Aviation Safety Investigation Report 199300818

Boeing Co
B737-400

11 April 1993

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Occurrence Number: 199300818 **Occurrence Type:** Incident
Location: Cairns
State: QLD **Inv Category:** 3
Date: Sunday 11 April 1993
Time: 2040 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: Boeing Co
Aircraft Model: 737-476
Aircraft Registration: VH-TJO **Serial Number:** 24440
Type of Operation: Air Transport Domestic High Capacity Passenger Scheduled
Damage to Aircraft: Nil
Departure Point: Brisbane QLD
Departure Time: 1848 EST
Destination: Cairns QLD

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	ATPL 1st Class	3260.0	12380

Approved for Release: Friday, October 8, 1993

Approaching Cairns the crew received the automatic terminal information service which gave the following information: "runway 15, wet, wind 170 degrees 12 knots, QNH 1014, temperature 22, 3 okta (cloud) at 2,500ft, lower patches, showers in area." Following a Distance Measuring Equipment (DME) arrival, the crew reported visual with the field at four nautical miles. They flew a visual circuit, tracking via a left downwind for runway 15.

During the base turn, the crew lost visual contact with the runway lights because a rain shower was positioned across the final approach path. The flying pilot (first officer) initiated an overshoot and commenced a right turn towards high terrain. The turn continued through some 250 degrees to 090 degrees magnetic, heading out to sea. The crew then conducted an instrument approach to runway 15 followed by a normal landing .

The right turn conducted by the crew allowed the aircraft to track outside the circling area limit of 4.2nm (7.8km). During the turn the lowest altitude of the aircraft was approximately 1,400ft in an area where the radar lowest safe altitude is 3,300ft.

The investigation revealed that the crew were under two misapprehensions. Both pilots believed that they would stay in visual meteorological conditions during the missed approach by conducting a right turn, although they had no way of assuring this on a dark night. The crew also thought that they were further off the coast (hence clear of high terrain) than they were. Prior to commencing the circuit the crew did not foresee the possibility of a missed approach and did not brief for that eventuality.

The procedures laid down in the Aeronautical Information Publication indicate that the crew should have remained inside the manoeuvring area for the DME arrival procedure following the loss of visual reference with the runway approach lights at night. This could best have been accomplished by continuing the left turn to intercept the 040 degree radial, whilst at the same time commencing a climb to the lowest safe altitude of 5,000ft (the procedure laid down for a missed approach off a DME Arrival).

FACTORS

1. The crew did not brief for the possibility of a missed approach in the circuit considering that rain showers were in the area.

2. They made a spontaneous, inappropriate decision to turn right thus tracking near high terrain.