AIRPROX REPORT No 2014213

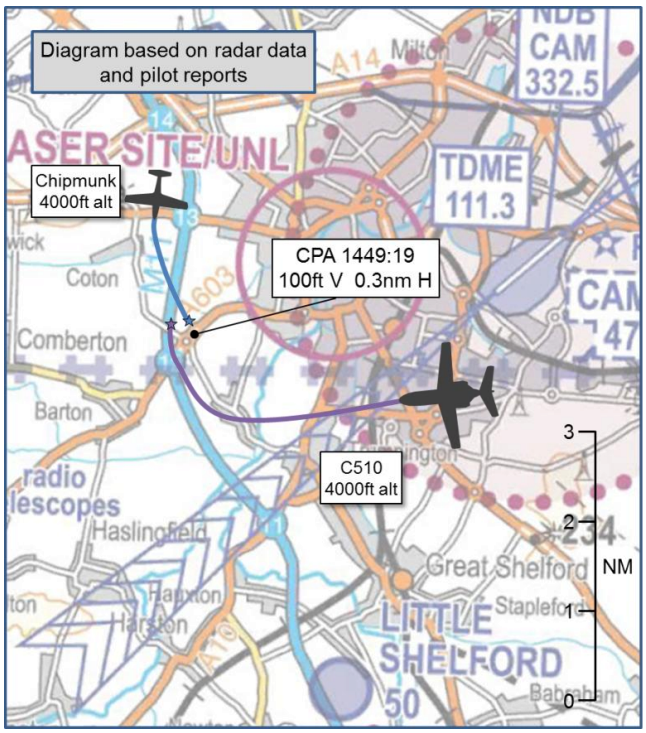
Date/Time: 10 Nov 2014 1449Z

Position: 5211N 00043E (IVO Cambridge)

Airspace: London FIR (*Class*: G)

	Aircraft 1	*Aircraft 2*
Type:	C510	Chipmunk
Operator:	CAT	Civ Pte
Alt/FL:	4000ft QNH	4000ft QFE
Conditions:	NK	VMC
Visibility:	>10km	>10km
Reported Separation:	0ft V/1nm H	300ft V/1nm H

Recorded Separation: 100ft V/0.3nm H



PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE CITATION C510 PILOT reports flying a white aircraft with all lights illuminated and the SSR transponder selected on with Mode 3A, C and S. The aircraft was fitted with TCAS. He reported that he was receiving a Traffic Service from Cambridge ATC. As he was approaching Cambridge he was instructed by ATC to take up the published hold over CAM NDB at 4000ft due to a B777 that needed to be towed off the runway. On the third inbound leg, tracking 092° towards the NDB, he spotted a piston light-aircraft in his 2 o'clock within 1nm and at the same altitude. It appeared to be in a left turn and quickly disappeared out of view behind the aircraft to the starboard side. He had not been informed about this traffic from ATC, nor had he received any warning from the TCAS. Not being sure about the position of the other traffic, the pilot asked to leave the hold on an easterly heading, this coincided with the runway being cleared and he was subsequently cleared for the approach and landed without further issue.

THE CHIPMUNK PILOT reports flying a silver aircraft with SSR transponder on with Mode 3A, C and S selected; the aircraft was not TAS equipped. He was carrying out an aerobatic instructional detail, the third one of the day, and was receiving a Basic Service from Duxford. Whilst performing a look-out turn prior to commencing a manoeuvre he saw the Citation in a turn towards him. He rolled out of the clearing turn to pass behind the other aircraft. He commented that he had called Cambridge ATC on the other two sorties that day but, on the previous detail, the controller had informed him that he was "going off air" for the rest of the afternoon, so he hadn't called them on this sortie.

He assessed the risk of collision as 'None'.

THE CAMBRIDGE CONTROLLER reports that he was providing a Procedural Service to the C510 who was in the CAM hold at 4000ft when the pilot reported seeing an "old military looking aircraft" at a similar altitude. The controller advised that he didn't know of any traffic operating to the west of Cambridge but, thinking that a Chipmunk [not the Airprox Chipmunk] that was on frequency and receiving a Basic Service may have been the aircraft involved, he asked it's position. The Chipmunk pilot replied that he was 3.8nm east of Cambridge and the controller immediately asked him to descend and Traffic Information was passed to both pilots. However, non-controlling staff in the visual control room reported that there was a second Chipmunk visible to the west of the airfield. The C510 pilot then asked to leave the hold, which was approved and subsequently requested a visual approach, from which he landed. The controller then rang Essex radar and by correlating the conflicting aircraft's position with a radar return established the callsign through Mode S.

Factual Background

The weather at Cambridge was reported as:

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EGSC 101450Z 17009KT 140V210 9999 FEW033 12/07 Q1002
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Analysis and Investigation

CAA ATSI

The C510 was operating IFR and was in receipt of a Procedural Service from Cambridge Tower/Approach combined. The Chipmunk was operating VFR on a local flight from Duxford and was in receipt of a Basic Service from Duxford Information. ATSI had access to reports from both pilots, the Cambridge Tower/Approach controller, the Duxford FISO, area radar recordings and a transcription of the Cambridge Tower/Approach frequency. Cambridge were providing the service without the aid of surveillance equipment. Screenshots produced in the report are provided using the area radar recordings.

At 1434:30 the C510 pilot contacted Cambridge Approach descending to 4000ft to the CAM NDB. He was given a Procedural Service and instructed to take up the hold at the CAM at 4000ft with delay not determined due to the runway about to be blocked with landing traffic (a B777 that was required to be towed off the runway). At approximately 1438 the Chipmunk departed from Duxford, tracked northwest and then north, passing Cambridge 5.3nm to the west (also passing 1.9nm west of the C510 in the CAM hold, at the same level, prior to the reported Airprox) at 1445:10.

At 1445:40 another Chipmunk(2) that was not involved in the Airprox contacted Cambridge, stating that they were returning to Audley End and intended to pass Cambridge to the east for general handling to the north, requesting a Basic Service. A Basic Service was agreed and the Cambridge controller instructed Chipmunk(2) to remain outside the ATZ. At 1448:38 Chipmunk(2) was approximately 4.5nm to the south-southeast of Cambridge tracking north. The C510 was westbound in the hold and the Chipmunk(1) was 2.4nm northwest of the C510, tracking south (Figure 1).

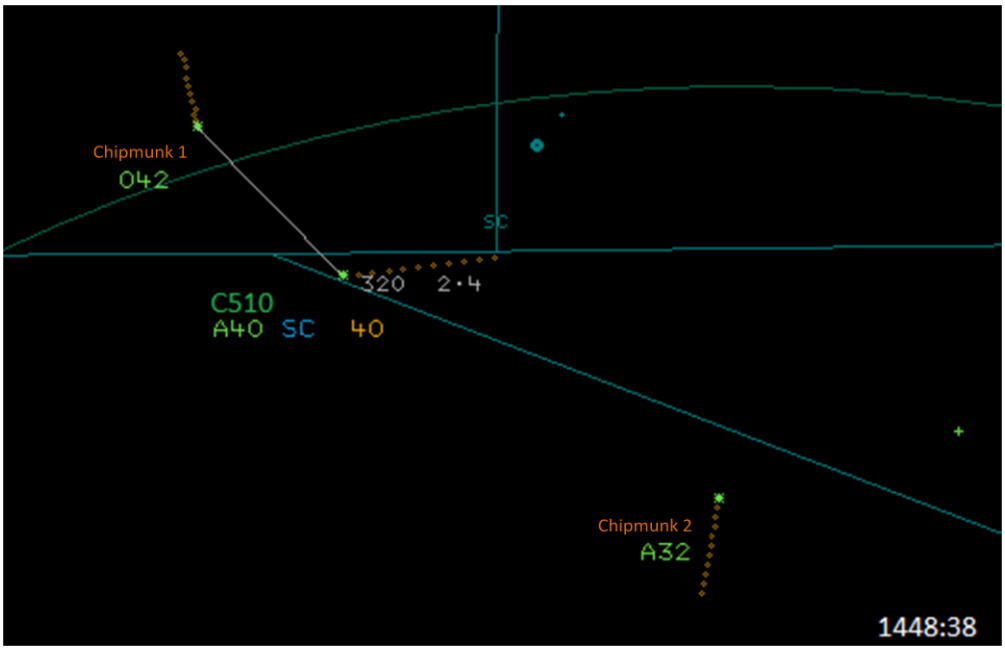

Figure 1.

As the C510 turned in the hold Chipmunk(1) and the C510 converged. CPA occurred at 1449:19 (Figure 2) when the two aircraft were 0.2nm and 100ft apart.

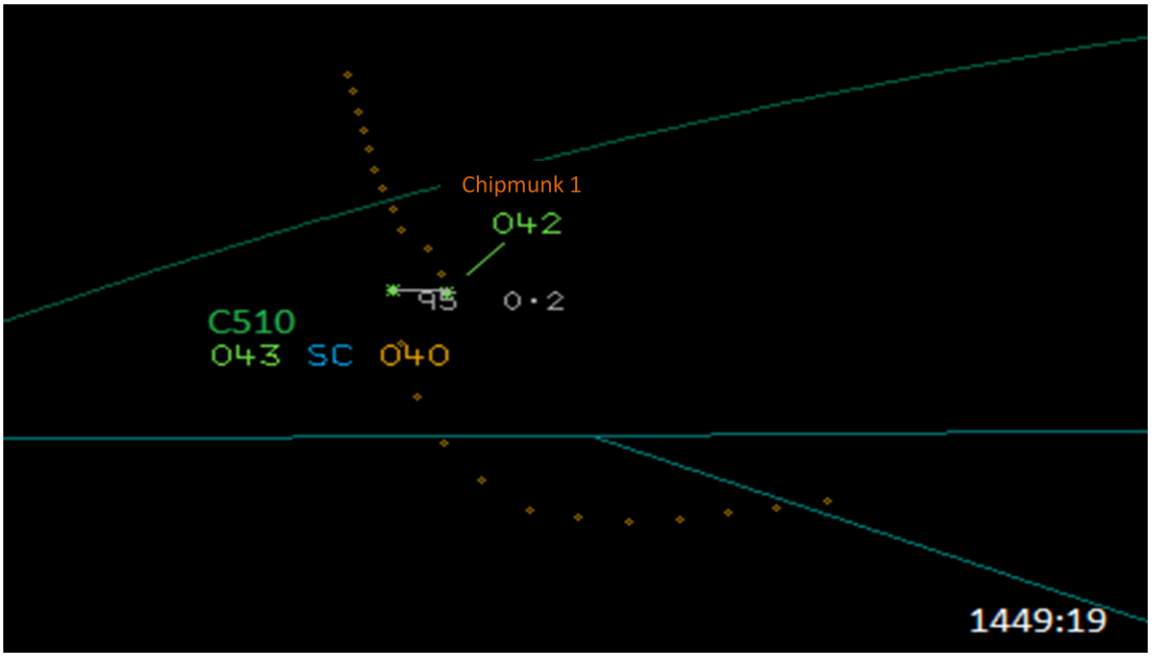

Figure 2.

At 1449:33 the C510 pilot reported that "*we have another traff- traffic at our level in the hold or just passed through our hold it was a tiny aircraft...*" The controller replied that he was not aware of any aircraft in the Cambridge overhead but that he'd have a look. The controller then requested Chipmunk(2) pilot to report his position and he replied that he was passing east abeam at 3900ft QNH. The Cambridge controller requested that Chipmunk(2) descend to 3000ft and passed Traffic Information on the C510 as he initially believed that Chipmunk(2) was conflicting with the C510. Traffic Information was passed to the C510 pilot stating that Chipmunk(2) was east of Cambridge at 3800ft descending but that the Cambridge controller was not aware of the aircraft to the west. The C510 pilot requested to track east for a while to "*get distance*" from Chipmunk(1). The Cambridge controller requested Chipmunk(2) to report his position and the pilot replied that they were east-abeam at 3000ft. The Cambridge controller instructed the C510 to maintain 4000ft due to Chipmunk(2) at 3000ft which was acknowledged by the C510 pilot.

The report from the Cambridge controller stated that non-operational staff in the VCR advised him that there was another Chipmunk visible to the west of the airport turning towards the airfield (Chipmunk1). The C510 subsequently made a visual approach to RW23 and Chipmunk(1) was identified with the help of Essex Radar.

The written report from the pilot of Chipmunk(1) stated that they were carrying out an instructional detail which was the third one of the day. They saw the C510 whilst performing a lookout turn prior to commencing a manoeuvre. The report stated that the pilot of Chipmunk(1) had spoken to Cambridge on the previous sorties but had been told towards the end of the second detail that Cambridge would be 'off air for the rest of the afternoon' so the pilot did not call on the 3rd sortie.

The Cambridge controller reported being unaware of Chipmunk(1) prior to the Airprox. Once the Airprox had been reported the controller correlated the Chipmunk(1) against an intermittent Mode A/C on the ATM[1]. Cambridge ATSU only had flight progress strips for one previous sortie for the Chipmunk(1) when the aircraft was on frequency between 1228 and 1314. There was no mention of Cambridge being closed later in the day (Mon) during that exchange. The UK AIP notifies

[1] Cambridge do not have approval for advanced uses of the ATM

Cambridge Radar as being available intermittently Mon-Fri during normal working hours and by arrangement only. The Duxford FISO reported that a phonecall from Cambridge alerted them to the Airprox with the C510.

The pilot of the Chipmunk believed that Cambridge was not available so did not contact them on his 3rd aerobatics sortie and was in receipt of a Basic Service from Duxford. There is no record of the conversation reported by the pilot of Chipmunk(1) where he claims he was advised that Cambridge would not be available for the rest of the afternoon. Cambridge Radar is only available intermittently, and it is possible that the pilot overheard another conversation regarding radar being unavailable but this cannot be confirmed.

Duxford only became aware of the Airprox after the event. They were providing a Basic Service to the Chipmunk without the use of surveillance equipment and were therefore unable to pass traffic information on the C510. Cambridge were providing a Procedural Service to the C510 and were unaware of the presence of the Chipmunk. As both aircraft were operating in Class G airspace, the pilots of both aircraft were ultimately responsible for their own collision avoidance.

UKAB Secretariat

Both pilots shared an equal responsibility for collision avoidance and for not flying into such proximity as to create a danger of collision[2]. The geometry was considered to be converging therefore the C510 pilot was required to give way[3].

Summary

An Airprox was reported on 11th November 2014 at 1445 between a Citation C510 and a Chipmunk. The C510 was commencing an NDB approach to Cambridge and receiving a Procedural Service but, because Cambridge were providing a service without radar, they were unaware of the Chipmunk and did not pass Traffic Information. The Chipmunk pilot was practising aerobatics and receiving a non-radar Basic Service from Duxford, and also did not receive any Traffic Information; however, he saw the C510 and turned to go behind it.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first looked at the actions of the C510 pilot and wondered whether he fully understood the type of service that he was receiving; his narrative suggested that he believed he was getting a radar service when, in fact, it was a Procedural Service and Cambridge ATC were only obliged to separate him from known traffic. Because the Chipmunk pilot wasn't in radio contact with them, Cambridge ATC didn't know about him and therefore couldn't give Traffic Information. Furthermore, being within Class G airspace, the C510 had no priority over other airspace users whilst in the hold: see-and-avoid remained the applicable collision avoidance mitigation measure and, under Rules of the Air, he was still required to give way to aircraft on his right. In this respect, the Board recalled previously rejected recommendations (Airprox 2013145 and 2013150) to the CAA regarding the briefing of visiting foreign crews of their responsibilities under ATSOCAS. The Board were unable to establish why, given the geometry of the two aircraft, TCAS had not given a Traffic Alert to the C510 pilot.

Turning to the Chipmunk pilot's actions, the Board wondered whether, even though he was under the mis-apprehension that Cambridge ATC was not operating, it would have been prudent in any case to have made a blind transmission on their frequency as he transited nearby. There was also a discussion amongst Board members about the wisdom of conducting aerobatics in the vicinity of an

[2] Rules of the Air 2007 (as amended), Rule 8 (Avoiding aerial collisions).
[3] Ibid., Rule 9 (Converging).

airfield's IFR hold irrespective of whether the airfield was known to be operating or not. Nevertheless, the Board recognised that the complexity of numerous airfields in the region meant that free airspace was limited, and they acknowledged that the Chipmunk pilot was entitled to operate in that area of Class G airspace. Notwithstanding, the Board again recalled previous recommendations to the CAA about publicising the position of IFR holding patterns (Airprox 2014097 and 2014126) for easy reference by GA pilots, and noted that these recommendations were still under consideration.

When discussing the actions of the Cambridge controller, the Board agreed that, under the circumstances, because the Chipmunk pilot had not called him for a service, the controller could not have been expected to know about the conflicting traffic and could not therefore have given Traffic Information to the C510 pilot.

The Board then discussed the cause and swiftly agreed that it was a late sighting by both pilots. In determining the risk, the Board deemed that because the Chipmunk pilot had been visual with the C510 and had taken avoiding action, it was Category C.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A late sighting by both pilots.

Degree of Risk: C.

ERC Score[4]: 4.

[4] Although the Event Risk Classification (ERC) trial had been formally terminated for future development at the time of the Board, for data continuity and consistency purposes, Director UKAB and the UKAB Secretariat provided a shadow assessment of ERC.