PRELIMINARY ACCIDENT REPORT

Accident and Incident Investigations Division

Accident
- Preliminary Report -
AIID Ref No: CA18/2/3/10569

Figure 1: File photo of ZU-MJM aircraft. (Source: https://www.airliners.net/photo/Untitled/Jabiru)

Description:
On Sunday morning, 23 March 2025 at approximately 0735Z, a pilot and two passengers on-board a Jabiru J430 aircraft with registration ZU-MJM were engaged in a private flight from R100 Nandoni private airstrip (registered) in Thohoyandou, Limpopo province, to Louis Trichardt Aerodrome (FALO) in the same province.

The pilot used Runway (RWY) 14 for take-off and the aircraft climbed to 2 000 feet (ft) above ground level (AGL). However, the engine ran rough whilst abeam Makhado Military Aerodrome (FALM). The pilot switched on the carburettor heat and pulled back the power lever (throttle); he then attempted to land the aircraft on Runway 10 at FALM but changed his plan when he noticed the trees before the runway threshold. He decided to conduct a forced landing on a field in Levubu residential area. At this point, the engine had stopped. After selecting the first stage flaps and just before touching down on the identified field, the pilot noticed a tree to his left and banked right to clear it. However, the right wing and main landing gear impacted the ground hard, and the left-wing tip and horizontal stabiliser impacted the tree stem. The aircraft stopped approximately 20 metres (m) after the first point of impact.

The pilot freed the passengers from their seat harnesses and pulled them out of the aircraft; the occupants had sustained minor to serious injuries and were rushed to different hospitals in the province. The aircraft was destroyed.

Occurrence Details

Reference Number	**:** CA18/2/3/10569
Occurrence Category	**:** Category 1
Type of Operation	**:** Private (Part 94)
Name of Operator	**:** Thabi's Funeral Services and Tombstones CC
Aircraft Registration	**:** ZU-MJM
Aircraft Make and Model	**:** Jabiru J430
Nationality	**:** South African
Place	**:** Levubu residential area, Limpopo Province
Date and Time	**:** 23 March 2025 at 0745Z
Injuries	**:** 3
Damage	**:** Destroyed

Purpose of the Investigation

In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, this report was compiled in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and not to apportion blame or liability.

All times given in this report are Co-ordinated Universal Time (UTC) and will be denoted by (Z). South African Standard Time is UTC plus 2 hours.

Investigation Process

The Accident and Incident Investigations Division (AIID) was notified of the occurrence involving a Jabiru J430 aircraft which occurred in Levubu residential area, Limpopo province, on 23 March 2025 at 0745Z. The occurrence was classified as an accident according to the CAR 2011 Part 12 and the International Civil Aviation Organisation (ICAO) STD Annex 13 definitions.

The AIID has appointed an investigator-in-charge (IIC) to conduct a full investigation; the IIC was dispatched to the accident site. Notification was sent to the State of Registry in accordance with the CAR 2011 Part 12 and the ICAO Annex 13 Chapter 4. The AIID will lead the investigation and issue the final report of this accident in accordance with the CAR 2011 Part 12 and the ICAO Annex 13.

The information contained in this preliminary report is derived from the information gathered during the on-going investigation into the occurrence. Later, an interim or final report may contain altered information in case new evidence is found during the on-going investigation that requires changes to the information depicted in this report.

The AIID reports are made available to the public at:
https://www.caa.co.za/industry-information/accidents-and-incidents/

Notes:

1. *Whenever the following words are mentioned in this report, they shall mean the following:*
   Accident — this investigated accident
   Aircraft — the Jabiru J430 involved in this accident
   Investigation — the investigation into the circumstances of this accident
   Pilot — the pilot involved in this accident
   Report — this accident report

2. *Photos and figures used in this report were taken from different sources and may have been adjusted from the original for the sole purpose of improving clarity of the report. Modifications to images used in this report were limited to cropping, magnification, file compression; or enhancement of colour, brightness, contrast; or addition of text boxes, arrows, or lines.*

Disclaimer

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Abbreviation	Description
°	Degrees
°C	Degrees Celsius
A to F	Authority-to-fly
AGL	Above Ground Level
AIID	Accident and Incident Investigations Division
ASI	Airspeed Indicator
ATC	Air Traffic Control
ATPL	Airline Transport Pilot Licence
C of R	Certificate of Registration
CRS	Certificate of Release to Service
FALM	Makhado Military Aerodrome
FALO	Louis Trichardt Aerodrome
ft	Feet
hPa	Hectopascal
kt	Knots
L	Litres
m	Metres
METAR	Meteorological Aerodrome Report
MLG	Main Landing Gear
MPH	Miles per Hour
nm	Nautical Miles
QNH	Altitude Above Mean Sea Level)
RWY	Runway
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Service
UTC	Co-ordinated Universal Time
VMC	Visual Meteorological Conditions
Z	Zulu (Term for Universal Co-ordinated Time - Zero Hours Greenwich)

1. FACTUAL INFORMATION

1.1. History of Flight

1.1.1. On Sunday morning, 23 March 2025, a pilot and two passengers on-board a Jabiru J430 aircraft with registration ZU-MJM were engaged in a private flight from R100 Nandoni private airstrip (registered) in Thohoyandou, Limpopo province, to Louis Trichardt Aerodrome (FALO) in the same province. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011 as amended.

1.1.2. The pilot stated that on 22 March 2025, he topped up fuel on the aircraft with 84 litres (L) of Octane 95 Unleaded fuel which came to a total of 140L (full tanks). The aircraft was flown for 1 hour after it was refuelled. On 23 March 2025, the pilot performed the pre-flight checks and briefed the two passengers about wearing safety belts and what to do in an emergency. Later, the pilot started the engine and completed the run-up checks before lining up for take-off on Runway (RWY) 14. Thereafter, the aircraft took off and climbed to 2 000 feet (ft) above ground level (AGL). Approximately eight minutes into the flight near Makhado Military Aerodrome (FALM), the engine ran rough and the engine's revolutions per minute (RPM) dropped. The pilot initiated a left to line up with RWY 10 at FALM, he also switched on the carburettor heat to avoid carburettor icing. However, the engine stopped. The pilot attempted to restart it but was unsuccessful.

1.1.3. As the aircraft approach RWY 10, the pilot realised that the aircraft was descending faster than he had expected; moreover, there was a line of trees on the aircraft's approach path just before the threshold. He deduced that it would be impossible to clear the trees with no power. He then turned the aircraft to the right (back to the original path) and identified a field on his flight path in Levubu residential area. He selected the first stage flaps and, just before touching down on the identified field, the pilot noticed a tree to his left and banked right to clear it, the aircraft landed hard on the ground with the right wing first and the left-wing tip impacted a tree stem, followed by the left horizontal stabiliser. The aircraft came to rest approximately 20 metres (m) from the first point of impact.

1.1.4. After the aircraft had stopped, the pilot freed the passengers from their seat harnesses and pulled them out of the aircraft. The pilot and the passengers sustained varying injuries. The front occupants (pilot and one passenger) were seriously injured; the passenger seated in the back seat sustained minor injuries. The pilot used his mobile phone to call for help. According to the aircraft clock, the accident occurred at 0745Z.

The pilot was airlifted to a nearby hospital and was later transferred to Polokwane Medi Clinic. The two passengers were transported to the same clinic.

1.1.5. The accident occurred during daylight on a field in Levubu residential area, approximately 1.25 nautical miles (nm) south-west of FALM RWY 10 threshold and at Global Positioning System (GPS) co-ordinates determined to be 23° 4'58.97" South 30°21'5.80" East, at an elevation of 2077 feet (ft).

1.2. Injuries to Persons

Injuries	Pilot	Crew	Pass.	Total On-board	Other
Fatal	-	-	-	-	-
Serious	1	-	1	-	-
Minor	-	-	1	-	-
None	-	-	-	-	-
Total	**1**	**-**	**2**	**3**	**-**

Note: Other means people on the ground.

1.2.1. The pilot and the front passenger were seriously injured; the passenger who was seated in the back seat sustained minor injuries and was discharged from the clinic on the same day.

1.3. Damage to Aircraft

1.3.1 The aircraft was destroyed.

Figure 2: The main aircraft after the accident.

1.4. **Other Damage**

1.4.1. None.

1.5. **Personnel Information**

Nationality	South African	Gender	Male	Age	22
Licence Type	Private Pilot Licence (PPL)				
Licence Valid	No	Type Endorsed	Yes		
Ratings	Night				
Medical Expiry Date	01 April 2026				
Restrictions	None				
Previous Accidents	Yes. 21 April 2024 (Ref: CA18/2/3/10446)				

Note: Previous accidents refer to past accidents the pilot was involved in, when relevant to this accident.

Flying Experience:

Total Hours	262.2
Total Past 24 Hours	1.0
Total Past 7 Days	1.0
Total Past 90 Days	6.0
Total on Type Past 90 Days	6.0
Total on Type	158.9

1.5.1. The pilot had a Privat Pilot Licence (PPL) that was initially issued on 18 December 2021 with an expiry date of 31 December 2024. The PPL was invalid at the time of the accident as it had expired. The pilot stated that he was not aware that his licence had expired.

1.5.2. The pilot's Class 2 medical certificate was issued on 1 April 2021 with an expiry date of 1 April 2026 with no restrictions.

1.6. **Aircraft Information**

1.6.1. Aircraft Description (Source: Pilot's Operating Handbook [POH])

The Jabiru UL450 is a two-seat high-wing light aircraft of composite construction with a maximum all-up weight of 450 kilograms (kg). It is powered by a Jabiru 2200A engine with a directly driven, two-bladed, fixed-pitch wooden propeller. Pitch and roll control are from a centrally mounted control column, yaw control is from rudder pedals in both the left and right footwells. A lever mounted on the roof to the left of the pilot's seat operates the flaps. An engine throttle lever is provided for each pilot.

Airframe:

Manufacturer/Model	Shadow Lite CC / Jabiru J430	
Serial Number	513	
Year of Manufacture	2020	
Total Airframe Hours (At Time of Accident)	926.8	
Last Annual Inspection (Date & Hours)	24 April 2024	881.1
Hours Since Last Inspection	45.7	
CRS Issue Date	02 August 2024	
ATF (Issue Date & Expiry Date)	31 July 2024	30 July 2025
C of R (Issue Date) (Present Owner)	27 February 2024	
Type of Fuel Used	Unleaded Octane 95	
Operating Category	Part 94	
Previous Accidents	On 21 April 2024, the pilot aborted take-off due to a bug that had lodged in the pitot tube and, as a result, caused the airspeed readings to remain at zero. The pilot could not bring the aircraft to a safe stop on the remaining runway and he decided to exit to the right to minimise damage (ref: CA18/2/3/10446).	

Note: Previous accidents refer to past accidents the aircraft was involved in, when relevant to this accident.

Engine:

Manufacturer/Model	Jabiru Aircraft (Pty) Ltd / Jabiru 2200A
Serial Number	33A1746
Hours Since New	926.8
Hours Since Overhaul	343.1

Propeller:

Manufacturer/Model	P-Prop / FEG8
Serial Number	N4255
Hours Since New	45.7
Hours Since Overhaul	TBO

1.7. Meteorological Information

1.7.1. The weather information below was obtained from the pilot questionnaire.

Wind Direction	Light and variable	Wind Speed	Light and variable	Visibility	9999m
Temperature	25°C	Cloud Cover	Sky clear	Cloud Base	0
Dew Point	Unknown	QNH	Unknown		

1.8. **Aids to Navigation**

1.8.1. The aircraft was equipped with standard navigational equipment as approved by the Regulator (SACAA). There were no records indicating that the navigational equipment was unserviceable prior to the flight.

1.9. **Communication**

1.9.1. The aircraft was equipped with a standard communication system as approved by the Regulator. There were no recorded defects with the communication system prior to the flight.

1.10. **Aerodrome Information**

1.10.1. The aircraft crashed on an open field, 1.25nm south-west of FALM RWY 10 threshold. The aircraft could not reach the aerodrome as it had no power.

Aerodrome Name	Makhado Military Aerodrome (FALM)
Aerodrome Location	Limpopo Province
Aerodrome Status	Unlicenced, but can be used for an emergency
Aerodrome GPS coordinates	23° 4'40.33" South, 30°22'55.63" East
Aerodrome Elevation	2013ft
Runway Headings	10/28
Dimensions of Runway Used	46m X 4020mm
Heading of Runway to be Used	090˚T
Surface of Runway Used	Tar
Approach Facilities	None
Radio Frequency	1119.8-MHz

Figure 3: The aerial view shows FALM and the accident site. (Source: Google Earth)

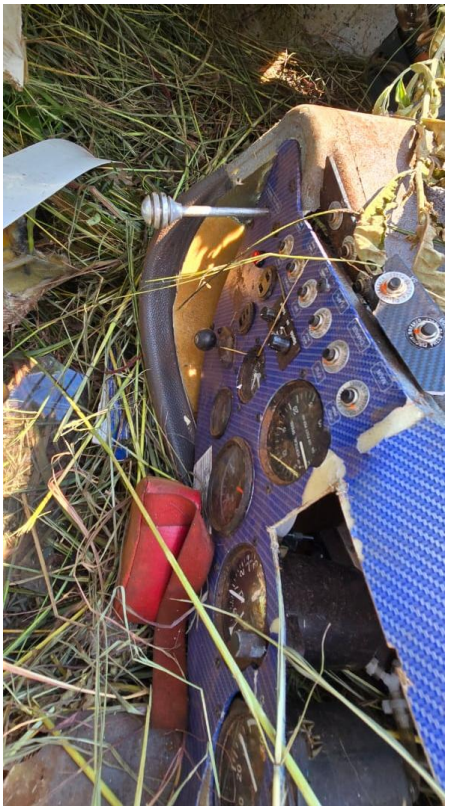
1.11. Flight Recorders

1.11.1. The aircraft was neither equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was it required by regulation to be fitted to the aircraft type.

1.12. Wreckage and Impact Information

1.12.1. After the engine had stopped, the pilot was unable to restart it; he decided to land on RWY 10 at FALM which was to his left. However, the trees before the threshold prompted him to seek another landing area because the aircraft had no power. The pilot located a field south-west of FALM, but the aircraft was descending faster than expected, therefore, he extended the flaps to the first stage (10˚) and maintained a gliding speed of 70 knots (kts).

1.12.2. Just before the aircraft touched down, the pilot realised that there was a tree to the left and he banked right to avoid impacting it. The right wing and right main landing gear (MLG) impacted the ground first, and the left-wing tip impacted the tree, followed by the left horizontal stabiliser. The right-side airframe was extensively damaged. The right wing was severed from the root; it was found at the front of the aircraft. The fuel lines were severed and the fuel leaked from them. The front and back passenger doors, as well as the right main landing gear were found ripped off of the aircraft. The engine mounts had broken off and the engine was found near the main fuselage. One of the wooden propellers had broken in half (the severed piece was found slightly further from the main fuselage); the second propeller had snapped backwards (but remained attached).



Figures 4 and 5: The damaged left-wing tip and instrument panel (left). The pulled back power lever (right).

Figure 6: The main fuselage after the accident.

1.12.3. The cabin area sustained serious damage. The windshield was found shattered, the instrument panel was destroyed, and the floor area was deformed after the right MLG collapsed due to impact forces. The safety harnesses were not damaged. The pilot assisted the passengers to disembark from the aircraft and, thereafter, called for help.

1.13. Medical and Pathological Information

1.13.1. The front-seated occupants (pilot and one passenger) sustained serious injuries and required hospitalisation; the occupant who was seated in the back seat sustained minor injuries and was discharged from the hospital on the same day. The front right passenger sustained more injuries to his upper torso which required an operation.

1.14. **Fire**

1.14.1. There was no pre- or post-impact fire.

1.15. **Survival Aspects**

1.15.1. The chances of survival were minimal as the cockpit area was extensively damaged. The occupant's chances of survival were improved by adhering to the safety standard of wearing the safety harnesses.

1.16. **Tests and Research**

1.16.1. The aircraft was recovered to the aircraft maintenance organisation (AMO) facility where the engine teardown inspection was performed. The results and findings will be discussed in the final report.

1.17. **Organisational and Management Information**

1.17.1. The AMO had a valid AMO Certificate that was issued on 31 August 2024 with an expiry date of 31 August 2025. The approved person (AP) had a valid AP Certificate that was issued on 10 December 2024 with an expiry date of 9 December 2026. He had an airframe and engine ratings of the aircraft type.

1.18. **Additional Information**

1.18.1. To be discussed in the final report.

1.19. **Useful or Effective Investigation Techniques**

1.19.1. None.

2. FINDINGS

2.1. **General**

From the available evidence, the following preliminary findings were made with respect to this accident. These shall not be read as apportioning blame or liability to any organisation or individual.

To serve the objective of this investigation, the following sections are included in the conclusions heading:

- **Findings —** are statements of all significant conditions, events, or circumstances in this accident. The findings are significant steps in this accident sequence, but they are not always causal or indicate deficiencies.

2.2. **Findings**

2.2.1. The pilot had an invalid Private Pilot Licence (PPL). The PPL was initially issued on 18 December 2021 with an expiry date of 31 December 2024. The Regulator does not have a record of the pilot's licence renewal process in their system. The aircraft type was endorsed on the pilot's licence.

2.2.2. The pilot had a Class 2 aviation medical certificate that was issued on 1 April 2021 with an expiry date of 1 April 2026 with no restrictions.

2.2.3. The last maintenance inspection of the aircraft was conducted and certified on 2 August 2024 at 881.1 airframe hours by an approved aircraft maintenance organisation (AMO). The aircraft had accrued 45.7 hours since the last maintenance.

2.2.4. The aircraft was issued a Certificate of Release to Service (CRS) on 2 August 2024 with an expiry date of 30 July 2025 or at 981.1 airframe hours, whichever comes first.

2.2.5. The aircraft had sufficient fuel for the flight. There were no defects noted in the flight folio; however, due to the engine stoppage, the aircraft could not reach FALM which was to the left of their flight path; the pilot performed a forced landing on an open field 1.25nm south-west of the aerodrome.

2.2.6. The weather was conducive at the time of the flight; the weather was not a contributing factor in this accident.

3. ON-GOING INVESTIGATION

3.1. The AIID investigation is on-going, and the investigator will investigate other aspects of this occurrence which may or may not have safety implications.

4. SAFETY RECOMMENDATIONS

4.1. **General**

The safety recommendations listed in this report are proposed according to paragraph 6.8 of Annex 13 to the Convention on International Civil Aviation and are based on the conclusions listed in heading 3 of this report. The AIID expects that all safety issues identified by the investigation are addressed by the receiving States and organisations.

4.2. **Safety Recommendation/s**

4.2.1. None.

5. APPENDICES

5.1. None.

This report is issued by:

Accident and Incident Investigations Division
South African Civil Aviation Authority
Republic of South Africa