

AIRPROX REPORT No 2013012

Date/Time: 27 Feb 2013 1524Z

Position: 5208N 00004E
(6nm SW Cambridge)

Airspace: Lon FIR (Class: G)

Reporter: Cambridge APP

1st Ac 2nd Ac

Type: Cessna C510 F86A

Operator: Civ Pte Civ Pte

Alt/FL: 1800ft 3000ft
QNH(NR) QFE(NR)

Weather: VMC CLBC VMC CAVOK

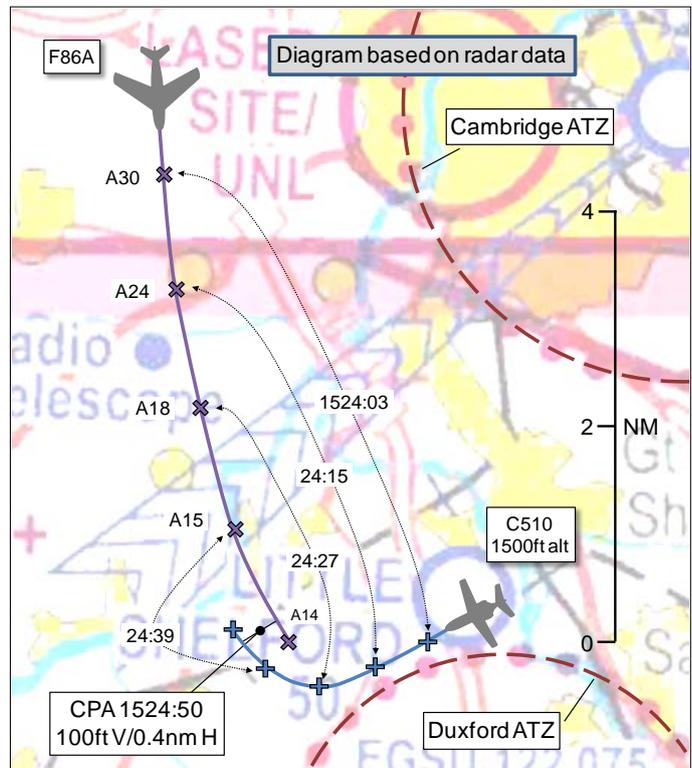
Visibility: >10km >10km

Reported Separation:

300ft V/1nm H 0ft V/1nm H

Recorded Separation:

100ft V/0.4nm H



CONTROLLER REPORTED

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

THE CAMBRIDGE RADAR APPROACH CONTROLLER reports he observed a fast moving unknown contact tracking towards Cambridge from the NW. As it passed about 2nm ahead of a Merlin helicopter, at a similar level of 3500ft and to which TI had been passed, it descended and accelerated. It passed 4nm SW of Cambridge A/D, tracking towards Duxford A/D, indicating 1900ft descending. He tried to warn the ADC as he was 'working a C510'. The C510 pilot was completing a visual RH cct to RW05, having completed a training instrument approach to RW23. The C510 pilot began a R base turn some 3-4nm SW of Cambridge at 1600ft as the contact passed close to him, possibly 300ft above, at about 300kts. The conflicting a/c was observed on radar joining the Duxford cct.

THE C510 PILOT reports conducting an OPC, operating in 'uncontrolled airspace' in the Cambridge RW05 RH cct. He was operating under VFR in VMC with a BS from Cambridge [125.900MHz]. The white and black/grey striped ac had navigation, recognition and strobe lights selected on, as was the SSR transponder with Modes A, C and S. The ac was fitted with TCAS I. Whilst turning through about W, at 180kt and an altitude of 1800ft [QNH NR], he observed a TCAS 'contact alert' with traffic indicating at a range of about 5nm. He saw the traffic at 2nm and it passed down his RH side, at a range of about 1nm and about 300ft below. He observed the other pilot 'wing-wagging' as he passed.

He assessed that there was no conflict and that the risk of collision was 'None'.

THE F86 PILOT reports conducting a visual recovery to land at Duxford, heading S at 240kt. He was operating under VFR in VMC with a BS from Duxford Information [122.070MHz]. The silver ac had the SSR transponder selected on with Modes A, C and S. The ac was not fitted with an ACAS. He saw a white, twin-engine, business jet about 6-7nm away, heading N. The other ac was not configured for landing. Each ac passed down the RH side of the other, at about the same altitude and travelling in opposite directions with about 1nm H separation. He 'wing-waggled' to acknowledge visual contact with no response from the other ac.

He observed that neither ac was flying in CAS, that the weather was good and that the low sun made it easier for him to see the other ac. He stated that he was in visual contact with the 'business jet' at all times.

He assessed that there was no conflict and that the risk of collision was 'None'.

ATSI reports that an Airprox was reported by Cambridge APP when a North American F86A Sabre (F86) came into conflict with a Cessna 510 'Citation Mustang' (C510) 6nm SW of Cambridge A/D in Class G uncontrolled airspace at altitude 1500ft.

Background

The C510 pilot had been operating under IFR, inbound to Cambridge, via airways, from Jersey and prior to the Airprox had undertaken several exercise manoeuvres using the navigational facilities available at Cambridge. At the time of the Airprox the C510 pilot was in receipt of an ACS from Cambridge TWR [125.900MHz]. The C510 was transponding SSR Mode A code 6165.

The F86 pilot was on a VFR flight and had departed Duxford at 1446 UTC. He flew to the NW and manoeuvred in Class G airspace, approximately 15nm N of Cambridge, before setting a course for RAF Coningsby. After manoeuvring in the vicinity of Coningsby under an ATS, the F86 pilot then tracked S for his return to Duxford. At the time of the Airprox the F86 pilot was in contact with Duxford Information [122.075MHz]. The F86 was transponding the general SSR conspicuity code 7000.

Cambridge APP was manned by a trainee and mentor. The mentor controller described the traffic levels and complexity as light. Services were being provided with the use of the A/D based AR15 radar and a SSR feed from the Debden radar.

ATSI had access to the Cambridge APP (mentor) controller's report, the F86 pilot's report, recorded area surveillance and transcriptions of Cambridge Approach [123.600MHz], Cambridge TWR and Duxford Information. Additionally ATSI undertook fact-finding site visits to Cambridge and Duxford A/Ds.

Meteorological information for Cambridge A/D was recorded as follows:
METAR EGSC 271520Z 02011KT 360V080 9999 FEW025 07/01 Q1034=

The F86 pilot was subject to a CAA Permission pursuant to Rule 21(Speed limitations), paragraph 3, of the RoA, which permitted him to fly at a speed that, according to the airspeed indicator, was more than 250kt, and below FL100, in so far as was necessary for the purposes of display practice, display flying training and transit. The permission was granted subject to several conditions, which included:

'(c) the said flights shall only be made in weather conditions which enable the aircraft to remain at least 3 kilometres horizontally and 1000 feet vertically away from cloud and in a flight visibility of at least 10 kilometres;

(d) on the said flights the aircraft shall not fly unless it is using a radar service, except when it is flying within an Aerodrome Traffic Zone (ATZ) ...'

Cambridge A/D has an ATZ of radius 2.5nm, centred on RW05/23 and extending from the surface to 2000ft aal (elevation 47ft). Duxford A/D has an ATZ of radius 2nm, centred on RW06/24 and extending from the surface to 2000ft aal (elevation 125ft).

Factual Information

The F86 pilot contacted Duxford Information at 1519:45 reporting, "*approximately three or four minutes out for recovery*". He was informed that Duxford was using RW06 RH with QFE 1028hPa

and was requested to report downwind. Figure 1 below shows the Stansted 10cm radar picture at 1519:45. The F86 pilot was 30.8nm N of Duxford at FL028 (which converts to altitude 3367ft on Cambridge QNH 1034hPa). The surveillance recorded ground speed of the F86 was 365kt.

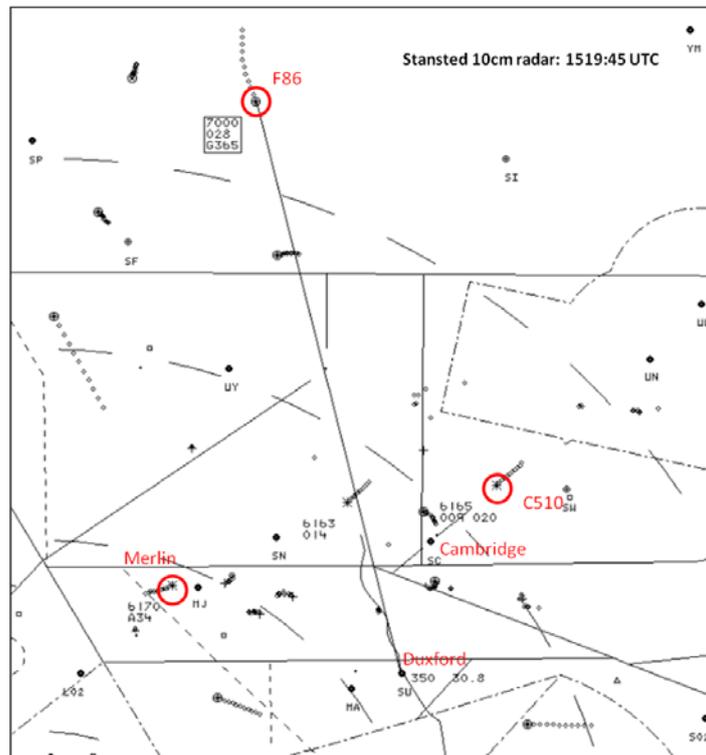


Figure 1: Stansted 10cm Radar at 1519:45

At 1521:30, the C510 pilot was instructed by Cambridge TWR to break L from an approach to RW23 and to reposition RH downwind for RW05. Previously in the approach the C510 pilot had been instructed to make his cct height 1600ft. The Stansted 10cm radar showed the C510 pilot climb away from the A/D on a S'yly track to enter the visual cct. At 1522:40, the C510 pilot reported downwind to land and was instructed to report final. He was number two to a C172, which was at 4nm on final approach to RW05.

At 1523:10, Cambridge APP (trainee) controller informed a Merlin helicopter pilot on frequency (Mode A 6170), *“fast moving traffic ten o'clock f- three miles left right also at three thousand feet now looks like it's descending towards you”*. The Merlin pilot reported visual. APP then passed further TI to which, at 1523:40, the Merlin pilot stated, *“I think he's seen us”*. APP (mentor) recalled that the presence of the fast moving 7000 squawk was assimilated approximately 5sec prior to the Merlin pilot being passed initial TI.

Figure 2 below shows the F86 tracking S, with a ground speed of 292kt, and the C510 downwind RH for RW05.

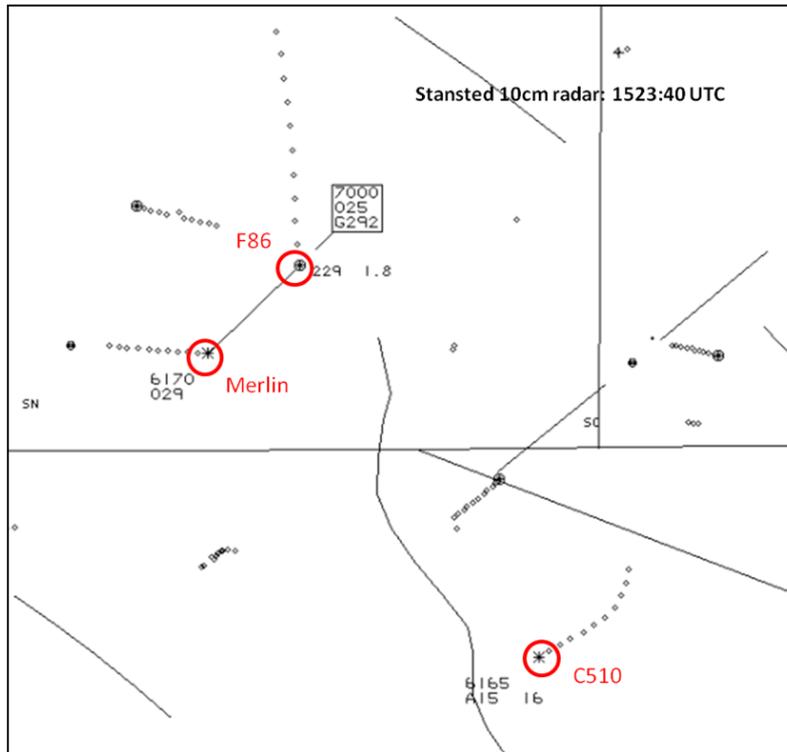


Figure 2: Stansted 10cm Radar at 1523:40

At 1524:22, APP telephoned TWR and informed him of the presence of the F86, giving its position as approximately 4nm SW of the A/D and observing that Tower's traffic, the C510, was turning towards the F86 at that time.

At 1524:30, the C510 pilot began a R turn onto base leg at 1500ft. Figure 3 below shows the F86 at 1600ft, N of the C510 by 1.9nm, with the C510 pilot turning towards the F86. The F86's recorded ground speed was 329kt.

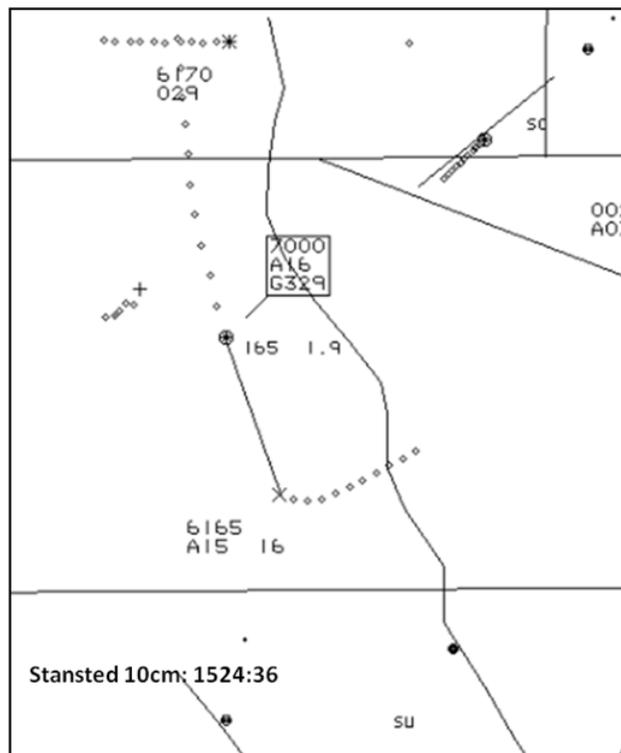


Figure 3: Stansted 10cm Radar at 1524:36

At 1524:40, TWR attempted to transmit to the C510 pilot but was interrupted by other traffic, which was told to standby. TWR then informed the C510 pilot, "traffic information not working Cambridge radar but crossing opposite direction to yourself similar height er is an aircraft southwest bound". The C510 pilot responded, "yeah it's a fast jet of some sort".

Figures 4 and 5 below show the F86 and C510 as recorded by the Stansted 10cm radar at 1524:46 and 1524:50 respectively. Minimum distance between the two ac is shown on Figure 5 as 0.4nm H and 100ft V.

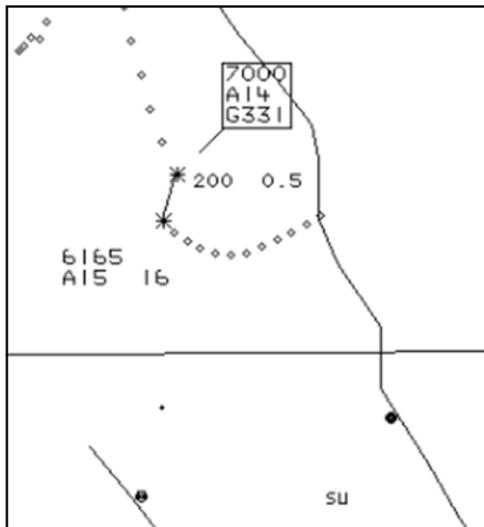


Figure 4: Stansted 10cm Radar at 1524:46

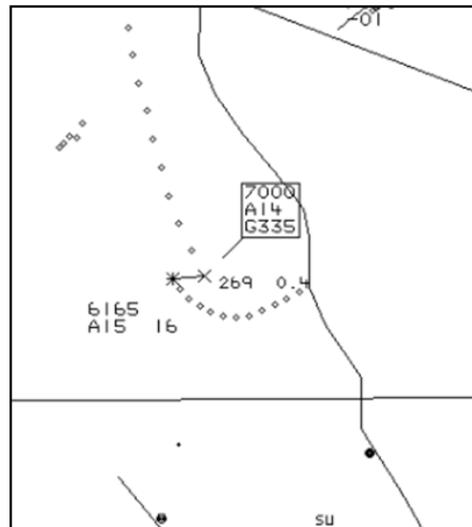


Figure 5: Stansted 10cm Radar at 1524:50

At 1524:50, the F86 pilot reported to Duxford Information that he was, "thirty seconds to the break". Duxford Information reported, "Sabre no er circuit traffic this time nothing known to affect and report downwind".

Cambridge TWR telephoned Duxford at 1528:10 to enquire as to the identity of the ac that had just flown through the Cambridge RW05 final approach track. The identity of the F86 was confirmed and Duxford were informed that it had flown into conflict with traffic under a service from Cambridge.

In a subsequent conversation between the C510 pilot and Cambridge TWR, the C510 pilot reported, "we had him on TCAS and er we saw him early enough to avoid any problems".

Analysis

The F86 pilot called Duxford Information whilst 30nm N of the A/D and flying at a recorded ground speed of 365kt. As Duxford Information is a non-surveillance based service the F86 was not in receipt of a radar service; nor was it within an ATZ. The recorded ground speeds range between 292kt and 365kt. There is no evidence to indicate that the F86 was subject to significant tailwinds and therefore it is likely that the airspeed indicator of the F86 was displaying in excess of 250kt.

The C510, Merlin, F86 and other ac in the vicinity of Cambridge were operating in Class G airspace where the responsibility for collision avoidance rests solely with the pilots concerned. In electing not to call Cambridge APP for a radar service, the F86 pilot would likely be operating solely on the principles of 'see and avoid' which, at increased speeds, could limit the pilot's ability to assimilate other traffic/conflicts and also impede other airspace user's ability to avoid collision.

The C510 pilot was positioning downwind RH for RW05 behind slower traffic. As such, and with a higher approach speed, the C510 pilot's cct took him outside the protection of the Cambridge ATZ.

Additionally, the speed of the F86 reduced the time available to Cambridge APP to assimilate its presence, pass TI to traffic working APP, assimilate the need to inform TWR of the conflicting traffic

and pass the details to the TWR controller. Once this chain of events had been completed, with TWR passing TI to the C510 pilot, CPA had already occurred.

Conclusion

An Airprox occurred 6nm SW of Cambridge A/D when an F86 pilot, flying at a speed likely to have been greater than 250kt indicated and not in receipt of a radar service, transited the final approach track for Cambridge RW05 and came into conflict with a C510 turning R base at altitude 1500ft.

[UKAB Note(1): The F86 pilot crossed the Cambridge A/D extended C/L at altitude 1500ft and range 5.5nm.]

The presence of the F86 had been assimilated by Cambridge APP and TI was passed to his own traffic. Additionally Cambridge APP notified TWR of the presence of the F86 in order that the C510 pilot could be passed TI.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available included reports from the pilots of both ac, 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 considered the actions of the Cambridge controller. It was clear that he had been alarmed at the high speed contact closing rapidly with traffic that he knew was in receipt of an ACS from Cambridge TWR. Although TWR was not able to pass TI to the C510 pilot in time to affect the outcome, the Board commended Cambridge APP for his effort to alert the TWR to the presence of a potential conflict.

The Board noted that the C510 pilot, having been instructed to join the RW05 RH visual cct, had extended downwind for RW05 RH in order to sequence behind a slower ac ahead of him. At the CPA he was some 6nm SW of Cambridge A/D, a position that was close to the boundary of the Duxford ATZ and which Members considered to be outside any reasonable estimation of the Cambridge visual cct. Members opined that once he had left the Cambridge ATZ he would have been better served by switching to APP and requesting an appropriate radar-based ATS. It was also possible that, by staying in the visual cct, he was devoting an increasing amount of time to maintaining visual contact with the A/D, particularly as his range from the A/D increased, to the detriment of his lookout. However, his TCAS provided timely warning of the approaching traffic and he was able to gain visual contact at a reported range of 2nm as he started his R turn. Turning to the F86 pilot's actions, the Board ascertained that he was not in receipt of a radar service and from the available data was likely flying in excess of 250kt indicated airspeed. Given the weather conditions, Members did not consider that the F86's speed was an impediment to the pilot's responsibility to 'see and avoid' or a factor in other traffic seeing him. Nevertheless, he would have been better served by obtaining a radar service from Cambridge to alert Cambridge ATC and to obtain TI; that said, he would have needed to be in contact with Duxford at the point at which the Airprox occurred prior to entering the ATZ. The Board also considered that he should have planned his recovery such that he avoided crossing the Cambridge active RWY C/L at a height and range that placed him directly in conflict with traffic in the RTC.

Both pilots were operating under VFR in class G airspace and had an equal responsibility for collision avoidance. It was considered that the F86 pilot had right of way and, given his range from Cambridge, had complied with Rule 12 (conform to, or remain clear of, the pattern of traffic intending to land).

A small minority of Members considered that effective and timely action had been taken to prevent ac collision but the majority agreed that, whilst the occurrence had appeared alarming to the Cambridge controller due to the speed of the F86, both pilots had seen the other ac in good time and had

passed clear of each other in class G airspace. As such, although the Cambridge controller had perceived a conflict, which he was correct to report, by analysis the occurrence was established to be benign.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: Controller perceived conflict.

Degree of Risk: E.