



**Traslation of the Finnish original report**

**TAXIING INCIDENT  
AT HELSINKI-VANTAA AIRPORT  
ON 13.12.1996**

**Investigation report**  
No. C 1/1997 L

As stated in Annex 13 to the Convention on International Civil Aviation, paragraph 3.1, the objective of the investigation of an aircraft accident or incident is to prevent further accidents. The investigation and report are not intended to deal with any liability or compensation issues that might arise from the accident. This basic rule is also contained in the Act on Accident Investigation (373/85). Use of the investigation report for purposes other than improving safety shall be avoided.

## INVESTIGATION REPORT

### 1 BASIC INFORMATION

<b>Aircraft:</b>	Boeing 737-500 airliner, registered D-ABIB, operated by Lufthansa.
<b>Place:</b>	Helsinki-Vantaa airport, stand no. 29.
<b>Time:</b>	December 13, 1996 at 17.01
<b>Type of the flight:</b>	Scheduled
<b>Weather:</b>	Wind 8 kt, 310°, visibility 5 km, temperature -1,3°C, light snowfall.
<b>Injuries to persons:</b>	No injuries.
<b>Damage to aircraft:</b>	Dents of approximately 100 cm in length and 1 cm in depth in the upper and lower edge of left engine air inlet.
<b>Other damage:</b>	No other damage.

### 2 INCIDENT

The Lufthansa airliner, flight number LH-3004, arrived from Frankfurt and taxied to stand 29 which had been assigned to it. The visual docking guidance system at the stand was not in operation, as the gate officer had not yet come to the passenger bridge. The captain slowly taxied the aircraft until it was a few meters away from the passenger bridge. The crew reported to air traffic control that the guidance system was inoperative, and the ATC notified this to apron control.

An apron controller, who was a member of the airport staff on duty in the "Follow Me" car, was informed of the matter. He went to the aircraft and decided to guide it to the stand himself in order to expedite the parking. He started to marshal the aircraft using illuminated wands. He was aware of the fact that the engine would come close to the passenger bridge and that there was a risk of collision. While marshalling, he stood at the left side of the aircraft nose and kept a watch so as to ensure that the engine would not hit the passenger bridge. However, he estimated the distance incorrectly, and at the same time as he signalled the aircraft to stop, the forward edge of the left engine air inlet struck the passenger bridge.

It was already dark at the time of the incident, and the area had artificial lighting. There was also light sleeting. These factors may have made distance estimation more difficult.

The stand did not have a stop line for the aircraft type in question, which the marshaller saw as a deficiency. The lines are for tractor towing, so that the driver can stop the nosewheel on the line intended for the aircraft type. However, as aircraft types are so many, there is not a separate line for every one of them.

When marshalling with hand signals, the aircraft will always cross the line if the stop sign is given when the nosewheel is on the line. How far it goes beyond the line depends on the pilot's reaction time and the time he needs to perform the action, as well as the taxiing speed of the aircraft.

The mobile police unit at Helsinki-Vantaa airport photographed and videotaped the scene of the incident and aircraft damage. The police also performed a breathalyzer test to determine whether the pilots or the marshaller were under the influence of alcohol. The test showed 0,00 ‰ for all of them.

### **3 APRON CONTROLLER'S TRAINING**

The apron controller who marshalled the aircraft had been working in his present duties since summer 1995. He had received on-the-job training for these tasks, which had taken approximately three months. The apron controller's duties include planning and coordination of aircraft parking and movement, supervising vehicle traffic and marshalling aircraft. He had been trained for marshalling with hand signals, and had guided aircraft to remote stands where hand signal marshalling is used. There are no visual guidance systems or passenger bridges on remote stands. The incident under investigation was the first time when he marshalled an aircraft to a contact stand with a passenger bridge. The apron controller told that marshalling to contact stands had not been practised during the training, and any special considerations or the risk of collision related to it had not been discussed.

According to the person who had given the training, it is not allowed to use hand signals to guide aircraft to contact stands, which are equipped with passenger bridges and the risk of collision is high. This is the reason why apron controllers are not trained for marshalling to contact stands. The collision risk is particularly high with Boeing 737 aircraft, in which the engine air inlet comes as near as approximately 1 meter from the passenger bridge. The trainer stated that the collision risk is mentioned during the training. The directions are that when the electronic docking guidance system is not in operation, the aircraft shall be towed to the stand by a tractor. In some exceptional cases the aircraft may taxi under its own power, but the mechanic walks beside it and maintains telephone contact with the pilot.

## 4 FINDINGS AND CAUSAL FACTORS

4.1 Finnair gate officer was not at the gate when the aircraft arrived at the stand.

4.2 The training of an apron controller does not include marshalling to stands equipped with passenger bridges, since it is not allowed due to the risk of collision.

4.3 It was the first time that the apron controller marshalled an aircraft to a contact stand with passenger bridge (causal factor).

4.4 According to what the apron controller told, he did not know that marshalling to a stand with a passenger bridge was not allowed (causal factor).

4.5 The apron controller was aware of the collision risk related to marshalling the aircraft type in question, but could not allow for a sufficient time interval and distance needed from the stop signal until the aircraft actually stops. When giving the stop signal, he estimated the distance of the engine from passenger bridge incorrectly. The artificial lighting and sleetfall may have contributed to this (causal factor).

## 5. RECOMMENDATIONS

No recommendations are given.

Helsinki, 24 February 1998

Chief Air Accident Investigator

Seppo Hämäläinen

The following reference material is retained in the Accident Investigation Board:

1. Notification and report of the police on the incident
2. Statement of the apron controller
3. Report of the pilot-in-command
4. Weather information at the time of the incident
5. Photograph collection compiled by the police