

Serious Incident

Aircraft Type and Registration:	Boeing 737-8, G-CRUX	
No & Type of Engines:	2 CFM International SA LEAP-1B27G05 turbofan engines	
Year of Manufacture:	2018 (Serial no: 44863)	
Date & Time (UTC):	22 April 2025 at 0630 hrs	
Location:	London Luton Airport	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 6	Passengers - 162
Injuries:	Crew - None	Passengers - None
Nature of Damage:	None reported	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	61 years	
Commander's Flying Experience:	10,000 hours (of which 3,000 were on type) Last 90 days - not known Last 28 days - not known	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

A change from the planned departure point led to the aircraft taking off with an incorrect power setting and rotating with fewer than 162 m of the paved runway surface remaining. A very shallow climb resulted in the aircraft reaching a height of 13 ft at the threshold. The operator reviewed its procedures and issued new guidance to crews.

History of the flight

The crew was carrying out a scheduled early morning flight to Athens and had prepared the aircraft for a departure from Runway 25 at London Luton Airport (LTN) using data for the full length of the runway. The pilots checked the performance calculations to see if they could use Intersection 'A', and during the pushback clearance, notified ATC that they were able to accept an intersection departure. Approaching the holding point, the crew recalled checking the Onboard Performance Tool (OPT)¹ and believed they had updated the V speeds² in the Flight Management Computer (FMC) to the correct values. Subsequent Flight Data Monitoring (FDM) analysis showed the maximum thrust used during the takeoff was 82.1%

Footnote

¹ The OPT is an electronic performance calculation tool used by flight crews to determine takeoff and landing performance for a specific aircraft, runway, and set of conditions.

² V speeds are defined airspeeds used during critical phases of flight, especially takeoff, climb, approach, and landing.

instead of the required 85.2% and the V_2 speed was not changed between initial data entry during flight preparation and takeoff, which resulted in the aircraft lifting off 162 m from the end of the paved runway surface (Figure 1).



Figure 1

Flight Data overlay of Google satellite image showing the aircraft lift off point

The aircraft crossed the end of the runway at an altitude of 13 ft agl. Reports from ATC described the aircraft appearing on radar climbing through 900 ft agl at approximately 0.8 nm from the airfield. Under normal circumstances the aircraft would appear much closer to the airfield at that height. CCTV from LTN ATC showed two images, one of the incident aircraft and a representative departure a few minutes later (Figure 2).

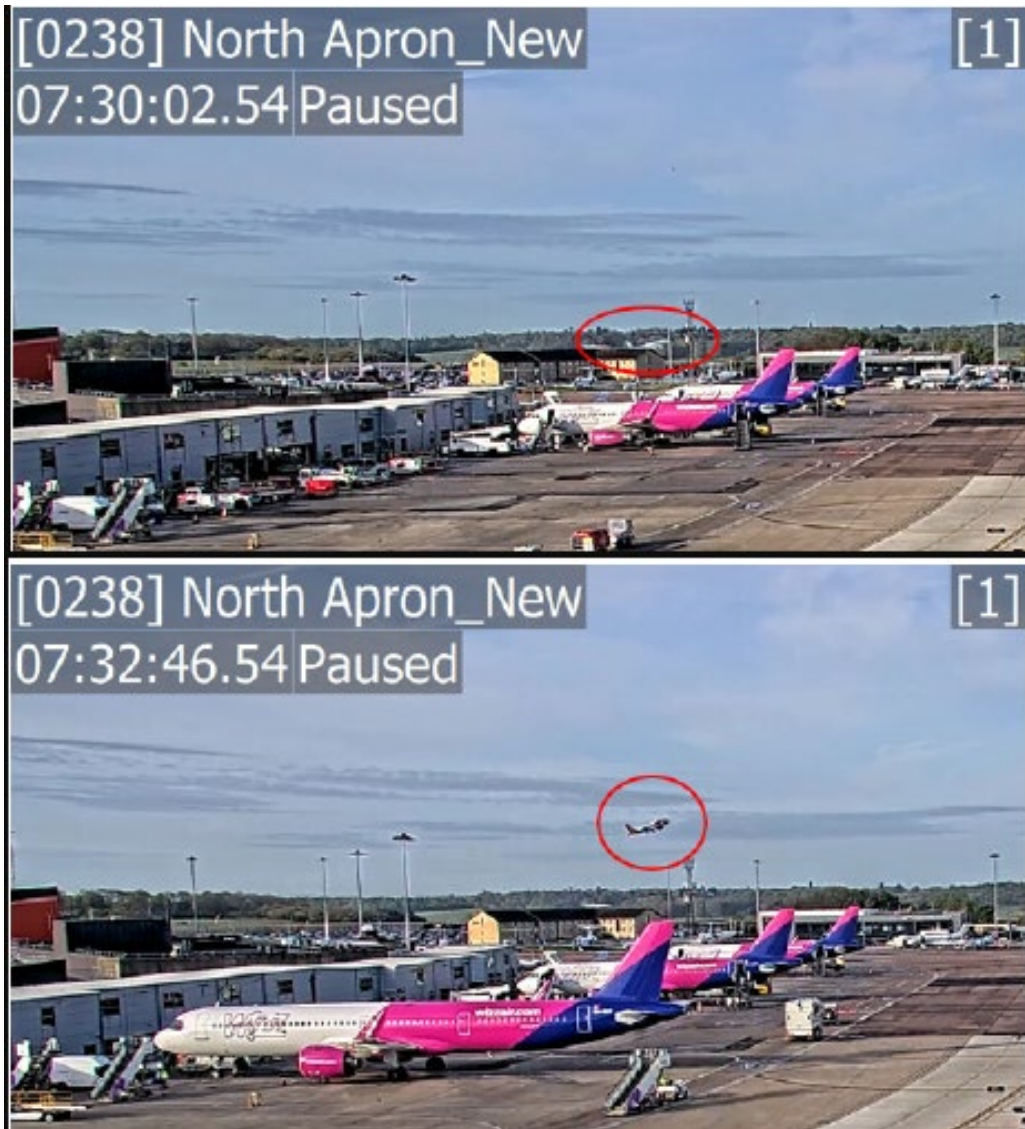


Figure 2

Images from LTN ATC CCTV

The upper image is the incident aircraft, the lower image is a representative departure

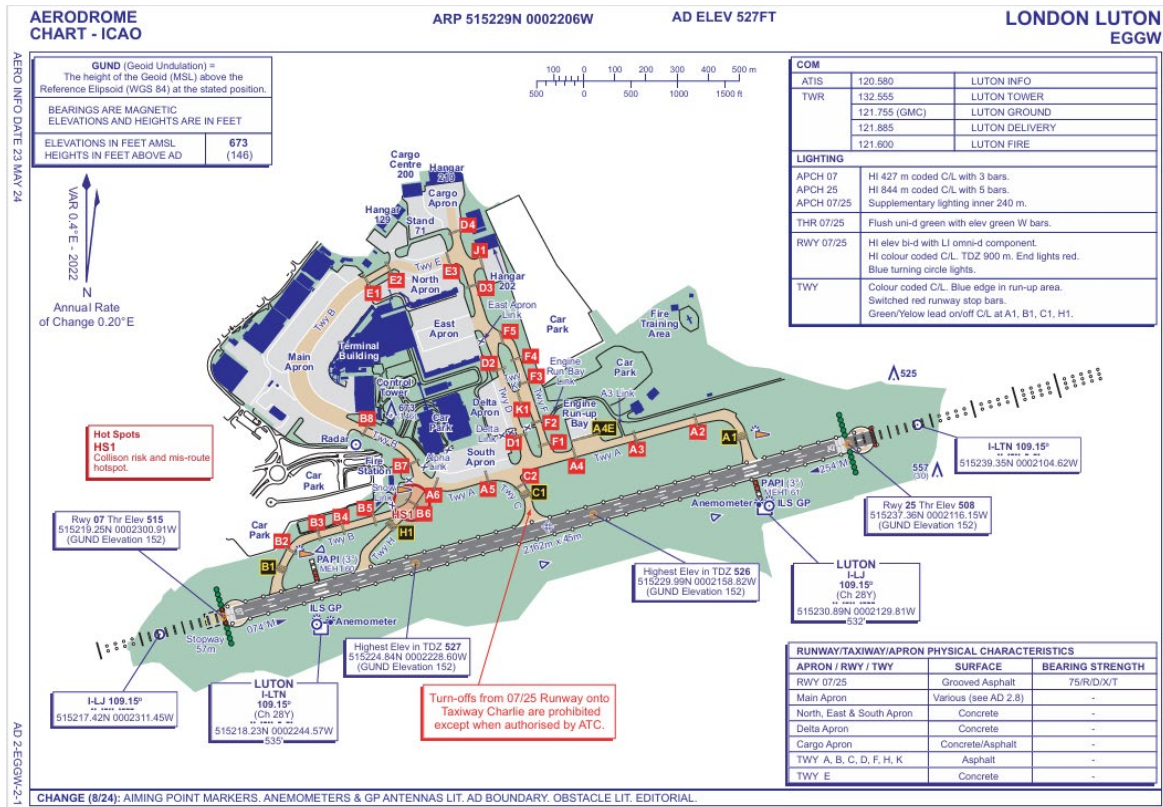


Figure 3
 London Luton Aerodrome Chart (correct Apr 2025)

The declared TORA³ from A was 1,771 m and the calculated required thrust was 85.2%.

Full length TORA was 2,116 m and the calculated required thrust was 81.4%.

FDM data showed that the maximum achieved thrust during takeoff was 82.1%. It is not possible to determine if this was a result of the autothrottle setting a slightly higher value than required or if it was manually set by the pilot.

A full length takeoff on Runway 25 is achieved by the aircraft entering the runway through the holding point at A1 and turning left to the end of the runway where there is sufficient room to complete a 180° turn.

Performance calculations are carried out to ensure that the aircraft has sufficient runway remaining to stop should a failure occur at a critical speed and also meets certain criteria during the climb to provide minimum height clearance from obstacles.

Footnote

³ TORA (TakeOff Run Available) is the length of runway available for an aircraft's ground run during takeoff.

Conclusion

The crew accepted a change to their planned departure point but did not verify that the takeoff performance was correctly entered in the FMC. This resulted in a lower power setting than required, and a long takeoff roll and slow climb out. If the aircraft had suffered a loss of thrust during takeoff, there was a potential that it would not have been able to stop on the remaining paved surface following a decision to reject the takeoff or, alternatively, achieve minimum height clearances during departure following a decision to continue the takeoff.