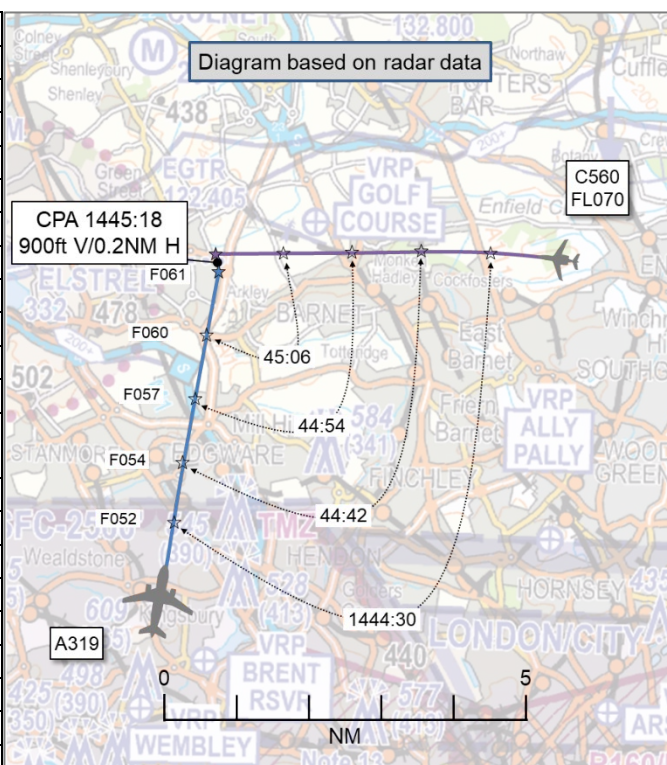


AIRPROX REPORT No 2024095

Date: 08 May 2024 Time: 1445Z Position: 5139N 00015W Location: 3NM E Elstree

PART A: SUMMARY OF INFORMATION REPORTED TO UKAB

Recorded	Aircraft 1	Aircraft 2
Aircraft	A319	C560
Operator	CAT	Civ Comm
Airspace	London TMA	London TMA
Class	A	A
Rules	IFR	IFR
Service	Radar Control	Radar Control
Provider	London Centre	Heathrow
Altitude/FL	FL061	FL070
Transponder	A, C, S+	A, C, S+
Reported		
Colours	White/blue	White/grey
Lighting	Strobe, beacon	Strobe, beacon, nav, anti-col
Conditions	VMC	VMC
Visibility	>10km	>10km
Altitude/FL	FL061	FL080
Altimeter	SPS	SPS
Heading	360°	~270°
Speed	250kt	NR
ACAS/TAS	TCAS II	TCAS II
Alert	TA	TA
Separation at CPA		
Reported	900ft V/200m H	800ft V/NR H
Recorded	900ft V/0.2NM H	



THE A319 PILOT reports departing with a clearance to climb to FL110 given quite early, with V/S +1500fpm used.¹ Having operated in the London TMA for over 20 years, they used V/S when getting the climb from 6000ft, unless there was nothing ahead or around as displayed on the Navigation Display (ND). They were mostly VMC with standard pressure setting set. There was an aircraft at FL70 in level flight [displayed on the ND] which seemed to be tracking towards them, but this was always hard to tell with TCAS targets because they often ‘jump about’. It initially looked like it was going north-to-south on the ND and would pass down their right-hand side. However, watching the target on the ND for a couple of seconds, it was getting closer and actually passing right-to-left. It appeared to have 2.5NM separation to start with, but that soon reduced as it was coming closer from right-to-left. It was getting closer very quickly and ‘something definitely didn’t feel right’. V/S +500fpm was selected and almost instantly they received a TCAS TA. V/S 0 was pushed. ATC then immediately instructed them to level off and the business jet passed in front of them. They were unable to see it until it went directly past them. They were already in level flight at FL61 when ATC issued the immediate level-off instruction. The pilot felt they would have been significantly closer if they had not already decided to level off, especially once they received the TA. There wasn’t time to challenge the initial flight level given, because the event occurred in the space of a few seconds. The pilot noted that they would not have been able to level off as quickly had they used full climb power in their lightly loaded A319.

The pilot assessed the risk of collision as ‘High’.

THE C560 PILOT reports in level flight abeam Heathrow when they received Traffic Information about a crossing aircraft. An Airbus levelled 900ft below and crossed behind 800ft below. They received a

¹ The autopilot set to give a vertical speed of 1500fpm rate of climb.

TCAS TA. They reported the other aircraft in sight and made a report in the company safety management system.

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

THE LONDON TERMINAL CONTROL NW CONTROLLER reports working as the TC NW/BNN controller with the sector banded. The sector was reasonably complex with CAT B aircraft, low overflights and a lot of thinking required to keep the sector flowing. [A319 C/S] was on frequency outbound from [departure airfield], maintaining altitude 6000ft on a heading to position it against other traffic. The controller was waiting for the [A319 C/S] to clear downwind traffic into Heathrow and had noted an inbound aircraft in the vicinity. They could not recall whether the inbound was garbling or not and for some reason climbed the [A319 C/S] before it was clear against all traffic. They saw the mistake and stopped the climb immediately. The pilot said they were visual with the traffic and had already stopped their climb. The controller saw the Mode C for the [A319 C/S] at a maximum altitude of 6200ft. Once the aircraft were clear the [A319 C/S] was cleared to climb. The pilot advised that no TCAS [alert] had been received.

THE LONDON HEATHROW INTERMEDIATE CONTROLLER reports operating in a banded configuration. Traffic was moderate with 2 CAT Bs orbiting west of LAM at FL100 and FL90. Traffic was being released by TMA at FL80 underneath the CAT B (with coordinated headings off the stack to remove any risk of inadvertent holding) so, other than monitoring traffic to ensure they remained separated, complexity was low. [C560 C/S] was released at FL70 (which is below the usual lowest release level at LAM) and was issued heading 275° on first call, with an aircraft in trail behind at FL80. Both aircraft left LAM in accordance with ATC instructions. When [C560 C/S] was about 15NM NE of Heathrow, the controller was called by a CPT departure which they turned onto a westerly heading. They were midway through issuing an aircraft with a climb instruction then they noticed STCA started to flash red and LL FIN alerted them at the same time to [A319 C/S] climbing through altitude 6000ft to FL110 (above the levels of the controller's traffic). They continued the climb instruction, as stopping halfway through would most likely lead to the aircraft then blocking the R/T with a query, and then immediately issued avoiding action to [C560 C/S]. There was no acknowledgement so they issued an immediate turn and Traffic Information, to which the [C560 C/S] acknowledged but queried the heading. At this point the [A319 C/S] was passing behind [C560 C/S] so they told the C560 pilot to continue on their present heading and again passed Traffic Information. Once clear, the aircraft was descended into [destination] for a normal approach and landing. The C560 pilot stated they had been visual with the aircraft as well.

Factual Background

The weather at Northolt was recorded as follows:

METAR EGWU 081450Z 08006KT CAVOK 21/08 Q1028 NOSIG RMK BLU BLU=
METAR EGWU 081420Z 08006KT CAVOK 20/08 Q1028 NOSIG RMK BLU BLU=

Analysis and Investigation

UKAB Secretariat

The A319 and C560 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 of NATS Ltd Occurrence Investigation

[C560 C/S], inbound to [destination], was maintaining FL70 in communication with the Heathrow Intermediate Approach controller. [A319 C/S], a Heathrow outbound was climbed from 6000ft to FL110 by the TC North West/BNN controller into direct conflict with [C560 C/S]. The pilot of [A319 C/S] observed the potential conflict and stopped the aircraft climb which resolved the scenario.

² (UK) SERA.3205 Proximity.

The TC North West Deps and BNN (TC NW) sectors were being operated in a bandboxed configuration. A coordinator was in situ to assist both the TC NW and North East sector controllers. The Heathrow Intermediate North and South (LL INT) sectors were also being operated in a bandboxed configuration. The London QNH at the time of the event was 1028 hectopascals (hPa).

[C560 C/S], a Cessna 560XL Citation [...], was under the control of the LL INT controller, on radar heading 270° and maintaining FL70. The aircraft was being vectored for handover to [destination] and a Ground Controller Approach (GCA) to [destination].

[A319 C/S], an Airbus A319 [...], departed from Heathrow Runway 09R following the ULTIB1J departure, climbing to 6000ft. The pilot called onto the TC NW frequency at 1443:01 (all times UTC), passing through 3600ft for 6000ft. The TC NW controller acknowledged the transmission and instructed the pilot to fly heading 010°, which was read back correctly.



At 1444:33, the TC NW controller instructed the pilot of [A319 C/S] to climb to FL110 (Figure 1).

Figure 1 Direct excerpt from TC NW position radar replay (Note: Track Data Block highlighted in red by Investigations)



High-level Short Term Conflict Alert (STCA) activated between [A319 C/S] and [C560 C/S] at 1445:00. Separation minima between [C560 C/S] and [A319 C/S] were eroded at 1445:02. (Figure 2)

Figure 2.

LL INT: The LL INT controller was involved in communication with another unrelated pilot at the time, and at 1445:08 transmitted to the pilot of [C560 C/S], “*avoiding action, turn right now heading three five zero degrees.*” The LL INT controller attempted to issue the instruction again at 1445:13, however this transmission crossed with a transmission from the pilot of [C560 C/S] reading back the right turn heading 350°. As the transmission from [C560 C/S] stopped, the LL INT controller gave Traffic Information relating to [A319 C/S] to the pilot of [C560 C/S]. The pilot of [C560 C/S] responded, “*roger, say again the heading.*”

This transmission concluded as separation was already being restored between the two aircraft, so the LL INT controller instructed the pilot to continue on their present heading and informed that the traffic had passed behind them.

TC NW: Coincident with the above, the TC NW controller exclaimed on the frequency at 1445:09, and at 1445:11 instructed the pilot of [A319 C/S] to, “*stop climb immediately.*” At the time of this instruction there was 0.8NM lateral separation between the two aircraft.

STCA indicated a low-level alert at 1445:13.



Minimum separation between [C560 C/S] and [A319 C/S] occurred at 1445:14, measured on the Multi-Track radar as 0.3NM and 800ft, where 3NM or 1000ft were required. (Figure 3)

Figure 3

Coincident with minimum separation the pilot of [A319 C/S] responded to the instruction to stop climb, stating, “*yeah, we saw it, we’ve got, err, we’re levelling six, Flight Level Six One.*” The TC NW controller apologised to the pilot, who responded, “*It’s alright, no dramas.*”

The TC NW controller then confirmed with the pilot of [A319 C/S] the level they were at. The pilot stated, “*six thousand five hundred feet the QNH, Flight Level six one, yeah, we saw it on the TCAS and it did start heading toward us so we levelled off.*”

Lateral separation between the two aircraft was restored at 1445:42.

At 1446:56 the LL INT controller apologised to the pilot of [C560 C/S], who had subsequently been cleared to descend to 4000ft and explained that it appeared as if an outbound aircraft had climbed above their cleared level. The pilot of [C560 C/S] responded, “*We had visual with the traffic, all good.*”

The NATS Ltd Investigation established the following Causal Factors:

- The TC NW controller had undergone training due to a break in controlling. This event occurred on the first radar controlling session after having been signed off as competent in a Dedicated Practical Assessment.
- The TC NW Deps and BNN sectors were being operated in a bandboxed configuration with a coordinator in-situ.
- The coordinator position was handed over to a new coordinator five minutes prior to the event taking place, which may have caused a distraction to the TC NW controller.
- The event occurred following a period of higher workload as evidenced by the R/T loading, TLPD and TC NW controller recollection.
- [C560 C/S] and [A319 C/S] were being controlled by different controllers in accordance with established procedures with the routes and procedures providing vertical separation between the aircraft. No flight strips were generated for the TC NW controller relating to [C560 C/S], as per design.
- There was some garbling of the Track Data Blocks on the TC NW position radar display.
- Having previously observed [C560 C/S], the TC NW controller cleared [A319 C/S] to climb through the level of [C560 C/S] not seeing the conflict on the radar display, without lateral separation being provided. The TC NW controller had previously been specifically aware of the presence of [C560 C/S].
- No medium-term conflict detection was available to the TC operation. High-level STCA activated between the two aircraft.

- The pilot of [A319 C/S] observed [C560 C/S] on their TCAS display, receiving a Traffic Alert and elected to stop climbing, effectively resolving the scenario.

Summary

An Airprox was reported when an A319 and a C560 flew into proximity 3NM east of Elstree aerodrome at 1445Z on Wednesday 8th May 2024. Both pilots were operating under IFR in VMC and in receipt of a Radar Control Service, the A319 pilot from London Centre and the C560 pilot from London Heathrow.

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 authority. 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 members first considered the TC NW controller's actions and quickly agreed that they had not provided lateral separation before providing the A319 pilot with a clearance to climb to FL110 (**CF1**, **CF2**), ultimately resulting in a small loss of separation (**CF3**). Controller members discussed possible contributory factors for such a mistake and agreed with the NATS Ltd Occurrence Investigation that there had been no identifiable single contributory factor or combination of contributory factors. It remained a fact that any amount of training, experience, currency or recency could still result in human error or mistake by the very nature of human involvement in complex systems. In the event, the TC NW controller had been alerted by the activation of STCA and had provided avoiding action. The A319 pilot had detected the converging C560 at an earlier stage from the situational awareness provided by their TCAS display. Notwithstanding the known issue of angle-of-arrival error, the A319 pilot had proactively adjusted their rate of climb and had levelled off as their TCAS had generated a TA (**CF6**). The Board commended them for their actions. The C560 crew had not assimilated the converging traffic (**CF5**) but had become aware of the A319 as their TCAS had also generated a TA (**CF6**) at a point after separation had been lost. Some members felt that safety had been much reduced, but the Board agreed by a majority that risk of collision had been averted, Risk C.

PART C: ASSESSMENT OF CONTRIBUTORY FACTORS AND RISK

Contributory Factors:

2024095				
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	• Inappropriate Clearance	An event involving the provision of an inappropriate clearance that led to an unsafe situation	
3	Human Factors	• Separation Provision	An event involving Air Navigation Services separation provision.	
• Electronic Warning System Operation and Compliance				
4	Technical	• STCA Warning	An event involving the triggering of a Short-Term Conflict Alert (STCA) Warning	
Flight Elements				
• Situational Awareness of the Conflicting Aircraft and Action				
5	Contextual	• Situational Awareness and Sensory Events	Events involving a flight crew's awareness and perception of situations	Pilot had no, late, inaccurate or only generic, Situational Awareness
• Electronic Warning System Operation and Compliance				

6	Contextual	• ACAS/TCAS TA	An event involving a genuine airborne collision avoidance system/traffic alert and collision avoidance system traffic advisory warning triggered	
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Degree of Risk: C.

Safety Barrier Assessment³

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

Ground Elements:

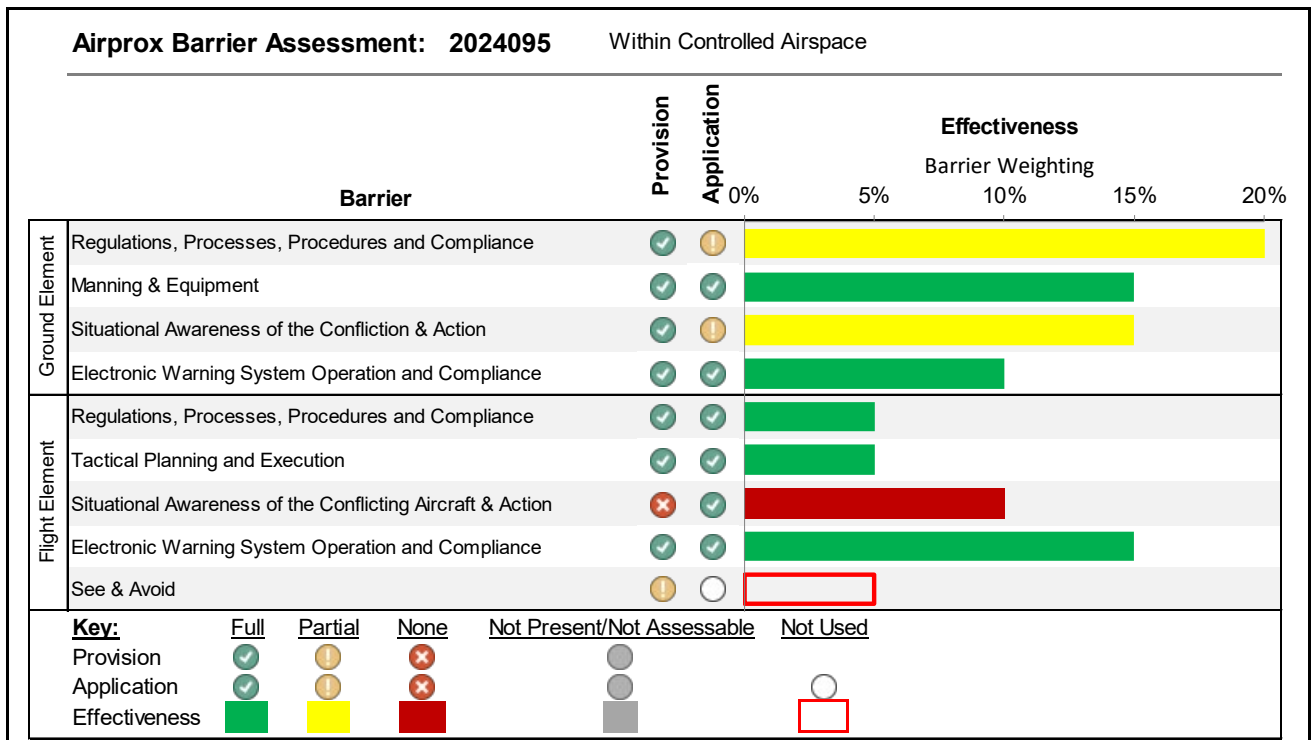
Regulations, Processes, Procedures and Compliance were assessed as **partially effective** because the London TC NW controller allowed the A319 pilot to climb through the level of the C560 without providing lateral separation.

Situational Awareness of the Confliction and Action were assessed as **partially effective** because the London TC NW controller did not detect the confliction until the STCA activated.

Flight Elements:

Situational Awareness of the Conflicting Aircraft and Action were assessed as **ineffective** because the C560 pilot did not have situational awareness of the A319 until after separation had been lost.

See and Avoid were assessed as **not used** because neither pilot used visual acquisition to effect avoiding action.



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