



AIRCRAFT INCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/3/2/0825	
Aircraft Registration	ZS-SGX	Date of Incident	10 January 2011		Time of Incident	1850Z
Type of Aircraft	Boeing 737 -200		Type of Operation		Commercial	
Pilot-in-command Licence Type		Airline pilot	Age	66	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	26 512		Hours on Type	Unknown
Last point of departure		Hoedspruit military aerodrome, Limpopo province (FAHS)				
Next point of intended landing		O. R. Tambo International Airport, Gauteng province (FAJS)				
Location of the incident site with reference to easily defined geographical points (GPS readings if possible)						
Hoedspruit military aerodrome taxiway						
Meteorological Information		Intermittent rain				
Number of people on board	2 + 1	No. of people injured	0	No. of people killed	0	
Synopsis						
<p>The aircraft was flown on a non-scheduled charter flight from O. R. Tambo International Airport to Hoedspruit military aerodrome, where it landed safely and all 97 passengers disembarked. The crew then prepared to return to O. R. Tambo International Airport with no passengers on board. Whilst taxiing to the cleared holding point for takeoff, the pilot switched off the landing lights to avoid blinding an approaching aircraft. As a result, he overshot the turning point in the darkness and found himself at the end of the taxiway with insufficient space to turn around. According to him, he decided to manoeuvre the aircraft out of the "dead end" by turning into the last taxiway, which led to military hangars, and then reversing the aircraft to carry out a 180° turn. This was to be done without external guidance. Whilst reversing the aircraft, the pilot failed to stop it in time, the main wheels rolled off the edge of the taxiway and the aircraft slipped down a steep embankment, coming to rest with the nose-wheel still on the taxiway. The aeroplane was substantially damaged, but no-one was injured.</p>						
Probable Cause						
Inappropriate decision by the captain to reverse the aircraft at night without external guidance.						
IARC Date				Release Date		

AIRCRAFT INCIDENT REPORT

Name of Owner/Operator : Africa Air Charter
Manufacturer : Boeing aircraft Company
Model : Boeing 737- 200
Nationality : South African
Registration Marks : ZS-SGX
Place : Hoedspruit military aerodrome
Date : 10 January 2011
Time : 1850Z

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.

Purpose of the Investigation

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (1997), this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and **not to establish legal liability.***

Disclaimer

This report is given without prejudice to the rights of the CAA, which are reserved.

1. FACTUAL INFORMATION

1.1 History of Flight

- 1.1.1 On 10 January 2011, the aircraft was flown on a non-scheduled flight from O R Tambo International Airport to Hoedspruit military aerodrome with 97 passengers on board. According to information submitted by the O R Tambo control tower, a flight plan was filed and takeoff was uneventful. The aircraft landed safely at Hoedspruit at approximately 17h00 local time and the crew prepared to return to O. R. Tambo without passengers. The captain was requested by the ATC to vacate the parking area as soon as disembarkation was completed due to an oncoming aircraft.
- 1.1.2 The crew was given start clearance at 17h40 and instructed to taxi along runway 09/27, turn left onto taxiway Alpha, and turn right onto taxiway Charlie to the holding point of runway 18 for takeoff. The captain stated that there was intermittent rain at the time and visibility was poor. The crew had switched on both aircraft taxi and landing lights whilst taxiing but as they neared taxiway Charlie, they switched off their landing lights so as not to blind the pilots of the incoming aircraft on final approach. Once this aircraft had landed, the crew switched their landing lights on again. As they did so, they realised that they had missed taxiway Charlie in the darkness and had taxied into a dead end.
- 1.1.3 The captain stated that they explained their problem to the control tower and requested ground assistance. They were told that there was no equipment available to tow the aircraft at the dead end. The captain therefore opted to manoeuvre the aircraft out of this position by turning into the last taxiway, which led to military hangers, and then

reversing to carry out a 180° turn.

1.1.4 The aircraft was accordingly reversed, but the pilot failed to stop in time. The main wheels rolled off the edge of the taxiway and the aircraft slipped backwards down a four-metre embankment, coming to rest with the nose-wheel still on the taxiway. The captain attempted to power the aircraft out, but was unsuccessful as the angle of the embankment was too steep (see Figure 1 below). Nobody was injured and the following day the aircraft was towed to the VIP parking area.

1.1.5 The incident occurred during night time within the boundary area of FAHS.



Figure 1. The final position of the aircraft.

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	-	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	2	1	-	-

1.3 Damage to Aircraft

1.3.1 The aircraft sustained substantial damages as a result of the incident:

- Left engine sustained severe foreign object damage
- Main gear subjected to unknown stresses

- Right wing outboard leading edge slat damaged
- Right wing aileron and flap trailing edge damaged
- Left wing inboard flap trailing edge damaged
- Left horizontal stabiliser leading edge dented
- Forward environmental equipment bay damaged
- Aft lower fuselage skins dented due to ground contact

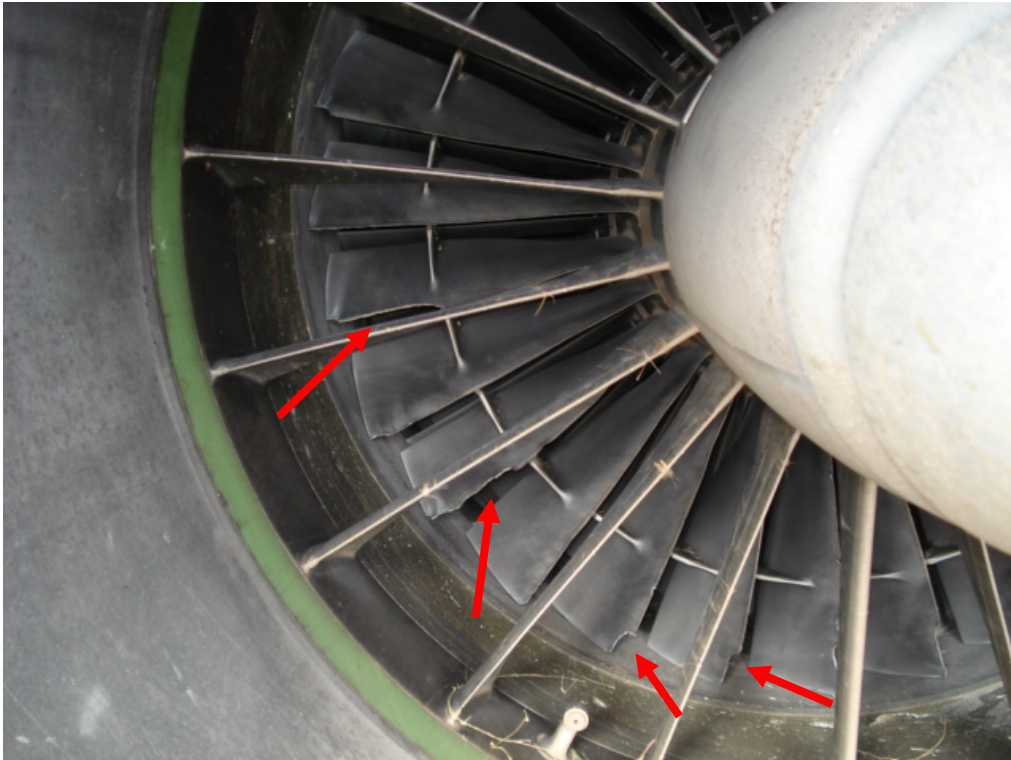


Figure 2. Damaged fan-blades on No. 1 engine.



Figure 3. Concrete structure on ground caused damage to aircraft belly.



Figure 4. Damaged right wing aileron.

1.4 Other Damage

1.4.1 None.

1.5 Personnel Information

Captain (pilot in control of the aircraft):

Nationality	South African	Gender	Male	Age	66
Licence Number	*****	Licence Type	Airline pilot		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Night Rating, Instrument rating, Instructor's Rating, Flight Tests Rating.				
Medical Expiry Date	28 February 2011				
Restrictions	Corrective lenses				
Previous Accidents	Nil				

The captain's last proficiency check on the aircraft type was conducted on 13 August 2010 and was valid until 13 February 2011.

Flying Experience:

Total Hours	26 512
Total Past 90 Days	Unknown
Total on Type Past 90 Days	Unknown
Total on Type	Unknown

Note: The captain's log-book could not be found during the investigation. The flying hours above were obtained from the SACAA pilot's file, indicating his last pilot's licence renewal dated 9 February 2010. The total hours on type and the hours flown during the previous 90 days could not be traced.

First Officer:

Nationality	South African	Gender	Male	Age	33
Licence Number	*****	Licence Type	Commercial		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Night Rating, Instrument Rating, Flight Tests Rating.				
Medical Expiry Date	30 September 2011				
Restrictions	None				
Previous Accidents	None				

The first officer's last proficiency check on the aircraft type was conducted on 1 October 2010 and was valid until 31 March 2011.

Flying Experience:

Total Hours	1 300
Total Past 90 Days	140
Total on Type Past 90 Days	140
Total on Type	1 100

1.6 Aircraft Information

1.6.1 Aircraft description

A Boeing 737-200 is a twin-engine, short-range, narrow-body airliner with a capacity of a maximum of 136 passengers.

Airframe

Type	Boeing 737-200	
Serial No.	22396	
Model	737-2T5	
Manufacturer	Boeing Aircraft Company	
Maximum takeoff mass	52 996 kg	
Date of Manufacture	1981	
Total Airframe Hours (at time of incident)	70 094,4	
Last C Check (Hours & Date)	70 093,7	21 December 2010
Hours since last C Check	7	
C of A (Issue Date)	9 April 2009	
C of A (Expiry Date)	8 April 2011	
C of R (Issue Date) (Present Owner)	7 November 2008	
Operating Categories	Standard	
Recommended fuel used	Jet A1	

The last C Check Inspection carried out on the aircraft prior to the accident was certified at 70 093 hours on 21 December 2010 by an approved Aircraft Maintenance Organisation (AMO).

Engine No. 1

Type	JT8D-15
Serial No.	68 7540
Hours since New	61 598,7
Hours since Overhaul	1 357,8

Engine No. 2

Type	JT8D-15
Serial No.	68 8516
Hours since New	70 054,1
Hours since Overhaul	1 253,1

1.7 Meteorological Information

According to the first officer, visibility was poor and it was drizzling.

1.8 Aids to Navigation

1.8.1 The aircraft was fitted with the following navigation aids:

- Magnetic compass
- Distance-measuring equipment (DME)

- ADF (automatic direction finder)
- VOR (variable omni range) finder
- Transponder
- Instrument landing system (ILS)
- Global positioning system (GPS)
- Weather radar

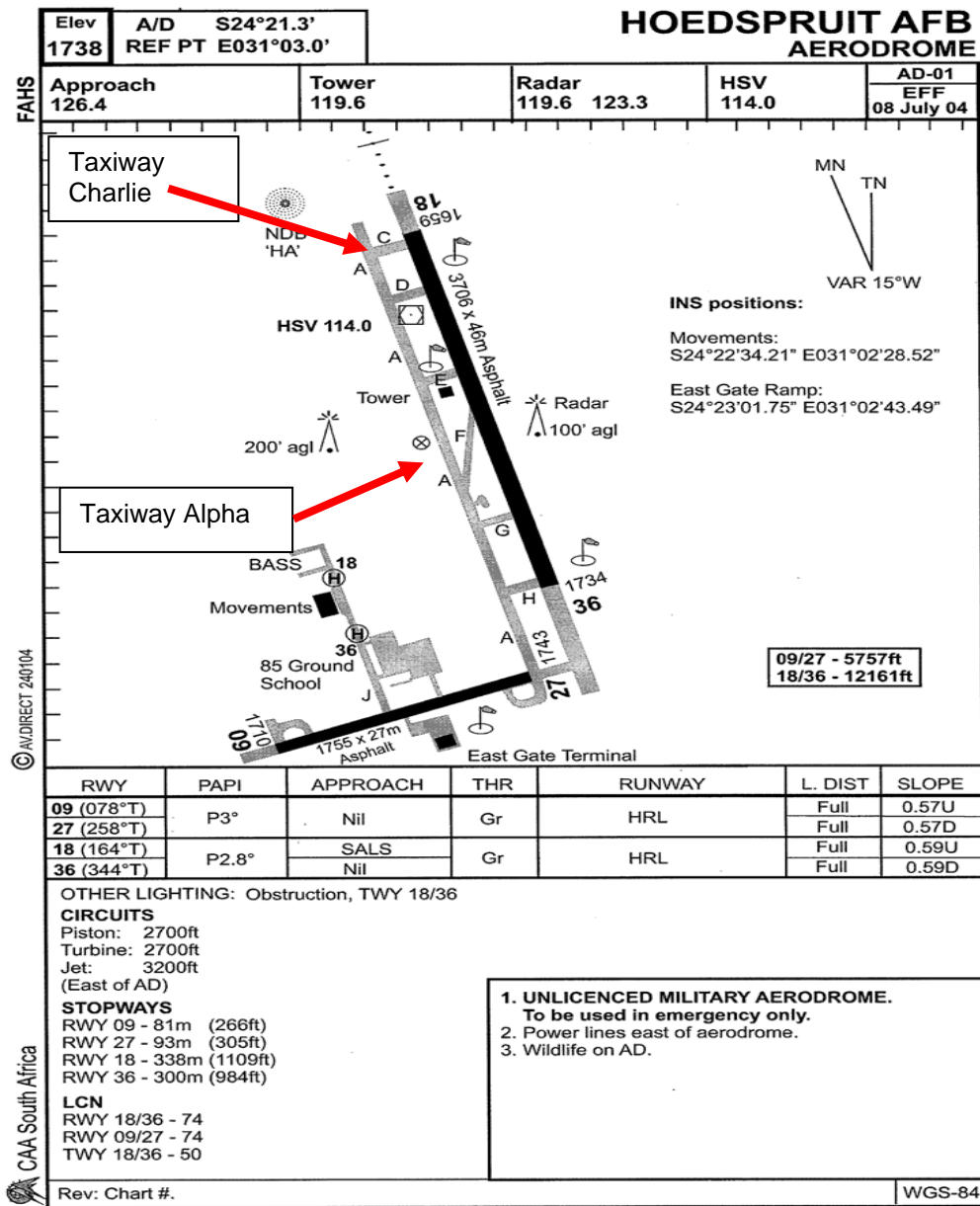
1.9 Communications

1.9.1 No difficulties with communications were known or reported prior to the incident. No malfunction of any of the equipment was reported at the time of the incident. The captain communicated his intentions with the control tower on 119.6 MHz.

1.10 Aerodrome Information

Aerodrome Location	7 nautical miles east of Hoedspruit	
Aerodrome Co-ordinates	S24°21,3' E031°03,0'	
Aerodrome Elevation	1 738 ft	
Runway Designations	36/18	3 796 m x 46 m
Runway Dimensions	09/27	1 755 m x 27 m
Runway Used	None	
Taxiway Surface	Asphalt	
Aerodrome Status	Unlicensed	
Approach Facilities	Runway lighting, PAPI, NDB, ILS	

1.10.1 Aerodrome details:



1.11 Flight Recorder

1.11.1 The aircraft was fitted with a cockpit voice recorder and flight data recorder as approved by the manufacturer.

1.12 Wreckage and Impact Information

1.12.1 The aircraft slipped backward down a steep four-metre embankment, coming to rest with the nose-wheel still on the taxiway and the tail section in thorn trees. The aeroplane suffered substantial damage to both engines, the tail section, the undercarriage and the wings.

1.13 Medical and Pathological Information

1.13.1 Not necessary.

1.14 Fire

1.14.1 There was no evidence of a pre- or post-impact fire.

1.15 Survival Aspects

1.15.1 The incident was considered survivable as there was no damage to the cabin area and all the occupants were properly restrained.

1.16 Tests and Research

1.16.1 None.

1.17 Organisational and Management Information

1.17.1 This was a commercial charter flight.

1.17.2 The last C Check Inspection carried out on the aircraft prior to the accident was certified at 70 093 hours on 21 December 2010 by an approved AMO.

1.18 Additional Information

1.18.1 Civil aviation regulations:

Part 91.02.08 Duties of pilot in command regarding flight operations states:

(1) The pilot-in-command of an aircraft shall be responsible for-

(a) The operation and safety of the aircraft while he or she is in command;

(b) The conduct of safety of flight crew members and passengers;

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 The captain held the required licence and the aircraft type was endorsed in his logbook. He had flown in and out of this aerodrome previously on several occasions.

2.2 The aircraft was properly maintained in accordance with the manufacturer's approved procedures and no documented evidence was found indicating any defect or malfunction prior to the flight that could have contributed to or caused the incident. The aircraft had flown a total of seven hours since the previous C Check was performed.

- 2.3 The crew was given start clearance at 17h40 local time and instructed to taxi along runway 09/27, turn left onto taxiway Alpha and turn right onto taxiway Charlie to the holding point of runway 18 for takeoff. The captain stated that there was intermittent rain at the time and visibility was poor. The crew had switched off their landing lights whilst taxiing near taxiway Charlie, and as a result had missed the turn-off in the dark and taxied into a dead-end.
- 2.4 After having established that there were no maintenance engineers to assist him, the captain took a decision to reverse the aircraft without any external guidance. It is the investigator's opinion that the aircraft should have been parked overnight in this position and help sought from ground crew or engineers the following day.

3 CONCLUSION

3.1 Findings

- (i) Both pilots had the aircraft type endorsed in their logbooks.
- (ii) The aircraft's certificate of airworthiness was valid at the time of the accident.
- (iii) The aircraft was maintained in accordance with the manufacturer's procedures.
- (iv) The aircraft had flown a total of seven hours since the C Check was certified.
- (v) Both pilots' medical certificates were valid at the time of the accident.

3.2 Probable Cause/s

- 3.2.1 Inappropriate decision by the captain to reverse the aircraft at night without external guidance.

4. SAFETY RECOMMENDATIONS

- 4.1 None.

5. APPENDICES

- 5.1 None.

Compiled by F M Motaung

Date: 26 May 2011

For: Director of Civil Aviation

Investigator-in-charge:

Date:

Co-Investigator:

Date: