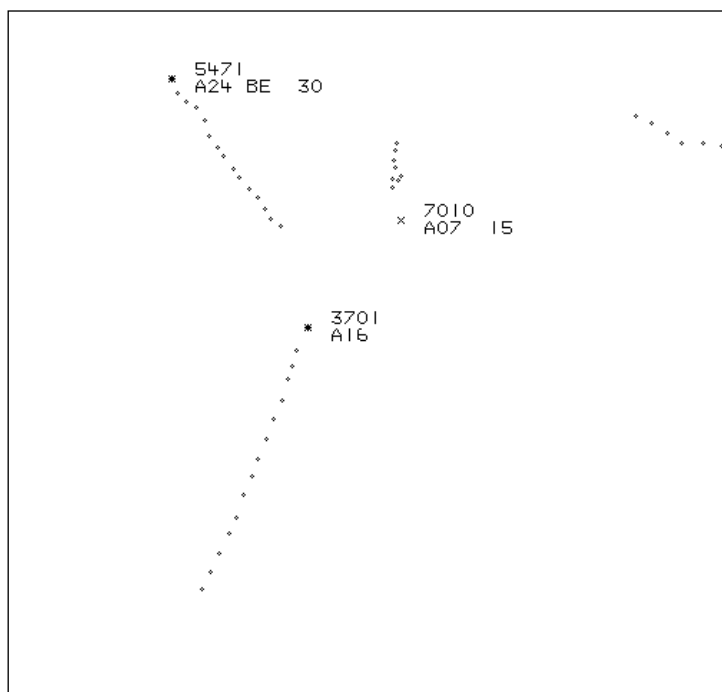


Figure 4: Climb instruction at 1043:55.

The A109 pilot called level at 2800ft (Brize QNH 1026hPa) at 1044:08 (Figure 5); at the same time Oxford declared that the A109 pilot was infringing their ATZ.

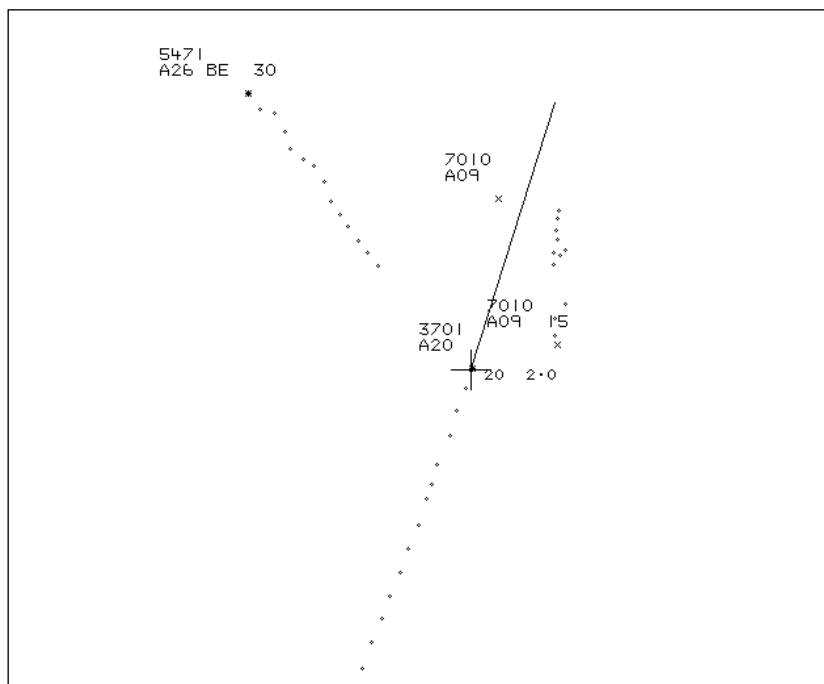


Figure 5: Replay at 1044:08, approximately 2nm from OX.

The RAC replay at 1044:10 (Figure 6) shows the A109 at 2400ft (London QNH 1026hPa) climbing; CPA is estimated at 1044:10 with 0.5nm horizontal and 1500ft height separation.

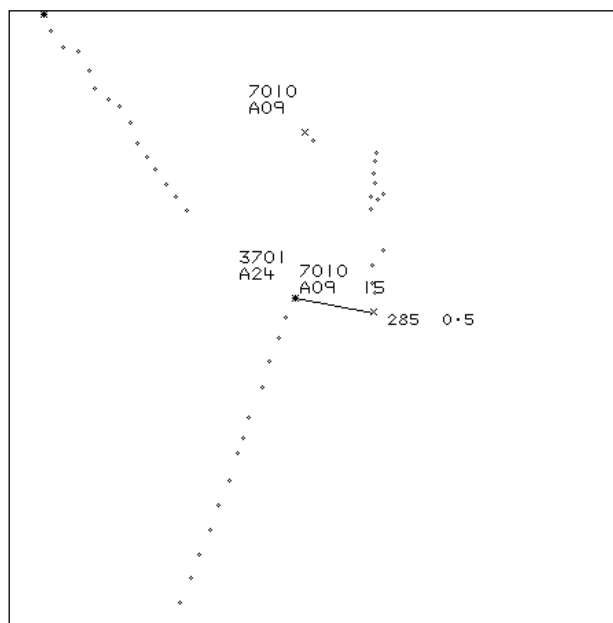


Figure 6: CPA at 1044:10 with 0.5nm horizontal separation and 1500ft vertical.

Oxford requested that the A109 pilot be not above 3000ft due to hold traffic, and this was passed to him at 1044:22. Brize once again confirmed that the A109 pilot would avoid D129 but no direction was given. At 1044:38, the pilot of the A109 commented that he thought Brize were gaining a clearance through Oxford, and Brize confirmed that the pilot should remain on the Brize frequency. The routing instruction and confirmation to remain on the Brize frequency may have led the A109 pilot to believe that he was cleared on his current path. In the subsequent conversation between Brize and Oxford ATC, the Brize controller confirmed that he had given the

route to the east of Weston and it may have been misunderstood by the pilot. The A109 pilot was transferred enroute at 1046:33.

Pilots are not routinely handed over to Oxford if the squawk has been passed by Brize. The Letter of Agreement (LOA) between Brize and Oxford states that:

'LARS transits operating within 2nm of the OX at or below FL80 will be offered to Oxford Radar for a service. Aircraft crossing the final approach track for RW19 (within 8nm OX) will be offered to Oxford Radar for a service. BZN LARS operates within a large area and should Oxford Radar see traffic that conflicts with their operation they should contact LARS and ask to work the traffic.'

The Brize controller had called Oxford, applied the correct services and issued reminders of the Oxford ATZ and D129. It appears that the controller inadvertently issued route instructions for the A109 pilot to pass to the 'west' of D129, when he meant, and thought, that he had said 'east'. This error may have been a slip by the controller, intending to route the A109 pilot to the east of D129, thus clearing Oxford laterally. The A109 pilot appears to have climbed above the Oxford ATZ and generic Traffic Information had been passed as a Class G transit under a Basic Service.

The normal barriers to an incident of this nature would be radar-derived Traffic Information, ACAS and sound deconfliction procedures. The CPA appears to be at 1044:10 with 1500ft height and 0.5nm horizontal separation between VFR traffic in Class G airspace. It is not known if ACAS would have alerted given the separation. Traffic Information was passed between units, and Brize informed the A109 pilot of traffic activity at Oxford. As the respective controllers had spoken, identified SSR codes and discussed routings, the controllers may have felt that they had satisfied the LOA and had a procedure to deconflict aircraft. However, an east/west cognitive slip from Brize may have led all parties to believe that a coordinated routing had been agreed. The A109 pilot had been informed of the traffic and he requested a climb above the Oxford ATZ as soon as he was clear of the Brize CTR; there does not appear to be any specific traffic for the pilot to 'see-and-avoid' because the traffic was below in the Oxford visual circuit.

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard². 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 operation³.

Summary

At the time of the Airprox both pilots were operating in Class G airspace, the C182 pilot was within the Oxford ATZ climbing out from RW19 in receipt of an Aerodrome Service and the A109 pilot, in receipt of a Basic Service from Brize Radar, had climbed rapidly to transit above the ATZ. The minimum separation was recorded as 1500ft vertically and 0.5nm horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from both pilots, the controllers concerned, area radar and RTF recordings and reports from the appropriate ATC and operating authorities.

The Board first discussed the actions of the A109 pilot. The civil helicopter pilot member was surprised that the A109 pilot had continued towards the Oxford ATZ without having received a positive clearance to transit the ATZ. In mitigation, he noted that the pilot had requested a handover from Brize Radar to Oxford and, although he had not received any positive instruction, it was possible that he had assumed that he had permission to continue on his current route and altitude given that he had been cleared by Brize to route west of D129; unfortunately he had not clarified the situation

² SERA.3205 Proximity.

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

until the last minute. The Board noted that the A109 pilot had climbed rapidly as he approached the Oxford ATZ boundary, as his concern at the TAS contacts in the Oxford visual circuit grew. Some members questioned the degree to which the A109 pilot had infringed the Oxford ATZ, if at all, but after some discussion agreed that determination of airspace infringement was not a matter for the Airprox Board and that the question of whether or not the pilot had entered the Oxford ATZ was not germane to the Airprox, other than that it had been a cause for concern to the Oxford controller. They also recognised the conflict that the A109 pilot faced between complying with the Brize transit altitude clearance and the need to climb to clear the Oxford ATZ (which extends laterally within the Brize CTR boundary). Although they were of the opinion that the A109 pilot could have been more positive with Brize ATC in establishing his degree of coordination, the Board commended the A109 pilot for his action in making such a quick climb to achieve an altitude above the upper level of the ATZ once he had been released by Brize.

The Board noted that the Brize controller had contacted Oxford ATC to inform them of the A109 and confirm that it would be routeing from Farmoor reservoir to the east of Weston on the Green/D129. This routeing would have taken the A109 away from the Oxford ATZ. However, the Brize controller made a cognitive error and cleared the A109 pilot to route to the west of Weston on the Green instead. The Board also noted that, on his initial call to Brize, the A109 pilot had requested to transit at 2400ft. The Brize controller had instead cleared the A109 to transit not above 1800ft because this was a standard altitude to avoid traffic in their radar pattern. The Board observed that no aircraft were evident on the radar recording in the Brize radar pattern until after the A109 had passed Farmoor reservoir, some 8.5nm east abeam Brize airfield. Several members commented that if the A109 pilot had been cleared to transit at his requested altitude of 2400ft he would have remained clear of Brize radar traffic, above the Oxford ATZ, and therefore the whole incident would have been avoided. The Board were also surprised that the Brize controller had not taken positive action, either by instructing the A109 pilot to climb, or by transferring him early enough to Oxford, to ensure that the A109 would remain clear of the Oxford ATZ. The radar display would have shown that the A109 pilot was not routeing to the east of Weston on the Green as he had expected and that, on his actual route at 1800ft, it was evident for some minutes that he would be in conflict with the Oxford ATZ as soon as he left the CTR. Equally, the Board wondered why the Oxford controller had not requested the A109 pilot be asked to contact him. Although the reported routeing would have taken the A109 away from the Oxford ATZ, it was apparent that the A109's actual routeing was taking it towards the Oxford ATZ, despite the Brize controller's comments. Members felt that if the A109 pilot had been asked to contact Oxford, the controller could have coordinated it with the Oxford circuit traffic.

In short, the Board opined that the context of the incident was that: although the A109 pilot had asked for a handover or coordination, he had not positively confirmed that this had been achieved as he approached the Oxford ATZ; the Brize controller had unnecessarily altitude restricted the A109, had erroneously issued routing to the A109 pilot contrary to the agreed routing with Oxford and had not proactively addressed the apparent airspace conflict as the A109 headed towards the Oxford ATZ below its upper level and contrary to his expectation; and the Oxford controller had not revisited the A109's routing with Brize early enough as he noted that it was not as he expected but instead heading towards his ATZ.

Although the Board could understand why the Oxford controller had decided to file an Airprox report in that he had been concerned that the A109 pilot might have flown into potential conflict with circuit traffic, they opined that the actual circumstances had been that the A109 pilot, climbing through 1800ft, had not flown into direct conflict with the C182 whose pilot was climbing upwind in the visual circuit passing 800ft. In the event, he had climbed quickly at the ATZ boundary to fly above the ATZ, had passed 1500ft above the C182 and well above other circuit traffic and had thereby avoided the pattern of traffic formed by other aircraft in operation. The purpose of the Board was not to assess what might have happened, but what had actually happened; therefore, the cause was considered to be that the Oxford controller had perceived a conflict and, because the A109 pilot had removed any possibility of a collision by climbing above the ATZ, it was considered that normal safety standards had pertained. Therefore, the Board unanimously agreed that the Airprox should be categorised as risk Category E.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The Oxford controller perceived a conflict.

Degree of Risk: E.