

Preliminary report on an Accident involving a Boeing 737-400 Aircraft with nationality and registration marks 5N-MBD operated by Max Air Limited which occurred at Mallam Aminu Kano International Airport, Kano Nigeria on 28 January 2025

Registered owner:	Max Air Limited
Operator:	Max Air Limited
Aircraft type and model:	Boeing 737-400
Manufacturer:	The Boeing Company, USA
Year of manufacture:	1997
Nationality and registration marks:	5N-MBD
Serial number:	28704
Location:	Mallam Aminu Kano International Airport (DNKN), Kano runway 06.
Date and Time:	28 January, 2025 at about 22:49 h <i>(All times in this report are local time, equivalent to UTC+1 unless otherwise stated)</i>



INTRODUCTION

The Nigerian Safety Investigation Bureau (NSIB) was notified of the occurrence by the Operations Manager of the Federal Airport Authority of Nigeria (FAAN) at Mallam Aminu Kano International Airport, Kano, on January 28, 2025. Investigators were dispatched to the site on the same day. They commenced post-occurrence assessments by the provisions of the Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2023 and ICAO Annex 13.

This Preliminary Report outlines the initial facts, discussions, and findings related to the Occurrence. It includes information gathered from witness statements, flight recorders, ATC transcripts, and a preliminary inspection of the site and the aircraft. This report presents the status of the notification's processing. Its content may still change and does not necessarily bind the conclusions published in the investigation's final report.

The investigation is ongoing.



1.0 FACTUAL INFORMATION

1.1 History of the flight

On 28 January, 2025, a Boeing 737-400 aircraft with nationality and registration marks 5N-MBD operated by Max Air Limited was scheduled to operate six flight sectors; Abuja-Kano, Kano-Abuja, Abuja-Bauchi, Bauchi-Abuja, Abuja-Lagos and Lagos-Kano, with six crew members (two-cockpit and four cabin crew). The crew resumed duty at about 13:00 h.

According to the maintenance engineer, during the post-flight inspection on the second sector, he observed that the nose wheel tyres were worn to the limit, and the equipment necessary for replacement was not available. The engineer sought the opinion of a colleague, and they concluded that the aircraft could be flown to another sector, pending the availability of the necessary equipment.

In the fifth sector, nose wheel tyres were replaced by Aircraft Maintenance Manual (AMM) 32-45-21. At approximately 20:09, 5N-MBD departed Nnamdi Azikiwe International Airport (DNAA) for Murtala Muhammed International Airport, Lagos (DNMM), as NGL 1645, and arrived at approximately 21:00. Upon landing at DNMM, the Pilot carried out a post-flight inspection of the aircraft and observed no abnormalities.

At approximately 21:42 hours, 5N-MBD departed DNMM as flight NGL 1605 for DNKN with 59 persons on board (six crew and 53 passengers) on an Instrument Flight Rules (IFR) flight plan with an endurance of four hours. The Captain was the Pilot Flying (PF), while the Co-pilot was the Pilot Monitoring (PM); the flight continued normally.

At 22:15:09.3 hours, while en route, the crew was heard discussing the removal of a lock wheel protection.

At 22:22:54 h, NGL 1605 established contact with Kano Area Control (ACC) and, shortly after, reported, "WE ARE FROM LAGOS TO KANO FL 270 5N-MBD A B737-400 ON-BOARD WE HAVE 59 POB 6 CREW AND ESTIMATE "KAN" 2147 ENDURANCE REMAINING 0330". Tower (TWR) responded, "CLEARED' KAN" FL 270, NO DELAY



EXPECTED, ILS APPROACH RWY 06, QNH 1019, TIME 2123, REPORT RELEASED BY KANO CONTROL.”

At 22:37:08 h, NGL 1605 reported, “WE ARE SQUAWKING 0501, SORRY RELEASED TO YOU BY CONTROL DESCENDING FL 150 REQUESTING FURTHER DESCEND”. TWR cleared NGL 1605 “CONTINUE DESCEND FL 50 FLY DCT TISOX”.

At 22:42:24 h, NGL 1605 reported “APPROACHING 25NM” and TWR responded; “AT 25NM DESCEND 4000FT ON QNH 1019 CLEARED ILS APPROACH RWY 06 REPORT ESTABLISHED”.

At 22:45:12 hours, NGL 1605 reported “ESTABLISHED SHOWING 9 MILES.” TWR cleared NGL 1605 to land on RWY 06, with a calm wind indicating a southwesterly direction, and NGL 1605 acknowledged.

At 22:45:17.9 hours, the pilot called out, “TWENTY KNOTS HEADWIND,” and the pilot flying (PF) replied, “Let's get closer and see.”

At 22:45:43.4 hours, RADALT called out twenty-five hundred.

At 22:45:47.2 hours, the PF requested, “GEARS DOWN FLAPS 15 SPEED IS CHECKED,” and the PM acknowledged.

At 22:46:12.6 h, the PF requested flaps 30, and the PM acknowledged. The PF called out, “Speed One Forty-Four,” and the PM acknowledged.

At 22:46:31.7 hours, the landing procedure checklist was completed.

At 22:45.1 hours, the PF called out a 19-knot headwind, and the PM responded that a 10-knot correction had been effected.

At 22:47:20.7 hours, RADALT called out one thousand feet.

At 22:47:44.7 h, the PM requested starting the APU, and PF acknowledged.

At 22:48:07.1 h, the autopilot disengaged.

At 22:48:38.4 hours, the RADALT called out “FIFTY FORTY THIRTY TWENTY TEN,” followed by the PM’s response, “SPEED BRAKES IS UP,” and the PF acknowledged.



At 22:49:00.3 hours, the aircraft landed right of the runway 06 centerline; an unidentified mechanical loud sound was heard, followed by another at 22:49:12.1 hours.

At 22:49:16 h, the PF called for flap forty, which was acknowledged by PM.

At 22:49:30.5 hours, the PF exclaimed, "It is that nose wheel," and the PM responded, "Yeah!"

At 22:49:35.4 hours, the PM declared MAYDAY and requested immediate assistance.

At 22:51:21.5 hours, the PF requested the lead cabin crew to check the engines through the window for signs of fire.

At 22:51:31.2 hours, TWR informed NGL 1605 that the fire truck was behind the aircraft and asked the crew what type of assistance was needed. The PM responded, "WE NEED THE FIRE TRUCK TO BE AROUND US. "We have a burst tyre on the nose wheel, sir. ERH standing by." The TWR further stated that the fire truck was at your two o'clock and another one behind you.

At 22:52:10.2 h, the PM requested assistance to disembark, as the aircraft was immovable.

At 22:52:12.3 h, the lead cabin crew reported to the PF that there was no fire.

At 22:54:05.5 hours, the PM asked for the evacuation checklist, and the PF responded, "No, it's not evacuation; there is no fire, there is no need."

At 22:55:19.4 hours, the crew requested stairs to disembark passengers and were informed by TWR that the stairs were on their way to you. Disembarkation was carried out through the left rear service door.

All the passengers disembarked the aircraft unhurt.

The accident occurred at night.



Figure 1: Flight track for NGL 1605

1.2 Injuries to persons

Injuries	Crew	Passengers	Total in the aircraft	Others
Fatal	Nil	Nil	Nil	Nil
Serious	Nil	Nil	Nil	Nil
Minor	Nil	Nil	Nil	Nil
None	6	53	59	Nil
TOTAL	6	53	59	Nil

1.3 Damage to aircraft

The aircraft was substantially damaged



1.4 Other damage



Figure 2: Scratch marks on the runway surface

1.5 Personnel information

1.5.1 Pilot

Nationality:	Nigerian
Age:	39 years
License type:	Airline Transport Pilot License (ATPL) (Aeroplane)
License:	Valid till 29 January, 2030
Aircraft ratings:	Boeing 737-300/500
Medical certificate:	Valid till 19 March, 2025
Instrument rating:	Valid till 09 October, 2025
Proficiency check:	Valid till 09 April 2025



Total flying time:	5150 h
Total on type:	4950 h
Total on type (PIC):	2150 h
Last 90 days:	289 h
Last 28 days:	97 h
Last 24 hours:	06 h

During the post-occurrence interview, the Captain mentioned that while on the ground in Lagos, the aircraft was loaded more on the forward hold.

CVR recordings indicated the Captain showing some concern about the nose wheel landing gear.

1.5.2 Co-Pilot

Nationality:	Nigerian
Age:	31
License type:	Airline Transport Pilot License (Aeroplane)
License:	Valid till 12 June, 2028
Aircraft ratings:	Boeing 737-300/500
Medical certificate:	Valid till 6 March, 2025
Instrument rating:	Valid till 29 September, 2025
Proficiency check:	Valid till 29 March, 2025
Total flying time:	3020 h
Total on type:	2860 h
Last 90 days:	126 h
Last 28 days:	NIL
Last 24 hours:	06 h



1.5.4 Engineer

(Aircraft Maintenance Engineer who replaced the Nose Wheel Tires on 28 January 2025)

Nationality:	Nigerian
Age:	49 years
License type:	Aircraft Maintenance Engineer License (AMEL) Avionics, Airframe and Power plant
License:	Valid till 27 July, 2026
Aircraft type ratings:	Boeing 737-NG/Classic

During the post-occurrence interview, the Engineer reported that 28 January 2025 was his second day on duty, and he resumed duty around 07:00 h. According to the maintenance engineer, during the post-flight inspection on the second sector, he observed that the nose wheel tyres were worn to the limit, and the necessary equipment for replacement was not available. The engineer sought the opinion of a colleague, and they concluded that the aircraft could be flown to another sector of Bauchi, pending the availability of the equipment.

The aircraft returned from Bauchi at approximately 19:10 hours. The nose wheel tyres were replaced by AMM 32-45-21, and the plane was released for service.

1.6 Aircraft information

1.6.1 General information

Type:	Boeing 737-400
Manufacturer:	The Boeing Company, USA
Year of manufacture:	1997



Serial number:	28704
Certificate of Airworthiness:	Valid till 13 August, 2025
Certificate of insurance:	Valid till 20 March, 2025
Certificate of registration:	Issued 27 August, 2021
Total airframe time:	39933:19
Total Landing Cycles:	44036



Figure 3: 5N-MBD post-occurrence on the runway.

1.6.1.1 Aircraft release information

The aircraft was dispatched with a takeoff weight (TOW) of 52350 kg and a maximum takeoff weight of 59745 kg. Landing weight (LW) of 48,850 kilograms and maximum Landing Weight of 56,745 kg, with a forward cargo compartment holding 870 kg of cargo/baggage and an aft cargo compartment holding 673 kilograms, as indicated on the Load sheet.



See Appendix I, Figures 1, 2, and 3.

1.6.2 Engines

Engine	Number 1	Number 2
Manufacturer	CFM International, USA	CFM International, USA
Type/Model	CFM 56-3C1	CFM 56-3B1
Serial number	858921	856357
Time Since New	41926:20	50454:54
Cycles Since New	34439	34935

Fuel Used: Jet A1

1.7 Meteorological information

Meteorological information for DNKN on the day of the occurrence

DNKN	2000Z	2100Z	2200Z
Wind	030/05	050/04	000/00
Visibility	9999	9999	9999
weather	Nil	Nil	Nil
Cloud	NOSIG	NOSIG	NOSIG
Temp/Dew point	20/06	18/05	17/05
QNH	1018	1019	1019

1.8 Aids to navigation

The status of the navigational aids at Mallam Aminu Kano International Airport on the day of the occurrence was as follows:

"KAN" DVOR/DME 112.5 MHz CH72X (SERVICEABLE)

"KAN" ILS/DME 109.5 MHz CH32X RWY 06 (SERVICEABLE)

"KAN" ILS/DME 111.1 MHz CH48X RWY 24 (NOT CALIBRATED)

FREQUENT SMART STRIP MAIN AND BACKUP (UNSERVICEABLE)



FREQUENT FLIGHT PLAN TERMINAL	(UNSERVICEABLE)
FREQUENT COMMUNICATION BOX 1, 2, AND 3	(SERVICEABLE)
FREQUENT STATUS MONITOR	(SERVICEABLE)
FREQUENT ATC CLOCK 1 AND 3	(SERVICEABLE)
FREQUENT ATIS DISPLAY TERMINAL	(SERVICEABLE)
RADAR MONITOR AND AERODROME BEACON	(SERVICEABLE)
ALDIS LAMP AND BINACULAR	(SERVICEABLE)
NIMET WX PC1 (COASTAL)	(SERVICEABLE)
NIMET WX PC2 (METER WZ)	(UNSERVICEABLE)
NIMET DIGITAL ANEMOMETER	(UNSERVICEABLE)
NIMET L. L. W. A. S.	(UNSERVICEABLE)
TELEPHONE LINE 1 AND 2	(SERVICEABLE)
BINATONE INTERCOMS	(SERVICEABLE)
POLYVISION ZETRON INTERCOMS	(UNSERVICEABLE)

1.9 Communication

The status of the communication equipment at Mallam Aminu Kano International Airport on the day of the occurrence was as follows:



VHF 118.1 MHz	TWR MAIN AND BACK-UP FREQ.	(SERVICEABLE)
VHF 119.1MHz	TWR SECONDARY FREQ.	(SERVICEABLE)
VHF 121.7 MHz	DOMESTIC FREQ.	(SERVICEABLE)
VHF 121.5 MHz	EMERGENCY FREQ.	(SERVICEABLE)
VHF 123.6 MHz	ATIS FREQ.	(SERVICEABLE)
VHF ICOM TRANSCEIVER		(SERVICEABLE)

1.10 Aerodrome information

Mallam Aminu Kano International Airport (DNKN) has aerodrome reference points 120253.0000N 0083125.0000E and an elevation of 476 m (1,562 ft.), the aerodrome has two runways with orientation RWY 05/23 and RWY 06/24. The runways have an asphalt/concrete surface length of 2450 m by 45 m, and 3300 m by 60 m respectively.

1.11 Flight recorders

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

Recorders	Flight Data Recorder	Cockpit Voice Recorder
Manufacturer	Honeywell, USA	Honeywell, USA
Model	SSFDR	SSCVR
Part Number	980-4700-042	980-6022-001
Serial Number	1544	120-04637

The CVR and FDR were retrieved, downloaded, and analyzed successfully at the Transportation Safety Laboratory of Nigerian Safety Investigation Bureau (NSIB), Abuja, Nigeria.

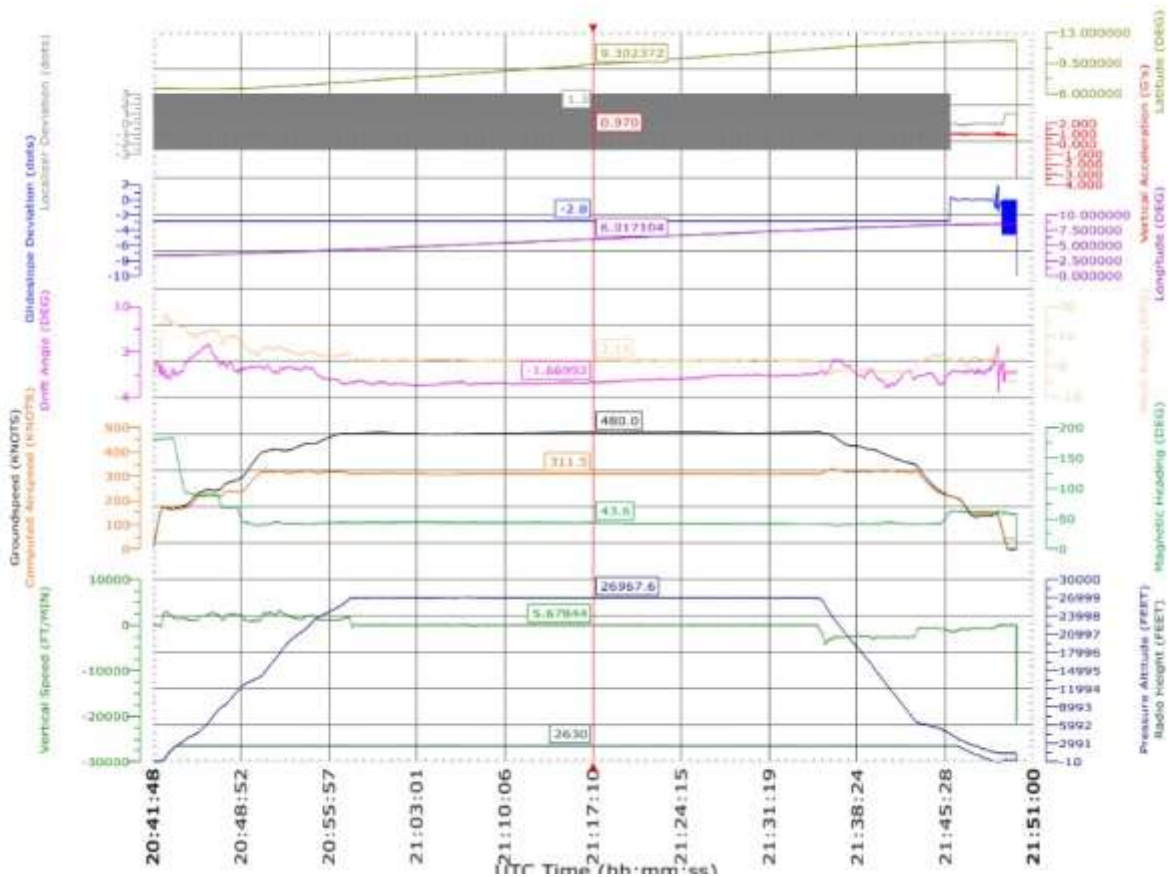


Figure 4: Relevant flight parameters for NGL 1605

1.12 Wreckage and impact information

The aircraft landed right of runway 06 centerline, while on landing roll at a distance of about 2180 m from the runway threshold, the nose wheel gear collapsed. The aircraft continued for about 523 m in contact with the runway surface and came to a stop at about 2703 m from the runway threshold.

The following damages observed:

1. Nose Wheel Gear collapsed rearward and stuck under the belly of the fuselage
2. No. 2 Engine inlet and fan blades
3. No. 4 main wheel tire
4. Nose wheel tires
5. Right main landing gear wheel well door sheared off



6. Nose wheel landing gear doors sheared off

1.12.1 Aircraft recovery

At about 23:00 h a NOTAM (Notice to Airmen) for the closure of the runway was issued.

After preliminary assessment of the scene and the wreckage by the Investigators, recovery operation commenced at about 03:15 h the next day by the joint team of Max Air, NAHCO and SAHCO, which was monitored by NSIB.

The recovery was done using two Fork Lift, Lifting Crane and Tug Tractor with Dolly. The Lifting Crane and two Fork Lift were used to lift the wreckage and placed it on the Dolly. The wreckage was towed to apron 'A' and parked at bay five (5). The recovery operation was completed at about 04:54 h.

At about 06:25 h, the runway was cleaned by Emmanpop Cleaning Services. NOTAM for the reopening of the runway was issued at about 08:00 h.

At about 08:19 h, joint inspection of the runway was carried out by FAAN, NCAA and NAMA.



Figure 5: Aerial view showing distance travelled by the aircraft on the runway



Figure 6: Damaged No. 4 main wheel tire

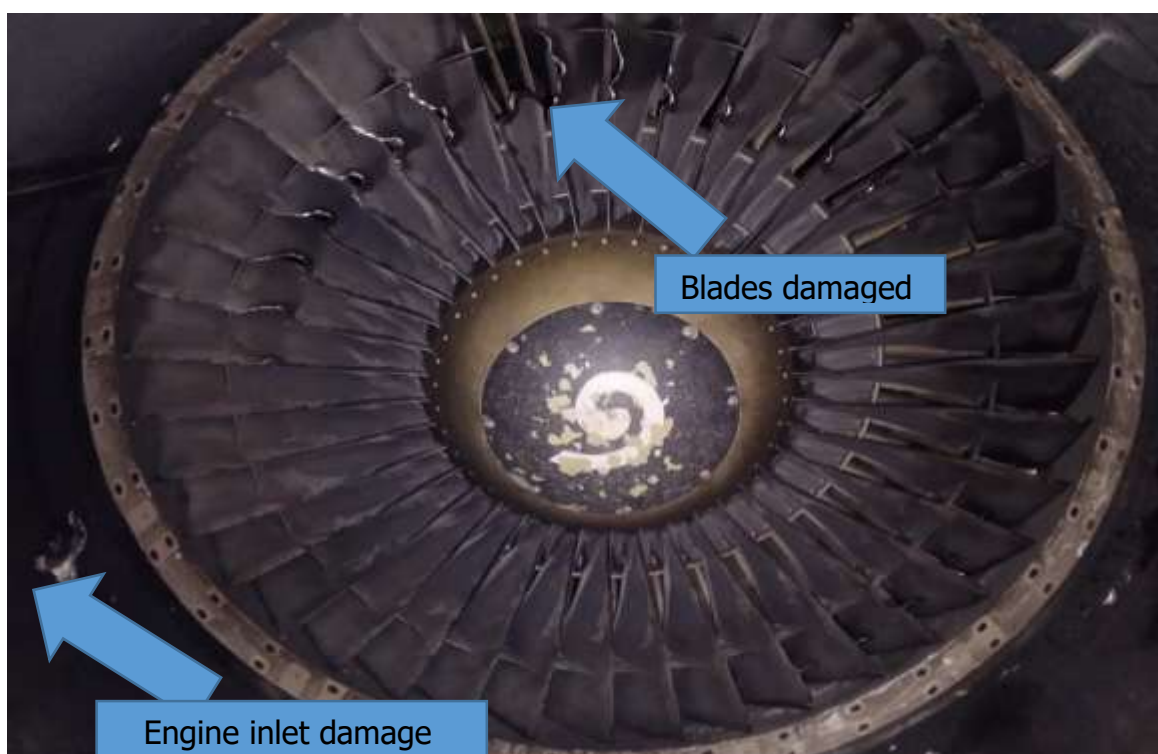


Figure 7: Engine No. 2 inlet and fan blades damage



Figure 8: Nose wheel gear collapsed and stuck into the fuselage belly.



Figure 9: Debris of the damaged nose landing gear



Figure 10: Debris of the damaged nose landing gear



Figure 11: Debris of the damaged nose landing gear



Figure 12: Debris of the damaged nose landing gear



Figure 13: Debris of the damaged nose landing gear



Figure 14: Debris of the damaged nose landing gear



Figure 15: Debris of the damaged nose landing gear



Figure 16: Debris of the damaged nose landing gear



Figure 17: No.2 Main wheel well door



Figure 18: Nose wheel well door.

1.13 Medical and pathological information

The Crew were immediately taken to Aminu Kano Teaching Hospital for toxicological assessment. Clinical observation at 02:08 hours on January 29, 2025, shows that the Captain was fully conscious and oriented, with stable vital signs. His urine test analysis was negative for all observed biochemical parameters.

Clinical observations as of 2:00 a.m. on January 29, 2025, show that the co-pilot was fully conscious and oriented, with stable vital signs. His urine test analysis was found to be positive for Cotinine and unremarkable for other parameters.



1.14 Fire

There was no pre- or post-impact fire

1.15 Survival aspect

The accident was survivable because the structural integrity of the cabin and cockpit was not compromised. There was no fire after the incident, and the seat and seatbelt harnesses were intact. The occupants disembarked through the aircraft's left rear service door.

1.16 Test and Research

Nil

1.17 Organization and management information

1.17.1 Max Air Limited

Max Air Limited (Max Air), a registered airline with a head office and main operational base located in Kano, holds an Air Operator Certificate (AOC) with the number: MAX/AOC/06-13/01 issued by the requirements of the existing Nigeria Civil Aviation Regulations (Nig. CARs). It is authorised to conduct passenger and cargo, scheduled operations and charter flight operations. The airline operates a fleet of Boeing 747, Boeing 737, and Boeing 777 aircraft.



2.0 FINDINGS

1. The flight crew were licensed to conduct the flight.
2. The aircraft had a valid Certificate of Airworthiness
3. The crew resumed duty at about 13:00 h on the day of the occurrence.
4. The aircraft was scheduled for six sectors with the crew.
5. Four sectors were flown typically.
6. On the fifth sector (Abuja-Lagos), nose wheel tyres were replaced due to worn out to the limit.
7. During the flight, the crew raised some concerns about the lock wheel protection mechanism.
8. The aircraft landed to the right of the runway 06 centerline.
9. During the landing roll, the nose landing gear (NLG) collapsed rearward and became stuck under the belly of the fuselage, approximately 2180 m from the runway threshold.
10. Impact marks were observed on the runway at the point at which the nose landing gear collapsed.
11. The aircraft came to a stop at a distance of 2703 m from runway 06 threshold.
12. The crew were heard raising some concerns about the nose landing gear.
13. The aircraft sustained substantial damage.
14. The ARFFS arrived promptly on the scene.
15. The rear left service door was used for the disembarkation
16. All aircraft occupants disembarked unhurt.
17. The accident occurred at night.
18. Debris from the nose landing gear and tyres was observed along the wreckage trail.
19. NOTAM for the closure of the runway was issued at 23:00 h.
20. The wreckage was recovered from the runway and parked at apron 'A' bay 5.
21. NOTAM for the reopening of the runway was issued at 08:00 h the following day



3.0 IMMEDIATE SAFETY RECOMMENDATION

3.1 Safety recommendation 2025-002


The Nigerian Civil Aviation Authority should enhance its safety oversight of Max Air Limited.

Further Investigations

1. Visit the wreckage with the operator for further assessment.
2. Collation of additional information.
3. Retrieval of the replaced worn-out nose wheel tyres and failed landing gear components.
4. Detailed inspection of the Nose Wheel Gear assembly.
5. Non-destructive testing (NDT) is used to check for fatigue failure and examine recovered gear components for pre-existing cracks or signs of overloading.
6. Conduct Structural and Metallurgical Analysis of the Nose Wheel Gear Component.



Appendix I:



035804

FLIGHT RELEASE FORM

Date 28/01/2025
 NGL 1605 AC 5N-MBD
 STD 2032 ETD _____ ROUTE LOS-KAN
 Fuel Situation AVAILABLE AT DESTINATION AND AT THE ALTERNATE

APS WT	<u>25317</u>	KG	MZFW	<u>53770</u>	KG
PAX	<u>5040</u>	KG	MTOW	<u>59745</u>	KG
Cargo/Baggage	<u>1793</u>	KG	MLW	<u>56745</u>	KG
ZFW	<u>47150</u>	KG			
Fuel	<u>10200</u>	KG			
TOW	<u>52350</u>	KG			
B/OFF	<u>3500</u>	KG			
LW	<u>48850</u>	KG			

DESTINATION WX KAN SW 030 05KT
 VIS C
 WX H
 CLD V
O
K

ALTERNATE WX ABV SW 060 05KT
 VIS C
 WX H
 CLD V
D
K

QNH 1018 HPA ONH 1013 HPA
 TEMP 29/06° DP TEMP 29/13° DP
 NO SIGT NO SIGT

OTHER INFORMATION
CAPT. SOLOMAN SFO ARRAS
PSR: AISHA
CC: TELLA, ESTHER AND REALITY

Capt SOLOMAN Fit Dispatcher LOUIS

Figure: 1



RC: 475386
MaxAir Ltd.
 NO 18 ASHTON ROAD KANO - NIGERIA
 TEL: 081021508 E-mail: ocr@maxair.com.ng

LOADSHEET & BALANCE
 BOEING MODEL (737-400)
 ALL WEIGHT IN KILOGRAM (KG)

Priority	Address(es)												
Origin	Recharge / Date / Time			Initial									
Flight	A/C Reg			Version				Crew			Date		
Basic Weight	314531.6			MAXIMUM OPERATIONAL WEIGHTS FOR				ZERO FUEL			LANDING		
Crew	5207			Takeoff Fuel				53070			5120		
Parity	227			ALLOWED WEIGHT FOR TAKEOFF				65370			5770		
DRY OPERATING WEIGHT	35317			(lowest of a, b, or c)				65370			5770		
Takeoff Fuel	10300			Operating Weight				65370			4670		
OPERATING WEIGHT	45617			ALLOWED TRAFFIC LOAD				11412			11412		

Dest	No. of Passengers				Cab Bag	Total	FORWARD HOLD				AFT HOLD		CABIN	Remarks											
	M	AF	C	INF			1	2	3	4	5	6		PAX		PAD									
							1	2	3	4	5	F		Y	F	Y									
K	5	3				1543	270	600	673																

Total Passenger Weight	+ 8745	11452	Allowed Traffic Load	11412	5995
TOTAL TRAFFIC LOAD	=	5740	UNDERLOAD BEFORE LMC	=	5155
Dry Operating Weight	+ 35317	41062			
ZERO FUEL WEIGHT	41062	41062			
TAXI WEIGHT	51912	51912			
Taxi Fuel	300	51612			
TAKEOFF WEIGHT	51612	51612			
Tsp Fuel	3500	55112			
LANDING WEIGHT	48112	48112			

Figure: 2



CHART 12c/132y Pax B737-400

001629

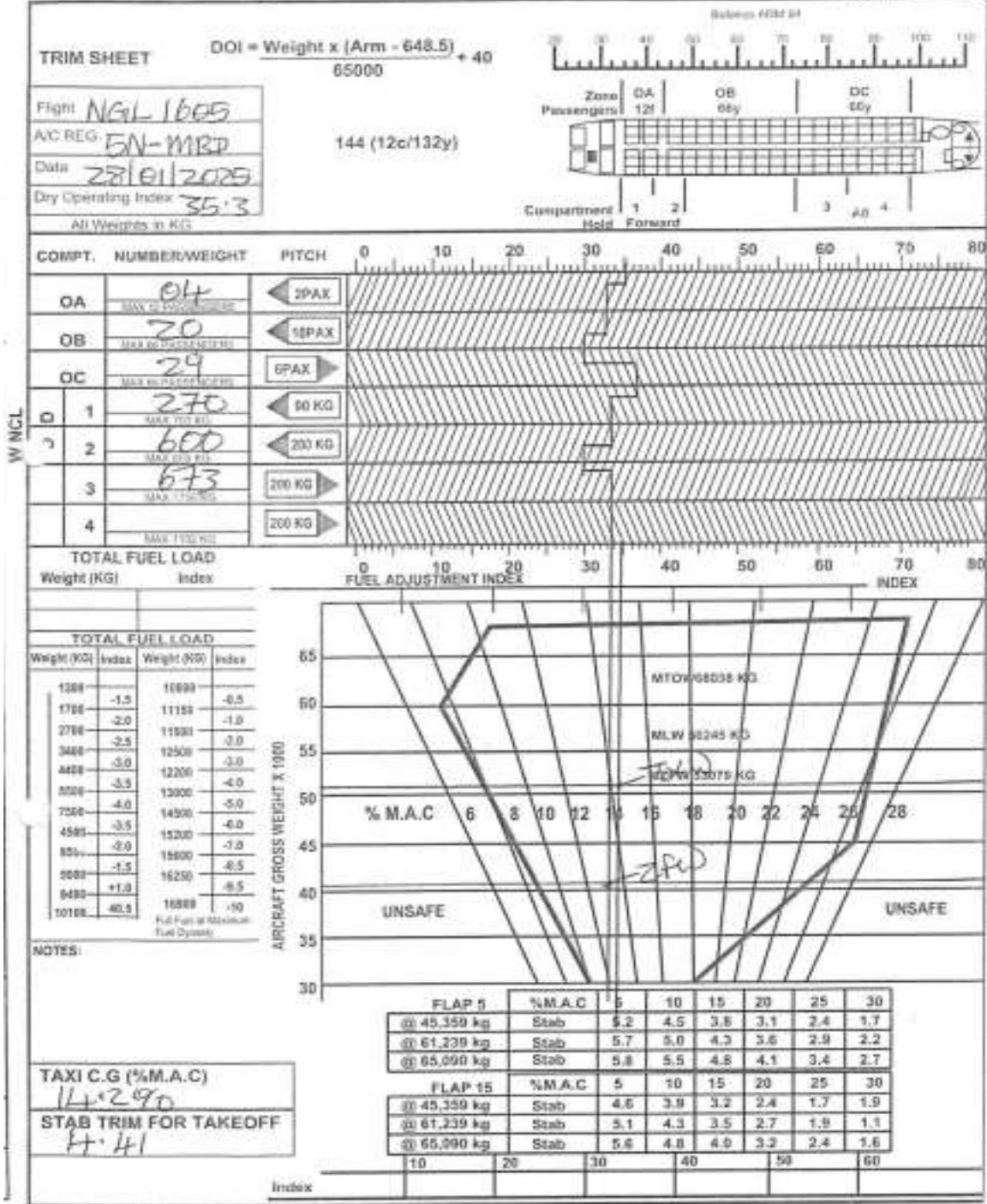


Figure: 3