



PRELIMINARY REPORT ON SERIOUS INCIDENT INVOLVING BOEING 737-500 AIRCRAFT OWNED AND OPERATED BY AIR PEACE LIMITED WITH NATIONALITY AND REGISTRATION MARKS 5N-BRN WHICH OCCURRED AT PORT HARCOURT INTERNATIONAL AIRPORT ON 22ND JUNE, 2019

Registered Owner and Operator:	Air Peace Limited
Aircraft Type and Model:	Boeing 737-500
Manufacturer:	Boeing Aircraft Company
Date of Manufacture:	1993
Nationality and Registration Marks:	5N-BRN
Serial Number:	25234
Location:	Runway 21, Port Harcourt International Airport 05°00'56"N, 006°56'58"E
Date and Time:	22nd June, 2019 at about 14:57 h

(All times in this report are local time (UTC +1) unless otherwise stated)

INTRODUCTION

Accident Investigation Bureau (AIB) was notified of the occurrence by Nigerian Airspace Management Agency (NAMA) on 22nd July, 2019. Investigators arrived the site the next day and commenced post incident assessments under the provisions of Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2016 and Annex 13 of International Civil Aviation Organization (ICAO).

The purpose of this preliminary report is to provide details of initial facts, discussions and findings surrounding the occurrence; it includes information gathered from witness statements, flight data recordings and a preliminary inspection of the aircraft.

The investigation is ongoing.



1.0 FACTUAL INFORMATION

1.1 History of the Flight

On 22nd June 2019, at about 14:05 h, a Boeing 737-500 aircraft with nationality and registration marks 5N-BRN operated by Air Peace Limited on a scheduled passenger flight with call sign APK7291 departed Nnamdi Azikiwe International Airport, Abuja (DNAA) for Port Harcourt International Airport (DNPO) on an Instrument Flight Rules (IFR) Flight Plan. It departed having 02:30 hours fuel endurance. There were 88 passengers and 6 crew members onboard. The First Officer was the Pilot Flying (PF) while the Captain was the Pilot Monitoring (PM).

At 14:32 h, APK7291 contacted Port Harcourt Air Traffic Control (ATC) Approach unit and passed its flight information and relayed its estimate into Port Harcourt airport VOR (POT) for 14:59 h. Port Harcourt Approach gave this inbound clearance to them; "APK7291 cleared to Papa Oscar Tango (POT), FL300 no delay expected for ILS approach runway 21, QNH 1011, time 1333Z. Standby for Port Harcourt METAR."

Subsequently, the Port Harcourt weather information for 1330Z (14:30 h) was passed to APK7291 as: Surface Wind 190°/05 kt, Visibility 10 km in thunderstorm, Cloud Broken 330 m, Few Cumulonimbus S-N of the airfield 600 m, QNH 1011, Temperature 30°C, thunderstorm to the N/W of the airfield and to report released by Lagos Area Control, which the crew acknowledged.

At 14:38 h, APK7291 contacted Port Harcourt Approach unit after being released by Lagos Area Control descending FL220. At 14:39 h, Port Harcourt Approach later cleared APK7291 to; descend FL120, report distance and inbound radial "POT".

At 14:40 h, APK7291 acknowledged the clearance, then reported on radial 006 "POT" and 92 DME (Distance Measuring Equipment). Approach requested APK7291 to report 80 Nautical Miles (NM) "POT" for further descent. Shortly after, APK7291 reported 82 NM and Approach unit re-cleared APK7291 to descend FL80 and to report 50 NM. At 14:45 h, APK7291 reported 50 NM and was cleared by Approach unit to descend FL70 and to report 28 NM POT for further descent.

At 14:49 h, APK7291 at 29 NM was cleared by Approach unit to descend 2,400 ft, QNH 1011, and was cleared straight-in ILS approach runway 21 to report established, which the crew acknowledged. At this point, the crew enquired from Approach unit if it was raining over the station. About one minute later, Approach Unit replied, "negative rain overhead the station".

At 14:54 h, APK7291 reported established on ILS 8 NM and the Approach Unit transferred APK7291 to the Control Tower (CT) for final landing clearance.



At 14:55 h, APK7291 contacted CT on frequency 119.2 MHz. CT subsequently cleared APK 7291 to land saying; "there is rain at the approach path, with the runway in sight check gears down and locked, wind is 070 at 03 knots, exercise caution on landing, runway surface wet, cleared to land runway 21", and the crew acknowledged "cleared to land runway 21 APK7291, copied the caution. Thank you."

During the Voice Recorder playback, below 1,000 ft, sound similar to that of wipers movement was heard continuously till the end of the flight. Shortly before 500 ft, PF announced "autopilot disengaged". At about 300 ft, the crew called, "minimums, checked landing". At this point, the captain (PM) announced "I have controls".

The crew stated that, on short finals after obtaining landing clearance, it started drizzling but the runway lights were visible, the runway markings were identifiable and the ILS was functional. And that after touchdown on runway 21, the intensity of rain increased in strong winds, visibility reduced causing them to experience loss of directional control of the aircraft. The crew also stated that, due to wet runway, the aircraft skidded to the left of the runway centerline uncontrollably even with the application of brakes, rudder and ailerons. The aircraft subsequently veered to the left of the runway into the grass area.

Tyre tracks on the grass verge showed that the aircraft touched down with the left main wheel on the grass verge and the right main wheel on the runway shoulder, at about 1,260 m from the threshold. It continued on its landing roll until it came to a stop parallel to the runway at 1,620 m from the threshold, with the right wing-tip aligned with the edge of the runway shoulder and the landing gears stuck in the mud.

At 14:58 h, CT called "APK7291 I can see your light on the ground ahh time now 1358Z, confirm ops normal". The crew then reported runway excursion and requested to disembark the passengers where the aircraft stopped. At 15:07 h, APK7291 confirmed the arrival of the movable passenger stairs which was positioned at the forward service door (R1) of the aircraft where all the passengers and crew disembarked with no injury.

The incident occurred at daylight in Instrument Meteorological Condition (IMC).



1.2 Injuries to persons

Injuries	Crew	Passengers	Total in the aircraft	Others
Fatal	Nil	Nil	Nil	
Serious	Nil	Nil	Nil	
Minor	Nil	Nil	Nil	N/A
None	6	88	94	N/A
TOTAL	6	88	94	

1.3 Damage to Aircraft

The aircraft was slightly damaged.

1.4 Other Damage

Nil.

1.5 Personnel Information

1.5.1 Captain

Nationality:	Zimbabwean
Gender:	Male
Age:	42 years
Licence Type:	ATPL (A)
Licence Validity:	14th September, 2019
Aircraft Ratings:	B737-200/500, C172, MA60, DNSM, LPR6
Medical Certificate Validity:	6th February, 2020
Simulator Validity:	3rd August, 2019
Proficiency Check:	21st December, 2018
Route/Line Check:	12th September, 2018
Total Flying Time:	9,200 h



Total on Type:	2010 h
Total on Type (PIC):	1727 h
Last 90 Days:	211:97 h
Last 28 Days:	72:23 h
Last 24 Hours:	06:0 h

1.5.2 First Officer

Nationality:	Nigerian
Gender:	Male
Age:	32 years
Licence Type:	CPL (A)
Licence Validity:	21st April, 2021
Aircraft Ratings:	B737-300/500, B737-NG, DA-42
Medical Certificate Validity:	4th July, 2019
Simulator Validity:	23rd September, 2019
Proficiency Check:	27th September, 2018
Route/Line Check:	23rd April, 2019
Total Flying Time:	533:59 h
Total on Type:	347 h
Last 90 Days:	174:45 h
Last 28 Days:	72:07 h
Last 24 h:	04:40 h

1.5.3 Purser

Nationality:	Nigerian
Age:	37 years



Gender: Male
Licence Type: Cabin Crew Licence
Licence Validity: 14th February, 2020
Ratings: B737-300/500, B747-300/400, B767-300,
B777-200/300, ATR42, EMB-135/145
Medical Validity: 3rd February, 2021

1.6 Aircraft Information

1.6.1 General Information

Manufacturer: The Boeing Company, USA
Model: B737-500
Serial Number: 25234
Year of Manufacture: 1993
Registered Owner/Operator: Air Peace Limited
Nationality and Registration marks: 5N-BRN
Certificate of Airworthiness: 17th July, 2019
Total Airframe Hours: 44,651 h
Total Cycles Since New: 34,612

1.6.2 Engines

	Engine No.1	Engine No.2
Manufacturer:	CFM International	CFM International
Engine Type:	CFM 56-3C1	CFM 56-3C1
Year of Manufacture:	1992	1992
Serial Number:	857205	860262
Total time since New:	54,178.14 h	22,529.58 h
Cycles:	37,859	17,965



1.7 Meteorological Information

The following weather information at Port Harcourt Airport:

Time: 1230 UTC
Wind: 200°/10 kt
Visibility: 10 km
Weather: Nil
Cloud: Broken 011, Few 020CB
Temp/Dew point: 31/25°C
QNH: 1013 hPa
Trend: Tempo Thunderstorm

Time: 1330 UTC
Wind: 190°/05 kt
Visibility: 10 km
Weather: Thunderstorm
Cloud: BKN330M Few CB S-N 600M
Temp/Dew point: 30°C thunderstorm N/W
QNH: 1011 hPa

Time: 1430 UTC
Wind: 230°/12 kt
Visibility: 600+TSRA
Weather: NOSIG
Cloud: BKN006 Few018 CB
Temp/Dew: 25/25°C
QNH: 1012 hPa

1.8 Aids to Navigation

The navigation aids were serviceable at the time of the incident.



1.9 Communications

There was effective communication between the aircraft and the ATC throughout the duration of the flight.

1.10 Aerodrome Information

Port Harcourt International Airport (DNPO) Aerodrome Reference Point is 05°00'56"N, 006°56'58"E and has an elevation of 27 m (87 ft). The aerodrome has a bi-directional runway with orientation of 03 and 21. The length and width of the runway are 3,000 m (9,843 ft) and 60 m (197 ft) respectively with an asphalt/concrete surface and a blast pad of 120 m (393.7 ft) at both ends. Both runways have Precision Approach Lighting System (PALS) and Runway 21 has Precision Approach Path Indicator (PAPI). Runway 21 was used for the landing.

According to the crew, during the approach on short finals, the runway lights were visible, the runway markings were identifiable and the Instrument Landing Systems (ILS) were functional. At landing time, the runway surface was wet due to rain.

1.11 Flight Recorders

The aircraft is fitted with Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR). The recorders, whose particulars are given below were retrieved and taken to the Accident Investigation Bureau's Flight Safety Laboratory in Abuja for download and analysis.

	Cockpit Voice Recorder	Flight Data Recorder
Model	SSCVR	SSFDR
Part Number	980-6022-001	980-4700-001
Serial Number	0705	0373
Manufacturer	Allied Signal	Honeywell

1.12 Wreckage and Impact Information

The aircraft touched down with the left main wheel on the grass verge and the right main wheel on the runway shoulder, at about 1,260 m from the runway 21 threshold and continued until it came to a stop parallel to the runway at about 1,620 m from runway 21 threshold, with the right wing tip aligned with the edge of the runway shoulder and the landing gears stuck in the mud.

The aircraft was recovered at about 15:10 h on 23rd June, 2019 by Federal Airports Authority of Nigeria (FAAN).



Figure 1: Aerial view of the aircraft at its final position



Figure 2: Picture showing the aircraft wheels stuck in mud



Figure 3: Picture showing tracks of the left main wheel at the touchdown point



Figure 4: Picture showing the tracks of the main wheels leading into the grass verge



Figure 5: Picture of the aircraft at its final position



1.13 Medical and Pathological Information

Toxicology examination was carried out on the crew after the incident. The result of the examination was negative for alcohol or drugs.

1.14 Fire

There was no fire.

1.15 Survival Aspects

The incident was survivable. There was liveable volume for the passengers and crew because the aircraft structure was intact after the occurrence. The seats and the restraint system were also found intact.

All persons on board disembarked the aircraft through the forward service door using the moveable passenger stairs.

1.16 Test and Research

Nil.



Initial Findings

1. The aircraft has a valid certificate of airworthiness.
2. The aircraft drifted left of runway 21 and touched down with the left main wheel on the grass verge and its right main wheel on the runway shoulder, at a distance of 1,260 m from the runway threshold.
3. The aircraft came to a stop at a distance of 1,620 m from the threshold of runway 21 with the landing gears stuck in the mud.
4. The aircraft right wing tip at its final position was aligned with the edge of the runway shoulder.
5. The crew and passengers disembarked without any injury through the forward service door (R1) using moveable passenger stairs.
6. There was no landing time recorded on the ATC transcript.
7. The aircraft was recovered at about 15:10 h on 23rd June, 2019 by FAAN.