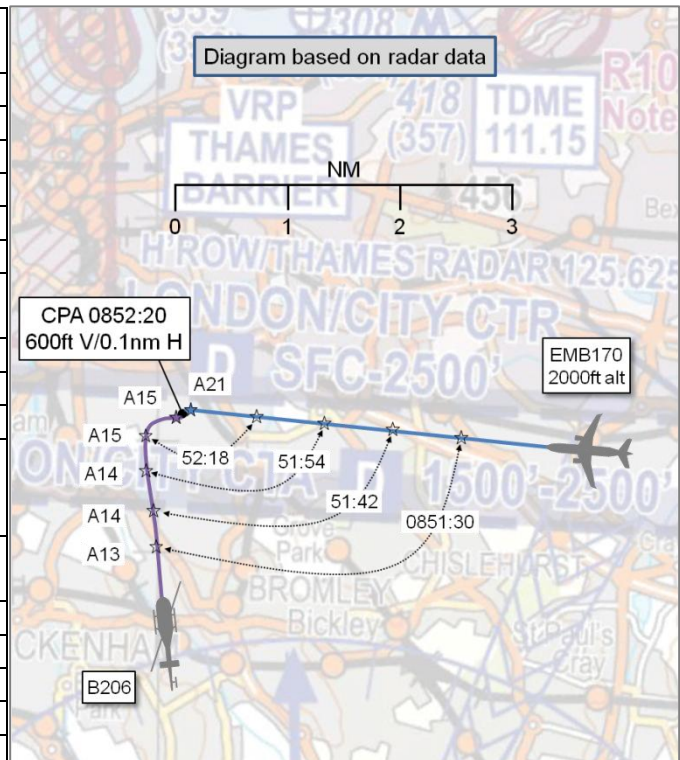


AIRPROX REPORT No 2015040

Date: 13 Apr 2015 Time: 0852Z Position: 5126N 00002W Location: 5nm SSW LCY

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	EMB170	B206
Operator	CAT	Civ Comm
Airspace	LCY CTR	London FIR
Class	D	G
Rules	IFR	VFR
Service	Radar Control	Basic
Provider	LCY DIR	Heathrow SVFR
Altitude/FL	2100ft	1500ft
Transponder	A/C/S	A/C
Reported		
Colours	White with company colour scheme	Mainly black
Lighting	Strobes, nav and red beacon	Anti-col, nav
Conditions	IMC	VMC
Visibility	>10km	5km Drizzle
Altitude/FL	2000ft	1200ft
Altimeter	QNH (1031hPa)	
Heading	275°	360°
Speed	190kt	100kt
ACAS/TAS	TCAS II	Not fitted
Alert	RA	N/A
Separation		
Reported	3-400ft V/4-500m H	Not seen
Recorded	600ft V/0.1nm H	



THE EMB170 PILOT reports that they were on the downwind leg for RW09 at London City (LCY). They were informed by ATC of traffic in uncontrolled airspace that would pass below and behind them. They repeatedly questioned the altitude of this aircraft because it was constantly showing 4-600ft below them and appeared on a direct heading. However, ATC reiterated that the aircraft would remain clear keeping visual to pass behind. They explained that they were in cloud despite being at 2000ft. The LCY ATIS was giving broken cloud at 3200ft. The opposite direction traffic flew 400ft beneath them and triggered an RA. They did not see the aircraft. It was definitely within 500m horizontally (probably much less) and within 400ft (possibly 300ft) vertically. They followed the full TCAS avoidance and alerted ATC. They encountered a TA at 2300ft with the aircraft reading 700ft below and behind them. It appeared that the intruding aircraft had made little effort to descend throughout the event. They informed ATC that they would be filing an ASR/MOR.

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

THE BELL 206 JETRANGER PILOT reports that after departing Biggin Hill to the west he then turned north and changed frequency to Heathrow Special VFR and requested a transit of LCY via the Isle of Dogs. He could not recollect if Heathrow cleared him into the CTR or whether they passed him to LCY Tower for the transit. He remembered being cleared into the CTR not above 1300ft (or 1500ft) to hold south of the southern tip of the Isle of Dogs. ATC passed him Traffic Information about an aircraft downwind right-hand for LCY (using RW09). He could not see the aircraft as the cloud-base was about 1600ft and the visibility had reduced to about 5km in very light drizzle. He

seemed to remember seeing the aircraft as it descended on about a 5nm final for RW09. He was holding to the south and was cleared to cross the approach path behind it, which he did.

He assessed the risk of collision as 'None'.

THE LONDON CITY DIRECTOR reports working with a trainee; SVFR and Thames Radar was split. SVFR coordinated a VFR transit helicopter from the south [the B206], explaining that it would remain outside controlled airspace and then pass behind the IFR traffic downwind for LCY RW09. This traffic was passed to the pilot of the EMB170 who commented that he was in cloud. As the EMB170 passed over the top of the B206 the Mode C readout of the helicopter popped up to 1500ft, at which point the EMB170 pilot reported a TCAS RA. The pilot very quickly reported levelling and back under their control. Whilst this was happening they coordinated with Heathrow Final Director against their traffic approaching the ILS for RW27L.

Factual Background

The LCY weather was:

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EGLC 130850Z 18004KT 080V250 9999 SCT018 BKN026 10/04 Q1032=
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Analysis and Investigation

CAA ATSI

The B206 was enroute from Biggin Hill and the pilot reported his intention was to route via the Isle of Dogs. This intended route would take the helicopter through the LCY CTR. LCY were operating on RW09 and the EMB170 was being vectored for a right-hand circuit which involved being descended to 2000ft and routing approximately 4nm south of the Airport. The B206 was co-ordinated by the Special VFR controller with the LCY Radar controller who was working the EMB170. Traffic Information was given to the EMB170 pilot by the LCY Radar controller (Director); however, the pilot commented that they were in cloud. The London Heathrow Special VFR controller was providing a Basic Service to the B206 pilot, and instructed him to remain outside Controlled Airspace and expect a clearance through the LCY CTR behind the EMB170. Updated position reports were passed to the B206 pilot but he did not see the EMB170 pass as it was in cloud. The B206 pilot orbited approximately 4.5nm south of LCY where the base of controlled airspace is 1500ft. The radar recording showed that the B206 was indicating 1400ft until it began a right orbit when, for 4 consecutive returns, the Mode C indicated 1500ft before returning to 1400ft. The EMB170 pilot had Traffic Advisory warnings when level at 2000ft prior to receiving a TCAS RA. The TCAS RA response is coincident with the first Mode C reading of 1500ft from the B206. (Figure 1 shows the relevant positions just as the EMB170 pilot began to climb from 2000ft, this was the third time the B206 indicated 1500ft.)

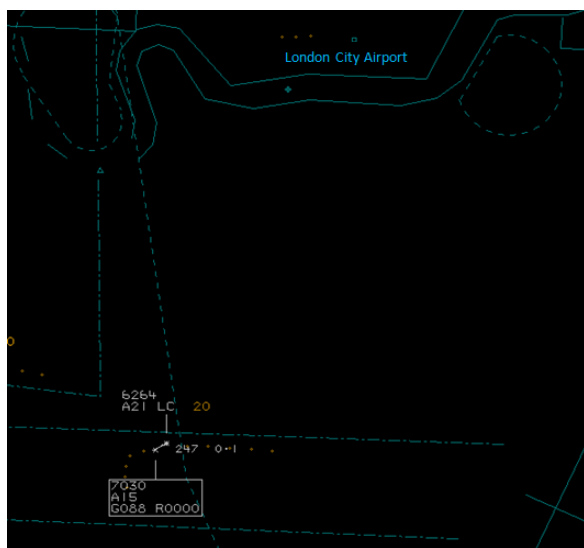


Figure 1

The EMB170 pilot responded to the TCAS RA and climbed to 2400ft before returning to 2000ft. The two controllers involved provided timely and pertinent Traffic Information prior to the occurrence. Additionally, it should be noted that although LCY were on easterly arrivals, Heathrow were on westerly arrivals. This necessitated the LCY inbound traffic to be vectored under Heathrow inbound traffic, hence the requirement to descend the EMB170 pilot downwind to 2000ft. There is no requirement to separate aircraft operating in Class G airspace from traffic in Class D airspace.

The Manual of Air Traffic Services (MATS) Part 1¹ states:

'... IFR flights within Class A-D airspace are deemed to be separated from unknown aircraft flying in adjoining uncontrolled airspace...'

Additionally²:

'...controllers should not normally allocate a level to an aircraft which provides less than 500 feet vertical separation above the base of a control area or airway. This will provide some vertical separation from aircraft operating beneath the base of controlled airspace.'

The B206 pilot was operating below the base of controlled airspace and in receipt of a Basic Service where the avoidance of other traffic is ultimately the pilot's responsibility and where a controller is not required to monitor the flight³.

UKAB Secretariat

Both pilots shared an equal responsibility for not flying into such proximity as to create a collision hazard⁴.

Summary

The EMB170 pilot was being positioned downwind right-hand to LCY RW09 at 2000ft under the control of the LCY Director. The B206 pilot was in receipt of a Basic Service from Heathrow S/VFR. The B206 pilot was instructed to remain outside controlled airspace where the base was 1500ft. As the two aircraft approached each other their proximity caused the EMB170 pilot to receive a TCAS

¹ Section 1, Chapter 6, Paragraph 13A.4.

² Section 1, Chapter 7, Paragraph 9.1.

³ CAP774, Chapter 2, Paragraph 2.1.

⁴ SERA.3205 Proximity.

RA. The minimum distance between the two aircraft was recorded as 600ft vertically and 0.1nm horizontally.

PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

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

The Board first discussed the actions of the EMB170 pilot. The Board noted that he was being vectored within Controlled Airspace (CAS) at 2000ft inbound to LCY RW09 and had been in cloud. He had been informed about traffic in Class G airspace that would remain clear visually to pass behind. He had also been aware of its position from his TCAS display, and had been concerned about its presence because it had been climbing towards his aircraft and, being in cloud, its pilot would not have been able to see his aircraft. Subsequently, he had received a TCAS RA. He had informed ATC and, as required by procedures, had followed the TCAS avoidance by climbing to 2400ft.

The B206 pilot had followed his ATC instruction to hold outside CAS. The Board noted that the base of CAS where he had been holding was 1500ft. Initially the radar recording showed that the B206 pilot had been maintaining 1400ft until he had commenced his orbit. The SSR Mode C return then showed the altitude as 1500ft when he had begun to orbit. It was considered that this climb triggered the EMB170's TCAS RA. There was considerable discussion amongst the Board members as to whether this constituted the B206 pilot entering controlled airspace but, although the CAS base was 1500ft, because of radar and SSR tolerances, the Board were informed that this could not be construed as such.

The Board considered that the actions of both of the controllers concerned were appropriate. The Radar controller had vectored the EMB170 500ft above the base of CAS, and the SVFR controller had instructed the B206 pilot to orbit until he was visual with the EMB170 or had been cleared to cross behind.

The Board quickly decided that the cause of the Airprox was a TCAS sighting report; the EMB170 pilot had received and had acted on a TCAS RA. Members recalled that this situation had occurred in a number of Airprox in the past, and was symptomatic of operating TCAS, a system designed for IFR operations, in a mixed environment of VFR and IFR aircraft.

The Board understood the reasons for the EMB170 pilot filing an Airprox and agreed that this was a valid situation so to do. He had been informed that the B206 pilot would pass visually behind his aircraft. At the time he was in cloud and would not have been visual with or to the B206 pilot; moreover, even if he had been visual with the B206, the EMB170 pilot was still required to respond to a TCAS RA. He had observed on TCAS the B206 climbing towards his aircraft, could not see the B206 because he was in cloud, had received a TCAS RA, and was therefore justifiably concerned about the proximity of the B206. The Board opined, however, that normal safety standards had prevailed because the EMB170 was sufficiently within CAS whilst the B206 was outside. At CPA, the two aircraft were 600ft vertically apart, there had been no risk of a collision, and normal safety standards had pertained. Consequently the Airprox was categorised as risk Category E.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: A TCAS sighting report.

Degree of Risk: E.