

**Preliminary Report on the Serious Incident involving Embraer 145LR aircraft with nationality and registration marks 5N-BWW operated by United Nigeria Airlines Limited which occurred at about 4,000 feet climbing out of Nnamdi Azikiwe International Airport, Abuja Nigeria on 17th November, 2021.**

<b>Registered owner:</b>	Private Airlines Services Limited
<b>Operator:</b>	United Nigeria Airlines Company Limited
<b>Aircraft type and model:</b>	EMB-145LR
<b>Manufacturer:</b>	Yabora Industria Aeronautica S.A
<b>Year of manufacture:</b>	2002
<b>Nationality and registration marks:</b>	5N-BWW
<b>Serial number:</b>	145553
<b>Location:</b>	About 4,000 feet climbing out of Nnamdi Azikiwe International Airport, Abuja
<b>Date and Time:</b>	17th November, 2021 at about 08:43 h <i>(All times in this report are local time, equivalent to UTC+1 unless otherwise stated)</i>

## **INTRODUCTION**

Accident Investigation Bureau, Nigeria (AIB) was notified of the incident by the Nigeria Airspace Management Agency (NAMA) on 17th November, 2021. Investigators were dispatched to the incident site the same day and commenced post occurrence assessments, 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 the initial facts gathered so far including discussions and findings surrounding the occurrence, information gathered from the witness accounts and a post occurrence inspection of the aircraft on the ramp.

**The investigation is ongoing.**

## **1.0 FACTUAL INFORMATION**

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

On 17th November, 2021 at about 08:29 h, an EMB-145LR aircraft with nationality and registration marks 5N-BWW, operated by United Nigeria Airlines Company Limited departed Nnamdi Azikiwe International Airport (DNAA) for Murtala Muhammed International Airport (DNMM) as scheduled flight NUA0505. On board were 43 passengers and four crew members (pilot, co-pilot and 2 cabin crew), with fuel endurance of 3 hours 17 minutes. Instrument Flight Rule (IFR) flight plan was filed for the flight. The Pilot was the Pilot Monitoring (PM) while the Co-pilot was the Pilot Flying (PF).

The aircraft was scheduled to operate six sectors for that day. The first sector was Lagos to Abuja which was uneventful.

At about 08:30 h, NUA0505 requested startup clearance for the second sector of the day, from Abuja Ground Control (AGC). AGC granted approval for NUA0505 to start, with squawk code of 0417.

At 08:33 h, NUA0505 requested for taxi clearance, Tower acknowledged and cleared the aircraft for taxi to holding point runway 22. NUA0505 commenced taxi and reported to Abuja Ground Control (AGC). AGC transferred NUA0505 to Abuja Tower.

At about 08:37 h, NUA0505 reported ready for take-off. Tower instructed NUA0505 to line up and wait runway 22 and to prepare for immediate.

At about 08:39 h, Tower cleared NUA0505 for take-off runway 22 and to maintain runway heading after departure. An EICAS Advisory Message "E1 OIL IMP BYP" came ON while the aircraft was lining up for take-off.

At about 08:40 h, NUA0505 advanced the throttle and set takeoff thrust. NUA0505 commenced the take-off roll. After take-off, Tower transferred NUA0505 to radar on frequency 127.9. NUA0505 acknowledged and complied. Thereafter, Radar instructed NUA0505 to turn right direct VONUK, climb and maintain FL280. NUA0505 acknowledged.

According to the flight crew, “during the climb there was a loud bang from the rear, and all engine parameters were checked and all in green. At about 4,000 ft, we heard another noise followed by a flameout.” The crew further stated that they identified it was an Engine Flameout.

At 08:43 h, the Pilot declared MAYDAY and requested to turn direct runway 04, DNAA for approach. Radar instructed NUA0505 to turn and establish runway 04, cleared for visual approach runway 04 and to report field insight and squawk 7700.

ATC reports indicated that NUA0505 executed a hold for over 5 minutes between 2NM-5NM, before establishing final for runway 04. Tower then cleared NUA0505 to land runway 04. At 08:53 h, NUA0505 landed safely, taxied to the apron and parked. All occupants of the aircraft disembarked unassisted, without injury. After landing, the emergency was cancelled by ATC.

Documents available to the Bureau revealed that ATC duly informed the Fire watch room and relevant officials at AIB, NAMA and NCAA, respectively. Also, all taxiing aircraft were instructed to taxi back to the apron.

The incident occurred at about 08:42 h, in daylight; Visual Meteorological Conditions (VMC) prevailed at the time of occurrence.

## 1.2 Injuries to persons

<b>Injuries</b>	<b>Crew</b>	<b>Passengers</b>	<b>Total in the aircraft</b>	<b>Others</b>
<b>Fatal</b>	Nil	Nil	Nil	Nil
<b>Serious</b>	Nil	Nil	Nil	Nil
<b>Minor</b>	Nil	Nil	Nil	Nil
<b>None</b>	4	43	47	Nil
<b>TOTAL</b>	4	43	47	Nil

## 1.3 Damage to aircraft

No damage.

## 1.4 Other damage

Nil

## 1.5 Personnel information

### 1.5.1 Pilot

Nationality: Nigerian  
 Age: 35  
 License type: Airline Transport Pilot License (Aeroplane)

License:	Valid till 28th February 2022
Aircraft ratings:	Part 1: EMB-135/145, Part 2: B737-NG
Medical certificate:	Valid till 28th February 2022
Total flying time:	3,900 h
Total on type:	306:00 h
Total on type (PIC):	306:00 h
Last 90 days:	266:00 h
Last 28 days:	63:00 h
Last 7 days:	8:40 h
Last 24 hours:	2:00 h

### **1.5.2 Co-Pilot**

Nationality:	Nigerian
Age:	30
License type:	Commercial Pilot License (Aeroplane)
License	Valid till 7th March 2022
Aircraft ratings:	Part 2: EMB-135/145 Part 1: B-58 & TB-9
Medical certificate:	Valid till 7th March 2022
Total flying time:	1,046 h
Total on type:	810 h
Last 90 days:	159:00 h
Last 28 days:	72:00 h

Last 7 days: 17:40 h

Last 24 hours: 2:00 h

## **1.6 Aircraft information**

### **1.6.1 General information**

Type:	EMB-145/145LR
Manufacturer:	Yabora Industria Aeronautica S.A
Year of manufacture:	2002
Serial number:	145553
Certificate of Airworthiness:	Valid till 26th January, 2022
Certificate of insurance:	Valid till 9th February, 2022
Certificate of registration:	Issued on 2nd November, 2020
Total airframe time:	41,340:33 h
Total Landing Cycles:	32,330



**Figure 1:** The aircraft parked at Apron of Nnamdi Azikiwe International Airport after the incidence

### 1.6.2 Engines

Engine	Number 1	Number 2
Manufacturer	Rolls Royce, USA	Rolls Royce, USA
Type/Model	AE3007A1P	AE3007A1P
Serial number	312038	312037
Time Since New	36,119:26 h	37,104:09 h
Cycles Since New	28,824	29,810

Fuel Used: Jet A1



## 1.7 Meteorological information

### **DNAA 0700z**

Wind: 340°/02 kt

Visibility: 10 km

Weather: Nil

Cloud: NSC

Temp/Dew: 25/23 °C

QNH: 1013 hPa

### **DNAA 0730z**

Wind: 310°/02 kt

Visibility: 10 km

Weather: nil

Cloud: NSC

Temp/Dew: 26/23 °C

QNH: 1013

**DNAA      0800z**

Wind:        240°/02 kt

Visibility:    10 km

Weather:     nil

Cloud:        FEW 300m

Temp/Dew:   28/23 °C

QNH:         1013 hPa

## **1.8 Aids to navigation**

The status of the navigational aids at Nnamdi Azikiwe International Airport on the day of the occurrence was as follows:

"ABC" VOR/DME	116.3 MHz	-	'Serviceable'
"IAB" ILS/DME	109.3 MHz	-	'Serviceable'
"IAC" ILS/DME	111.9 MHz	-	'Serviceable'

## **1.9 Communication**

There was effective communication between the aircraft and air traffic control.

### 1.10 Aerodrome information

The Nnamdi Azikiwe International Airport, Abuja (DNAA) has aerodrome reference points 09°00'25"N, 007°15'47"E and elevation 1123 ft with runway orientation 04/22. The runway has a length of 3610 m and a width of 60 m with asphalt/concrete surface and a blast pad of 65 m at both ends.

### 1.11 Flight recorders

The aircraft is fitted with Solid-State Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) with the following particulars:

<b>Recorders</b>	<b>Flight Data Recorder</b>	<b>Cockpit Voice Recorder</b>
<b>Manufacturer</b>	Honeywell, USA	Honeywell, USA
<b>Model</b>	SSFDR	SSCVR
<b>Part Number</b>	980-4700-042	980-6022-001
<b>Serial Number</b>	08762	CVR120-05078

The FDR and CVR were retrieved and downloaded successfully at the Flight Safety Laboratory of Accident Investigation Bureau (AIB), Abuja, Nigeria.

The Flight Data Recorder (FDR) did not record the incident flight. The last recorded flight on the FDR was dated 14th February 2021.

### **1.12 Wreckage and impact information**

Not applicable.

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

Not applicable.

### **1.14 Fire**

There was no pre or post occurrence fire.

### **1.15 Survival aspect**

The aircraft landed safely on runway 04.

The Aerodrome Rescue and Fire Fighting Service (ARFFS) had already positioned close to runway 04 in readiness for any emergency. After landing, the aircraft taxied to the apron, where the occupants disembarked unassisted without injury

## 2.0 INITIAL FINDINGS

1. The flight crew were licensed and qualified to conduct the flight.
2. The aircraft had a valid Certificate of Airworthiness.
3. The aircraft was scheduled for six sectors for that day.
4. The incident occurred on the second sector.
5. An EICAS Advisory Message "E1 OIL IMP BYP" came ON while the aircraft was lining up for take-off.
6. During climb out, the crew heard a bang from the rear.
7. At about 4,000 ft the crew heard another bang.
8. At 08:43 h, the crew declared MAYDAY.
9. The fire watch room was duly informed.
10. NUA0505 landed safely on runway 04 at 08:53 h.
11. The Flight Data Recorder (FDR) did not record this flight. The last recorded flight on the FDR was dated 14th February, 2021.

## Further Investigative actions

1. Spectrometric Oil Analysis
2. Further Engine inspection