

**AIRPROX REPORT No 2011026**

Date/Time: 1 Apr 2011 1130Z

Position: 5144N 00115W (15nm N CPT)

Airspace: Oxford AIAA (Class: G)

Reporter: LTC OCK/SE LOW

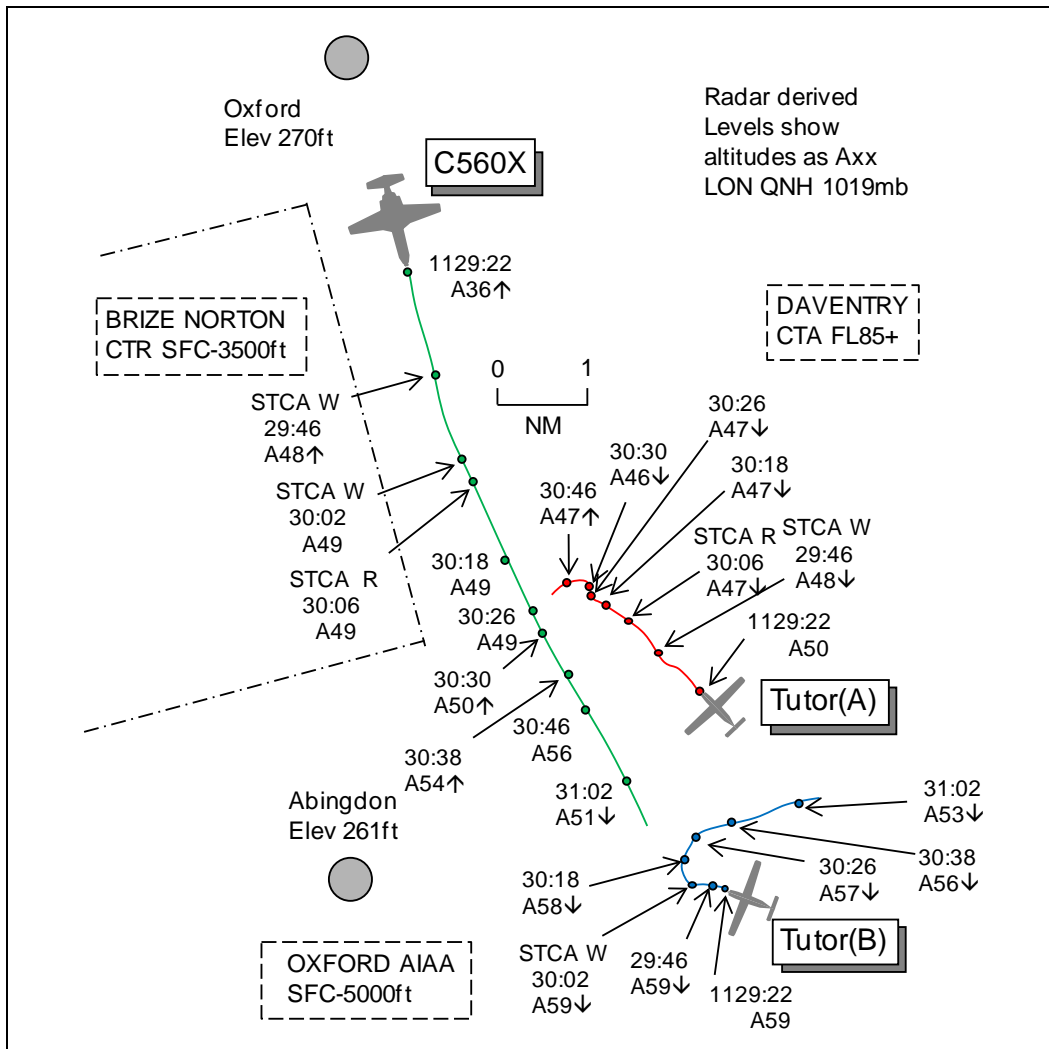
	<u>1st Ac</u>	<u>2nd Ac</u>	<u>3<sup>rd</sup> Ac</u>
<u>Type:</u>	C560X	Tutor(A)	Tutor(B)
<u>Operator:</u>	Civ Exec	HQ Air (Trg)	HQ Air (Trg)
<u>Alt/FL:</u>	5000ft (QNH 1017mb)	5000ft (QNH)	FL50
<u>Weather:</u>	VMC CLNC	VMC CLAC	VMC CLAC
<u>Visibility:</u>	>10km	>10km	NR

Reported Separation:

400ft V/NR H    above V/2nm H    Not seen

Recorded Separation:

C560X v Tutor(A) 200ft V/0.7nm H  
 C560X v Tutor(B) 200ft V/1.8nm H



## **PART A: SUMMARY OF INFORMATION REPORTED TO UKAB**

**THE LTC OCK/SE LOW CONTROLLER** reports that an Oxford departure, the C560X, had been given a clearance to remain outside CAS and to call for join. He noticed that there were 2 Benson ac operating on the route towards CPT between FL40 and FL60. As the C560X flight called on frequency climbing to FL50, STCA activated against the first Benson ac [Tutor(A)] which was at FL49. He told the C560X crew that they were under a BS only but that there was traffic 11 o'clock 5nm now descending to FL48. He re-called the traffic at 2nm at the same level before the C560X was seen to climb to FL54 and its crew reported that they had climbed owing to traffic. In taking the climb the C560X came into conflict with the second Benson ac [Tutor(B)] so he called this as traffic and gave the C560X flight a joining clearance on track CPT altitude 6000ft to enable further climb. When the C560X flight was inside CAS he asked the crew if they had seen the traffic to which they replied that they had not seen it but had responded to a TCAS RA. While this event occurred outside CAS and under a BS, a flight on frequency activating STCA with 2 other unknown ac and reporting a TCAS RA could be a distraction.

**THE C560X PILOT** reports outbound from Oxford, IFR and in communication with London on 135.8MHz, squawking 5251 with Modes S and C. They had received a clearance from Oxford to take-off RW19 with a L turn to CPT and to climb to 5000ft with the assigned code and to contact London after take-off. After calling London they were assured again of 5000ft to CPT under a 'Traffic Advisory' service, he thought. Heading 150° at 240kt and maintaining 5000ft they received TI on traffic in their 1230 position, he thought, range 6nm. Neither the PF in the RHS nor he could visually acquire the traffic but it was shown on TCAS to be closing quickly and almost at the same height. He switched the TCAS from 12nm to 6nm range but then received a TCAS RA 'climb, climb'. The co-pilot initiated the manoeuvre without delay and he also increased the ROC. This climb took them to 5800ft; a second ac was no immediate threat owing to their climb. He informed London as soon as the frequency wasn't occupied. Flight conditions were VMC but they never visually acquired any traffic. Shortly thereafter they were cleared to FL60 and were fully IFR controlled.

**THE TUTOR(A) PILOT** reports teaching an elementary flying exercise to a UAS student at 100kt and in receipt of a TS from Benson. The visibility was excellent above a uniform layer of cloud, tops 3500ft. The controller alerted him to fast moving traffic to his NW with which he was already visual in his 1030-11 o'clock approximately 3nm away and at the same height, 5000ft; he acknowledged this accordingly. The other ac was on an opposite track and it was clear that his continued heading would keep him well clear of it. The other ac appeared to maintain its heading in a gentle climb and passed abeam on his LHS at range 2nm and at high speed, sufficiently far enough away to make it difficult to identify the ac type but he thought it was a Citation. At no point was there any perceived risk and the Citation did not deviate from its track throughout. He maintained visual contact with Citation throughout until it cleared to the S.

**THE TUTOR(B) PILOT** reports flying a dual training sortie from Benson and in receipt of a TS from Benson squawking with Modes S and C. About 4nm S of Oxford he was flying above 8/8<sup>th</sup> cloud outside CAS on recovery to Benson in excellent visibility. He was on an E'ly heading at FL50 when he was advised of fast moving traffic 2nm to the NW, behind him, 200ft below and climbing. He did not consider this traffic to be a threat but asked ATC to keep him posted. He was later advised that the other ac was submitting an Airprox

**THE BENSON APPROACH CONTROLLER** reports operating bandboxed with Director. At 1115 he received a telephone call from Oxford with TI on an ac departing Oxford squawking 5251 climbing to 5000ft to join CAS at CPT. He was asked if he wanted to work the flight and due to him having no traffic to affect at the time he declined after consultation with Zone. At 1130, 15min after the TI was passed, he witnessed an ac leaving the Oxford ATZ squawking 5251 and, as now he had traffic in the area, he passed TI to Tutor(A) pilot, who called visual, and to another Tutor flight, Tutor(B), whose pilot asked to be kept updated. Both Tutors were under a TS and due to the non-threatening heading of the traffic he did not consider an update to be relevant and therefore none was passed. Shortly after this Tutor(A) flight downgraded to a BS and changed frequency to Stud 7. Shortly after

this he was relieved for lunch and on arrival back in the Tower he was informed that LTC S had filed an Airprox on both Tutors.

**ATSI** reports that an Airprox occurred approximately 10nm N of CPT when the C560X came into conflict with a Tutor at altitude 5000ft.

The C560X departed Oxford for a flight to Bern, Switzerland. The C560X was in contact with the LTC OCK sector on 132.125MHz and in receipt of a BS.

The Tutor had departed Benson and was on a training flight, in receipt of a TS from Benson Approach.

LTC OCK was manned by one controller and there were no reported unservicabilities or undue distractions. The OCK controller filed an Airprox report. ATSI assessed the controller's workload as 'light'.

ATSI had access to controller and pilots' reports, transcript of frequency 132.125MHz, recorded area surveillance and the ANSP unit report.

The C560X flight departed Oxford's RW19 cleared, "*left turn to Compton, climb altitude 5000 feet, squawk 5251*". The code 5251 was the airways Mode A code for the flight and was code-c/s converted on the OCK controller's situation display. The C560X was airborne at 1128 (UTC).

The LTC Manual of Air Traffic Services (MATS) Part 2 STH 5.7 Para 5.8.2 states:

'All departures from Oxford requesting an airways join at CPT are pre-noted to Brize Radar. On occasions, Brize Radar may provide a service to such departures subject to workload.'

Further provision is also made for Oxford ATC to pass details of departures towards CPT to Benson, when Brize Radar will not work such departures. ATSI were unable to ascertain if the C560X flight was offered to either Brize Norton or Benson for a service.

The C560X appeared on the OCK controller's situation display at 1129:23 as it passed through altitude 3600ft. Pease Pottage was the radar in use.

At 1129:25 the C560X pilot called the OCK sector and a BS was assigned. The ac was 18.5nm N of CPT, where the base of CAS is FL085.

[UKAB Note (1): Pilots are notified in UK AIP ENR 1-6-1-1 (12 Mar 09) that no DS or TS will be available on any London Control frequency below FL070.]

Under a BS controllers are not obliged to pass TI; however, a controller with access to surveillance derived information may pass a warning to pilots if that controller considers a definite risk of collision exists.

At 1129:40 the OCK controller informed the C560X flight, "*(C560X c/s) although it's a Basic Service outside be advised there is traffic in your 11 o'clock range of approximately 5 miles showing flight level four nine er descending actually four eight now unverified.*" The controller's transmission ended at 1129:52, by which time STCA low-level alert had activated between the C560X and an A3610 return [Tutor(A)]. Both ac were at altitude 4800ft (London QNH was 1019mb), Tutor(A) in the C560X's 11 o'clock range 3-8nm.

The C560X pilot replied, "*Yeah, we have contact er one thousand below.*" The controller did not detect this discrepancy.

Another low-level STCA warning activated at 1130:02 on a Benson squawk A3611, Tutor(B), at altitude 5900ft in the C560X's 11 o'clock, range 5-4nm.

At 1130:05 a high-level STCA warning activated between the C560X and Tutor(A).

The controller updated the TI on Tutor(A) at 1130:16, *“and (C560X c/s) previously mentioned traffic at about two miles now er in your 11 o'clock opposite direction showing four seven unverified.”* The C560X crew acknowledged with, *“Er”*. The C560X was now at altitude 4900ft with Tutor(A) at 4700ft, range 1-8nm closing from the L, 11 o'clock.

[UKAB Note (2): The CPA occurs at 1130:26 when Tutor(A) passed down the LHS of the C560X with lateral separation 0.7nm, the C560X showing altitude 4900ft and Tutor(A) at 4700ft. The next sweep 4sec later shows the lateral separation still at 0.7nm with the C560X climbing through 5000ft and Tutor(A) descending through 4600ft.]

At 1130:49 the C560X flight reported, *“...we had to climb up due to er climb advisory of the TCAS of the mentioned traffic we're descending to five thousand again.”* The C560X had climbed to altitude 5600ft. STCA had ceased on Tutor(A) but reactivated on the 3611 return, Tutor(B).

The controller acknowledged the C560X's climb and at 1130:57 gave TI on Tutor(B) return which by now had turned E'bound away from the track of the C560X, *“...there's further traffic now in your nine o'clock showing five four unverified you are clear to enter controlled airspace in the climb to altitude six thousand feet if you want to climb.”*

No further TCAS incidents were reported.

Shortly before leaving the OCK frequency the controller asked the C560X pilot if they had seen the Tutor traffic, to which the reply was negative. The flight conditions later reported by the C560X pilot were 'VMC (visibility >10km in haze)'.

The controller later acknowledged that even though outside CAS under a BS, the activation of conflict alert between the C560X and the 2 other ac, plus the reporting of the RA, could have been an undue distraction. There were no other reported incidents on the sector at the time.

The Airprox occurred in Class G uncontrolled airspace 15nm N of CPT at altitude 5000ft when the C560X, inbound CPT, came into conflict with Tutor(A) operating in the vicinity.

Outside CAS the responsibility for collision avoidance rests solely with the pilot of each ac however, subject to the level of service agreed through ATSOCAS, controllers may provide TI (or deconfliction advice) as necessary.

At the time of the incident the C560X flight was in receipt of a BS; however the OCK controller deemed that the relative positions of each ac were such that a warning, in the form of TI, was necessary. Tutor(A) flight, being visual with the C560X, was able to avoid the C560X having been provided TI from Benson Approach.

There is no obligation for a third party agency to provide services to Oxford departures via CPT and similarities between this Airprox and an earlier Airprox (2011004) should be noted. London Oxford Airport has published its intention to procure surveillance equipment for operational readiness in 2012 at which time the procedures relative to all ANSPs in the Oxford-Compton area should be reviewed.

**BM SAFETY MANAGEMENT** reports that this incident was filed as an Airprox by the LTC OCK controller and involved 2 individual Tutors operating VFR in receipt of a TS from Benson APP and a Citation 560X which had departed Oxford in receipt of a PS from them and latterly a BS from TC OCK.

All altitudes quoted within the report, unless stated otherwise, are based on the SSR Mode C information from the RAC supplied radar replay.

At 1115:24, Oxford contact Benson stating, *“five-three-five-four squawk, climbing up towards CPT at 5, do you need to work him?”* The procedure between Oxford and Benson is that as Benson is not a unit with a mandated LARS task; they only accept Oxford traffic if they have IFR traffic that they need to de-conflict with the Oxford traffic. In this case, Benson had no such traffic.

[UKAB Note (3): The C560X assigned code was 5251.]

At 1129:45 the Citation is approximately 3.2nm S of Oxford climbing through 4800ft, with Tutor(A) 4.3nm SE at 4800ft in a slow descent, tracking NW.

Shortly afterwards at 1129:50 Tutor(A) turned L approximately 20° bringing it more directly into conflict with the Citation. At 1129:57 APP passed accurate TI to Tutor(A) flight stating, *“traffic north-west, three miles [radar replay shows 3.7nm], tracking south, fast moving, one hundred feet above climbing.”*

By 1130:01 Tutor(B) is 5.7nm SE of the Citation, tracking W, indicating 5900ft, with the Citation now maintaining 4900ft.

At 1130:09 Tutor(A) pilot reported visual with the Citation, with 2.1nm lateral separation existing and Tutor(A) indicating 4700ft in descent. However, the pilot of Tutor(A) stated in his report that they were already visual with the Citation at the point when TI was passed.

At 1130:15, Tutor(B) commences a long R turn onto NE.

The CPA between Tutor(A) and the Citation occurs at 1130:26 with 200ft vertical and 0.7nm lateral separation shown on radar. The pilot of Tutor(A) stated that the Citation could be seen to be *“flying the opposite track to me and it was clear that our continued heading would keep us well clear of each other.”*

At 1130:35 APP passed accurate TI to Tutor(B) flight stating, *“traffic north-west, two miles [radar replay shows 2.6nms], tracking south-east, fast moving, two hundred feet below climbing.”* At 1130:38 the Citation has climbed to 5400ft which accords with the pilot’s report to the TC OCK controller that they had manoeuvred in accordance with a TCAS RA. Although Tutor(B) pilot requested to be kept *“posted”* on the position of the Citation, with the relative courses of the ac no further update was required from APP with the Citation tracking through Tutor(B)’s 6 o’clock range 2.1nm.

The CPA between Tutor(B) and the Citation occurs at 1131:02 with 200ft vertical and 1.8nm lateral separation shown on radar.

Realistically, the Airprox did not involve Tutor(B) and occurred between Tutor(A) and the Citation. However, Tutor(A) pilot was visual with the Citation at an early point in the incident sequence, enabling him to assess the situation and determine that sufficient separation existed.

Focussing specifically on the Mil ATM issues, APP provided accurate TI to the Tutors in accordance with the criteria laid down within CAP774. Moreover, by adapting their phraseology to include the term *“fast moving”* they provided a better *“picture”* for the Tutor aircrews involved. Given the number of Tutors operating within the local area and that both Tutors had previously been passed TI on each other, exclusion of the term *“fast moving”* might have suggested that the TI referred to another Tutor.

In terms of the timeliness of the TI to both Tutors, based upon the information presented to APP in terms of the relative tracks of Tutor(A) and the Citation and the speed of Tutor(A), passing TI earlier than 1129:57 would have been nugatory. Moreover, in terms of the TI to Tutor(B), 1130:35 represented their first opportunity to pass TI given that they had been involved in an RT exchange with a third Tutor, involving the passing of TI to that flight. This exchange lasted from the point where

approximately 4.2nm lateral separation had existed between Tutor(B) and the Citation, to the point where TI was passed to Tutor(B) at 2.6nm.

Finally, the Unit raised the issue of the landline liaison between themselves and Oxford at 1115:24 and their status as a non-LARS unit. Whilst a hindsight-bias argument could be created to suggest that APP could have contacted Oxford to pass TI to them on the Tutors, no clear benefit from such an activity could have been gained from Oxford's perspective, given the absence of surveillance equipment at that unit which would result in the passing of very generic TI to the Citation. Moreover, Oxford clearly transferred control of the Citation to LTC OCK relatively early, enabling LTC OCK to give more effective TI, despite only being able to offer a BS outside CAS.

This Airprox occurred in Class G airspace where the Mil aircrews and controllers involved discharged their responsibilities under CAP774 and the Rules of the Air exactly.

**HQ AIR (TRG)** comments that both Tutors operated under a TS and received timely TI that enabled them to deconflict from traffic, in Class G airspace, that did not see them. The activation of STCA and TCAS provided an additional benefit, firstly to the controller and secondly to the Citation, by highlighting a potential conflict in 'see and avoid' airspace.

## **PART B: SUMMARY OF THE BOARD'S DISCUSSIONS**

Information available included reports from the pilots of all 3 ac, transcripts of the relevant RT frequencies, radar video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC and operating authorities.

The LTC OC/SE Low controller was undoubtedly concerned when the C560X flight was transferred to his frequency in potential conflict with 2 ac, Tutors (A) and (B). Although the C560X flight was flying under IFR, in Class G airspace there was equal responsibility on all crews to maintain their own separation from other ac through see and avoid. The controller was limited to providing a BS but issued a traffic warning to the C560X crew as the flightpaths were in apparent conflict, which was reinforced when STCA activated. The controller updated the warning when separation reduced to 2nm, the C560X crew reporting 30sec later that they had manoeuvred in response to a TCAS RA against Tutor(A). Members noted that the radar recording does not reflect the C560X crew's perception of the TCAS evolution as the ac's Mode C only indicates a climb as it passes abeam Tutor(A) with 0.7nm horizontal separation and 200ft vertical. The LTC controller also passed a traffic warning on Tutor(B) but by now that Tutor was tracking E'ly and the C560X had descended back to 5000ft, below it. Meanwhile, unbeknown to the LTC controller, both Tutor(A) and (B) flights were operating under VFR and a TS from Benson. Tutor(A) flight was issued with TI by Benson on the C560X which he had already seen and was taking visual separation against. (B) flight was given TI and was not concerned given the geometry, content the C560X would pass behind.

A controller Member, familiar with LTC operations, stated that an initial joining clearance would not be issued until the flight called on frequency owing to the uncertainty of the departure time from Oxford and its time en-route. The airspace in the CPT area is complicated by Luton outbound flights climbing to FL70, the lowest available level, or above, so invariably flights seeking to join are told to remain outside CAS until the controller is sure of traffic situation. Members noted that in this incident, although it was not relevant to the Airprox, the Oxford clearance to the C560X had not included the instruction to remain clear of CAS; rather it had cleared the ac to CPT at 5000ft. Members sympathised with the controller's predicament, being on the receiving end of a situation where STCA activated and a TCAS RA was reported. However, the Tutor crews had fully discharged their responsibilities whilst the C560X crew, although unable to visually acquire the Tutors, were cognisant of their presence from the LTC controller's warnings and TCAS, and had followed the TCAS guidance. The Board believed that LTC controller, from the information presented, had perceived a conflict between the IFR C560X and VFR Tutors but there had been no erosion of normal safety standards or parameters.

The CAA SRG Advisor informed the Board that a new routeing had been established out of Oxford towards KENET and Brize would endeavour to provide a service for those flights.

**PART C: ASSESSMENT OF CAUSE AND RISK**

Cause: Controller perceived conflict in Class G airspace.

Degree of Risk: E.