AIRCRAFT ACCIDENT REPORT No 5/2008

This report was published on 29 April 2008 and is available on the AAIB Website www.aaib.gov.uk

REPORT ON THE ACCIDENT TO BOEING 737-300, REGISTRATION OO-TND AT NOTTINGHAM EAST MIDLANDS AIRPORT ON 15 JUNE 2006

Registered Owner and Operator:	TNT Airways Limited
Aircraft Type:	Boeing 737-300
Nationality:	Belgian
Registration:	OO-TND
Location of Accident:	Nottingham East Midlands Airport
Date and Time:	15 June 2006 at 0440 hrs All times in this report are UTC

Synopsis

The accident was reported to the AAIB by Air Traffic Control following the emergency landing of the aircraft at Birmingham International Airport. The investigation was conducted by:

Mr P T Claiden	(Investigator-in-Charge)
Ms G M Dean	(Operations)
Mr R W Shimmons	(Operations)
Mr J R McMillan	(Engineering)
Mr M P Jarvis	(Engineering)
Mr P Wivell	(Flight Recorders)

On a scheduled cargo flight from Liège Airport to London Stansted Airport the crew diverted to Nottingham East Midlands Airport[1] due to unexpectedly poor weather conditions at Stansted. The weather conditions at EMA required a CAT IIIA approach and landing. On approach, at approximately 500 feet agl, the crew were passed a message by ATC advising them of a company request to divert to Liverpool Airport. The commander inadvertently disconnected both autopilots whilst attempting to reply to ATC. He then attempted to re-engage the autopilot in order to continue the approach.

The aircraft diverged to the left of the runway centreline and developed a high rate of descent. The commander commenced a go-around but was too late to prevent the aircraft contacting the grass some 90 m to the left of the runway centreline. The aircraft became airborne again but, during contact with the ground, the right main landing gear had broken off.

The crew subsequently made an emergency landing at Birmingham Airport (BHX).

Footnote

[1] Commonly known as East Midlands Airport, and referred to as EMA in this report.

The investigation determined the following:

Causal factors:

1. ATC inappropriately transmitted a company R/T message when the aircraft was at a late stage of a CAT III automatic approach.

2. The commander inadvertently disconnected the autopilots in attempting to respond to the R/T message.

3. The crew did not make a decision to go-around when it was required after the disconnection of both autopilots below 500 ft during a CAT III approach.

4. The commander lost situational awareness in the latter stages of the approach, following his inadvertent disconnection of the autopilots.

5. The co-pilot did not call 'go-around' until after the aircraft had contacted the ground.

Contributory factors:

1. The weather forecast gave no indication that mist and fog might occur.

2. The commander re-engaged one of the autopilots during a CAT III approach, following the inadvertent disconnection of both autopilots at 400 ft aal.

3. The training of the co-pilot was ineffective in respect of his understanding that he could call for a go-around during an approach.

One Safety Recommendation is made.

Findings

1. The flight crew were properly licensed and medically fit to conduct the flight.

2. The flight crew flew the aircraft within the operator's normal Flight Time Limitations scheme limits.

3. The performance of both pilots may have been adversely affected by tiredness, as a result of the combined effects of their overnight periods on duty and the low point in their circadian rhythm.

4. The flight crew conducted their pre-flight planning thoroughly, taking into account the work in progress at Stansted and the weather forecasts for southern England.

5. A number of unusual events, from the flight crew's perspective, occurred during the flight prior to the accident, which contributed to an increased workload and their subsequent loss of situational awareness.

6. The weather forecasts for southern England did not correspond to the actual conditions. The possibility of fog or weather conditions, which would prevent an approach at Stansted or require a CAT III approach at EMA, was not forecast and was not a planning consideration for the crew.

7. The aircraft's documentation was in order and there were no outstanding defects recorded in the technical log.

8. The aircraft was loaded with sufficient fuel for the intended flight.

9. The aircraft was serviceable up to the moment it struck the ground at EMA.

10 Following deterioration of the weather conditions at Stansted, the decision to divert to EMA was taken in good time, and allowed for a possible second diversion to Liverpool Airport.

11. Additional pressure was placed upon the crew during the transit to East Midlands Airport as excessive time was taken to locate the approach plates as these were filed under N for Nottingham East Midlands Airport.

12. The weather conditions at EMA were such that a CAT IIIA approach and landing was required.

13. The recorded automated RVR at EMA was not incorporated into the latest weather reports, although it was passed to the pilots by ATC.

14 The CAT IIIA approach was the first to be carried out by the commander in actual conditions in the aircraft since he had been promoted from co-pilot some four months previously.

15 The aircraft intercepted the ILS to Runway 27 normally and became established on both the localiser and the glideslope by approximately 2,000 ft aal.

16 At a late stage in the approach, at around 530 ft aal, ATC transmitted a 'company message' to the aircraft, to the effect that they did not want the aircraft to land at East Midlands Airport. At the discretion of the crew, they were approved by ATC to go-around.

17 The commander's attempt to respond to, and clarify the contents of, the call from ATC, late in the approach, was an inappropriate action for the Pilot Flying.

18 In his attempt to clarify the ATC message, the commander inadvertently disconnected the autopilots.

19 The commander's attempt to re-instate the autopilots whilst replying to ATC was an inappropriate action and not in accordance with the company CAT III SOPs.

20. In attempting to reinstate both autopilots, the commander only succeeded in engaging one, and only in CWS P and CWS R modes.

21. The OM did not specifically state that a co-pilot should call GO-AROUND if he felt uncomfortable during an approach, although it was the operator's expectation that he should.

22. The co-pilot did not appear to have understood that he could make the call for a go-around.

23. The commander did not initiate a go-around until the EGPWS sounded a SINK RATE PULL UP warning at a radio altimeter height of between 87 ft and 59 ft, and he saw the green colour of the grass ahead.

24. The go-around was initiated too late to prevent the aircraft striking the ground. It made contact in the sterile grassed area to the left of Runway 27, abeam the threshold.

25. During the ground contact, the right main landing gear detached from the wing, causing damage to the right flaps and the loss of hydraulic System A.

26. After striking the ground, there was a short period of confusion on the flight deck, after which the commander resumed control as the aircraft climbed.

27. The flight crew had no knowledge of where the aircraft had struck the ground.

28. The aircraft was flown to Birmingham Airport with the nose and left landing gear down, and with the trailing edge flaps stuck at 32º and 40º, left and right, respectively; this produced a tendency to roll to the left.

29. The Runway 15 ILS glideslope transmitter remained switched off at Birmingham Airport following maintenance.

30. The commander decided to accept a longer route in order to be able to carry out an ILS approach for Runway 33.

31. The longer route to Runway 33 allowed an opportunity for the police helicopter to inspect the aircraft. In order for this to be done, the damaged aircraft flew over the city of Birmingham.

32. The inspection by the police was helpful to the pilots.

33. A successful partial gear up emergency landing was made at Birmingham.

Safety Recommendations

Although the circumstances of this event could easily have led to a catastrophic accident there are few safety recommendations which can be made. This is because actions by individuals which contributed to the accident were either inappropriate or were not in compliance with existing procedures. Non-compliance with procedures, whether inadvertent or deliberate, can be difficult to prevent and can only be addressed by effective training and maintaining a culture of adherence to SOPs within an organisation.

A large proportion of the operator's flying programme was carried out at night. Operational tasks carried out at night are subject to a greater number of human errors, because of the limitations of human performance. It is particularly necessary in these circumstances, therefore, that the operating procedures are robust and well understood by all concerned. This will help to ensure that when errors are made they are detected and appropriate corrective action is taken.

One of the causes of this accident was the lack of a decision to go-around when it was required. Therefore the following safety recommendation is made:

Safety Recommendation 2008-010

It is recommended that the Kingdom of Belgium Civil Aviation Authority require TNT Airlines in Belgium to carry out a review of their standard operating procedures to ensure that it is clear to all pilots when go-around action is required.

Safety action

The timing and content of the message passed by ATC to the aircraft when it was at 500 ft, was inappropriate and distracted the commander at a critical phase of flight. The revision to MATS Part 1, already underway at the time of the accident and effective from 31 July 2006, has addressed this problem. However, the CAA considers that it may be possible to give more specific guidance as to when messages may be passed, and proposes to undertake a study of this issue by establishing a working group.

The absence of RVR data in the METARs from East Midlands Airport around the time of the accident meant that forecasts for the area were not updated for several hours and did not reflect the actual conditions. The meteorological reporting system at EMA was upgraded in April 2007. The new system provides for automatic reporting of weather information, including RVR data, within the required criteria. Therefore, it is considered that this safety issue has been addressed and no safety recommendation is made.