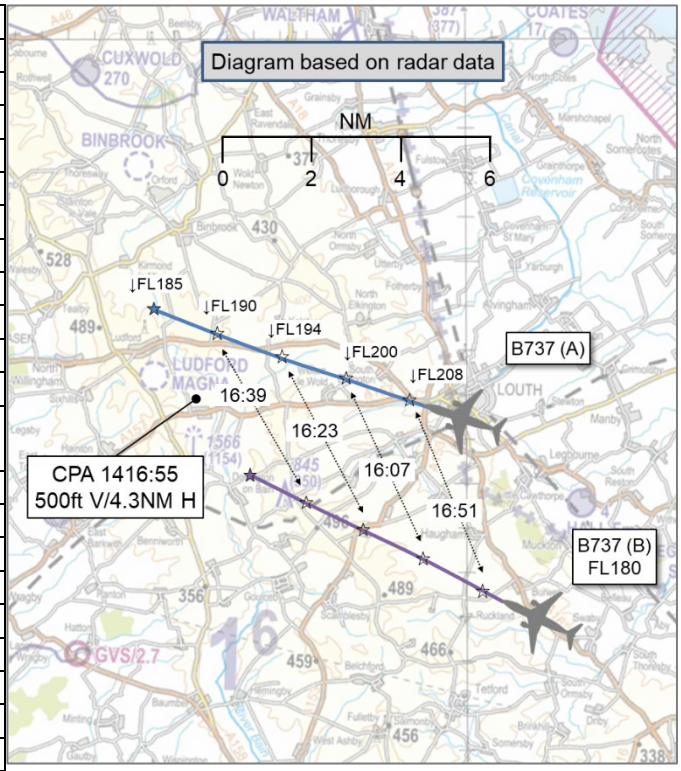
AIRPROX REPORT No 2022234

Date: 23 Sep 2022 Time: 1417Z Position: 5322N 00010W Location: 6NM W Louth

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	B737(A)	B737(B)
Operator	CAT	CAT
Airspace	Lincolnshire CTA1	Lincolnshire CTA1
Class	A	A
Rules	IFR	IFR
Service	Radar Control	Radar Control
Provider	Scottish Control	Doncaster App
Altitude/FL	FL185	FL180
Transponder	A, C, S+	A, C, S+
Reported		
Colours	White, Blue	Blue, White, Red
Lighting	Anti-col, Strobe, Nav	Anti-col, Strobe, Nav
Conditions	VMC	VMC
Visibility	>10km	NR
Altitude/FL	FL185	NR
Altimeter	Std (1013hPa)	Std (1013hPa)
Heading	NR	NR
Speed	290kt	NR
ACAS/TAS	TCAS II	TCAS II
Alert	None	None
Separation at CPA		
Reported	600ft V/3NM H	Not seen
Recorded	500ft V/4.3NM H	



THE B737(A) PILOT reports that they were in contact with Scottish Control on 133.800MHz. They were cleared to descend to FL170. Passing FL185 they noticed traffic on TCAS (range just over 2.5NM, 600ft below and at their 7 o'clock position). Vertical speed was reduced to minus ~250fpm to try to maintain separation. They were unable to locate the traffic visually. No TA or RA was generated. ATC was contacted to ask if there was any traffic nearby and their reply was "*yes, it's 1000ft below you*", which at the time of response was correct, however, the aircraft had shown as being within 600ft of their position - it was only due to their reduction of vertical speed (to below 500fpm) that allowed separation to increase. When separation was restored, they asked ATC if the other aircraft was in controlled airspace. The response was "*Yes, commercial traffic going to* [destination]". They then notified ATC of their intent to file an Airprox at time 1418z.

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

THE B737(B) PILOT reports that they have been asked to submit a form for an Airprox that they know nothing about, on a flight that they have little recollection of, and apologise for the vagueness of their answer.

THE SCOTTISH CONTROLLER reports that they were the North and East Tactical controller around 1410. At this point, they started the splitting process to open North. [B737(A)] requested descent, so they descended them to FL200 on top of [B737(B)], which was at FL180 around the OTBED area, where there was also other traffic descending on top of [B737(A)], so there was a bit of a cluttered zone. While they were handing over strips and information to the receiving controller opening the North Sector, a pilot called for descent. At this point they believe they transferred the [B737(B)] to Doncaster Approach for further descent and, soon after, as the [B737(A) pilot] asked for further descent, they dropped them to FL170, on top of the Hibaldstow [paradropping site] limits, but not fully aware of the position of the [B737(B), the pilot of] which was already talking to Doncaster and behind the [B737(A)]. Then the

[B737(A)] pilot asked if there was an aircraft behind them and if it was inside CAS, they [the controller] replied [that there was], so the [B737(A) pilot] mentioned they were going to file [an Airprox report], as they thought they were pretty close ahead of them.

THE DONCASTER APPROACH CONTROLLER reports that whilst working Doncaster Radar they started to talk to, and control, [B737(B)] en-route to [destination] via OTBED. Control of aircraft [with this routing] are handed over, on a silent release, at OTBED descending to FL180. The aircraft was kept at FL180 as coordination was needed to be obtained from Humberside Radar due to Hibaldstow paradropping site being active up to FL160.

[B737(B)'s pilot] called whilst they were already on a coordination call from Leeds ATC, who were requesting descent through Doncaster Class D airspace with two of their inbound aircraft, the second of which was about 4NM north-northwest of [B737(B)] and above. The controller coordinated that they could descend to 1000ft above [B737(B)] through Class D airspace. They then made a call to Humberside ATC to coordinate decent through Hibaldstow, whilst remaining in Class A airspace. The call to Humberside ATC would normally have been made after the [B737(B)] pilot had first called, be that before the release point of OTBED or after. Hence the call to Humberside ATC was slightly delayed to normal.

[B737(B)] was given descent to FL160 so as to keep the aircraft within Class A airspace.

They then noticed [B737(A)] passing FL184 to the north-northwest of [B737(B)] with what was perceived to be less than 5NM [separation]. They then turned [B737(B)] onto a heading of 270° so as to separate the aircraft. Coordination is required from Area if they are to vector aircraft into the southern portion of the airway and so the heading of 270° seemed to be the best heading that would split the aircraft tracks whilst not infringing too much into the south of the airway. The projected vector line they had placed on the [B737(A)], seemed to them to turn left, which would have paralleled [B737(B)] and not have split them as they were trying to do. They attempted a call to Area so as to advise them of the situation and to inform them of what they had done and request use of the southern airway. North sector picked up the call who then tried to transfer them to East, however, they [the Doncaster controller] hung up as they wanted to devote their attention to the situation. They called again and East picked up and they [the Doncaster controller] informed them they were going to use the southern airway which was acknowledged and approved.

[B737(B)] then continued with no further incident.

In hindsight they did not issue *"avoiding action"* and they did not pass Traffic Information to [B737(B)]. At the time they perceived that what they did achieved the objective of separating the aircraft sufficiently in the calmest way possible.

Factual Background

The weather at RAF Waddington was recorded as follows:

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METAR EGXW 231420Z 34007KT 9999 FEW040 18/08 Q1015 NOSIG RMK BLU BLU
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Analysis and Investigation

Doncaster ATSU

The investigation into this event found that an aircraft under the control of the PC East controller had given descent to a level already occupied by the [B737(B)]. The Doncaster APS ATCO had not issued any control instructions to the [B737(B)], this was due to completing coordination initiated by Leeds APS, on two aircraft, one of which was still with PC East. Secondly, as Hibaldstow paradropping site was active, the Doncaster APS controller also needed to achieve coordination against the parachuting site for the [B737(B)].

On realising there was a loss of standard separation, the Doncaster controller attempted to achieve further coordination with PC East [for the B737(B) aircraft] to go south of the airway. As there was some delay in achieving this, on realising there was a loss in standard separation the ATCO turned the aircraft to the left and issued some descent, both instructions were to improve separation to the standard minima. No "avoiding action" phraseology was used. Standard separation was achieved soon afterwards.

[Traffic following this routing] from the east through OTBED is subject to standing agreement at FL180, Doncaster APS is then able to begin further descent, initially to FL160. However, crews can request descent outside CAS. In this case there may have been some expectation from PC East that the Doncaster APS ATCO would begin descending sooner. The root cause was a descent given below FL190 by PC East. Some causal factors were the protracted coordination with Leeds and [the Doncaster controller being] unable to achieve a solid line of communication with PC East, as North continuously answered the phone call.

NATS Prestwick Investigation

Immediately prior to the incident occurring, the North and East sectors were in the process of being split from a bandboxed configuration operated by one Tactical controller (referred to as East T controller for clarity) and a Planner (East P), to two separate sectors (North sector and East sector). The East T controller was to continue operating as the East Tactical whilst another controller was splitting off the North sector. There were no reported unserviceabilities affecting the sector and traffic prior to the event was assessed by the East T controller as "very quiet."

The Hibaldstow paradropping area (6.5NM to the southwest of Humberside Airport with 3NM radius drop zone including an area within the Lincolnshire CTA) was active at the time of the incident, with an upper limit of FL160. A strip alerting the sector team to this was displayed on their WACOMs.[1]

The pilot of [B737(B)] checked in with the East T controller at 1406:48 routeing to OTBED and was instructed to descend to FL180, which was the agreed level for [traffic following that routeing] via OTBED.

The pilot of [B737(A)] checked in with the East T controller at 1409:20 routeing to OTBED and was instructed to route to BATLI and descend to FL280. At this time, [B737(A)] was 6.5NM southwest of [B737(B)]. [B737(A)] was subject to a standing agreement from East into the North Sector of FL140 by GOLES.

At 1412:58 the pilot of [B737(A)] requested further descent and was instructed to descend to FL200 with [B737(B)] passing FL193.

The pilot of [B737(B)] requested further descent at 1414:15. There was a delay before there was any reply which was punctuated after 8sec by an unidentified person transmitting "*Standby*". During interview the East T controller could not recall this transmission or who else may have made it. At 1414:25 the East T controller transmitted, "[unrelated aircraft c/s] *further descent in about twelve miles when you clear a paradrop area active in your ten er twelve o'clock*". The pilot of [the unrelated aircraft], an aircraft north west of VEGUS at FL170, responded to this with their callsign only. The controller then transmitted, "*And* [B737(B) c/s] *you can now request lower with Doncaster approach one two six decimal two two five*".

This transmission ended at 1414:39 and the relative locations of each aircraft at this time are shown in Figure 1.

[1] A system utilised to enable a controller to view, update and manipulate electronic Flight Progress Strips (FPS).

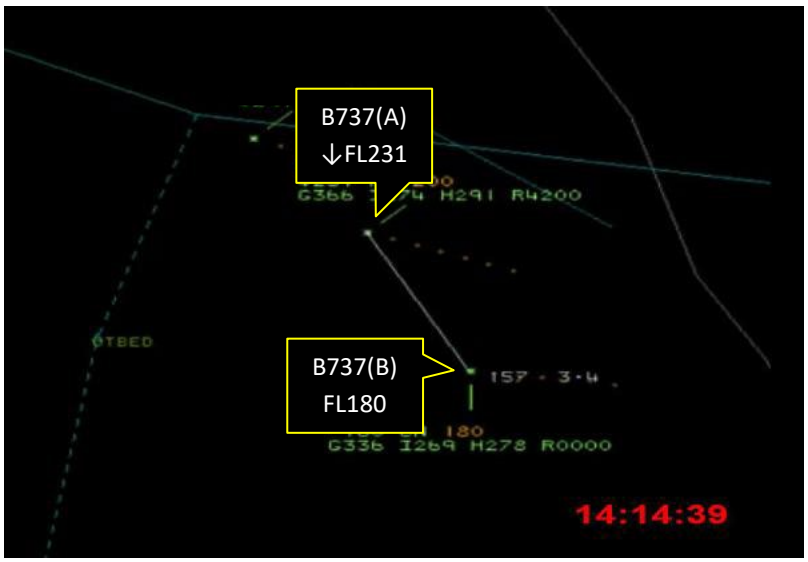


Figure 1. Relative positions of event aircraft when [B737(B)] was transferred to Doncaster ATC.

The base of controlled airspace to the east of OTBED was FL175, however the limits of service provision by Doncaster Radar would not have permitted them to provide a radar service outside controlled airspace until [B737(B)] had passed OTBED.

The East T controller then out-commed the EFD flight progress strip (FPS) for [B737(B)] which was in the controller's bay directly beneath the strip for [B737(A)] . When the pilot of [B737(B)] checked in on the Doncaster frequency at 1414:40 the Doncaster controller was in the middle of a coordination telephone conversation with Leeds ATC and so replied briefly to the pilot, issuing them with the type of approach and runway in use [at destination]. The Doncaster controller then returned to their phone call with Leeds (which ended at 1416:13).

At 1414:50 the East T controller [bandboxed controller] became the East Tactical only, as the North controller had then completed the handover. East P also became the East Planner only. 12sec later the controller moved the EFD FPS for [B737(A)] across into the bay to the left (under the GOLES-UPTON-MAMUL-VEGUS designator) meaning that the strip was in a separate bay to the FPS for [B737(B)]. Under usual circumstances there would have been two East sector strips for [B737(A)] (a GOLES and an OTBED strip) and for [B737(B)] (an OTBED and a [destination] strip), however whilst operating in a bandboxed configuration only one of these was retained, as the sector is reflected under a single designator.

At 1415:12 the East T controller instructed another aircraft on frequency, [c/s redacted]), to descend to FL220 as [B737(A)] indicated FL216.

The pilot of [B737(A)] was instructed to descend to FL170 at 1415:20 when [B737(B)] was 4.2NM southeast of them, still level at FL180, and the FPS was updated with the new cleared level. Since [B737(B)] had been transferred to Doncaster Radar, the required lateral separation between the aircraft was now 5NM. The controller then continued to deal with other aircraft on the frequency.

At 1416:29, the Doncaster controller initiated a phone call to Humberside ATC (the controlling authority for the Hibaldstow paradropping area) to coordinate a lower level for [B737(B)] in relation to the paradropping area. FL110 was coordinated and the call ended at 1416:43

Separation between [B737(A)] and [B737(B)] was eroded at 1416:43 to 4.3NM and 900ft, where 5.0NM or 1000ft were required, as shown in Figure 2.

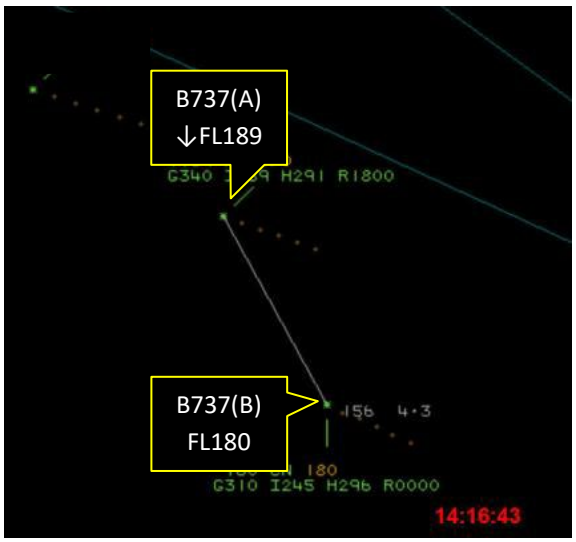


Figure 2

The Doncaster Controller instructed the pilot of [B737(B)] to descend to FL160 at 1416:47. The base of controlled airspace in the location of [B737(B)] was FL155 so this was the lowest level the controller could allocate without offering a service outside.

Vertical separation between [B737(A)] and [B737(B)] continued to erode to a minimum of 4.3NM and 500ft at 1416:55 as shown in Figure 3.

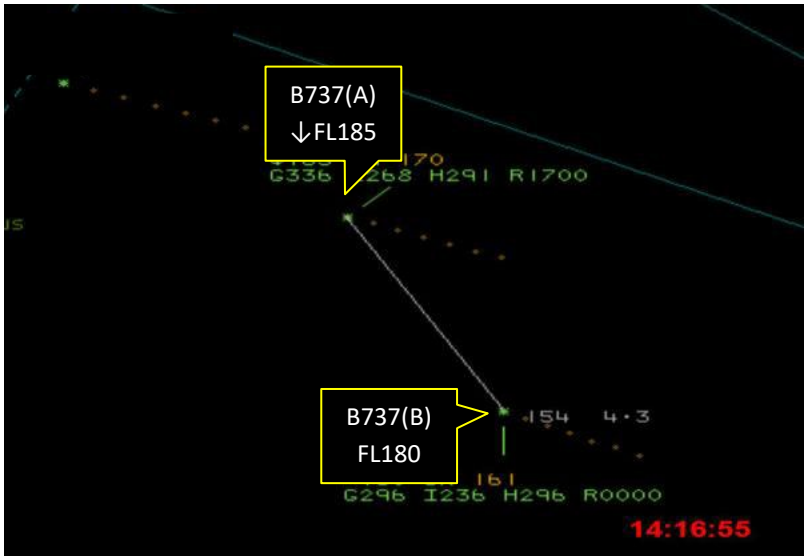


Figure 3. Point of minimum separation.

Due to the faster speed of [B737(A)] the lateral distance between the two aircraft slowly increased to 4.4NM at 1417:03. 4sec later, when the aircraft were 4.4NM and 500ft apart ([B737(A)] was descending through FL184, the pilot of [B737(A)] queried, "*Do you have any traffic behind us at the minute?*". The East T controller responded, "*…just traffic into* [destination] *at the moment, yes, he's a thousand feet below your cleared level*" and the pilot replied "*OK*".

At 1417:12 the Doncaster Controller instructed the pilot of [B737(B)] to turn left heading 270°. Vertical separation of 1000ft was restored between [B737(A)] and [B737(B)] at 1417:19.

Investigation

Information available to the investigation included:

- A report from the East T controller.
- Human Factors expertise and input.

- Radar and R/T recordings.
- WACOM snapshots of the East T controller's WACOM.
- TLPD and frequency occupancy data.
- Safety Investigation Interview with the East T Controller.
- Airline Safety report (ASR) from [the pilot of B737(A)].
- Timeline provided by Doncaster ATC.

Background and Lead-Up To The Event

Prior to the incident session, the East T controller had operated on the STAFA and TRENT sectors between 13:00 and 13:30 and they had then taken a 30min break immediately prior to the incident session. They felt well rested on the day of the event and there were no other distractions that may have affected their work.

Prior to the event, the North Sector and East Sector were combined into a bandboxed configuration and operated by two controllers, one Tactical and one Planner. The Traffic Load Prediction Device (TLPD) indicated that at 14:15 there would be around 25 aircraft per 15-minute interval, where the sector monitor value (MV) was 20 aircraft per 15-minute interval.

The East T controller took over the sector at 14:00 whilst the East P had been in position since 13:30. Before plugging in, the East T controller recalled that they checked the TLPD and were informed by the GS that the sector would be split shortly. The East T controller stated in interview that they were operating using their normal radar range and, apart from some label garbling, there were no radar-based issues prior to the event.

In response to the predicted increase in traffic and complexity, and as discussed with the East T controller prior to them plugging in, at 1402:11 the Scotland Lower Group Supervisor (GS) telephoned the East P controller and informed them that the sector would be splitting just before 14:15.

At 1413:47 the East T controller's WACOM role indicator changed to orange which indicated the incoming North controller had selected their role on their own WACOM. The handover complete button on the WACOM was selected at 1414:50.

Regarding the sector split, the East T controller explained in interview that prior to the split commencing they rated their situational awareness as "very good or excellent."

During the split process the East T controller recalled that the incoming North Tactical controller sat on the radar suite to their left and they both then commenced a verbal, face-to-face, handover procedure of pertinent traffic whilst both they, and the East P controller, moved the strips around. This handover did not comply with PC MATS Part 2, Gen, Chapter 2, Paragraph 2.14.2 which stipulated 'Handovers shall be conducted on the phone...' and paragraph 2.14.2.2.2 clarified further, 'The handing over Controller shall use VCCS to give a WEST handover to the receiving Controller'.

The East T controller recalled that during the handover the resultant lack of RT transmissions from them caused several pilots to call asking for descent. To action these requests the East T controller stated that they had to move their focus from the conversation with the North Tactical, to their radar display. They assessed this as reducing their situational awareness of the sector to "insufficient."

The radio telephony loading for the East frequency of 133.800MHz reached a maximum of 60% briefly at 14:12 and remained relatively low throughout.

Event

In interview, the East T controller recalled that the first pilot request during the handover came from the pilot of [B737(A)], (this was at 1412:58), and they instructed them to descend to FL200 as per their plan to retain the required 1000ft vertical separation against [B737(B)]. The East T controller

explained that this vertical method of deconfliction was how they usually operated, and this was their plan for deconflicting [B737(B)] and [B737(A)] .

When the pilot of [B737(B)] then called for further descent at 1414:15, the East T controller stated that they were still mid-handover and, as a result of the distraction caused by this and trying to balance verbal conversations with the North Tactical and the R/T, they initially replied to a different aircraft, which was around 20NM ahead of [B737(B)] and [B737(A)] . The East T controller recalled that they then transferred the pilot of [B737(B)] to the Doncaster Approach frequency. The controller explained, in an example of expectation bias, that after transfer, aircraft [following this routing] from the east (as [B737(B)] was) are routinely descended quickly to FL160 and it was their expectation on the day of the event that this would be the case too.

When the pilot of [B737(B)] checked in on the Doncaster frequency however, the Doncaster controller was in the middle of a prolonged telephone call with Leeds ATC, and then made a further call to Humberside ATC to formulate a plan for [B737(B)] to avoid the paradropping area. These telephone calls resulted in an elapsed time of 2min 8sec between the East T controller transferring [B737(B)] to the Doncaster frequency and the Doncaster controller issuing them with a further descent instruction.

The East T controller recalled that they were nearing the end of the handover process, and (incorrectly) believed that [B737(B)] had been descended to FL160 "*as usual*" by Doncaster and that "*5 or 6 miles*" existed between the two aircraft laterally. The East T controller did not scan the radar effectively to confirm their plan to maintain 1000ft vertical separation on top of [B737(B)] and instructed the pilot of [B737(A)] to descend to FL170 at 1415:20.

In interview the East T controller confirmed that they did not measure the distance between [B737(B)] and [B737(A)] when issuing this instruction as they believed they had vertical separation, and that they, "*did not think* [B737(B)] *was a problem*". The Human Factors Specialist stated, regarding this sequence of events, the controller was displaying confirmation bias. [They] had a mental model in place that the [B737(B)] was at FL160, and any checking of the radar was a quick glance to support and confirm [their] mental model, [they] stated [they] could see that [B737(B)] aircraft was in front and 'out the way' and was looking for information to support [their] mental model.

The controller also recalled that, as a result of the sector split, their FPS were "*mixed up*" and they couldn't immediately find the strips they needed. After this instruction had been issued and the sector split had been completed, the East T controller stated that they believed their situational awareness was "*back at excellent*".

The East T controller also explained that on reflection they felt they had experienced, "*…a lapse in concentration during a 2 or 3min period during the handover*.". They also recalled that there may have been some label garbling (overlapping labels) during the event but this was not evidenced on the replays of the radar, where there had been overlapping previously but it had been resolved by the East T controller prior to the affected aircraft calling on frequency.

During interview, the East T controller went on to state that they didn't believe there was any issue between the aircraft during the descent as "*there had been no warnings on the radar".* The East T controller was referring in this statement to the fact that Short-Term Conflict Alert (STCA) had not been triggered by the event. This is because the trajectories of the aircraft placed them out of the parameters required to trigger STCA.

When the pilot of [B737(A)] queried if there was an aircraft behind them, at 1417:07 (24sec after separation had been eroded, and 12sec before it was restored) the East T controller explained that they, "*Looked at the radar and thought it was maybe a bit close*" but, by the time they had fully assessed the relative trajectories of the aircraft, and based on the fact that there was "*no flashing*" (STCA activation) decided that they would not issue resolution instructions as they, *"…couldn't do anything to resolve the situation before it resolved itself*".

The East T controller recalled that at this point the East P, who had previously been busy on the sector splitting process and with whom they had, "*an excellent relationship*", said to them, "*It's fine you got more than 3 miles*". The East T controller then clarified that they had already transferred the pilot of [B737(B)] to the Doncaster frequency and therefore 5NM now were required.

Conclusions.

Shortly after taking over the combined North and East sectors, the sectors were split due to an anticipated peak in traffic. During the sector split the East T controller was distracted from the radar and RT by verbal, face-to-face coordination with the incoming North Tactical controller sitting at the suite next to them in contravention of MATS Part 2 handover procedures, and this resulted in a deterioration in concentration and focus. The East P was also engaged with splitting the sector and was unable to assist the East T controller's decision-making process.

The sector split also resulted in the EFD FPS being "mixed up" and the East T controller not being able to locate the FPS they needed easily. The East T controller incorrectly assumed that Doncaster ATC would descend [B737(B)] to FL160 on first contact and did not monitor if this was the case.

The East T controller, without appropriately checking or effectively scanning on the radar, instructed the pilot of [B737(A)] to descend to FL170 believing that, as above, Doncaster ATC had descended [B737(B)] to FL160. In doing this the East T controller also mis-judged the lateral proximity of the two aircraft.

Upon seeing the proximity of [B737(A)] to [B737(B)] , the Doncaster controller instructed the pilot to turn onto a heading of 270° and to descend to FL160, which hastened the restoration of the required vertical separation.

When the pilot of [B737(A)] enquired about the proximity of the other aircraft, the East T controller assessed the relative trajectories of each aircraft but elected not to issue resolution instructions or Traffic Information to the pilot of [B737(A)] and, via the telephone to Doncaster ATC, to the pilot of [B737(B)].

Separation was eroded at 1416:43. Minimum separation occurred at 1416:55 and was recorded on the Multi-Track Radar as 4.3NM and 500ft.

The loss of separation was caused when the East T controller executed their plan to maintain 1000ft vertical separation between [B737(B)] and [B737(A)] without first using the tools available to them or effectively scanning the radar to ensure separation would not be eroded, and subsequently instructed the pilot of the latter to descend to FL170.

The incident was resolved by the Doncaster controller instructing the pilot of [B737(B)] to descend to FL160 with the speed differential between the two aircraft ensuring lateral separation was constantly improving.

UKAB Secretariat

The [B737(A)] and [B737(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.[2]

Summary

An Airprox was reported when two B737s flew into proximity 6NM west of Louth at 1417Z on Friday 23rd September 2022. Both pilots were operating under IFR in VMC, the B737(A) pilot in receipt of a Radar Control Service from Scottish Control and the B737(B) pilot in receipt of a Radar Control Service from Doncaster Approach.

[2] (UK) SERA.3205 Proximity.

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 discussed the actions of the B737(A) pilot and had been encouraged that they had been maintaining a high level of situational awareness and using their TCAS display to supplement this. The Board discussed that, in reducing their rate of descent, the pilot had helped to mitigate the situation and prevent separation from eroding more quickly, however it was noted that ordinarily a pilot would be expected to inform ATC of a significant change to their climb or descent rate. Members agreed that the pilot had been concerned by the proximity of B737(B) (**CF10**) and, in voicing those concerns to ATC, had highlighted the situation to the controller.

Next, members considered the actions the actions of B737(B) and quickly agreed that they had been acting in accordance with their clearance and that it would have been likely that they had not been aware of the situation at the time, as they had been on a different frequency to the pilot of B737(A).

The Board then turned its attention to the ground elements involved and firstly discussed the actions of the Scottish controller. Members noted that the controller hand-over during the sector split had not been conducted in accordance with the regulations (**CF1**), and that the subsequent movement of the FPS had eroded the controller's Situational Awareness (**CF8**). The Board agreed that the Scottish controller, when issuing the clearance to the pilot of B737(A) to descend (**CF7, CF9**), had done so on the assumption the B737(B) pilot had been cleared to descend by the Doncaster controller (**CF6**), however, this had not been the case. A civil controller member stated that 'silent handovers' of aircraft to other controllers, in this case from Scottish to Doncaster, were standard practice and that, due to the nature of the airspace in this location, the transfer of control hade meant that the minimum lateral separation required between aircraft within 1000ft vertically had increased to 5NM. They went on to say that, because the aircraft had been diverging due to B737(A) having a higher groundspeed, they would not have expected an STCA activation, and members agreed that these factors may have contributed to the late detection of the situation by the Scottish controller (**CF3**). In turn, this had meant that the Scottish controller had been unable to resolve the situation as it had already been improving (**CF4**).

Members next discussed the involvement of the Doncaster controller and noted that they had been engaged in a number of coordination tasks which had included securing descent for the B737(B) pilot. The Board agreed that, as a result, the controller had become aware that the separation between B737(A) and B737(B) had been eroded at a later than optimum time (**CF5**) which, although the controller had acted quickly, had meant that the resolution action had been delivered at a later than optimum time (**CF3**). The Board noted that, as part of their resolution action, the Doncaster controller had tried to establish direct contact with the Scottish controller, however they had had to hold on the telephone as the controller for another sector had initially answered the call, which members agreed had been sub-optimal (**CF2**).

Finally, the Board considered the risk involved in this Airprox. Members discussed that the erosion of separation between B737(A) and B737(B) had been detected late. Members agreed that the Scottish controller issued an air-traffic instruction based on the assumption that the aircraft had had sufficient separation. The erosion of separation between the aircraft had been reduced by the actions of the B737(A) pilot in reducing their rate of descent, and the situation had been resolved by the Doncaster controller before the Scottish controller had had time to intervene. The Board concluded that there had been no risk of collision however, safety had been degraded. Consequently, the Board assigned a Risk Category C to this event.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

	2022234			
CF	**Factor**	**Description**	**ECCAIRS Amplification**	**UKAB Amplification**
	Ground Elements			
	• Regulations, Processes, Procedures and Compliance			
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
	• Situational Awareness and Action			
2	Human Factors	• ATM Coordination	Coordination related issues (external as well as internal)	
3	Human Factors	• Conflict Detection - Detected Late	An event involving the late detection of a conflict between aircraft	
4	Human Factors	• Conflict Resolution – Not provided	An event involving the non provision of conflict resolution	
5	Human Factors	• Conflict Resolution - Provided Late	An event involving the late provision of conflict resolution	
6	Human Factors	• Expectation/Assumption	Events involving an individual or a crew/ team acting on the basis of expectation or assumptions of a situation that is different from the reality	
7	Human Factors	• Inappropriate Clearance	An event involving the provision of an inappropriate clearance that led to an unsafe situation	
8	Contextual	• Traffic Management Information Action	An event involving traffic management information actions	The ground element had only generic, late, no or inaccurate Situational Awareness
9	Human Factors	• Traffic Management Information Provision	An event involving traffic management information provision	The ANS instructions contributed to the Airprox
	Flight Elements			
	• Situational Awareness of the Conflicting Aircraft and Action			
10	Human Factors	• Unnecessary Action	Events involving flight crew performing an action that was not required	Pilot was concerned by the proximity of the other aircraft

Degree of Risk: C

Safety Barrier Assessment[3]

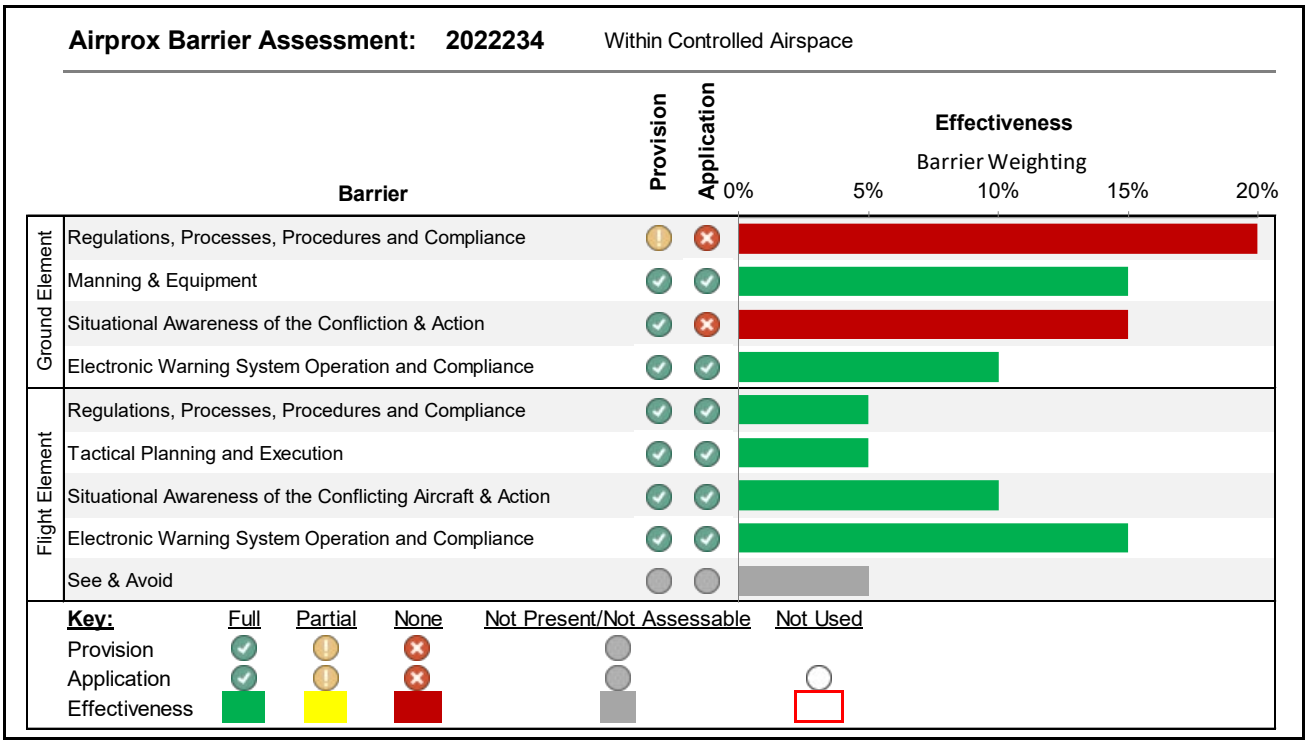
In assessing the effectiveness of the safety barriers associated with this incident, the Board concluded that the key factors had been that:

Ground Elements:

Regulations, Processes, Procedures and Compliance were assessed as **ineffective** because the controller handover during the sector split had not been carried out in accordance with procedure, and the Scottish controller had cleared the pilot of B737(A) to descend through the level occupied by B737(B) without the required lateral separation.

Situational Awareness of the Confliction and Action were assessed as **ineffective** because the Scottish controller had issued a clearance to the pilot of B737(A) based on an assumption that the Doncaster controller had descended B737(B). The resulting conflict had been detected at a late stage by both the Scottish and Doncaster controllers and, although the Doncaster controller had taken action to restore separation, the situation had resolved itself before the Scottish controller had been able to act.

[3] The UK Airprox Board scheme for assessing the Availability, Functionality and Effectiveness of safety barriers can be found on the UKAB Website.


Airprox Barrier Assessment: 2022234
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
Key:
Full
Partial
None
Not Present/Not Assessable
Not Used
Provision
Application
Effectiveness