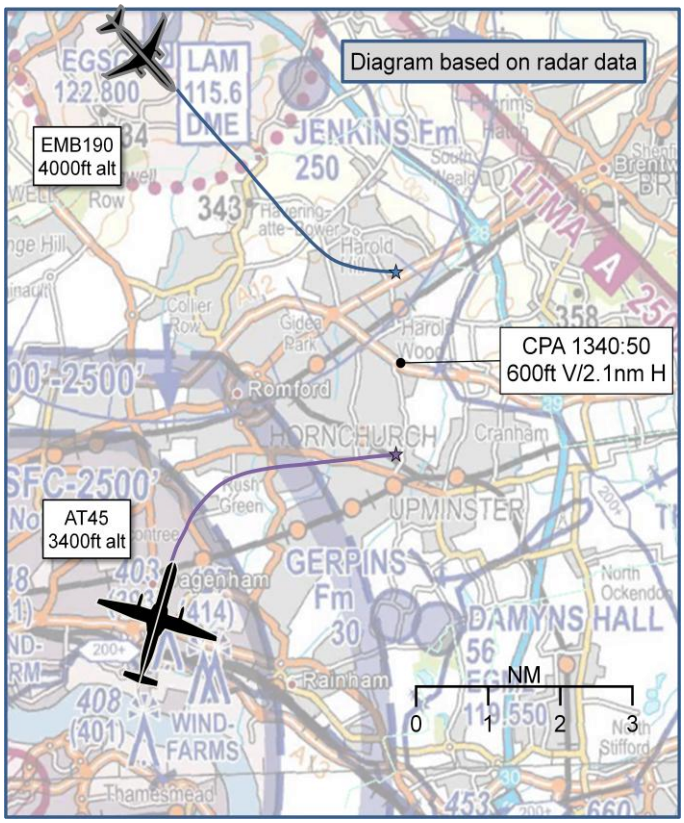
AIRPROX REPORT No 2015055

Date: 23 Apr 2015 Time: 13.40Z Position: 5136N 0001E Location: 5nm SE Lambourne VOR

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	ATR42	EMB190
Operator	CAT	Civ Trg
Airspace	London TMA	London TMA
Class	A	A
Rules	IFR	IFR
Service	Radar Control	Radar Control
Provider	TMA Departures (NE)	Thames Radar
Altitude/FL	3700ft	4000ft
Transponder	A,C,S	A,C,S
Reported		
Colours	Blue/white	Blue/white/red
Lighting	HISL/Nav/Landing	HISL/Landing
Conditions	VMC	VMC
Visibility	6KM	NK
Altitude/FL	3700ft	4000ft
Altimeter	QNH (1019hPa)	NK
Heading	021°	NK
Speed	210kt	NK
ACAS/TAS	TCAS II	TCAS II
Alert	Nil	Nil
Separation		
Reported	300ft V/2nm H	NK V/NK H
Recorded	600ft V/2.1nm H	



THE ATR42 PILOT reports outbound from London City Airport (LCY) on a LYD 5U SID climbing to 4000ft. Once established on the BIG 021° radial, he was instructed by ATC to descend immediately to 3000ft and to turn right onto 090°.

He assessed the risk of collision as 'Low'.

THE EMB190 PILOT reports inbound to LCY on a training flight. He was given a heading change with the phrase 'avoiding action'. He complied with the instruction, there was no TCAS alert and no other aircraft was seen.

He assessed the risk of collision as 'None'.

THE TMA DEPARTURES (NE) CONTROLLER reports that the planned release of the EMB190 to Thames Radar was subtly different to 'normal' in that it was for a descent to 5000ft only (see UKAB Note below). He issued a final heading and level to the aircraft, but missed the fact that the level was different to 'normal' and instructed the EMB190 to descend to 4000ft before then transferring the aircraft to Thames Radar. On then noticing an outbound aircraft climbing to 4000ft, he made a priority call to Thames Radar to point out the situation.

[UKAB Note: deconfliction procedures for inbound and outbound traffic to LCY had recently changed as a result of the introduction of the Southend CTR/CTA; previously, inbound aircraft were descended to 4000ft and outbound aircraft were climbed to 3000ft but, because of the introduction of the airspace, this had been changed to 5000ft and 4000ft respectively].

THE THAMES RADAR CONTROLLER reports co-ordinating with the TMA (NE) Controller that the EMB190 would descend to 5000ft. When the pilot checked in, he recalled circling the '5' on his flight

progress strip but couldn't fully recall what the pilot reported as his clearance limit. The ATR42 pilot then called in and was cleared to climb to 4000ft to provide 1000ft separation against the EMB190, which he expected to stop descent at 5000ft. The priority line then rang pointing out the EMB190 had actually been cleared to 4000ft. He checked the EMB190's Mode S readout (which was garbling with other aircraft on the display) to confirm the cleared level – Mode S was indicating 4000ft. He then gave avoiding action to the EMB190, together with traffic information.

Factual Background

The London city weather at the time was:

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METAR EGLC 231550Z 09007KT 050V110 CAVOK 15/06 Q1017
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Analysis and Investigation

CAA ATSI

ATSI had access to reports from both aircraft, the Thames Radar controller and the NE Radar Controller, the area radar recordings and transcription of the Thames radar frequencies and telephone coordination. ATSI also had access to the unit investigation summary. Screenshots produced in the report are provided using the area radar recordings. Levels indicated are in altitude.

The ATR42 was operating IFR on a commercial passenger flight from LCY, and was in receipt of a Radar Control Service from Thames Radar on frequency 132.700MHz. The EMB190 was operating IFR on a training flight to LCY and, at the time of the Airprox, was also in receipt of a Radar Control Service from Thames Radar on frequency 132.700MHz, having just been transferred from the North East departures controller (NE).

At 1335:28, telephone coordination took place between the Thames Radar Controller and the North East Departures Co-ordinator (NE). During this coordination it was agreed that the EMB190 would leave the LAM (VOR) on a heading of 140°and descend to 5000ft. The NE controller reported that normal practice had been to descend such traffic to 4000ft and, at 1336:48, the EMB190 pilot was instructed to descend to 4000ft by the NE controller, despite the recent coordination limiting the descent to 5000ft. The pilot was subsequently instructed to change frequency to Thames Radar.

At 1338:50 the EMB190 pilot reported descending to 4000ft on the Thames Radar frequency. At the time, the controller was just completing telephone coordination with Southend Airport when the EMB190 reported on frequency. The controller acknowledged the call, issued a speed reduction, but did not assimilate the unexpected 4000ft reference by the pilot. The Thames Radar controller reported marking his flight progress strip (FPS) by circling a '5', to indicate the level that had previously been coordinated.

At 1339:08 the ATR42 pilot reported onto the Thames Radar frequency, climbing to 3000ft having just departed from LCY. The controller responded by instructing the pilot to climb to 4000ft, as he believed the EMB190 was descending to 5000ft.

At 1339:57 a low-level Short Term Conflict Alert (STCA) activated as indicated in Figure 1. As this occurred, the North East controller made a priority phone call to the Thames Radar Controller and apologised that the EMB190 was descending to 4000ft. The Thames Radar controller stated in his written report that he had not seen the Mode S indication of a cleared level of 4000ft prior to this due to garbling of squawks. This is also evident in Figure 1 (although prior to this screenshot the aircraft data-block was green and blended with the other contacts to an even greater extent).

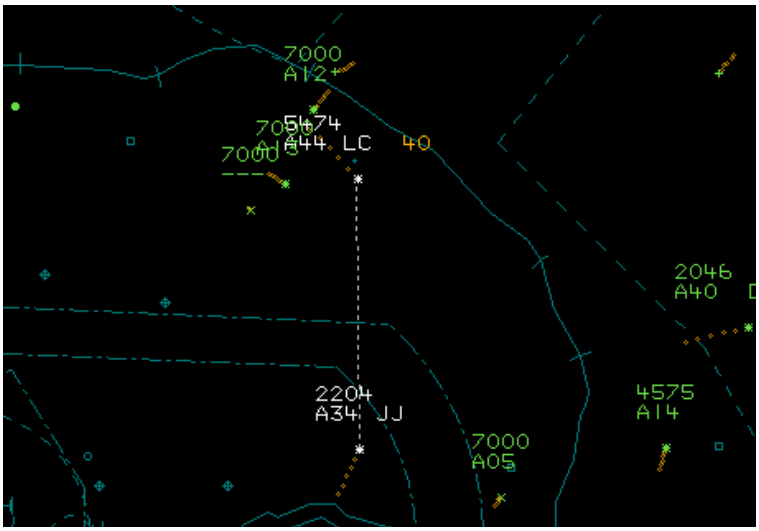

Figure 1 (1339:57)

At 1340:07 the Thames Radar controller issued avoiding action instructions to the ATR42, which was instructed to stop climb and descend to 3000ft. The EMB190 was then given an avoiding action left turn and passed traffic information. At 1340:30 the required 1000ft vertical and/or 3nm horizontal separation was lost (Figure 2).

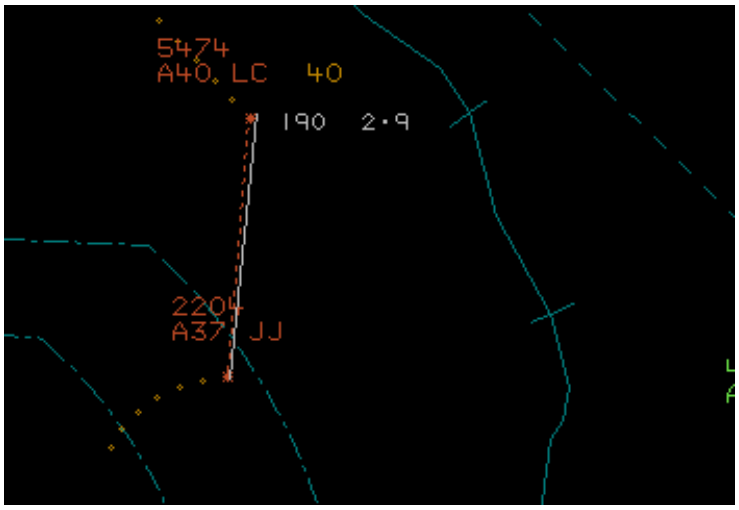

Figure 2 (1340:30)

CPA of 2.1 miles and 600ft occurred at 1340:52 as shown in Figure 3.

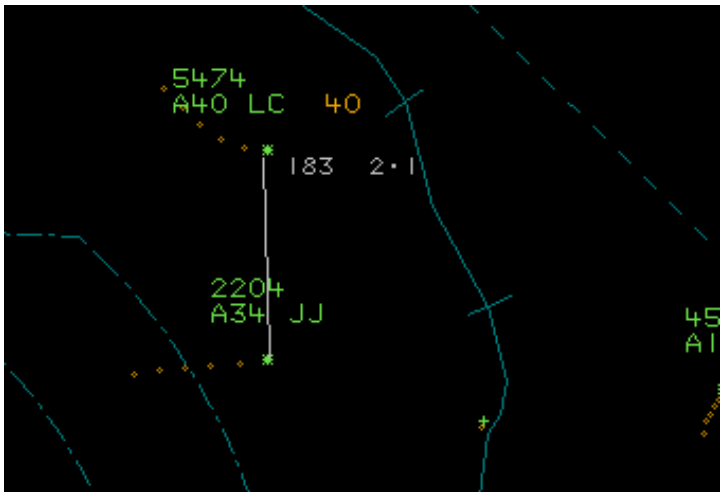

Figure 3 (1340:52)

The NE controller descended the EMB190 to 4000ft in accordance with previous practice, forgetting that coordination had been made to stop the descent at 5000ft. The EMB190 was then transferred to the next controller – Thames Radar. The Thames Radar controller had coordinated a descent for the EMB190 to 5000ft so was expecting this report from the pilot when he reported on frequency. Although the pilot clearly stated descending to 4000ft, the controller missed the level report and marked his strip to indicate 5000ft. The fact that he was just completing a phone call at the time could have been a distraction.

As the EMB190 continued its descent, the Thames Radar controller did not notice the 4000ft cleared level on the radar data block, because (as he reported) there was garbling with other labels from aircraft below controlled airspace (Figure 1). The activation of the STCA brought the situation to the attention of both the NE controller and the Thames Radar controller. The Thames Radar controller commenced avoiding action to both aircraft immediately following a brief telephone call with the NE controller.

UKAB Secretariat

Because both aircraft were operating under IFR in Class A airspace, the controller was responsible for maintaining the prescribed 1000ft vertical and/or 3nm horizontal separation. In pure collision avoidance terms, both pilots remained equally responsible for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard[1]. Notwithstanding ATC instruction otherwise[2], the incident geometry is considered as converging and the EMB190 pilot was ultimately required to give way to the ATR42[3] if they had come into close proximity.

Summary

An Airprox occurred at 16:52 on Thursday 23rd April between an EMB190 and an ATR42 in the vicinity of LCY. Both aircraft were under a Radar Control service, and both aircraft received avoiding action from the Thames radar controller, which resolved the situation.

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 quickly agreed that this event hinged around the fact that both aircraft had evidently been mistakenly cleared to the same level. There then ensued an extended debate amongst the members as to the potential human factors and organisational aspects of this mistake. Specifically, the Board noted that although coordination had been agreed between the two qualified and experienced controllers for the EMB190 pilot to descend to 5000ft, the NE controller had then gone on to instruct the EMB190 pilot to descend to 4000ft before handing him over to the Thames controller, who did not assimilated the EMB190 pilot's reporting of the incorrect altitude on his initial call.
A controller member with knowledge of this incident informed the Board that the changes in airspace that had been introduced as a result of the introduction of the Southend CTR/CTA had required the modification of previous deconfliction measures between aircraft arriving and departing LCY. In the past, departing aircraft had been climbed to 3000ft, whilst arriving aircraft had been correspondingly coordinated in descent to 4000ft. It was explained that on 2nd April (some 21days before the event) the CAA had introduced the Southend CTR/CTA, which extended up to 3500ft near to the LCY CTA. This meant that, without positive control, southbound departures that had previously been climbed to only 3000ft were now in danger of penetrating the Southend CTA. The member explained that various methods of tackling this problem had been employed by different controller shifts such as issuing a heading to avoid the airspace, or climbing the aircraft above the airspace, as happened in

[1] SERA.3205 Proximity.
[2] SERA.8005 Operation of air traffic control service.
[3] SERA.3210 Right-of-way (c) (2) Converging.

this instance. These methods were new (in respect of the Southend airspace change) and both controllers concerned in the incident had not controlled, due to annual leave and other commitments, since the introduction of the Southend CTR/CTA – the incident occurred close to the start of their first shift. The controller member noted that the perception of the controllers was that, although they had been informed of the impending airspace changes, it was perceived within the operational environment that the introduction had been rushed; it was reported that although training was given in the form of briefings and written instructions, simulator time was only provided if it had been specifically requested by an individual controller (which had been taken up by some, but not all, of the controllers).

For their part, the NATS representative subsequently reported that the London Southend airspace change had been implemented by the unit some three weeks before the Airprox, and that in their opinion the airspace change was therefore not contributory to the Airprox event. They stated that NATS had fully complied with all the necessary processes to support the implementation of the London Southend changes into their operation. They also confirmed that NATS had obtained specific agreement from the CAA to offer simulated familiarisation to any controller who believed they would benefit from undertaking a simulated exercise of the new airspace procedures. This offer was made to all appropriately valid controllers and was accepted by some. The same briefing material and instructions were provided to all five Terminal Control watches. Because Swanwick is a very large unit, NATS commented that significant lead times are required to prepare for change, including the need to consider and prepare any specific briefing or training material for operational staff.

The Board noted the differing perspectives of how the airspace had been introduced and it's bearing on the Airprox. Members also noted that this had been the first shift that these controllers had operated after the change and that, although written instructions and briefings had been given, simulator training was not a mandatory part of the introduction. They therefore concluded that the lack of familiarity with the new airspace may have been a factor in the Airprox in that, under the pressure of their first experience with the change, the controllers may have unconsciously reverted to many years of previous practice and transmitted and heard what they expected, rather than what they had agreed to in their coordination. The Mode S garbling and the distracting phone call with Southend were also considered to be contributory factors in this respect.

Thankfully, the safety barriers of STCA and the call from the NE controller had highlighted the problem to the Thames controller, and this had led to timely and effective avoiding action being taken. The Board therefore assessed the risk as Category C. Notwithstanding, the Board had sufficient questions over the fact that neither controller appeared to be sufficiently practised with the new airspace's implications that they recommended that the CAA and NATS review the process of the introduction of the Southend CTR/CTA so that lessons may be identified for future airspace changes.

PART C: ASSESSMENT OF CAUSE AND RISK

Cause: The TMA (NE) controller's inadvertent instruction led to the EMB190 pilot descending into conflict with the ATR42.

Contributory Factor(s):

1. The Thames controller missed the EMB190 pilot's altitude report.
2. Mode S garbling.
3. Thames controller distraction whilst making an operational call with Southend.
4. Neither controller were practised in the implications of the Southend airspace change.

Degree of Risk: C.

Recommendation(s): The CAA and NATS plc review the process of the introduction of the Southend CTR/CTA.