Statens haverikommission
Swedish Accident Investigation Authority

ISSN 1400-5719

Final report RL 2013:02

Accident involving aircraft EI-DLD on 8 May 2012 at Göteborg/Säve Airport, Västra Götaland county, Sweden.

Ref no L-37/12
2013-01-25

The report is also available on our website: www.havkom.se

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The Swedish Accident Investigation Authority (Statens haverikommission, SHK) has investigated an accident that occurred on 8 May 2012 at Göteborg/Säve Airport in Västra Götaland county, involving one aircraft with the registration EI-DLD.

SHK hereby submits under the Regulation (EU) No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation, a final report on the investigation.

This document is a translation of the original Swedish report.

On behalf of the Swedish Accident Investigation Authority,

Mikael Karanikas Sakari Havbrandt

General points of departure and limitations

The Swedish Accident Investigation Authority (Statens haverikommission – SHK) is a state authority with the task of investigating accidents and incidents with the aim of improving safety. SHK accident investigations are intended so far as possible to determine both the sequence of events and the cause of the events, along with the damage and effects in general. An investigation shall provide the basis for decisions which are aimed at preventing similar events from happening again, or to limit the effects of such an event. At the same time the investigation provides a basis for an assessment of the operations performed by the public emergency services in connection with the event and, if there is a need for them, improvements to the emergency services.

SHK accident investigations try to come to conclusions in respect of three questions: *What happened? Why did it happen? How can a similar event be avoided in future?*

SHK does not have any inspection remit, nor is it any part of its task to apportion blame or liability concerning damages. This means that issues concerning liability are neither investigated nor described in association with its investigations. Issues concerning blame, responsibility and damages are dealt with by the judicial system or, for example, by insurance companies.

The task of SHK also does not include, aside from that part of the investigation that concerns the rescue operation, an investigation into how people transported to hospital have been treated there. Nor does it include public actions in the form of social care or crisis management after the event.

The investigation of aviation incidents is regulated in the main by the Regulation (EU)
No 996/2010 on the investigation and prevention of accidents and incidents in civil aviation. The investigation is carried out in accordance with the Chicago Convention Annex 13.

The investigation

SHK was notified on 9 May 2012 that an accident involving an aircraft with the registration EI-DLD had occurred on 8 May at 11.30 hrs at Göteborg/Säve Airport, Västra Götaland county.

The accident has been investigated by SHK as represented by Mr Mikael Karanikas, Chairperson, and Mr Sakari Havbrandt, Investigator in Charge.

The investigation team of SHK was assisted by Ms Liselotte Yregård as a medical expert and Ms Gerd Svensson as an expert specialising in Human and Organisational Factors.

Mr Leo P Murray participated as accredited representative of the Air Accident Investigation Unit (Ireland).

The investigation was followed by Mr Christer Erlandsson of the Swedish Transport Agency

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Aircraft: registration and type	EI-DLD, Boeing 737
Class/Airworthiness	Normal, valid Airworthiness Review Certificate (ARC)
Owner/Holder/Operator	Ryanair
Time of occurrence	08-05-2012, 11.30 hrs in daylight Note: All times are given in Swedish daylight saving time (UTC + 2 hrs)
Place	Göteborg/Säve Airport, Västra Götaland county (pos. 5746.5N 1152.2E; 18 m above sea level)
Type of flight	Scheduled flight
Weather	According to SMHI's analysis: south-easterly wind, 10 kts, visibility >10 km, no clouds below 5000 feet, temp/dewpoint +12°C/-1° C, QNH[1] 1017 hPa
Persons on board: crew members	2 flight and 4 cabin crew members
passengers	173
Injuries to persons	Serious, one cabin crew member
Damage to aircraft	None
Other damage	None
The flight attendant	Age 22 years; 8 months' experience as a cabin crew member

History of the flight etc.

Boarding was in progress for a flight to Stansted, England. The flight was about an hour late due to earlier problems during the day, which meant that there was a certain element of stress.

The cabin crew member in question was in position at the aircraft's rear door to receive passengers and check their boarding passes.

One passenger carried two pieces of luggage on board, one of which was labelled for transport in the aircraft hold. The cabin crew member took charge of that piece of luggage and placed it on the floor with the intent of later carrying it down to the hold. Sometime later, ground staff returned waste that had previously been offloaded. The reason for this was that it had not been sorted in a manner that was acceptable to the airport.

When boarding was completed, the driver of the mobile passenger stairs went to the aircraft door, disassembled the stair's side panels and awaited the closing of the door. The flight attendant closed and locked the cabin door. No formal

[1] QNH indicates barometric pressure adjusted to sea level.

oral communication took place during the procedure. When the cabin crew member then stowed away the waste, she discovered that the luggage that was to go to the hold was still on the cabin floor.

She opened the door and stepped out onto the stair platform to make contact with the ground staff and get the luggage down. The moment she shifted her weight onto the platform, the passenger stairs vehicle moved back from the aircraft, upon which she lost her balance and fell down onto the apron back-first.

The driver of the passenger stairs vehicle saw the fall, hurried to her, urged her to lie still and called an ambulance.

An ambulance arrived quickly to the scene and took her to hospital, where it was found that she had sustained four cracked vertebrae and a wound to her head.

The cabin crew member has stated that the closing of the door was initiated by the driver of the passenger stairs vehicle through his releasing the catch (gust lock) that keeps the door open and half closing the door. Furthermore, she stated that she was not completely prepared for the door closure when it was initiated.

The driver of the passenger stairs vehicle has stated that he had not touched the door, but had only waited on the platform until the door was closed.

According to the operator's manual, the door must only be closed following a command from the flight crew or the purser. Furthermore, the door may be opened only on the aircraft captain's command.

Excerpt from RYANAIR's manual:

9.2 Operation of Doors – Inside

9.2.1 To Open

Only qualified ground staff, Cabin Crew training staff, Flight Crew and Cabin Crew may open a door in a non-emergency situation – Doors may only be opened on the Captains command.

1. Rotate the operating handle on the door up and towards the rear of the aircraft.
2. Grasp the door assist handle and push the door out and towards the front of the aircraft.
3. Ensure gust lock engages.

When opening a door, be aware of external conditions, strong winds, driving rain, backlash from other aircraft. When opening or closing a door ensure that you adopt a body position facing the door, and **do not** lean your body out of the aircraft more than is necessary.

9.2.2 To Close

Only qualified ground staff, Cabin Crew training staff, Flight Crew and Cabin Crew may close a door.

Doors must not be closed on request of Ground Staff only.

Doors may only be closed after instruction from the Flight Crew and/or the No 1.

1. Depress the gust lock located on the door hinge.
2. Grasp the door assist handle and pull the door inwards.
3. Rotate the operating handle on the door towards the front of the aircraft to lock.

WARNING: The forward doors will move into the cabin with significant speed and force.

('*No. 1' above refers to the purser*)

According to the instructions for the driver of the passenger stairs vehicle, the all-clear signal is to be awaited from the crew that the stairs or boarding bridge can be removed.

Configuration of the aircraft and the mobile passenger stairs when the flight attendant opened the door

Conclusions

It has not been possible to establish with certainty why the door was closed without a command from the flight crew or purser or who it was that initiated the closing of the door.

However, it may be considered entirely clear that the door was closed too early. It is probable that the cabin crew member felt an expectation to close the door quickly since the driver of the mobile passenger stairs was standing on the platform and waiting, regardless of whether he initiated the door closure.

In that the driver of the passenger stairs vehicle was on the platform and saw the door being closed, it is explicable that he perceived this to be an all-clear signal to move the vehicle back, even though no formal all-clear signal had been given. Formal all-clear signals are probably uncommon because the operator's manual does not prescribe the giving of any formal all-clear signal to remove the stairs.

The fact that a short time had elapsed since the closing, and that she had neither received a command for closing nor reported the closing, is likely to have been decisive in the decision to re-open the door without a command from the captain.

When the door was opened and she saw the stair platform, it is understandable that it was not perceived hazardous to step out onto it. Furthermore, in the hurry, she had probably not considered that the closing of the door had been perceived as an all-clear signal to remove the stairs.

The element of stress due to the flight being delayed contributed to the decision and to the quick manner of solving the problem that had arisen.

Causal factors:

- The door was closed before the cabin crew member was completely prepared
- There was a certain element of stress due to the delay and the returning of the waste
- It was not established how the all-clear signal to remove the stairs was to be given
- The door was opened without a full appraisal of the associated risks

Recommendations

None.