

ACCIDENT

Aircraft Type and Registration:	Boeing 737-600, LN-RPH
No & Type of Engines:	2 CFM 56-7B turbofan engines
Year of Manufacture:	1999
Date & Time (UTC):	23 August 2010 at 1415 hrs
Location:	On approach to London Heathrow Airport
Type of Flight:	Commercial Air Transport (Passenger)
Persons on Board:	Crew - 6 Passengers - 79
Injuries:	Crew - 1 (Serious) Passengers - None
Nature of Damage:	None
Commander's Licence:	Airline Transport Pilot's Licence
Commander's Age:	53 years
Commander's Flying Experience:	12,200 hours (of which 3,500 were on type) Last 90 days - 180 hours Last 28 days - 47 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

A member of the cabin crew sustained serious injuries when the aircraft encountered weather related turbulence during the approach. The seatbelt sign was illuminated but the cabin crew were unrestrained. Issues relating to inter-crew communications and procedures relating to turbulence were identified in the operator's report that made several recommendation relating to training and procedures.

History of the flight

The aircraft was on approach to Runway 27R at Heathrow Airport at FL110 in VMC but with cumulonimbus clouds ahead extending to approximately 10,000 ft.

The cabin seat belt signs illuminated and a pre-landing PA announcement, describing the weather and the possibility of turbulence, was made to the passengers by the pilots.

The aircraft was subjected to light turbulence when it deviated to the south of a weather cell indicated on the weather radar, followed by a brief period of more severe turbulence after it appeared to clear the cell. The cabin crew were securing the cabin for landing and were not restrained at the time. Three of the four cabin crew members, including the purser, were not aware of the weather related comments in the PA announcement. One of the cabin crew managed to sit in an empty seat, but was not able to fasten the seat belt

before being thrown into the air and hitting the cabin roof. Despite this she was uninjured. Another cabin crew member, seated on a crew seat in the rear galley and making a PA to the passengers, was also thrown into the air. She landed back on the seat and badly injured her back. The other cabin crew members were uninjured and attended to their injured colleague who was in considerable pain and had to remain on the galley floor for the rest of the flight. An ambulance met the aircraft on landing and the injured crew member was subsequently diagnosed with spinal injuries requiring hospitalisation for 10 days.

Weather

At the time of the accident the Heathrow area was experiencing a low pressure system giving unstable weather conditions. Recorded winds at 10,000 feet were westerly at 35-40 kt. The crew reported cloud tops of approximately 10,000 feet with low precipitation activity. The aircraft's weather radar indicated a few weather cells but these did not affect the aircraft whilst holding.

Operator's procedures

The operator's procedures called for the seat belt sign on short haul aircraft to be illuminated 10 minutes prior to the expected landing time, but earlier when turbulence was expected. Cabin crew were to be seated during flight, with seatbelts fastened, when the seat belt signs were on, except when performing safety related duties. During approach and landing, cabin crew were to be seated when the landing gear chime sounded until the aircraft vacated the runway.

It was intended that the cabin crew should be made aware of expected enroute turbulence by the pilots, although the method of doing so was not specified.

Operator's investigation

The operator's safety department carried out an investigation into the occurrence which highlighted three similar occasions where cabin crew received serious injuries due to turbulence. In all cases the cabin seat belt sign had been illuminated and the crew were unsecured, preparing the aircraft for landing. In one case two crew occupying the aft galley were incapacitated during the approach, each having sustained bone fractures.

Discussion

The events investigated by the operator indicated that encounters with turbulence can result in incapacitation of several members of crew. If cabin crew can be seated quickly and securely when turbulence is expected or encountered, it is more likely that they will remain capable of performing their essential safety duties at the end of the encounter.

Wearing a seat belt while seated helps to protect against unexpected turbulence encounters, but cabin crew, because their duties require them to be mobile, are less likely to be seated in the first place. Clear communication and adequate notice of impending turbulence will therefore assist in protecting the cabin crew by giving them the opportunity to secure themselves.

The operator's procedures called for the seat belt sign on shorthaul aircraft to be illuminated 10 minutes prior to the expected landing time, regardless of atmospheric conditions. Illumination of the seat belt sign, during the approach but because of turbulence, might therefore be misunderstood by the cabin crew without clarification from the flight deck.

Safety actions

The operator's safety department made the following internal recommendations:

- Reconsider procedures on communicating when seat belts should/shall be used.
- Include turbulence injuries during pilot recurrent training.
- Use the IATA Toolkit Standard Operating Procedures for Turbulence Management.
- Revise communications between the cabin and flight deck to clarify when just the cabin is secure and when both the cabin and cabin crew are secure.
- Introduce specific announcements to be made to passengers to help secure the cabin during unexpected turbulence but allowing the cabin crew to remain seated.