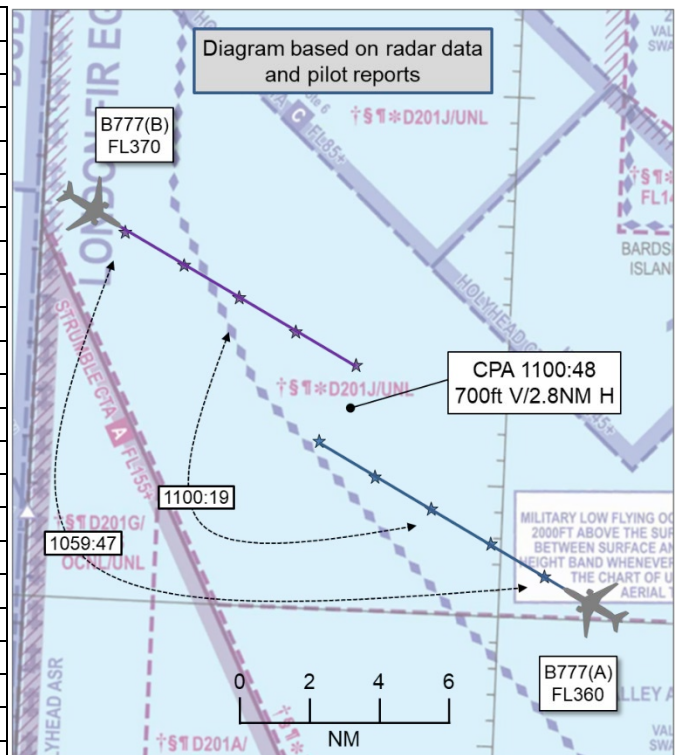


**AIRPROX REPORT No 2023142**

Date: 24 Jun 2023 Time: 1101Z Position: 5238N 00512W Location: 17NM WSW Bardsey Island

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

Recorded	Aircraft 1	Aircraft 2
Aircraft	B777(A)	B777(B)
Operator	CAT	CAT
Airspace	London UIR	London UIR
Class	C	C
Rules	IFR	IFR
Service	Radar Control	Radar Control
Provider	Shannon	London Area
Altitude/FL	FL363	FL370
Transponder	A, C, S+	A, C, S+
Reported		
Colours	White	NR
Lighting	Bcn, Nav, Strobes	NR
Conditions	VMC	NR
Visibility	>10km	NR
Altitude/FL	FL360-380	FL370
Altimeter	SPS (1013hPa)	SPS (1013hPa)
Heading	297°	117°
Speed	M0.84	478kts
ACAS/TAS	TCAS II	TCAS II
Alert	TA	TA
Separation at CPA		
Reported	500ft V/3NM H	NR V/NR H
Recorded	700ft V/2.8NM H	



**THE LONDON AREA CONTROLLER** reports that [B777(A)] had been transferred to ANSP1 at FL360. [B777(B)] had been on frequency at FL370, transferred from ANSP1. ANSP1 climbed B777(A) to FL380. The London Area controller noticed when the aircraft was passing FL362, gave avoiding action to B777(B) and passed Traffic Information. The controller [recalls that] B777(A) went to FL364 and had been approximately 2NM away maximum. The B777(B) pilot reacted immediately and said they had had an alert on the other traffic. Their level remained at FL370 so the controller believed they must have had a TA.

**THE LONDON AREA PLANNER CONTROLLER** reports that at approximately 1100, they had been operating as S8/35P on a moderately busy session when they heard the Tactical [controller] comment that "they've climbed it". They looked up to see what they were referencing and following a radar scan noticed B777(A) climbing into conflict with B777(B).

B777(A) had been transferred to ANSP1 at FL360 in the BADSI region. B777(B) had been in comms with S35 maintaining FL370 routing direct to [...]. B777(A) had subsequently been seen to have climbed (to FL364 before descending again [they recall]) losing separation with B777(B) which was approximately 2NM north of the position of B777(A). The Tactical [controller] issued avoiding action to the pilot of B777(B), turning it left. The controller called the Group Supervisor over to ensure that the Tactical [controller] was removed from their position ASAP and agreed that the Group Supervisor would call ANSP1 to ascertain the particulars of the event.

Given the traffic loading, the proximity of the aircraft and the ANSP1 phone redirect system, the controller deemed that the Group Supervisor calling to ascertain what had happened to be the most appropriate course of action. They then continued with the task in hand and additionally monitored the Tactical [controller]. The controller offered for them to swap positions should they feel it necessary but this was declined.

**THE LONDON AREA GROUP SUPERVISOR** reports that on taking over as Group Supervisor West, they had been advised by the incumbent Group Supervisor that the sector 8 and 35 Tactical [controller] had just had a loss of separation. The controller had been immediately removed from the sector. Some minutes later, the outgoing Group Supervisor then relieved the 8 and 35 Planner [controller].

Brief follow up investigation and discussion with the ANSP1 station manager highlighted that it had been their controllers who had inadvertently climbed B777(A) from FL360 into the B777(B) working LAC at FL370. They estimated separation at 2NM and 800ft.

The events described have not been checked for accuracy against the appropriate RTF recording.

**THE B777(A) PILOT** reports that whilst in ANSP1 FIR [they recall] heading westbound to [destination] they had been given climb via VHF from FL360 to their oceanic cleared level of FL370. Although not the correct semi-circular level, this is not unusual when about to enter Oceanic Airspace so had not been questioned. VNAV had been used to climb and, as the climb started, the PF had noticed an aircraft on the navigation display 1000ft above flying in the opposite direction towards them. V/S had been selected to reduce the rate of climb. At the same time the V/S button had been pressed, they received a TCAS TA. ATC immediately issued a stop climb call and then instructed them to descend to FL360. Their already low V/S climb was reversed to a -1000fpm descent to FL360. A [company brand] B777(B) passed their right hand side by approximately 3NM. TCAS had shown the separation as 700ft. ANSP1 ATC instructed the B777(A) pilot that they would be filing a report.

The pilot assessed the risk of collision as 'None'.

**THE B777(B) PILOT** reports that the incident happened between ANSP1 airspace and London ATC. One First Officer was in the flight crew rest. The reporting pilot had been with the second First Officer at the end of the Atlantic Ocean cruise flying back from [departure]. A long flight! The pilot recalls a TCAS TA and that they had been concentrating on the oncoming aircraft and on the manoeuvre they could be doing soon. They noted no RA. The First Officer in the cockpit and the pilot have no recollection [of anything special] of the transferring time in between ANSP1 and London. Probably the nearly 3min for the transfer were due to their attention focus on the oncoming traffic. That's all they can remember. They apologised if they took those nearly 3min to transfer.

## Factual Background

The weather at Dublin was recorded as follows:

METAR EIDW 241100Z 22009KT 180V270 9999 FEW010 BKN030 23/15 Q1019 NOSIG=

## Analysis and Investigation

### NATS Safety Investigations

B777(A) had been transferred to ANSP1 ATC maintaining FL360, whilst B777(B) had been transferred from ANSP1 ATC maintaining FL370. The ANSP1 controller issued a climb to B777(A) to FL370 prior to the aircraft crossing. A red alert had been generated in the SM, and an STCA activated. The S8/35 controller issued avoiding action and Traffic Information to the pilot of B777(B).

London Area Control Sectors 8 and 35 had been operating in a bandboxed configuration, under the control of a Planner and Tactical controller. B777(A) had been transferred from the Sector 8/35 Tactical controller to ANSP1 ATC by CPDLC<sup>1</sup> at 1057:49, maintaining FL360 on track to RESNO. The pilot reported onto the ANSP1 frequency at 1058:14. The B777(B) had been transferred from ANSP1 ATC to S8/35 at 1056:37, maintaining FL370. The pilot reported onto the London frequency at 1059:57 and had been issued a direct routeing to NUCHU. ANSP1 ATC however had cleared B777(A) to climb to FL370 at 1059:54, into potential conflict with B777(B). A Selected Flight Level

<sup>1</sup> Controller Pilot Data Link Communications (CPDLC) is a means of communication between controller and pilot, using data link for ATC communications. (ICAO Doc 4444: PANS-ATM)

alert for B777(A) was generated in the iFACTS toolset at 1100:00. B777(A) commenced climb at 1100:20.

At 1100:28, the ANSP1 controller instructed the pilot of B777(A) to stop climb, to which the pilot responded that they had “just seen the traffic” and were descending back to FL360. Separation minima between B777(B) and B777(A) were eroded at 1100:36. The required separation was 5NM laterally or 1000ft vertically. The S8/35 Tactical controller issued avoiding action to the pilot of the B777(B) at 1100:41, to turn left heading 060°. This had been read back by the pilot. Traffic Information had been provided to the pilot of B777(B) who read back the instruction and advised that they had a TCAS “alert.” Minimum separation between B777(A) and B777(B) occurred at 1100:48, measured on the multi-track radar as 2.8NM and 700ft. Separation minima were restored at 1101:08. The pilot of the B777(A) subsequently advised ANSP1 ATC that they had not received a TCAS RA during this event.

A TCAS analysis was commissioned by NATS Safety Investigations relating to this event given the report from the pilot of B777(B) that they had received a TCAS alert. The analysis confirmed Mode S downlinked information indicated no TCAS RA had been generated for either aircraft. As a result, a simulation of the event was conducted to ascertain the TCAS interactions between the two aircraft. It was confirmed that only a TCAS TA was generated during this event. Therefore it was determined there had been no TCAS RA associated with this event, for either of the aircraft involved.

Safety Investigations contacted ANSP1 ATC in relation to this event and a full timeline of the event had been received from the ANSP1 ATC perspective. The times and details of the event provided by ANSP1 ATC have been included within the description of the event provided above. B777(A) had been transferred to ANSP1 ATC, and B777(B) transferred from ANSP1 ATC. Both aircraft were known to both ANSP1 ATC and S8/35. It had been noted by ANSP1 that B777(B) took over three minutes to call onto the Sector 8/35 frequency. Safety Investigations listened to the RTF replay and [noted that] there had been high RTF occupancy during that time. However, the pilot of B777(B) called on the S8/35 frequency prior to any indication of the event being evident to the London operation, and therefore this had no impact on this event.

Causal Factors: B777(A) had been transferred to ANSP1 ATC and B777(B) had been transferred from ANSP1 ATC. Both aircraft had been known to ANSP1 ATC and Sector 8/35. ANSP1 ATC cleared B777(A) to climb prior to separation being provided against B777(B). Prior to separation minima being eroded, ANSP1 ATC instructed the pilot of B777(A) to stop climb, and avoiding action was subsequently given to the pilot of B777(B) by the S8/35 Tactical controller. The pilot of B777(A) subsequently elected to descend back to their previously cleared level.

### **AIRNAV Ireland Safety Investigation**

AIRNAV Ireland provided a comprehensive safety investigation report, relevant extracts from which are reproduced below.

AIRNAV Ireland examined the relevant sections of the ANSP1 MATS 1 and 2 documents, the ANSP1/LONDON LOA, COOPANS procedures and Eurocontrol material relating to the concept of ‘Blind Spot’ phenomena.

Event timeline:

1045 ACT from S7 goes to S8 on B777(B) at F370 routeing MORAG.

1051 EC7 amended flight leg of B777(B) to remove 4DS/S8 from the sector sequence. SI of B777(B) label then showed EGTT as next sector and allowed for direct CPDLC transfer to London frequency. Label of B777(B) changed system state (colour) in S8 from ‘coordinated’ (light green) to ‘redundant’ (brown).

1052:20 PC8 signed in to position.

1053 PC took coordination call from London on 3<sup>rd</sup> aircraft climbing to F340 and routeing direct to RESNO.

1056:37 B777(B) was transferred by CPDLC from S7 to London ACC.

1056:49 WILCO received from B777(B).

1057:40 B777(B) signal entered corner of S8 in redundant colour F370.

1057:49 B777(A) was transferred by London to ANSP1 (information from NATS investigation).

1058:14 B777(A) called on S8 frequency and was identified and cleared direct to RESNO by EC.

1058:23 3<sup>rd</sup> aircraft called on S8 frequency and was identified and asked by PC for their RESNO estimate.

Pilot replied "Estimating RESNO time 1149, we have our Oceanic at F370 and we're happy to take that any time."

1058:45 PC asked B777(A) for their RESNO estimate. Pilot replied "47 and we can take F370 anytime."

PC said they had traffic restricted behind and to let them know if that time changes.

PC then instructed 3<sup>rd</sup> aircraft to cross RESNO NBT 1150. 3<sup>rd</sup> aircraft read back correctly and said they could accept F370 anytime.

The restriction between the two aircraft was 3 minutes and at this time they were side by side in London's airspace routeing direct to RESNO.

1059:15 B777(B) passed overhead MORAG F370.

1059:30 EC signed into position. EC invoked Min Sep tool between two aircraft, converging with 5.5NM in London's airspace east of LESLU.

1059:32 PC invoked QDM between 3<sup>rd</sup> aircraft and B777(A)

1059:40 PC changed XFL on B777(A) from F360 to F370 initiating an automatic level proposal in pink to S7.

1059:44 Level was accepted by S7.

1059:46 PC changed XFL of 3<sup>rd</sup> aircraft from F340 to F360 initiating an automatic level proposal in pink to S7.

1059:54 Level was accepted by S8 and PC issued climb to F370 to B777(A).

1059:57 B777(B) called on London frequency (information from NATS investigation).

1059:58 EC adjusted range on the screen and continued to adjust other elements on their radar screen.

1100 PC instructed 3<sup>rd</sup> aircraft to climb to F360. Red dots appeared on labels of 3<sup>rd</sup> aircraft and B777(A).

1100:15 PC took a call from London S9 reference two aircraft converging east of LESLU.

1100:23 STCA activated between B777(B) and B777(A).

1100:28 EC instructed B777(A) to “stop climb now F360 due traffic.” B777(A) label showed F360 climbing. Pilot replied “Ya we’ve just seen that, we’re going back down to F360.”

1100:39 B777(A) reached F363.

1100:41 B777(B) given left turn for avoiding action (information from NATS investigation).

1100:45 PC invoked QDM on B777(B) and B777(A). This showed 3.3NM laterally between the aircraft. B777(A) F363, B777(B) F370

1100:50 Aircraft were at their closest point 2.8NM laterally and 800ft vertically. B777(A) label showed F362 descending.

1100:54 EC called Coordinator to say there had been an STCA activation and separation loss.

1101:09 Separation regained between B777(A) and B777(B) – 5.8NM laterally, B777(A) F360.

1101:10 EC instructed 3<sup>rd</sup> aircraft to stop climb F350.

1101:36 EC thanked B777(A) and said they will be filing a report.

1102:48 New EC signed in to position.

1103:16 B777(A) called to say they did not get a TCAS RA.

1104 New PC signed in.

A call was received in the sector from London enquiring if they were aware that a separation loss had taken place and if a report was going to be filed. This was confirmed by the sector controller.

AIRNAV held interviews with those at positions EC7, EC8(1), EC8(2), PC8(1) and PC8(2).

AIRNAV Ireland made a number of **Findings**, they are shown below:

1. This incident is a clear case of "Blind Spot"<sup>2</sup> causing the controller to climb an aircraft through another aircraft they did not see.
2. B777(A) and the 3<sup>rd</sup> aircraft were both transferred by London RFC and RFT.
3. Following transfer, it took over 3 minutes for B777(B) to establish communications with London.
4. Were B777(B) to have established contact with London then it is highly likely that London would not have transferred B777(A) to ANSP1.
5. If PC8 had been involved directly in the coordination they would likely have been more mindful and/or aware of the presence of B777(B) prior to issuing the climb instruction.
6. The procedures for skipping aircraft in COOPANS only applies to inter-sector transfer of flights.
7. There are no procedures for label management (manual movement to a designated sector, Suite Highlight etc.) for external FIR transfers from the sector that is not the adjacent sector. There are also no procedures for a flight not being worked on frequency by the last sector if coordination has taken place between the two sectors to agree this action.
8. If the 'skipped' traffic B777(B) had been "suite highlighted", as is the procedure for inter-sector skip, then it could have drawn PC8's attention to the aircraft and made it more visible to them.
9. EC and PC took over ANSP1 4FS08C S8 with appropriate intervals between handovers.
10. PC8 was informed of the coordination on B777(B) during their handover. EC8 was not informed of the coordination on B777(B) during their handover as the aircraft had left the sector by this time.

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<sup>2</sup> From Eurocontrol Operational Safety Study into Blind Spot, 12/12/2014. Loss of separation “Blind Spot” events are typically characterised by the controller not detecting a conflict with the closest aircraft. They usually occur after an incorrect descent or climb clearance. This study identified that there are three most frequent contributing factors that influence the losses of separation because of blind spot occurrences, and that offer a good prevention potential if properly addressed: • Flight Data Display not updated to reflect change of routing or did not highlight confliction. • Track labels obscured. • Sector hand over and post sector handover.

11. PC8 gave climb instruction to B777(A) without reference to B777(B) opposite direction at the same level.
12. EC8 was still setting up their screen and formulating their 'picture' when the climb instruction was given.
13. The team situational awareness of two controllers working together in a sector was eroded by the handover in the EC position.
14. PC8 had control of the sector and there was no requirement for them to co-ordinate the level change instructions with EC8, until transfer of control of the sector was handed to them.
15. EC8 reacted extremely quickly and effectively in resolving the situation.
16. Stopping the climb of B777(A) was the only option immediately available to them due to the proximity of [3<sup>rd</sup> aircraft] to the left, and they did not have comms with B777(B).
17. EC8 did not issue essential Traffic Information as B777(A) had reported that they knew about the traffic.
18. EC7 did not END CPDLC on B777(B).
19. B777(A) did not question the climb instruction even though they knew of the opposite direction traffic.
20. PC8, while not a new controller, had only been operating in High Level for less than a year.
21. PC8's eagerness to facilitate aircraft to their oceanic flight level led them to coordinate F370 westbound for the B777(A), and issue the climb instruction.
22. A Blind Spot Tool is scheduled for introduction in May 2024.
23. As per system logic, MTCD<sup>3</sup> presented the conflict as outside risk.

AIRNAV Ireland noted the **causal factor** for this event to have been – 'due to an occurrence of the 'Blind Spot' phenomenon where the controller did not see the pertinent traffic when issuing climb instruction'.

Additionally, AIRNAV Ireland noted the following **contributory factors**:

1. Handover in the sector meant EC was not fully established at the time of the incident, and was unaware of the instruction PC issued.
2. Direct transfer of B777(B) by S7 to London made the aircraft signal less noticeable and PC less aware of its presence.
3. The current procedure, which was not widely applied among ATCOs due to lack of awareness of it, only outlined partially the actions to be taken by controllers when transferring traffic to London from a non-adjacent sector. Flight leg manipulation, label transfer and cross sector sequence changes are not documented in the procedure which had been designed originally to discourage ATCOs from carrying out this type of aircraft transfer.
4. The location of MORAG close to two sector boundaries and the FIR boundary precipitated the common practice of missing out one sector on transfer to London.
5. B777(B) took over 3 minutes to contact London. In that time B777(A) had been transferred to ANSP1 thus having both aircraft on different frequencies with B777(A) RFC.
6. Eagerness to facilitate aircraft at the earliest opportunity led PC to issue the climb instruction.

AIRNAV Ireland made a number of **recommendations**, the key ones are shown below:

Recommendation 1 - Safety Reminders be issued to staff on the following:

1. The correct procedure for transferring traffic to London which is not the last ANSP1 sector.
2. Highlighting the importance and content of correct Handover procedures.

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<sup>3</sup> Medium Term Conflict Detection.

3. Highlighting the Blind Spot Issue, what causes it and techniques to manage it.

Recommendation 2 - Operations to discuss this event with NATS, with a view to examining the robustness of the procedures contained in the LOA in light of this event.

Recommendation 3 - A module on Blind Spot Phenomenon in ATC be included in the next available refresher training for all ATCOs.

Recommendation 4 - Operations review the procedure for transfer of control from non-adjacent sectors to external FIRs in the light of this event.

Recommendation 5 - Operations consider introducing a procedure where "Suite Highlight" is used in all 'skip' situations.

Recommendation 6 - In the context of this event, and previous blind spot-related occurrences, the implementation of a Blind Spot detection tool in COOPANS be afforded an appropriate level of prioritisation to enable timely implementation.

Recommendation 7 - ANSP1 Operations to review the current sectorisation around position MORAG in light of the lack of awareness of ATCOs of the procedure, and the proclivity of MORAG sector controllers to 'skip' traffic at this position.

Recommendation 8 - TC8 should be de-briefed on the event and the expeditious response to an abnormal situation should be recognised.

Recommendation 9 - PC8 should be de-briefed on the event. The de-brief should focus on:

- a. The blind spot phenomenon, its known contributors and mitigations; and,
- b. The timing of level change instructions and that, where there is no immediate need to initiate a level change, time should be taken to factor in all potential traffic.

Recommendation 10 - PC8 should be provided with a period of training to be determined by Unit Operations to ensure that:

- a. All potential conflicts are factored into level change instructions prior to issuing them; and,
- b. Such instructions are not issued with too much haste, unless so required for safety related reasons.

## UKAB Secretariat

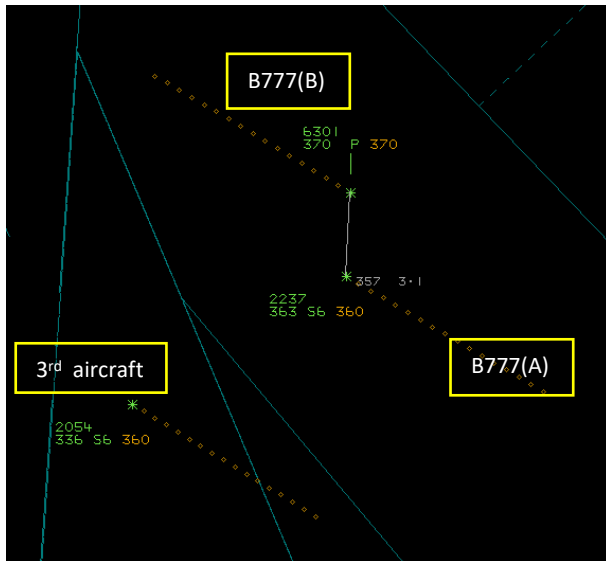


Figure 1: 1100:47 showing the closest vertical separation as recorded on radar between B777(A) and (B).

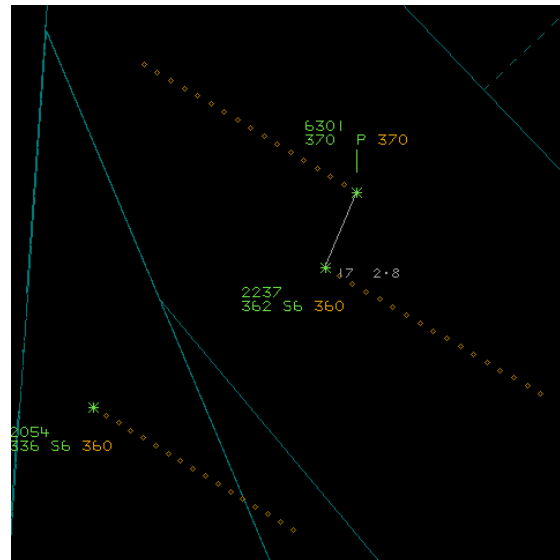


Figure 2: 1100:51 showing the closest horizontal separation as recorded on radar between B777(A) and (B).

The B777(A) and B777(B) pilots shared an equal responsibility for collision avoidance and not to operate in such proximity to other aircraft as to create a collision hazard.<sup>4</sup> If the incident geometry is considered as head-on or nearly so then both pilots were required to turn to the right.<sup>5</sup>

## Summary

An Airprox was reported when B777(A) and B777(B) flew into proximity 17NM west-northwest of Bardsey Island at 1101Z on Saturday 24<sup>th</sup> June 2023. Both pilots were operating under IFR in VMC, the B777(A) pilot in receipt of a Radar Control Service from ANSP1 ATC and the B777(B) pilot in receipt of a Radar Control Service from Swanwick London ATC.

## PART B: SUMMARY OF THE BOARD'S DISCUSSIONS

Information available consisted of reports from both pilots, radar photographs/video recordings, reports from the air traffic controllers involved and reports from the appropriate operating authorities. Relevant contributory factors mentioned during the Board's discussions are highlighted within the text in bold, with the numbers referring to the Contributory Factors table displayed in Part C.

The Board first considered the role played by the ANSP1 controller. Members acknowledged the comprehensive investigation work carried out by the AIRNAV Ireland safety team and thanked them for sharing their observations and lessons in this event. The Board understood there to have been a number of contributory factors that, in combination, had led to an unsafe situation through an inappropriate clearance to climb (**CF1**, **CF4**) having been passed to the pilot of B777(A) with a resultant reduction in separation provision (**CF5**).

They noted that there had been a series of closely linked staff changeovers in the preceding minutes (**CF2**), an element of which had led to a controller giving 'stop climb' instructions less than 1 minute after having signed in. This, in association with the less-commonly understood 'sector-skip' scenario which had been employed, enabling CPDLC handover of B777(B) to run alongside voice communications handover for B777(A), all tied to the relatively new phenomenon of a blind-spot event following the de-prioritisation in colour representation on the controller's display, had contributed to a

<sup>4</sup> (UK) SERA.3205 Proximity.

<sup>5</sup> (UK) SERA.3210 Right-of-way (c)(1) Approaching head-on.



less-than-ideal handover of traffic (**CF3**) at a busy intersection with commensurately reduced situational awareness for those controlling (**CF6**).

Board members then looked at the part played by the London (Swanwick) controller, noting their timely response to the ANSP1 controller's climb instruction to B777(A) to FL370 prior to the aircraft crossing, the red alert that had been generated, and the STCA that had been activated (**CF7**). The Board agreed that this had led to the Swanwick controller issuing avoiding action and Traffic Information to the pilot of B777(B) and members agreed that there had been little more that the controller could have done at that stage to avoid a reduction in safety margins.

Moving on to the actions of the B777(A) pilot – on handover from London to ANSP1 at FL360 – members noted that the pilot flying had, after having been cleared to and after having initiated their climb, then seen an aircraft on the navigation display 1000ft above and flying directly towards them. The Board could not resolve why the ANSP1 investigation had found that the pilot had not questioned their climb instruction when the pilot reported contact with the intruder aircraft after this climb instruction had been issued. Nonetheless, members agreed that the pilot of B777(A) had received a TCAS TA (**CF8**) shortly afterwards. Members praised the crew for their reaction to the TCAS alert in reducing their rate of climb and reverse the climb to regain FL360 and, noting the B777(B) pass approximately 3NM to their beam, considered reasonably that there had been no risk of collision.

Turning to the actions of the B777(B) pilot, they noted the extended time for frequency change and aligned that to the duration of the flight already undertaken by the crew and the focus of their attention being both on oncoming aircraft and the coincident TCAS alert (**CF8**), but agreed that there was little else the crew could have done to avoid the situation in which they found themselves.

When determining the risk of the Airprox, members considered the reports from both pilots and those of the controllers, together with the radar screenshots. They agreed that the radar separation between the two aircraft meant that, whilst safety had been degraded, there had been no risk of collision and therefore assigned Risk Category C to this event.

## **PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK**

### Contributory Factors:

	2023142			
CF	Factor	Description	ECCAIRS Amplification	UKAB Amplification
	<b>• Regulations, Processes, Procedures and Compliance</b>			
1	Human Factors	• ATM Regulatory Deviation	An event involving a deviation from an Air Traffic Management Regulation.	Regulations and/or procedures not fully complied with
	<b>• Manning and Equipment</b>			
2	Organisational	• ATM Staffing and Scheduling	An event related to the planning and scheduling of ATM personnel	
	<b>• Situational Awareness and Action</b>			
3	Human Factors	• ATM Coordination	Coordination related issues (external as well as internal)	
4	Human Factors	• Inappropriate Clearance	An event involving the provision of an inappropriate clearance that led to an unsafe situation	
5	Human Factors	• Separation Provision	An event involving Air Navigation Services separation provision.	
6	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
	<b>• Electronic Warning System Operation and Compliance</b>			
7	Technical	• STCA Warning	An event involving the triggering of a Short Term Conflict Alert (STCA) Warning	

• Electronic Warning System Operation and Compliance				
8	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	

Degree of Risk: C

### Safety Barrier Assessment<sup>6</sup>

In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

#### **Ground Elements:**

**Regulations, Processes, Procedures and Compliance** were assessed as **partially effective** because ANSP1 ATC had cleared B777(A) to climb before safe separation on B777(B) had been assured.

**Manning and Equipment** were assessed as **partially effective** because ANSP1 ATC had experienced a multiple controller changeover immediately preceding the Airprox event.

**Situational Awareness of the Confliction and Action** were assessed as **partially effective** because, once the handover of B777(B) had occurred, the system aircraft track colour changed, leading to the ANSP1 controller losing full situational awareness on that aircraft and then clearing B777(A) to climb.

#### **Flight Elements:**

**See and Avoid** were assessed as **not used** because separation minima between the two aircraft were regained due to ATC actions before the situation was close enough for see and avoid to be utilised.

<sup>6</sup> The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the [UKAB Website](#).

<b>Airprox Barrier Assessment: 2023142</b>		Within Controlled Airspace						
Barrier	Provision	Application	Effectiveness					
			Barrier Weighting					
			0%	5%	10%	15%	20%	
Ground Element	Regulations, Processes, Procedures and Compliance							
	Manning & Equipment							
	Situational Awareness of the Confliction & Action							
	Electronic Warning System Operation and Compliance							
Flight Element	Regulations, Processes, Procedures and Compliance							
	Tactical Planning and Execution							
	Situational Awareness of the Conflicting Aircraft & Action							
	Electronic Warning System Operation and Compliance							
	See & Avoid							
<b>Key:</b>								
	Full	Partial	None	Not Present/Not Assessable	Not Used			
Provision								
Application								
Effectiveness								