

INCIDENT

Aircraft Type and Registration:	Boeing 737-8AS, EI-DPK	
No & Type of Engines:	2 CFM56-7B27 turbofan engines	
Year of Manufacture:	2007 (Serial no: 33610)	
Date & Time (UTC):	26 February 2019 at approximately 1105 hrs	
Location:	London Stansted Airport	
Type of Flight:	Commercial Air Transport (Passenger)	
Persons on Board:	Crew - 6	Passengers - 169
Injuries:	Crew - None	Passengers - 1 (Minor)
Nature of Damage:	None reported	
Commander's Licence:	Airline Transport Pilot's Licence	
Commander's Age:	39 years	
Commander's Flying Experience:	5,000 hours (of which 1,800 were on type) Last 90 days - 236 hours Last 28 days - 85 hours	
Information Source:	Aircraft Accident Report Form submitted by the operator and additional enquiries made by the AAIB	

Synopsis

As passengers disembarked the aircraft using the forward integral airstairs, a child fell to the ground through the gap between the handrails. The child continued its journey without treatment after being assessed by medical personnel.

Boeing 737 forward airstairs

Some Boeing 737 series aircraft are fitted with a set of retractable airstairs at the forward left cabin door, to allow the boarding and disembarkation of passengers without the need for additional ground support equipment.

The airstairs include an integral two-rung handrail on either side. These rise into position during deployment of the stairs, but due to the geometric restrictions imposed by the retraction mechanism design, they do not extend to the fuselage side. In order to bridge this gap between the top of the handrails and the fuselage, a manually extendable handrail is fitted to each of the integral rails. After deployment of the airstairs, these are extended and secured to points in the entry door frame (Figure 1). Each extendable rail is supported by a strut extending from the side rail of the airstairs.

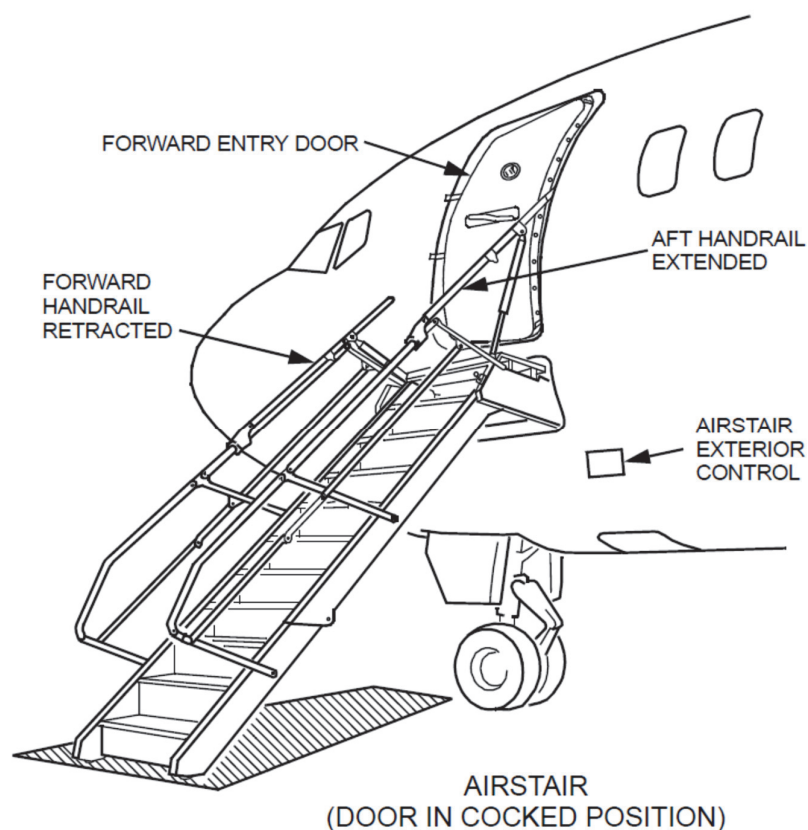


Figure 1

Boeing 737 forward airstairs

History of the flight and reporting of the event

The flight originated in Oslo and the passengers were disembarking on arrival in Stansted. It was daytime and weather conditions were reported to be dry. As a child left the aircraft with his family, he stumbled and fell sideways to the ground from the top two or three steps of the integral airstairs. The exact sequence of events leading to the fall was unclear, but the father reported that the child was walking while holding his hand. He felt the child pull from his hand and then fall sideways from the stairs. After assessment by airport medical personnel, the child was allowed to continue their journey without treatment.

The flight crew did not know that the child had fallen and, therefore, did not submit an Air Safety Report (ASR). The operator stated that their Customer Services department became aware of the fall in March 2019 when they received external correspondence relating to the event. In accordance with their internal procedures, they obtained reports from the ground crew and cabin crew, with the latter being reminded of the operator's procedures, which require that all inflight events are reported to the aircraft captain. The operator did not inform the AAIB because the child's injuries did not constitute an accident or serious incident as defined in ICAO Annex 13 or Regulation (EU) 996/2010. Irrespective of this, however, the event should have been reported to the Irish Aviation Authority (IAA) under Regulation (EU) 376/2014. This regulation requires the mandatory reporting of occurrences related to injury.

The AAIB became aware of the event in April 2019 and decided to investigate the circumstances under Article 5 of Regulation (EU) 996/2010. This decision was made in the knowledge of a previous similar event on EI-DLJ (AAIB Bulletin 8/2010) and the potential for a more serious outcome. The AAIB contacted the Air Accident Investigation Unit (AAIU) in Ireland, who subsequently contacted the operator's Safety Services Office. On becoming aware of the event, the Safety Services Office collated the cabin crew reports, processed an ASR, and submitted a Mandatory Occurrence Report to the IAA.

Investigation

The scope of the investigation was limited because the exact circumstances of the fall were unclear. There were four cabin crew on the flight, but none of them saw the child fall. The airport operator reviewed the CCTV footage, but the forward left door of the aircraft was outside the field of view and the fall was not recorded.

Previous events within Europe

The AAIB identified eight previously reported events in Europe since 2009 and six of these involved children of various ages. Typically, the airstair equipped Boeing 737 fleet completes over 780,000 flights per year, carrying over 120 million passengers across all age groups. The aircraft manufacturer confirmed that these events had been reported to them and reviewed in accordance with the Boeing / Federal Aviation Administration Continued Operational Safety Process. They considered that the existing safety actions provided adequate mitigation (see previous safety actions, below).

Certification of integral airstairs

Federal Aviation Regulation 25 and its European equivalent, Certification Standard 25, define the airworthiness standards for transport category aeroplanes. The specifications do not contain any requirements relating to integral airstairs. EASA advised that the Boeing 737-800 approval within Europe was issued by the Joint Aviation Authorities (JAA) following a validation activity in 1998. The integral airstair design is understood to have been accepted on the basis of previous Boeing 737 models.

Previous safety actions

Anti-skid material and warning placards

In September 2007, the Federal Aviation Administration issued a Special Airworthiness Information Bulletin (SAIB) after four reports of injuries resulting from small children falling through or over the airstair handrails¹. The bulletin recommended the introduction of anti-skid material and warning placards to advise people accompanying children to hold the child's hand whilst on the stairs.

Footnote

¹ Special Airworthiness Information Bulletin NM-07-47 [http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/dc7bd4f27e5f107486257221005f069d/cab005ca55f1abd78625734e006eb6b7/\\$FILE/NM-07-47.pdf](http://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/dc7bd4f27e5f107486257221005f069d/cab005ca55f1abd78625734e006eb6b7/$FILE/NM-07-47.pdf) (accessed 25 September 2019)

The operator of EI-DPK confirmed that warning placards and anti-slip material were in place on the aircraft when the child fell. In addition to these recommendations, after the previous AAIB investigation, the operator installed a retractable roller-tensioned tape and detachable airstair rails to further reduce the likelihood of somebody falling.

Boarding and disembarking announcements

The previous AAIB investigation resulted in Safety Recommendation 2010-018. This was made applicable to all UK operators of 737 aircraft with integral airstairs in April 2011 when the UK Civil Aviation Authority issued a Safety Notice (SN-2011/02) entitled ‘*Safe Use of Airstairs.*’ The safety notice required operators to review their boarding and disembarkation procedures so that special assistance is made available to passengers accompanied by small children, or those with special needs. The notice stated that operators:

‘should also review announcements made by staff at the boarding gate and before disembarkation to ensure that passengers’ attention is drawn to the need to exercise caution when boarding and disembarking using airstairs. Passengers in these circumstances should, in particular, be advised to keep small children under close supervision throughout the boarding and disembarkation process.’

This Safety Notice was cancelled in 2018.

The operator’s ground operations manual contains the pre-boarding announcement, which includes the words:

‘adults with young children must hold their hands whilst walking to the aircraft and on the aircraft steps. Use the handrails provided.’

The Safety Equipment Procedures manual contains the before disembarking announcement, which contains the words:

‘All passengers should use the handrail provided when walking down the stairs. For passengers travelling with children please hold their hands as you walk down the stairs and until you are inside the terminal building.’

Discussion

The child continued his journey without medical treatment, so the event did not meet the criteria of an accident or serious incident defined in ICAO Annex 13 or Regulation (EU) 996/2010. However, the investigation was instituted because safety lessons were expected to be drawn from it.

The flight crew were unaware of the fall, which occurred within the defined period of a flight. The operator reminded their cabin crew that their incident reporting procedures requires them to notify the aircraft captain of events that occur in flight. If appropriate, the flight crew will submit an ASR and the regulator can be notified if necessary. In the case of this event,

there was a mandatory requirement to notify the IAA under Regulation (EU) 376/2014. In this case there was a delay of approximately two months because the flight crew were unaware of the fall.

There are no certification requirements for integral airstairs and in the last 10 years, there have been nine reports (within Europe) where people, both adults and children, have fallen whilst using them. The manufacturer is aware of these events and considers the recommendations in the FAA SAIB to be adequate mitigation. When considering the arising rate, the operator reported that in 2018, they completed over 787,000 flights and carried over 126 million passengers across all age groups.