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## Ground collision between bus and MD-83, HB-INV, September 3, 1999, Dublin Airport

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**Micro-summary:** On parking, this MD-83 hit a bus.

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**Event Date:** 1999-09-03 at 1310 UTC

**Investigative Body:** Air Accident Investigation Unit (AAIU), Ireland

**Investigative Body's Web Site:** <http://www.aaiu.ie/>

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*AAIU Report No. 2000/013*  
*AAIU File No. 1999/0058*  
*Published.: 11/09/02*

<b>Aircraft Type and Registration:</b>	MD83,	HB-INV
<b>No. and Type of Engines:</b>	2 X JT8D-219	
<b>Aircraft Serial Number:</b>	49359	
<b>Year of Manufacture:</b>	1987	
<b>Date and Time (UTC):</b>	3 Sept '99	13.10 hrs
<b>Location:</b>	Stand 32 Dublin Airport	
<b>Type of Flight:</b>	Public Transport	
<b>Persons on Board:</b>	133	
<b>Injuries:</b>	Nil	
<b>Nature of Damage:</b>	Damage to left wing outer slat	
<b>Commanders Licence:</b>	Air Transport Pilots Licence	
<b>Commanders Age:</b>	60 years	
<b>Commanders Flying Experience:</b>	13,000 hours	
<b>Information Source:</b>	Aer Rianta Duty Officer AAIU Field Investigation	

## **SYNOPSIS**

The aircraft taxied on to Stand 32 at Dublin Airport at 13.10 hours on 3rd September, 1999. The Captain manoeuvred the aircraft on to the yellow taxiline. Before reaching the stop point at the hammerhead however the left wing forward slat came in contact with a bus parked in the area of the stand. The rear window of the bus was shattered on impact and the forward slat and wing tip were damaged.

## **1. HISTORY OF THE INCIDENT**

### **1.1 Eyewitness Recollection**

The Captain manoeuvred his aircraft on to the yellow taxiline of Stand 32. He saw the Marshaller and the two Wingmen, one on each side of the aircraft. The Captain was aware that there were several buses parked on the stand and slowed down the aircraft to a "very low taxi speed". He said the Marshaller moved slightly to the Captain's left and then signalled the aircraft to move ahead. The Captain then released the brakes to move forward to the hammerhead. However, the aircraft came to a sudden stop prior to reaching the hammerhead and the Captain realised that the aircraft had collided with the parked bus.

The Marshaller said that whilst he was marshalling the aircraft on to Stand 32 he noticed five buses belonging to another aircraft operator parked to the right of his position. He could not see the stand red boundary line to his right. The Wingman stood by the buses. As the aircraft turned he thought the Wingman was about to give him a signal but the Wingman then dropped his hands. The Marshaller then continued to marshal the aircraft forward. As the aircraft straightened along the yellow taxiline the Marshaller was observing the nose wheel of the aircraft. He looked up to his right and realised that the left wing was going to collide with one of the buses. He raised his hands to give the stop signal by which time the left wing had impacted the rear window of the bus.

The Wingman said he took up a position near the buses which were parked over the red boundary line of Stand 32. As the aircraft taxied in he observed that the wing tip was dangerously close to one of the buses. He began to give a stop signal to the Marshaller. As the aircraft continued to swing to the right he discontinued the signal thinking that the aircraft was clear to proceed. He said that the aircraft straightened up quicker than he thought it would and the wing tip hit the rear of the bus. He said the Marshaller immediately signalled the aircraft to stop.

Another witness who was on the telephone in his office, 200 metres from the stand, said that he saw the aircraft approaching Stand 32. He said that he thought the aircraft was taxiing "at a quick pace" but that it was difficult to be sure because of the distance from his office to Stand 32. He noticed some buses adjacent to the stand and then became aware that the aircraft's left wing had crashed into the rear of one of the buses. He could not see the Marshaller or the Wingman as there was a lot of equipment parked in the vicinity which restricted his view.

## **1.2 Injuries to Persons**

There were no injuries sustained by crew, passengers, ground crew or others.

## **1.3 Damage to the Aircraft.**

The area of impact covered from the wing tip inwards to a distance equal to the width of the rear of the bus. The left wing forward slat was damaged in addition to wing tip damage adjacent to the wing tip light housing.

## **1.4 Other damage**

The rear window glass of the bus was shattered and there was damage to the window frame at the right and left supports.

## **1.5 Aerodrome Information**

### **1.5.1 Apron Area**

Stand 32 is located at the Central Apron at Pier B. Construction work was in progress at a site in this area which covered an area previously occupied by Stands 25 to 30.

Because of the proximity of construction vehicles entering and leaving this site several aircraft operators refused to have their aircraft marshalled on to the adjacent Stand 31. Most were concerned about the likelihood of the effect of FOD (Foreign Object Damage) due to the nearby transportation of building materials. Stand 31 therefore became redundant and was used by an aircraft operator as a site for the parking of their buses. At the time of the incident there were buses parked in this vicinity, five of which were parked either partially or wholly on Stand 32.

## **1.6 Apron Safety, Regulation, Monitoring and Enforcement**

Responsibility for the control of apron surface traffic rests with the Airport Authority. As stated in the Airport Directive No. 2 *"in pursuance of this responsibility the Airport Authority will regulate the parking of aircraft, and the movement of vehicles, equipment and pedestrians on the apron"* Section 5.2.1. of the Directive under marshalling states that "it is the responsibility of the Airport Authority to provide marshalling of aircraft at Dublin Airport. Marshalling services may be delegated to a designated Handling Agent or contracted Handling Agents".

In this case, marshalling services have been delegated to a contracted Handling Agent. Monitoring and policing of ground handling at Dublin Airport is carried out by the Airport Authority on an on-going basis. In all cases if any breaches of ramp safety are observed, they are normally brought to the attention of the offending company. The Authority stated to the investigation that all airlines/handling agents are notified by means of Aerodrome Notices of all or any physical changes airside, either of a temporary or permanent nature.

## **1.7 Additional Information**

The UK Civil Aviation Authority (CAA) have published a guidance document entitled "Airside Safety Management" (CAP 642) in response to the need for guidance about safe operating practices for all those engaged in activities taking place on the airside areas of airports and aerodromes.

With the support of industry and the UK Health and Safety Executive, the UK CAA established a joint Working Group to look at specific issues concerning aircraft and personal safety in the ground handling phase of airport operations. The move was in general accordance with the views of the UK Air Accident Investigation Branch.

The advice and guidance in CAP 642 is best described as 'Acceptable Good Practice' and represents an acceptable way of achieving a safe standard. It illustrates how risks might be identified and provides advice about how airside safety can be placed within the context of a systematic and structured management approach - a Safety Management System.

### 1.7.1 Training and Training Records

The following training records for the Marshaller and Wingman were provided by the contracted Handling Agents above with the dates on which courses were certified.

Introduction	18/03/99
Pre-Trip Procedure	18/03/99
Ramp Safety	18/03/99
Defect Reporting	18/03/99
Equipment Tug	22/03/99
Bel & Loader	22/03/99
Ground Power Unit	23/03/99
Aircraft Marshalling	23/03/99
Towable Passenger Step	23/03/99
FEP Power	23/03/99
Wing Walking	23/03/99
Walk Round Checks	23/03/99
Headset and Handset Procedures	21/05/99
Toilet Services Vehicles	10/06/99
Portable Water	10/06/99

The two ground staff members received their training as part of a class recruited by the company in mid.March 1999. Training was given over a two week period and consisted of classroom instructions and ramp work. Some of the recruited personnel were let go by the company following the summer period and others were made permanent part-time staff.

## 2. ANALYSIS

The Captain of the aircraft, the Marshaller and the Wingman were all aware of the proximity of the buses to the yellow taxiline along which the aircraft was about to be manoeuvred. The left wing impacted the rear of the bus from the wing tip to a point approx. 2 metres inboard from the tip. The aircraft would have to have been this distance to the right of the taxiline in order to avoid colliding with the bus. A witness who was at an elevated site 200 meters away said that the aircraft appeared to taxi "at a quick pace". The Captain said that he taxied his aircraft at a "very low taxi speed". Neither the Marshaller or Wingman made a comment in their statements regarding taxi speed. The Marshaller would have been approx. 38 meters from the Wingman and therefore reliant on signals from him during the marshalling process. He observed the Wingman about to give a signal to stop which would indicate that he was alert to the danger involved. However, no signal to stop came from the Wingman.

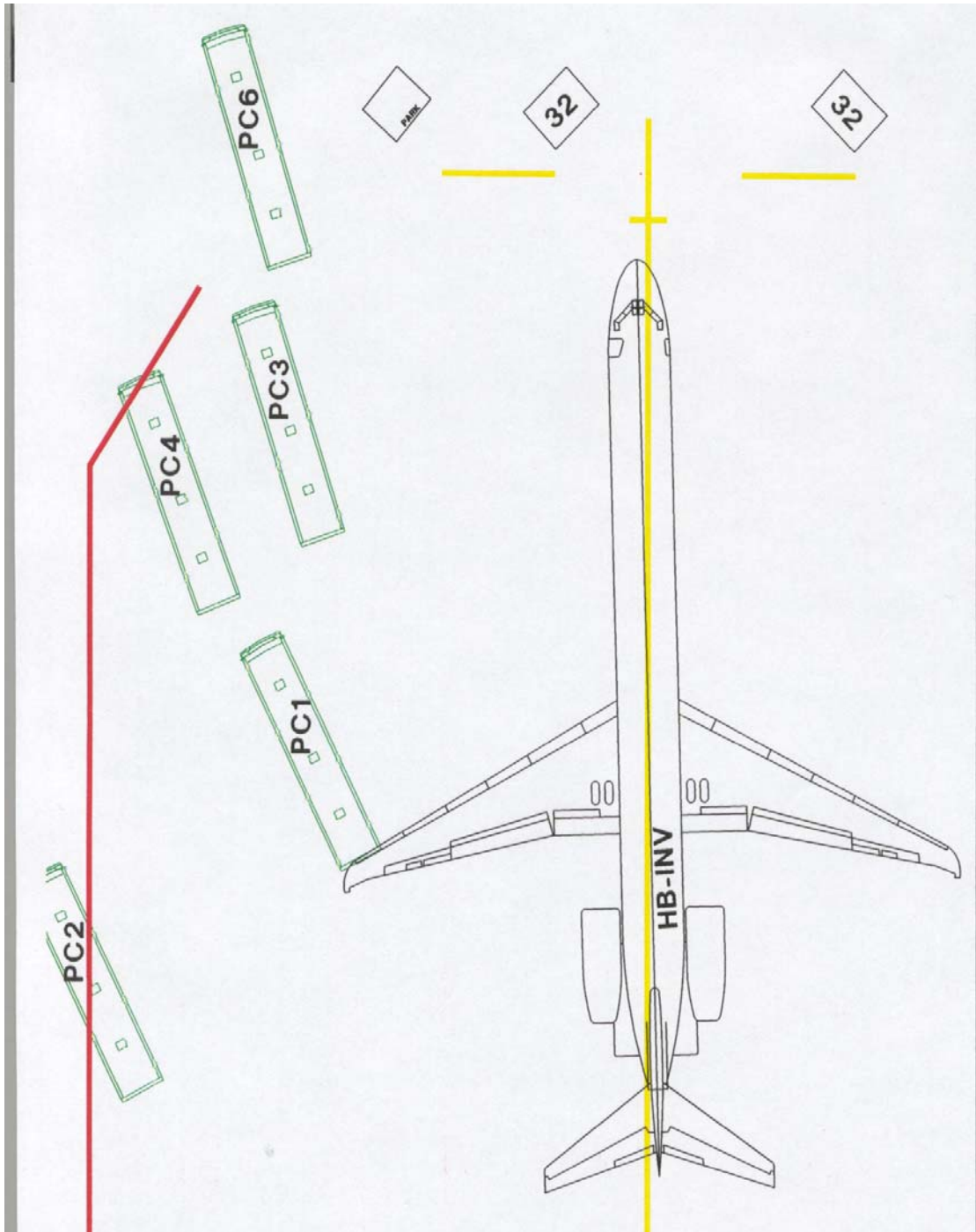
### 3. CONCLUSIONS

- 3.1 The passenger buses should not have been parked on Stand 32 within the limits of the stand area.
- 3.2 Being aware of the parked vehicles the Captain, Marshaller and Wingman should have exercised more caution in bringing the aircraft on to the stand.
- 3.3 The Marshaller should have ensured that the stand was cleared of all parked equipment prior to permitting the aircraft on stand.

### 4. SAFETY RECOMMENDATIONS

- 4.1 The Airport Authority should ensure that all passenger vehicles in use on the airside have a designated parking area. **(SR 39 Of 2000)**
- 4.2 The aircraft operators and ground handlers should ensure that all their passenger vehicles, in use on the airside, use the designated parking areas provided by the Airport Authority. **(SR 40 Of 2000)**
- 4.3 The IAA should set up a working group consisting of the IAA, Airport Owner, and representatives of the different ground handling agencies/companies to formulate a set of requirements/criteria for the management and operation of airport apron areas, thereby providing a standard against which these operations will be audited and monitored. (SR 31 of 1997 and SR 52 of 1999 refers) **(SR 41 of 2000)**
- 4.4 That within this IAA sponsored working group the CAA CAP642 document be considered as a basis for the working group deliberations. (SR 53 of 1999, SR 31 and SR 32 of 1998 refers) **(SR 42 of 2000)**

NOTE: Since this incident, the Airport Authority has commenced a major in-house training programme for all their airside staff. It is envisaged that this programme will be extended to provide materials to the aircraft operators/handling agents. The Authority will then formally audit the training conducted by all aircraft operators/ handling agents later in the year 2000.



Position of HB-INV and adjacent passenger vehicles at the time of the incident.