

## AIRPROX REPORT No 2012029

Date/Time: 5 Mar 2012 1821Z (Night)

Position: 5131N 00014E (6.5nm E  
London/City - elev 19ft)

Airspace: LFIR/LTMA (Class: A/G)

Reporter: London/City ADC

1st Ac 2nd Ac

Type: EMB170 FK50

Operator: CAT CAT

Alt/FL: 3000ft 3000ft  
QNH QNH

Weather: VMC CLBC VMC CLBC

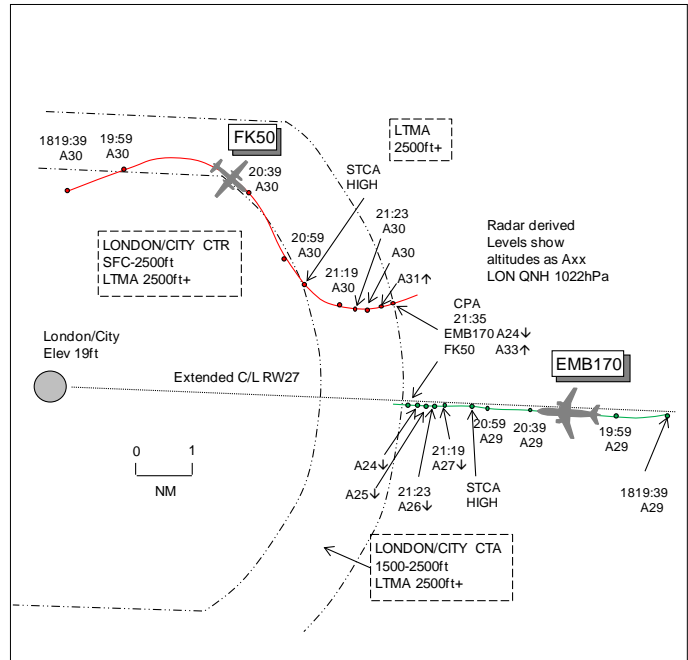
Visibility: 10km >10km

Reported Separation:

700ft V/5nm H Nil V/3nm H

Recorded Separation:

900ft V/1.8nm H



## **CONTROLLER REPORTED**

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

**THE LONDON/CITY ADC** reports that the EMB170 flight established RT contact at about 9nm on approach RW27. When the ac reached approximately 7nm from touchdown Thames Radar called on the priority phone line and told him to descend the EMB170 flight immediately to 2000ft, which he did. While doing so he observed and passed TI on the FK50 which was N of the final approach, tracking S at the same altitude as the EMB170. Having received the read back he then instructed the EMB170 crew that this was an avoiding action descent. The EMB170 was then seen to descend and he was aware of Thames Radar issuing a turn for avoiding action to the FK50. He thought the ac were about 4nm apart when he issued the descent instruction.

**THE THAMES RADAR CONTROLLER** reports that the sector was split and a Coordinator was in place. He had just plugged-in and almost immediately there was a go-around by the FK50 owing to crosswinds at London/City. There was traffic on the RW27 ILS at about 7DME (the EMB170) which had already been transferred to Tower. He noticed the FK50 appear to turn past what he thought it should have been tracking owing to the strong N'yly wind so he issued a further turn to the L of 060°. The FK50 then kept turning R, pointing at the EMB170 on the ILS which was also at 3000ft. He then issued an avoiding action turn to the L but the ac didn't seem to be turning L. He rang the Tower on the priority line and told them to expedite the EMB170 down to 2000ft. At this point STCA was flashing red [high severity alert] and the FK50 was in the L turn so he passed TI to its crew on the EMB170 on the ILS and then climbed the FK50 to 4000ft. He queried with the FK50 crew if they had navigational problems before he turned the flight R onto the LOC.

**THE EMB170 PILOT** reports inbound to London/City, IFR and in communication with City Tower on 118.075MHz, squawking 7407 with Modes S and C. The visibility was 10km flying below cloud in VMC and the ac's nav, strobe, taxi, landing and tail logo lights were all switched on. About 6-8nm E of London/City during their approach to RW27 while level at 3000ft, heading 295° at 160kt and established on the ILS LOC prior to GP capture, they were given immediate descent to 2000ft. A later transmission was given as "avoiding action" which was received while they were in the descent. They saw a high-wing twin-engine ac in their 0130 position with strobe, nav and landing lights on

about 7nm away estimating it passed about 700ft above and 5nm clear on their R. During this encounter a TCAS TA was received and he assessed the risk as low. This was their 2nd approach after a wind-shear go-around.

**THE FK50 PILOT** reports inbound to London/City, IFR and in receipt of a RCS from Thames Radar on 132.7MHz squawking with Modes S and C. The visibility was >10km flying 2000ft below cloud in VMC and the ac's strobe, nav and landing lights were all switched on. Following a go-around from RW27 they were following vectors from Thames Radar for a new intercept for a 2<sup>nd</sup> approach into London/City. The go-around was called out and made by the FO, PF, owing to windy conditions (up to 15kt) and changing wind direction (from NW to NE) during the 1<sup>st</sup> approach. The Capt, PNF, contacted ATC to confirm the go-around and was given vectors which he confirmed, a heading of 060° [levelling at altitude 3000ft QNH at 180kt]. The Capt then communicated with the cabin crew about the go-around while ATC communication was with the FO. The FO initially turned towards a different direction, heading 080°, which they believed was given by ATC. They were flying on this heading for <1min before ATC asked what heading they were on. As the Capt, now back in RT communication with ATC, answered ATC told them to fly heading 060°, which they did. It only took a couple of seconds to pick up the heading. ATC then told them to climb to 4000ft in order to avoid flying close to other traffic, which they could see both on TCAS and visually; a TCAS TA was then received. The separation at the CPA was estimated as 3nm at the same level. Once level at 4000ft and heading 060° the controller asked them if their heading was indeed 060° which it was, according to their indications. Before transfer to Tower ATC told them that a report would be filed concerning their late turn. He assessed the risk as medium to low.

After landing the crew discussed the incident and thought that maybe a mis-communication about the initial radar vector, before they turned back onto heading 060°, was part of the reported late turn. At that particular time the workload of the FO became more intense which might have played a part in this mis-communication. However, as soon as the wrong heading was acknowledged by the crew it was corrected immediately following the ATC instructions, both navigation and communication wise.

UKAB Note (1): The Secretariat contacted the FK50 Capt to ascertain whether the ac turning through its assigned heading had been due to equipment failure or human factors. The Capt confirmed that the FO was flying the ac at the time and talking to ATC whilst the Capt was talking to the cabin crew. There was a mis-communication between the crew as the Capt confirmed the given vector but the FO understood a different heading; however, this was not assimilated by the crew at the time. As soon as the FO realised the situation the ac was turned away onto the given heading.

UKAB Note (2): Sunset was 1749Z.

UKAB Note (3): Met Office archive data shows the 3000ft wind as between 350° and 020° 45-50kt.

**ATSI** reports that the Airprox occurred in the London TMA (Class A) airspace, 6.5nm E of London City Airport, between an EMB170 and a FK50.

The EMB170 was on an IFR flight from Edinburgh to London City and was in receipt of an Aerodrome Control Service from London City Tower on frequency 118.075MHz.

The FK50 was on an IFR flight from Rotterdam to London City and was in receipt of a RCS from Thames Radar on frequency 132.7MHz.

ATSI had access to radar recordings of the incident and RT from the London City Tower and Thames Radar frequencies.

The London City METARs are provided for 1750 and 1820 UTC:

EGLC 051750Z 33016KT 300V360 9999 -RA SCT030 BKN045 08/M01 Q1021= and EGLC 051820Z 32014G24KT 9999 BKN040 08/M01 Q1021=

At 1814:40 UTC the EMB170 flight was instructed by Thames Radar to turn R heading 075° to reposition downwind following a go-around from RW27 due to the strong winds.

At 1815:40 the FK50 crew reported to London City Tower that they were going around.

At 1817:40 the EMB170 flight, which was maintaining 3000ft, was instructed by Thames Radar to turn onto a heading of 145° to reposition on to R base for RW27.

At 1818:00 the FK50 flight contacted Thames Radar in the missed approach procedure and requested another approach. Thames Radar instructed the FK50 crew to fly radar heading 060° and climb to maintain 3000ft.

At 1819:40, as the EMB170 was establishing on the ILS, the FK50 flight was instructed to, "...turn right heading zero eight zero degrees" to position downwind RH. The crew read back "Zero eight zero (FK50 c/s)".

At 1820:00 the EMB170 crew was instructed to contact London City Tower on 118-075MHz.

At 1820:40 the EMB170 was on a 9nm final at 2900ft and the FK50 was N of the final approach track, tracking SE, having turned through the heading of 080°. Thames Radar instructed the FK50 crew to turn L immediately heading 060°. The controller immediately restated the instruction "(FK50 c/s) avoiding action start a left turn now start a left turn now (FK50 c/s)". The pilot of the FK50 replied, "Turning left (FK50 c/s) followed immediately with, "And turning to zero six zero (FK50 c/s)".

The Thames Radar controller telephoned the London City Tower controller and instructed them to descend the EMB170 to 2000ft. The London City Tower controller instructed the EMB170 flight to descend immediately to 2000ft and gave TI on the FK50. The EMB170 crew read back the instruction and the London City Tower controller then upgraded the instruction to avoiding action.

By 1820:59 the FK50 had turned further to the R and was tracking approximately 160°, at 3000ft, on a conflicting course with the EMB170 which was at 2900ft. The 2 ac were 4.6nm apart. The Thames radar controller again instructed the FK50 flight, "(FK50 c/s) avoiding action turn left immediately" which was read back as "Turn left immediately (FK50 c/s)".

The Thames radar controller then instructed the FK50 crew to, "...climb to altitude four thousand feet traffic one o'clock same level two miles". This transmission was not acknowledged so Thames Radar transmitted at 1821:20, "(FK50 c/s) traffic one one o'clock two miles same level climb to altitude four thousand feet". The FK50 crew replied, "Four thousand feet (FK50 c/s)". At this time the FK50 was in the L turn at 3000ft, 2.3nm from the EMB170 at 2600ft. At the CPA, 1821:35, the FK50 passed down the RHS of the EMB170 at a range of 1.8nm climbing through 3300ft while the EMB170 was descending through 2400ft.

Following the incident the Thames Radar controller checked the track of the FK50 against the heading reported by the crew and the two appeared to correlate. No Mode S heading information was available from the FK50.

No report from the crew of the FK50 has been received by ATSI therefore it is unknown why the crew turned significantly through the heading of 080° instructed by the Thames Radar controller.

The Thames Radar controller issued a heading of 080° to the crew of the FK50 which was read back correctly but not followed. The FK50 turned through the heading issued by the controller and flew into conflict with the EMB170. An avoiding action L turn was issued to the FK50 flight at 1820:40 but the FK50 continued to turn R until 1821:00.

Both the Thames Radar controller and the London City Tower controller took prompt, appropriate action to resolve the situation.

## **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 video recordings, reports from the air traffic controllers involved and reports from the appropriate ATC authorities.

A CAT pilot Member said that although missed approaches are relatively rare events, pilots routinely enter/select the relevant procedures in the ac FMS to minimise the cockpit workload in the event of a go-around. Both pilot and controller Members confirmed that it was rare for the published missed approach at London/City to be flown, with flights being issued with vectors, after the initial part of the procedure, to ensure that ac do not turn back into conflict with other departing flights or with inbound traffic. It was clear that, for whatever reason, the FK50 crew did not follow their assigned heading after being instructed to turn from 060° onto 080°, a part cause of the Airprox. The Capt reported being 'off air' for a period while the ac was under radar vectors. However pilot Members agreed that during unusual situations, priorities should be established on the flightdeck to ensure that disruptions to SOPs are kept to a minimum. The cabin crew should have been aware, from the flight profile flown, that the ac had gone-around and would have been responsible for informing the pax of the situation; the Capt normally updates the pax later on. Although the crew reported the heading of 080° was confirmed internally, there appeared to be a missing cross-check in the cockpit to ensure the heading was flown. Moreover, from correlating the RT transcript and radar recording, Members agreed that the FK50 crew, although acknowledging the avoiding action issued by Thames Radar, were slow to respond to the instructions given, which resulted in the ac flying into conflict with the EMB170, the other part cause of the Airprox.

Although Thames Radar had done well in recognising the developing conflict early, before STCA activated, he was undoubtedly concerned that the FK50 flight was not turning away from the EMB170's projected flightpath as quickly as he expected. He had then telephoned London/City and told the ADC to descend the EMB170 flight, which was actioned immediately, the ADC showing good SA in passing TI to its crew on the FK50 and upgrading the descent instruction to avoiding action. Eventually both the EMB170's descent and the turn/climb of the FK50 took effect which resulted in the ac passing each other separated by 900ft and 1.8nm. Both crews had also seen the developing situation on their TCAS equipment and acquired each other's ac visually while following ATC instructions. Taking all of these elements into account, when combined, the Board was able to conclude that any risk of collision had been effectively removed.

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

Cause: The FK50 crew did not follow their assigned heading and were slow to respond to avoiding action, resulting in their flying into conflict with the EMB170.

Degree of Risk: C.