

# **THE REPUBLIC OF KENYA**



**MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING,  
URBAN DEVELOPMENT & PUBLIC WORKS**

**STATE DEPARTMENT FOR TRANSPORT**

**AIRCRAFT INCIDENT INVESTIGATION DEPARTMENT**

**INVESTIGATION REPORT**

**INVESTIGATION REPORT No.xx/xx/22**

**INCIDENT TO THE AIRCRAFT 5Y-BRJ, PIPER PA 32R301T ON  
19.03.2022 AT WILSON AIRPORT, NAIROBI COUNTY**

## SERIOUS INCIDENT REPORT SUMMARY

OPERATOR	:	Air Lamu Ltd
AIRCRAFT TYPE	:	Piper PA 32R301T
AIRCRAFT MANUFACTURER	:	Piper Aircraft Corporation
YEAR OF MANUFACTURE	:	1982
AIRCRAFT REGISTRATION	:	5Y-BRJ
AIRCRAFT SERIAL NUMBER	:	32R-8229014
DATE OF REGISTRATION	:	08 April 2003
NUMBER AND TYPE OF ENGINE	:	One, Lycoming T10540S1AD
DATE OF OCCURRENCE	:	19 March 2022
LAST POINT OF DEPARTURE	:	Lamu Manda Airstrip, Lamu County (0° 11' 34.00"N, 37° 28' 21.00"E)
POINT OF INTENDED LANDING	:	Wilson Airport
TIME OF OCCURRENCE	:	0618 (0918)
LOCATION OF OCCURRENCE	:	Wilson Airport
TYPE OF FLIGHT	:	Commercial
PHASE OF FLIGHT	:	Landing
NUMBER OF PERSONS ON BOARD	:	Two
INJURIES	:	None
NATURE OF DAMAGE	:	Substantial
CLASS OF OCCURRENCE	:	Accident
PILOT IN COMMAND	:	CPL
PIC's FLYING EXPERIENCE	:	4680.3 Hours

*All times given in this report is Coordinated Universal Time (UTC), with East African Local Time in Parenthesis*

## **OBJECTIVE**

This report contains factual information that has been determined up to the time of publication. The information in this report is published to inform the aviation industry and the public of the general circumstances of the incident.

This investigation has been carried out in accordance with The Kenya Civil Aviation (Aircraft Incident and Incident Investigation) Regulations, 2018, and Annex 13 to the ICAO Convention on International Civil Aviation.

The sole objective of the investigation of an incident or incident under these Regulations shall be the prevention of incidents and incidents. It shall not be the purpose of such an investigation to apportion blame or liability.

The information contained in this report is derived from the data collected during the investigation of the Incident.

## **INVESTIGATION PROCESS**

The occurrence involving a Piper PA passenger aircraft registration 5Y-BRJ was notified to the Aircraft Accident Investigation Department (AAID), State Department for Transport (SDT) of the Ministry of Transport, Infrastructure, Housing, Urban development, and Public Works through a phone call by Wilson Control Tower.

Under the provisions of Annex 13 to the Convention on International Civil Aviation, Kenya civil aviation act, and regulations, an investigation into the circumstances leading to the incident was initiated immediately.

After the initial on-site investigation phase, the occurrence was classified as an ‘Serious Incident’ owing to the nature of the occurrence.

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## **LIST OF ABBREVIATIONS/GLOSSARY OF TERMS**

<b>AAID</b>	-	Aircraft Accident Investigation Department
<b>AMSL</b>	-	Above Mean Sea Level
<b>FT</b>	-	feet
<b>ICAO</b>	-	International Civil Aviation Organization
<b>KCAA</b>	-	Kenya Civil Aviation Authority
<b>LG</b>	-	Landing Gear
<b>LH</b>	-	Left Hand
<b>LT</b>	-	Local Time
<b>RH</b>	-	Right Hand
<b>TBN</b>	-	To Be Notified
<b>VFR</b>	-	Visual Flight Rules



## **SYNOPSIS**

The report describes the events of an aircraft serious incident that occurred at Wilson Airport on 19 March 2022 at 0630 (0930) involving a Piper PA, registration 5Y-BRJ operated by Air Lamu Ltd.

The pilot took off from Manda Point airstrip on Manda Island for Nairobi, Wilson Airport at 0428 (0728) with one passenger on board. At about 0618 (0918) after landing at Wilson airport, the aircraft was involved in an excursion on runway 07, after the blades contacted the runway surface coming to a stop several meters off the center line to the left. The two persons on board the aircraft did not sustain any injuries and disembarked unaided. The aircraft incurred minor damage and there was no outbreak of fire.

The serious incident was notified to AAID on the same day at (0840) 1140.

## **1.0 FACTUAL INFORMATION**

### **1.1 History of the Flight**

On 19 March 2022, at 0618 (0918) a serious incident involving a Piper PA Saratoga, registration 5Y-BRJ operated by Air Lamu Ltd was notified to AAID at (0840) 1140.

The pilot was reported to have taken off from Manda Point airstrip on Manda Island for Nairobi, Wilson Airport at 0428 (0728) with one passenger. During the flight, he noticed the ammeter and GPS flickering bright and dim and figured out that there was a problem with the alternator. To conserve power, he switched off the radio and the transponder. He made initial contact with Wilson Airport and was informed about the direction and velocity of wind on the runway and cleared via the Silos to position downwind 07 and finally released for descend and landing. On downwind 07 the pilot reported that he reduced the speed and dropped the gear and noticed that no green lights were indicating. He recycled the landing gear lever but no green lights were indicating for the second time. He assumed that it could be due to low battery and continued with the finals, while maintaining 50ft above the ground he contacted the tower to verify whether the landing gears were extended to which it was affirmed.

The pilot continued to flare with no issue but on lowering the nose gear, the propeller came in contact with the runway surface and he immediately raised the nose of the aircraft and added power to clear the runway and let the nose down on the grass to the left of the runway center line. The pilot shut down the engine, turned off the mags and the master switch and while on the grass, the left gear collapsed. He applied the right brake to hold the aircraft as straight as possible. The aircraft slide very gently to the left and came to stop about 203meters off the runway tilted to the left. Judging that there was no fuel leaking, the pilot set the gear lever to the UP position, turned off all the electrical power switches, and then exited the aircraft.

There were no injuries reported to the pilot and the passenger. The aircraft sustained minor damage and there was no pre or post-crash of fire.

At the time of the incident, the weather was reported to be favorable for a VFR flight and the prevailing visibility was greater than 6 km.

## 1.2 Injuries to Persons

*Table 1: Injury chart*

Injuries	Crew	Passenger	Others
Fatal	0	0	0
Serious	0	0	0
Minor/None	1	1	

## 1.3 Damage to Aircraft



*Figure 1: The aircraft in a grassy area within the confines of the Aerodrome*

The aircraft sustained minor damage on the left wing and both blades were bent at the tip. Bottom of engine cowls had scratches and slightly worn on the sides.

The left landing gear collapsed and the flaps retracted. There was no damage to right and nose landing gear gear strut, gear-strut-to-actuator joint or actuator. Except for the nose portion, the bottom surfaces of the Aircraft were free of scratches and other damage both in the fuselage portion and the doors of the left and right main landing gears.

The tail section, and other parts of the fuselage and the empennage remained intact.

#### **1.4 Other Damage**

There was damage to the runway edge light.



*Fig 2: Damage on the runway edge light*

#### **1.5 Pilot's Information**

The pilot is a Kenyan male aged 64. At the time of the incident, he held CPL issued by Kenya Civil Aviation Authority.

**Table 2: Summary of the pilot's relevant information**

D.o.B/Age	18 December 1958
Sex	Male
Nationality	Kenyan
Type of License	CPL
Issuing Authority	KCAA
Date of issue	16 February 2022
Validity of License	16 February 2022
Ratings	Piper PA32R, Piper PA32, Cessna 206
Total Flying hours	4680.3
Total hours on type	TBN
Total last 90 days (hours)	12.8
Total last 30 days (hours)	4.2
Total last 7 days (hours)	0
Total last 24 Hours (hours)	0
Medical Certificate (Class/Validity)	Class 1 with no restrictions/limitations, issued on 17 August 2021, Valid for 24Months.

## 1.6 Aircraft Information

### 1.6.1 General information

The aircraft, a Piper PA 32R301T, Turbo Saratoga SP, serial number 32R-8229014, was manufactured in 1980 by Piper Aircraft Corporation. and entered the Kenyan register on 10 March 2014. It is a single engine, low wing, retractable landing gear airplane. It is all metal, seats up to seven occupants, and has two separate one hundred capacity baggage compartments. With the exception of the steel engine mount, parts of the landing gear, miscellaneous steel parts, the cowling, and the lightweight plastic extremities (tips of wings, tail fin and stabilator), the basic airframe is of aluminum alloy. Aerobatics are prohibited in this airplane since the structure is not designed for aerobatic loads.

The fuselage is a semi-monocoque structure. The front door is on the right side and the rear door on the left. A cargo door is installed aft of the rear passenger door.

When both rear doors are open, large pieces of cargo can be loaded through the extra-wide opening. A door on the right side of the nose section gives access to the nose baggage compartment. A maintenance history review of the aircraft's documentation showed it had a valid certificate of release to service with no defects.

### 1.6.2 5Y-BRJ



*Figure 3: 5Y- BRJ Aircraft before the incident*

**Table 1: Aircraft data at the time of the incident**

<b>Aircraft data at the time of the Incident</b>	
Manufacturer:	Piper Aircraft Corporation.
Model:	Piper PA-32R-301T, Saratoga
MSN:	32R-8229014
Year of manufacture:	1982
Total hours since new	TBN
Nationality and registration mark:	Kenyan, 5Y-BRJ
<b>Certificate of airworthiness</b>	
Number:	S/No 0942
Initial Issue date:	21 November 2018
Renewal date	26 February 2021
Valid until:	9 December 2022
<b>Certificate of registration</b>	
Number:	S/No 1926-B
Issue date:	10 March 2014
<b>Engine</b>	
<b>Lycoming TIO-540-S1AD</b>	
Engine Serial Number	L-23479-215
Total time since new	TBN
Last major inspection and date:	TBN
Total hours since the last inspection:	TBN
Total hours since the last COA:	TBN
Maximum take-off Weight	1,632.9Kg (3600lbs)
Maximum Landing Weight	1,632,9Kg (3600lbs)
Maximum Operating Altitude	TBN
Propeller Type	HARTZELL
Propeller Weight	12.88Kg (28.4 lbs) at an arm of –36.5 inches
No. of Blades	3, Constant Speed, Hydraulically Actuated
Constructor	HARTZELL PROPELLER INC
Constructor’s No.	F7673DR-0
Hub Model	HC-E3YR-1F

### **1.6.3 Fuel**

The fuel used was AVGAS 100/100LL Aviation grade.

### **1.6.4 Maintenance Condition of the Aircraft**

The Aircraft's maintenance was relegated to Light Plane Maintenance Ltd, an aircraft maintenance service company based in Airspray, Naivasha, except for daily storage inspection and pre-flight and post-flight inspections, were performed by the Captain himself. Although the maintenance service company was in a position to handle temporary failures and malfunctions of the Aircraft, nothing was done other than regular inspections for more than one year prior to this serious incident because the Aircraft had not experienced any trouble during this period. The service log has no record of any problems or maintenance service instructions, other than the landing gear system incident which was reported to AAID on 16 May 2013. Also, neither the maintenance engineers of the company nor the captain remember any problems with the other Aircraft systems.

### **1.7 Meteorological Information**

Recorded meteorological information at Wilson Airport indicated the temperature at 0600 (0900) Winds 08° at 05 knots and there was no recorded rain for the period; Visibility was greater than 10km; Clouds ceiling broken at 2400ft above the ground level (AGL); Temperature was 22°C; Dew point 15°C; QNH 1022.5mb and QFE 834.5mb.

### **1.8 Aids to Navigation**

The flight was conducted in the daytime under VFR.

### **1.9 Communication**

There was no recorded failure or defect in communication before or during the flight and therefore this was considered not to be a factor.



## 1.10 Aerodrome information

HKNW is located at latitude 01° 19' 18.19" S and longitude 036° 48' 53.40" E at an elevation of 5,546 feet AMSL. The airport is a medium-sized airport situated about 5km south of Nairobi Central Business District. It serves both domestic and international traffic and has two asphalt runways:

- RWY 07/25 measures 4,800 feet (1,463m) long by 79 ft (24m) wide;
- RWY 14/32 measures 5,118 feet (1,560m) long by 75 ft (22m) wide.

The airport has eight taxiways namely A, B, C, E, H, J, K, L, and M.

It is also used for training flights. The aerodrome has a manned ATC, with Wilson tower providing control services relevant information.



*Figure 4: The Wilson Aerodrome where the accident occurred*

## 1.11 Flight Recorders

The aircraft was not fitted with flight recorders and it was not a requirement by the KCAA regulations.

## 1.12 Wreckage and Impact Information

The aircraft came to a final stop about 220 meters from the runway.

The left-hand wing came into contact with the ground.

### 1.12.1 Salvage operations

To remove the aircraft from the location, the left wing was lifted manually and thereafter the left main landing gear strut was forced down to support the fuselage. The aircraft was then pushed to the hangar.



*Figure 5: The R/H landing gear.*



*Figure 6: Damage to the propellers blades.*



*Fig 7: The Section of the Cockpit Instruments*

### **1.12.2 Emergency locator transmitter**

The aircraft is equipped with an ELT.

### **1.13 Medical and Pathological Information**

There was no evidence that physiological factors or incapacitation affected the performance of the pilot.

### **1.14 Fire**

There was no pre or post-crash fire

### **1.15 Survival Aspects**

The incident was survivable. The pilot and the passenger did not suffer any injuries.

### **1.16 Tests and Research**

Not applicable

### **1.17 Organizational and Management Information**

Aircraft Owner : AIR LAMU LIMITED  
Aircraft Operator : AIR LAMU LTD  
Address : P. O Box 24576-00502  
NAIROBI, Kenya

#### **1.17.1 Maintenance Organization**

Name : LIGHT PLANE MAINTENANCE LTD  
Location : AIRSPRAY, NAIVASHA  
Address : P. O Box 40813-00100  
NAIROBI, Kenya

### **1.18 Additional information**

The investigation is ongoing and a final report is expected to be published once the investigation is complete.

### **1.19 Useful or Effective investigation techniques**

Not applicable

### **2.0 Summary**

An investigation into the probable cause(s) of the occurrence is ongoing.

**Investigator-In-Charge**

**13/04/2022**