

Addressee(s):

All ground personnel who have to enter a Boeing 737 aircraft using the forward airstair.

Applicability:

Some Boeing 737 aircraft that are equipped with the optional retractable airstair(s).
(Note that they also exist on other short-range airliners)

Safety matter

Following a serious incident, this note has been made to remind to not use the airstair when the stair's guiderails are removed and no two-way communication is established with the cabin crew.

Related incident

In July 2016 a serious incident happened at the airport of Charleroi (EBCI) when a dispatcher from the ground handling department ran up the airstair at the left entry door #1 of a Boeing 737 upon the time the cabin crew commanded the retraction of the airstair.

The cabin crew did not notice the dispatcher and started the retraction when he was on the upper half of the stair. During this, he lost his balance and fell on his back from a height of approximately 2 meters. The dispatcher suffered only minor injuries. As the outcome may have been worse, this Safety Feedback has been made as a reminder to all that have to enter an aircraft via an airstair.

System description

Some Boeing 737 series aircraft are fitted with a retractable airstair at the forward left entry door to allow the boarding and disembarkation of passengers without the need for additional ground support equipment. The airstair is stowed inside a compartment just below the forward entry door. It includes an integral double 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 the gap between the top of the handrails and the fuselage, a manually extendable upper handrail is fitted to each of the integral rails. After deployment of the airstair, these are extended and secured to support brackets inside the entry door. Each extendable rail is supported by a strut extending from the side rail of the airstair. The airstair is electrically operated and may be controlled from either outside or inside the airplane via switches on the forward attendant panel in the cabin.

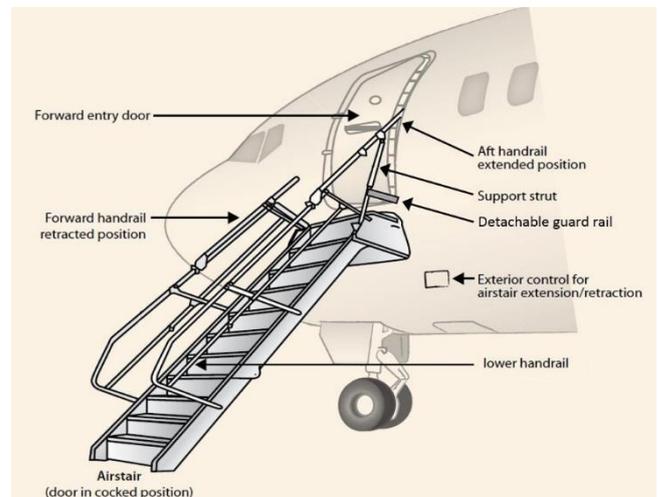


Figure 1: Parts of the Boeing 737 airstair

For the purpose of flying, the airstair is retracted from the interior by a cabin crew member. In order to retract the stair, first of all the guard rails are detached and stowed in the galley. These guard rails serve as protection for small children. Subsequently the handrail extensions are disengaged from the door supports and slid down along the upper rails. Stowing in appropriate stowage points provides circuit continuity for energizing retract relay.

Then the door is pulled over and left in the 'cocked'¹ position. This is because on one hand the airstair can't be operated from the inside when the door is closed and on the other hand to provide maximum safety protection to the cabin crew when working close to the door frame.



Figure 2: Door in 'cocked' position and retracted handrails (red encircled)

The airstair is finally retracted by operating a switch on an attendant panel. As the small door window is not at eye level, it is impossible for the cabin crew member to continuously look outside while operating the airstair, see Figure 3.

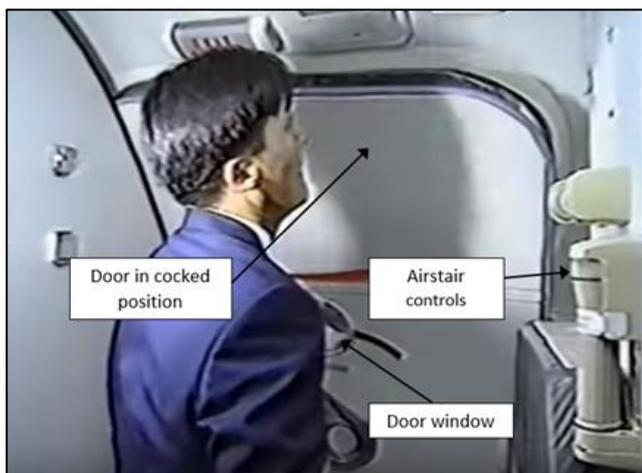


Figure 3: Screenshot from flight attendant training video (former Canadian Airlines)



Figure 4: Sequence of airstair retraction (operated via exterior control on these pictures)

¹ Cocked position: the inner most position of the entry door

Safety message

- Any person intending to use the B737 forward airstair to enter the aircraft should verify the **presence of the upper handrails of an airstair**, the absence of it (see Figure 2) is a danger anyway.
- Moreover, the entry door in the **cocked position** is a sign that the airstair is highly probably about to be retracted. In this case, the person wanting to enter the airplane must
 - first **establish a two-way communication** with the cabin crew
 - **wait** until the door has been **fully opened** again by a cabin crew member.

About this Safety Feedback

This Safety Feedback is intended to diffuse lessons learned and good practices amongst the aviation community. The material is coming both from investigations as per EU Regulation (EU) no. 996/2010 on the investigation and prevention of accidents and incidents in civil aviation and from reports made by pilots, traffic controllers, mechanics, ground handlers, in application of EU Regulation (EU) no. 376/2014. **The report is de-identified and the safety message has been established with the help of flight instructors and traffic controllers.**

The Air Accident Investigation Unit of Belgium (AAIU(Be)) is an independent section of the Federal Public Service Mobility and Transport and is the Belgian safety investigation authority as per EU Regulation (EU) no. 996/2010. The sole objective of safety investigations and the publications is the prevention of future accidents and incidents without apportioning blame or liability. The AAIU(Be) is also a member of the European Network of Civil Aviation Safety Investigation Authorities (ENCASIA).

