



**PRELIMINARY REPORT ON SERIOUS INCIDENT INVOLVING A BOEING 737-500 AIRCRAFT WITH NATIONALITY AND REGISTRATION MARKS 5N-SYS OPERATED BY AZMAN AIR SERVICES LIMITED WHICH OCCURRED ON RUNWAY 18R, MURTALA MUHAMMED INTERNATIONAL AIRPORT, LAGOS; NIGERIA ON THE 16TH OF FEBRUARY, 2021**

<b>Registered owner and operator:</b>	Azman Air Services Limited
<b>Aircraft type and model:</b>	B737-500
<b>Manufacturer:</b>	Boeing Aircraft Company, USA
<b>Year of manufacture:</b>	1997
<b>Nationality and registration marks:</b>	5N-SYS
<b>Serial number:</b>	28565
<b>Location:</b>	Runway 18R, Murtala Muhammed International Airport, Ikeja, Lagos.
<b>Date and time:</b>	16th February, 2021 at about 17:55 h ( <i>All times in this report are local times UTC+1 unless otherwise stated</i> )

## **INTRODUCTION**

Accident Investigation Bureau (AIB) was notified of the serious incident through the AIB Command and Control Centre on 16th February, 2021. Investigators were dispatched to the scene of the incident and commenced post incident assessments immediately under the provisions of Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2019 and ICAO Annex 13.

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 and a preliminary inspection of the incident site and aircraft.

### **The investigation is ongoing**

## **1.0 FACTUAL INFORMATION**

### **1.1 History of the flight**

On 16th February, 2021, at about 16:54 h, a Boeing B737-500 aircraft with nationality and registration marks 5N-SYS operated by Azman Air Service Limited departed Nnamdi Azikiwe International Airport, Abuja (DNAA) on a scheduled passenger flight to Murtala Muhammed Airport, Lagos (DNMM) as AZM2325 on an Instrument Flight Rules (IFR) flight plan. On board were 55 persons inclusive of six crew members with a fuel endurance of 3 hours 20 minutes. This flight was the last of the six sectors for the day. The Captain was the Pilot Flying (PF) and the First Officer was the Pilot Monitoring (PM).

The cockpit crew stated during interview that all necessary checks were carried out and reference was made to relevant documents on anti-skid inoperative conditions before departing Abuja. The take-off, climb, cruise and the initial approach phases of flight were normal.

According to the cockpit crew, on approach at about 600 ft to touchdown, there was heavy rain and windshear warning. On reaching Decision Altitude (DA), the Captain carried out a missed approach and requested for runway 36L from the Approach Control but was vectored around traffic to runway 18R. AZM2325 was advised by the ATC of the prevailing weather condition, asked to state intention and if unable to make it, elect to divert to alternate.

At 17:53 h, AZM2325 stated “we would like to make one approach, runway 18R, if not [successful] we would divert to our alternate...”

According to the crew, at short final, the Approach Light became visible even though there was some rain. Performance calculations were carried out, the aircraft landing distance was within the landing limits and the visibility was good.

AZM2325 landed on runway 18R and was instructed to continue with Ground Control on 121.9MHz. The Captain stated “We landed as normal at the 1000 ft marker on RWY 18R

even though the runway was wet. Speed brakes and reversals were used on landing and I also applied manual brake pressure while still on the wet runway. I felt some vibration after getting on the dry part of the runway. I sensed we had burst tyres and brought the aircraft to a stop.”

At 17:59 h, AZM2325 reported “121.9 MHz; we have an issue; we are on the runway... we need assistance please. We’re on the runway, we have an engine indication...we have an engine indication, number one engine, we’re on the runway.”

At 18:00 h ATC replied, AZM2325 the fire unit would be with you shortly. They’ve been advised and are proceeding to runway 18R. Please report when you have the fire unit with you. We can observe them moving towards you on the runway.

At 18:02 h, AZM2325 confirmed “we have the fire truck here, I just need them to tell us the extent of what is going on.”

At 18:03 h, ATC stated “AZM2325 we advised the unit to proceed with the tow truck to assist you. But the fire unit will be with you shortly.”

At 18:04 h, ATC asked “confirm you have a burst tyre on runway?” The Cockpit crew replied in the affirmative.

At 18:16:53 h, the ATC told AZM2325 “your passengers would be evacuated shortly and please report when you have the tow truck in sight”.

At 18:22:56 h, the ATC told AZM2325 “your station manager is aware and they are coming to you to assist in the evacuation of the passengers”. The captain stated “We then waited forty-five (45) minutes for stairs and buses to disembark the passengers.”

At 19:07 h, the fire unit advised ATC that disembarkation of passengers was complete with only the crew and passenger baggage on board the aircraft.

All passengers disembarked uninjured.

The incident occurred in daylight and Visual Meteorological Conditions (VMC) prevailed.

## 1.2 Injuries to persons

<b>Injuries</b>	<b>Crew</b>	<b>Passengers</b>	<b>Total in the aircraft</b>
<b>Fatal</b>	Nil	Nil	Nil
<b>Serious</b>	Nil	Nil	Nil
<b>Minor</b>	Nil	Nil	Nil
<b>None</b>	6	49	49
<b>Total</b>	6	49	49

## 1.3 Damage to aircraft

The aircraft was substantially damaged.

## 1.4 Other damage

Nil.

## 1.5 Personnel information

### 1.5.1 Captain (Pilot Flying)

Nationality:	Nigerian
Age:	39 years
License type:	Airline Transport Pilot License (Aeroplane)
License:	Valid till 7th May, 2022
Medical Certificate:	Valid till 31st December, 2021
Instrument rating:	Valid till 26th October 2021

Proficiency:	Valid till 26th April 2021
Aircraft ratings:	DHC-8-Q400, B737-300/500, DASH-8
Total flying time:	5,978:20 h
Total on type:	1,894:45 h
Total on type (PIC):	262:45 h
Last 90 days:	262:45 h
Last 28 days:	66:50 h
Last 24 hours:	07:50 h

### **1.5.2 First Officer (Pilot Monitoring)**

Nationality:	Nigerian
Age:	35 years
License type:	Commercial Pilot License (Aeroplane)
License:	Valid till 12th November, 2024
Aircraft ratings:	B737-300/500
Medical certificate:	Valid till 27th January, 2021
Instrument rating:	Valid till 18th December 2020
Proficiency:	Valid till 31st March, 2021
Total flying time:	975:30 h
Total on type:	800 h
Last 90 days:	123:30 h
Last 28 days:	61:30 h
Last 24 hours:	05:20 h

## 1.6 Aircraft information

### 1.6.1 General information

Type:	Boeing 737-500
Manufacturer:	Boeing Aircraft Company, USA
Serial number:	28565
Year of manufacture:	1997
Certificate of airworthiness:	Valid till 11th March, 2021
Certificate of insurance:	Valid till 25th April, 2021
Total airframe time as at 15th February:	40,673:23 h
Total landing cycle as at 12th February:	35,112
Type of Fuel:	Jet A1

### 1.7 Meteorological information

<b>Time</b>	<b>1700UTC</b>	<b>1730UTC</b>	<b>1800UTC</b>
<b>Wind</b>	210/07 Kt	210/06 Kt	230/03 Kt
<b>Visibility</b>	8 km	8 km	8 km
<b>Weather</b>	Nil	Nil	Nil
<b>Cloud</b>	Few013	Few013	Few012
<b>Temp/Dew point</b>	29/25°C	29/25°C	28/25°C
<b>QNH</b>	1008 hPa	1008 hPa	1008 hPa
<b>Trend</b>	NOSIG	NOSIG	NOSIG

## 1.8 Aids to Navigation

VOR/DME 'LAG' VHF 113.7 MHz	-	Serviceable
ILS 'ILB' VHF 108.1 MHz	-	Serviceable
ATIS 112.3MHz	-	Serviceable

## 1.9 Communication

There was effective communication between the aircraft and the relevant ATC units. All communications between ATC and the crew were recorded by ground based automatic voice recording equipment for the duration of the occurrence. All VHF radios were serviceable.

ATC received NOTAM (A0031/21 NOTAMN) from Aeronautical Information Service (AIS) unit reporting runway 18R closed due to disabled aircraft.

## 1.10 Aerodrome information

Murtala Muhammed Airport, Ikeja, Lagos, has a location indicator DNMM, elevation of 135 ft and a reference point of N06° 34' 38" and E003° 19' 16". The airport has four runways with a concrete/asphalt surface, designated as runways 18L/36R and 18R/36L. Both runways are equipped with ILS; ILS for runway 18L (110.3 MHz), ILS for runway 18R (108.1MHz), a VOR/DME (113.7MHz) which is aligned with runway 18L centre line and a VOR/DME (112.9MHz) aligned with runway 36L centre line. There is a locator beacon, NDB 336kHz aligned with runway 18L centre line.

The runway length of 18L/36R is 9,006ft (2745m) with blast pads of 50/65 metres and runway 18R/36L is 12,795ft (3900m) with blast pads of 120 metres on both ends. The Precision Approach Path Indicator (PAPI) was available for both runways.

### 1.11 Flight recorders

The aircraft was equipped with both Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR) as required by the Nigeria Civil Aviation Regulations. Both recorders were removed from the aircraft intact and transported to the flight safety laboratory of Accident Investigation Bureau (AIB) in Abuja for examination and download. The FDR was downloaded and data recovered is being analyzed. The CVR recording of the flight relevant to the occurrence was found overwritten.

	<b>Flight Data Recorder</b>	<b>Cockpit Voice Recorder</b>
<b>Manufacturer</b>	Honeywell, USA	Fairchild, USA
<b>Model</b>	SSFDR	SSCVR
<b>Part Number</b>	980-4700-003	S100-0080-00
<b>Serial Number</b>	SSFDR-08677	01937

### 1.12 Wreckage and impact information

The aircraft remained on the active runway. No. 1, 2, 3 & 4 main landing gear tyres were found burst. The tyre threads were heavily worn revealing multiple layers of the canvass. Debris from the tyres were ingested into No. 1 engine and the left rear side of the fuselage.





**Figure 1: The Aircraft 5N-SYS parked at the military hangar after tyre replacement**



**Figure 2: Damaged fan blades of number 1 engine caused by ingestion of debris from the burst tyre**



**Figure 3: Damaged number 1 & 2 main wheel tyres**



**Figure 4: Rear view of damaged number 3 & 4 main wheel tyres**



**Figure 5: A damaged section of the fuselage due tire debris**

### **1.13 Medical and pathological information**

Nil.

### **1.14 Fire**

There was no fire.

### **Initial findings**

Investigation so far revealed the following:

1. The aircraft had a valid Certificate of Airworthiness.
2. The First Officer's Medicals was valid till 27th January, 2021
3. The First Officer's license validity had expired as at the time of occurrence.
4. Technical log book entries were not promptly made.

5. The crew carried out a missed approach on runway 18L.
6. At 17:58 h, the aircraft landed on runway 18R.
7. The runway surface 18R was wet at the time of the occurrence.
8. According to the ATC, the aircraft touched down beyond the touchdown zone.
9. Aircraft stopped on the runway.
10. All main wheel tyres were found burst after landing.
11. At about 18:01 h, Aerodrome Rescue and Firefighting Service (ARFFS) arrived the scene of the occurrence promptly.
12. At 19:07 h, ARFFS advised ATC that passengers were disembarked on the runway after one hour, seven minutes from the landing time.
13. At 19:45 h, ARFFS informed Tower that the assistance of LASEMA and NEMA would be required.
14. At 20:46 h, LASEMA arrived at the incident site and carried out its assessment to determine what equipment to use.
15. The CVR recording of the flight relevant to the occurrence was found overwritten.

### **Immediate safety recommendation**

NCAA should ensure that Azman Air Services Limited check and confirm flight crew license validity before scheduling for flight operations.

## **Further information and investigative action**

1. Analysis of the flight data
2. Review of tyre maintenance records