Serious Incident

Aircraft Type and Registration:	Airbus A320-214, G-EZUK	
No & Type of Engines:	2 CFM56-5B4/3 turbofan engines	
Year of Manufacture:	2011 (Serial no: 4749)	
Date & Time (UTC):	13 June 2025 at 0532 hrs	
Location:	London Luton Airport	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 6	Passengers - 180
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	49 years	
Commander's Flying Experience:	13,500 hours (of which 9,000 were on type) Last 90 days - 175 hours Last 28 days - 45 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB	

Synopsis

The crew calculated takeoff performance to depart using the full-length of the runway, but the aircraft departed from a runway intersection, ie with a shorter take off run. The crew did not notice this during the takeoff roll but it was identified later the same day by the operator's Flight Data Monitoring (FDM) system.

Safety action was taken by the operator to amend their operating procedures to try to trap this takeoff performance error.

History of the flight

The aircraft was on a scheduled flight from London Luton Airport (LTN) to Málaga Costa del Sol Airport, Spain. The co-pilot was the PF for this sector.

During the crew's pre-flight planning, on their electronic flight bags (EFB), the co-pilot initially planned to takeoff from Intersection Alpha on Runway 25[1], with flaps at CONF 1+F[2]. However, he noted that they did not have the takeoff performance, given the aircraft's weight and the environmental conditions at the time. This was checked and confirmed by the

Footnote

[1] See *Airport Information* section.

[2] CONF 1+F is the operator's preferred flap setting for takeoffs and is the default option in the EFB's takeoff performance software. However, CONF 2 or 3 may be considered by the crew.

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commander. They therefore agreed to do a calculation using the full-length of Runway 25, which permitted a takeoff. They then briefed for the departure including potential threats to be considered. While the aircraft's higher-than-normal weight was considered, should an immediate return to LTN be required, the takeoff from the full-length, rather than from an intersection, was not. Once all the pre-flight preparation was completed the crew requested permission from the ATC Ground controller to push back and start, from Stand 47 on the East Apron, about one minute ahead of the scheduled departure time. After a delay of two minutes, due to other aircraft taxiing out, the pushback and start was approved, during which the crew started just the left engine, as they had planned to conduct a single engine taxi[3].

Once the pushback was completed the commander requested clearance to taxi, to which ATC responded with, "ARE YOU [Intersection] ALPHA ABLE?". The commander replied "AFFIRM". ATC then cleared the aircraft to taxi via Taxiway Delta to Holding Point Alpha One.

During the taxi out the second engine was started[4]. During this time another aircraft requested push and start and advised ATC that they "CAN TAKE THE INTERSECTION" and another stated that they were "REQUIRING FULL-LENGTH". The aircraft was then transferred to the ATC Tower controller and as they approached Holding Point Alpha One they joined a queue of a few other aircraft awaiting to depart. At this time three preceding aircraft departed from Intersection Alpha.

The aircraft subsequently received clearance to line-up on Runway 25, at Intersection Alpha, behind a landing aircraft, followed by clearance to take off. The aircraft departed without event.

The aircraft returned to LTN later that day and the crew went off duty. Later the same day the commander was contacted by the operator. They informed him that the departure from LTN had automatically triggered a post-flight event on the operator's FDM system. The FDM trigger was the aircraft's low height at the far end of Runway 25 and "questionable runway length remaining" at the point of lift off. It was at this point that the commander realised they had made a mistake with their takeoff point compared to the performance they had calculated.

Given the aircraft flew back to LTN before this serious incident was identified, the CVR was not available as it had been overwritten.

Crews' comments

Neither crew member believed fatigue was a factor and described the pre-flight preparations as routine. They added that 90% of the time the aircraft has the performance to takeoff from the intersection at LTN.

Footnote

[3] During a single engine taxi the second engine is started up at a convenient time prior to take off.
[4] The second engine start sequence was completed about seven minutes before take off.

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Commander

The commander stated that during their pre-flight preparations there were no time pressures or unusual distractions.

When ATC asked, "Are you intersection able?" he believes he replied "Affirm", as it seemed appropriate, as this is what he had done recently many times before. He added that he had not flown a takeoff from LTN using the full-length for "at least a month or two".

As the aircraft taxied towards the runway the crew completed the takeoff performance/ PEDS review[5]. During the PEDS review the commander believed that he stated that they had calculated the takeoff performance from Intersection Alpha and would be departing from Intersection Alpha. However, neither he nor the co-pilot noticed this was incorrect.

While he was aware the aircraft became airborne a long way down the runway, he didn't believe it to be anything unusual, as he attributed it to a possible tailwind component.

Co-pilot

The co-pilot stated that he did not recall hearing the request from ATC asking whether they were able to depart from Intersection Alpha.

During the commander's PEDS review the co-pilot did not recall whether the commander mentioned departing from Intersection Alpha or the full-length.

Meteorology

LTN ATIS Information Whiskey, recorded at 0420 hrs, stated that the surface wind was from 190° at 4 kt, varying between 160° and 220°, visibility was 9,000 m with no significant cloud, temperature 14°C, dew point 14°C and the QNH was 1017 hPa.

Airport information

LTN has one runway orientated 07/25. The full-length of Runway 25 has a TORA of 1,982 m and an Accelerate Stop Distance Available (ASDA) of 2,219 m. From Intersection Alpha the TORA is 1,771 m and the ASDA is 1,828 m.

Footnote

[5] See *Operator's manuals* section for more details on the PEDS review.

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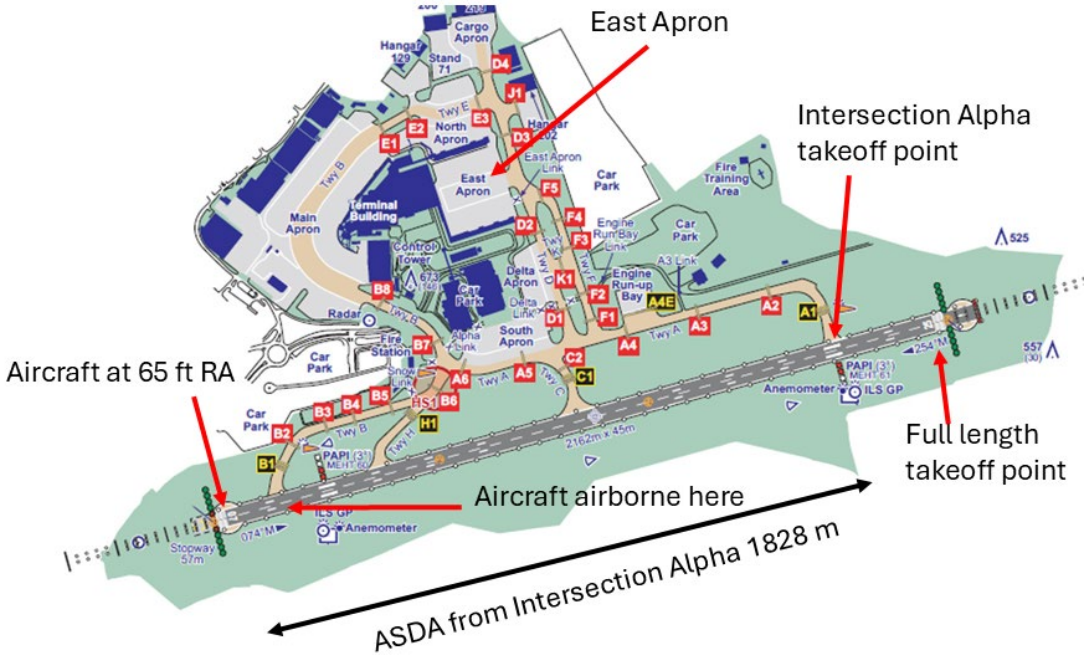


Figure 1

London Luton Airport Layout
(UK Aeronautical Information Publication (AIP))

Performance information

The crew calculated takeoff performance using flaps at CONF 1+F, for a takeoff from Runway 25 at LTN, at a weight of 68,887 kg. They input a wind from 160° at 4 kt as a worst case. Figure 2 shows the indications on the EFB showing that the takeoff was not permitted from Intersection Alpha for the conditions input.

The operator's FDM recorded that the aircraft lifted off about 310 m from the threshold of Runway 07 and was at 65 ft radio altitude over the threshold of Runway 07.

Analysis by the aircraft manufacturer suggested that in the event of an engine failure at V_1, with the takeoff continued, the obstacle clearance requirements of the net takeoff flight path would have been met. They also calculated that in the event of a rejected takeoff at V_1 with One Engine Inoperative (OEI) that the Accelerate Stop Distance Required (ASDR) would have been 1,666 m. In the event of a rejected takeoff at V_1 with All Engine Operative (AEO) the ASDR would have been 1,680 m. Given the ASDA from Intersection Alpha is 1,828 m, the margin would have been 187 m OEI and 173 m AEO. There was thus no runway overrun potential for all rejected takeoff scenarios.

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Figure 2

Takeoff performance from Intersection Alpha, Runway 25

Operator's manuals

The operator's Flight Crew Operating Manual stated in '*Normal Procedures, TAKEOFF FROM INTERSECTION*', that the takeoff shift should be entered into the Multipurpose Control and Display Unit (MCDU). However, the operator stated that while it was available to use, it was not standard practice for this to be done. In this event it would have been left blank given they were required to use the full-length of the runway.

The AAIB contacted three other UK operators of the A320. They all stated that it was standard practice to enter the takeoff shift into the MCDU, if conducting a takeoff from an intersection.

The operator's Operating Manual Part B (OMB) stated in Section 2.3.10.1, '*All Engines Taxi at Departure*';

> **'DEPARTURE BRIEFING.....CONFIRM**
>
> *The DEPARTURE BRIEFING CONFIRMATION (PEDS review) is aiming to:*
>
> *– Capture any changes affecting takeoff performance.*
>
> *– Final confirmation of takeoff performance data (actual vs computed).*
>
> *– Brief review/confirmation of departure briefing.*

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When appropriate, [whilst taxing out to the runway] the PF requests the PM to conduct the PEDS review:

• ***Performance*** *– Actual takeoff position to be used and computed takeoff position shall be stated.*

• ***EOSID*** *[engine out standard instrument departure]* ***Procedure*** *– Standard/ Non-Standard EOSID (initial turn).*

• ***Departure (T/O RWY & SID)*** *– Check FMGC [Flight Management and Guidance Computer] RWY and SID referring to MCDU F-PLN page against ATC departure clearance.*

• ***Stop Altitude (initial)*** *– Check initial altitude as per SID/ATC departure clearance and FCU [Flight Control Unit] altitude setting (PFD [Primary Flight Display]).'*

The operator stated that the PEDS review does not require crews to crosscheck the departure point against calculated performance data, relying instead on memory.

In 'OMB 2.3.11.2, *LINE-UP Checklist*', it stated that the crew were to confirm that the line-up is performed on the intended runway/intersection and confirm the ATC clearance received.

Safety actions

As a result of this serious incident the operator conducted a review of their takeoff performance operating procedures. Changes were made to include recording the intersection used to calculate the takeoff performance. This could be in the MCDU. This would then be crosschecked against the takeoff position during taxi and validated during line-up prior to takeoff. These amendments were planned to be published by the operator in March 2026.

Human factors

NASA Ames Research Center conducted a study of memory errors in flight decks/cockpits, '*Human memory and cockpit operations*'[6].

Its findings stated that in highly familiar situations people tend to respond automatically with habitual actions, rather than thinking explicitly about each action, which requires much more mental effort. If the pilots had periodically reminded themselves that they were to do a takeoff using the full-length of the runway, they might have had a better chance of remembering to perform the correct action, though they would still have been somewhat vulnerable because habitual responses are difficult to inhibit.

Footnote

[6] Human memory and cockpit operations: An ASRS [Aviation Safety Reporting System] study, by J L Nowinski, J B Holbrook and R K Dismukes (2003) can be found here: https://studylib.net/doc/25913824/human-memory-and-cockpit-operations-nowinski-etal-isap03 [accessed 20 March 2026].

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Other takeoff performance events

The AAIB reported on several takeoff performance serious incidents over the years leading up to this event. While some of these events had similar themes to this one (taking off from an incorrect intersection), there is a wide variation of reasons that can lead to an aircraft taking off with inappropriate thrust for the environmental and physical conditions.

Analysis

The aircraft was ready to depart slightly ahead of schedule and there were no external distractions that may have led to the crew rushing or forgetting their requirement to depart from the full-length of Runway 25.

While the crew briefed potential threats, including the aircraft's higher-than-normal weight, an opportunity was missed to highlight the requirement to takeoff from the lesser used full-length, as opposed to the more common intersection.

Once the push back was completed the commander requested clearance to taxi. ATC responded with, "ARE YOU [Intersection] ALPHA ABLE?" to which the commander incorrectly replied "AFFIRM". As the commander had departed from an intersection many times recently, this was likely to have been a habitual response, and it was not noticed by the co-pilot.

Despite another aircraft stating that they were "REQUIRING FULL-LENGTH", just before the aircraft was transferred to the Tower frequency, this did not cause the crew to realise that that they too required the full-length, as they may have been busy completing other tasks before departure. Added to the fact that they observed three preceding aircraft line-up and depart from the Intersection Alpha it is likely their mental model was reinforced by confirmation bias.

The PEDS review aimed to be the final check of the actual takeoff performance data versus that computed, and it relied on crew's memory. There was no requirement to crosscheck the performance that was stated by the PM against what was calculated. In this case the commander, as PM, believed he stated that they were taking off from the intersection and had planned to do so, probably because of habitual behaviour and confirmation bias. This was not captured by him or the co-pilot as it was likely engrained in their mental model from the initial call from ATC, and it was an habitual call.

It was not standard practice to enter the takeoff shift in the MCDU. Had it been used regularly, and had the crew seen it was blank for their full-length take off, it may have reminded them of the requirement to do so, or they might have queried why the takeoff shift distance had not been entered for the departure from the intersection.

Conclusion

The aircraft took off using a shorter TORA than had been used to calculate aircraft takeoff performance. While there were a few opportunities to trap this error, they were missed, probably by a combination of the crews' habitual behaviour and confirmation bias.

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Takeoff performance serious incidents continue to occur, and this one demonstrated that crews must be resilient to confirmation bias and the normalising of regular types of departure.

Safety action

The operator took the following safety action:

> The operator reviewed and amended their take off performance procedures with the aim of making them more resilient to the type of error highlighted in this event.

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