

PRELIMINARY ACCIDENT REPORT

Accident and Incident Investigations Division

Accident
- Preliminary Report -
AIID Ref No: CA18/2/3/10471



Figure 1: The ZU-IEZ aircraft before the accident. (Source: Pilot)

Description:

On Monday morning, 15 July 2024, a pilot and a passenger on-board a Bat Hawk aircraft with registration ZU-IEZ took off on a private flight from Bundu Fly Inn Estate Airfield in Gauteng province with the intention to fly to Wonderboom Aerodrome (FAWB) 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.

The pilot stated that whilst en route to FAWB, the aircraft's radio squelched and he elected to return to Bundu Fly Inn Estate Airfield. Whilst on approach for landing on Runway 27, the engine stopped. He then executed a forced landing on an open field next to Ga-Rankuwa informal settlement. During the landing roll, the nose wheel impacted a rock, and the aircraft flipped over. The accident occurred about 0.6 nautical miles (nm) west of Bundu Fly Inn Estate Airfield. The aircraft was substantially damaged. The pilot sustained minor injuries during the accident sequence; the passenger was not injured.

Occurrence Details

Reference Number : CA18/2/3/10471
Occurrence Category : Accident Category 1
Type of Operation : Private (Part 94)
Name of Operator : Wilhem Otto Wolfgang Jacobs
Aircraft Registration : ZU-IEZ
Aircraft Make and Model : Bat Hawk / LSA
Nationality : South Africa
Registration Marks : ZU-IEZ
Place : Open field next to a Ga-Rankuwa informal settlement
Date and Time : 15 July 2024 at 0700Z
Injuries : Minor
Damage : Substantial

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 Bat Hawk aircraft next to Ga-Rankuwa informal settlement in Gauteng province on 15 July 2024 at 0700Z. 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 appointed an investigator-in-charge who dispatched to the accident scene to conduct a full investigation. Notification was sent to the State of Registry, Operator, Design and Manufacturer in accordance with the CAR 2011 Part 12 and the ICAO Annex 13 Chapter 4. The States did not appoint an accredited representative and/or advisor. 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 Bat Hawk 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 various 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

This report is produced without prejudice to the rights of the SACAA, which are reserved.

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Abbreviation	Description
°	Degrees
°C	Degrees Celsius
ACCID	Accident
AGL	Above Ground Level
AIID	Accident and Incident Investigations Division
AP	Approved Person
ATF	Authority to Fly
CAR	Civil Aviation Regulations
CAVOK	Cloud and Visibility OK
C of R	Certificate of Registration
CRS	Certificate of Release to Service
CVR	Cockpit Voice Recorder
FAWB	Wonderboom Aerodrome
FDR	Flight Data Recorder
ft	Feet
GPS	Global Positioning System
hPa	Hectopascal
kt	Knots
m	Metres
METAR	Meteorological Routine Aerodrome Report
nm	Nautical Miles
QNH	Altitude Above Mean Sea Level
RWY	Runway
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Service
VFR	Visual Flight Rules
VMC	Visual Meteorological Condition
W	West
Z	Zulu (Term for Universal Co-ordinated Time - Zero Hours Greenwich)

1. FACTUAL INFORMATION

1.1. History of Flight

- 1.1.1. On Monday morning, 15 July 2024, a pilot and a passenger on-board a Bat Hawk aircraft with registration ZU-IEZ took off on a private flight from Bundu Inn Estate Airfield in Gauteng province with the intention to fly to Wonderboom Aerodrome (FAWB) 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 whilst en route to FAWB, the aircraft's radio squelched and he elected to return to Bundu Fly Inn Estate Airfield. Whilst on approach for landing on Runway 27 (RWY 27) at a height of approximately 700 feet (ft) above ground level (AGL), the engine stopped. He then tried to restart the engine, but he was unsuccessful. As a result, he elected to execute a forced landing on an open field next to Ga-Rankuwa informal settlement. During the landing roll, the nose wheel hit a rock which caused the aircraft to flip over; it skidded for approximately 20 metres (m) before it came to rest. The aircraft was substantially damaged. Both occupants evacuated the aircraft without assistance. However, the pilot sustained minor injuries during the accident sequence; the passenger was not injured.
- 1.1.3. The accident occurred approximately 0.6 nautical miles (nm) west of Bundu Fly Inn Estate Airfield at Global Positioning System (GPS) co-ordinates determined to be 25°39'02.9" South 028°02' 48.7" East, at an elevation of 4 265 ft.



Figure 2: The accident site and the threshold of Runway 27. (Source: Google Earth)

1.2. Injuries to Persons

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

Note: Other means people on the ground.

1.3. Damage to Aircraft

1.3.1. The aircraft was substantially damaged.



Figure 3: The aircraft post-accident. (Source: Pilot)

1.4. Other Damage

1.4.1. None.

1.5. Personnel Information

Nationality	South African	Gender	Male	Age	65
Licence Type	National Pilot Licence (NPL)				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Nil				
Medical Expiry Date	1 October 2024				
Restrictions	None				
Previous Accidents	None				

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

Flying Experience:

Total Hours	101.2
Total Past 24 Hours	0
Total Past 7 Days	0
Total Past 90 Days	10.3
Total on Type Past 90 Days	10.8
Total on Type	10.3

- 1.5.1. The pilot was initially issued a National Pilot Licence (NPL) on 24 June 2023. The licence was renewed on 17 June 2024 with an expiry date of 16 June 2026. The aircraft type was endorsed on the pilot's licence.
- 1.5.2. The pilot was issued a Class 4 aviation medical certificate on 14 October 2022 with an expiry date of 1 October 2024 with no medical restrictions.

1.6. Aircraft Information

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

The Bat Hawk R is a high wing monoplane with the crew of two seating side-by-side in an under-slung tubular framed structure surrounded by a glass fibre composite fairing. Crew members are protected from the weather by a large wrap-around windshield. The propeller and the engine are mounted in a tractor position above and in front of the crew. The empennage is conventional in location and layout. The undercarriage is a tricycle arrangement with a steerable nose wheel.

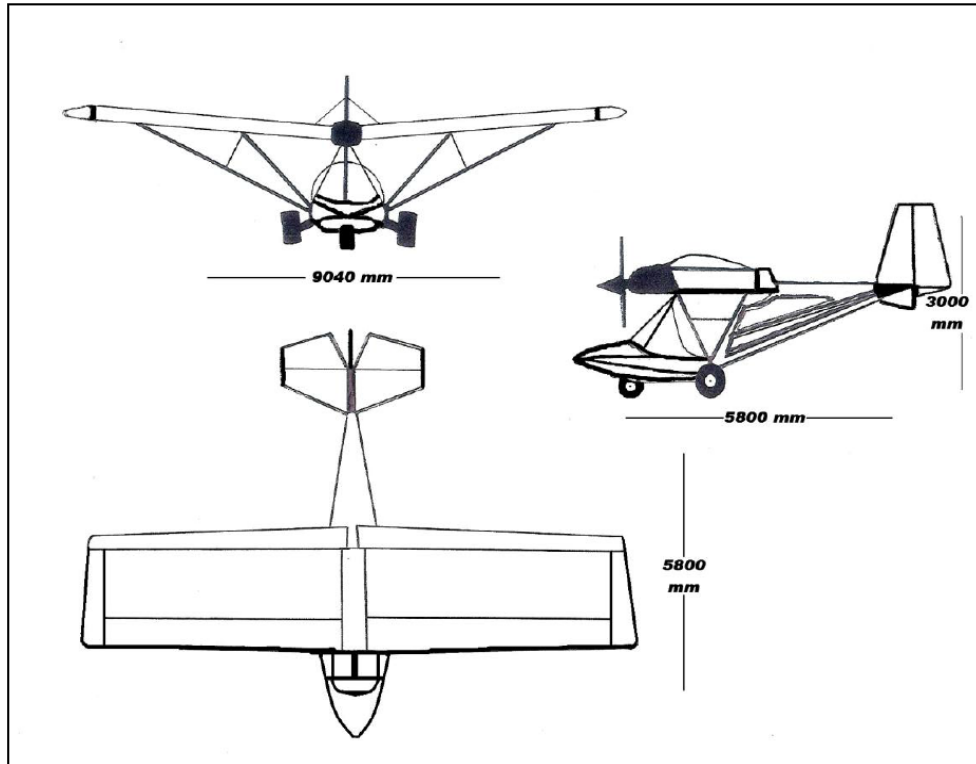


Diagram 1: The three-dimensional view of the aircraft type.

Airframe:

Manufacturer/Model	Micro Aviation SA / Bat Hawk	
Serial Number	0006	
Year of Manufacture	9 September 2019	
Total Airframe Hours (At Time of Accident)	353.2	
Last Inspection (Date & Hours)	30 September 2023	300
Hours Since Last Inspection	53.2	
CRS Issue Date	30 September 2023	
ATF (Issue Date & Expiry Date)	22 May 2023	30 September 2024
C of R (Issue Date) (Present Owner)	22 May 2023	
Type of Fuel Used	Avgas	
Operating Category	Private Part 94	
Previous Accidents	None	

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

Engine:

Manufacturer/Model	Camit 3300 SLRE
Serial Number	0011
Part Number	Unknown
Hours Since New	353.2
Hours Since Overhaul	TBO not yet reached

Propeller:

Manufacturer/Model	P-Prop (Wooden)
Serial Number	N3700
Part Number	Unknown
Hours Since New	353.2
Hours Since Overhaul	TBO not yet reached

1.6.2 The aircraft had a valid Authority to Fly (ATF) Certificate that was initially issued on 27 September 2019. The latest ATF was renewed on 22 May 2023 with an expiry date of 30 September 2024.

1.6.3 The aircraft's Certificate of Release to Service (CRS) was issued on 30 September 2023 at 285.0 hours with an expiry date of 30 September 2025 or at 385.0 hours, whichever comes first.

1.7 Meteorological Information

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

Wind Direction	180°	Wind Speed	5Kt	Visibility	CAVOK
Temperature	8°C	Cloud Cover	None	Cloud Base	None
Dew Point	-2°C	QNH	TBD		

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 accident occurred approximately 0.6nm from the threshold of RWY 27 at Bundu Fly Inn Estate Airfield.

Aerodrome Name	Bundu Fly Inn Estate Airfield
Aerodrome Location	Gauteng Province
Aerodrome Status	Licensed
Aerodrome GPS coordinates	25°38'43.6" South, 028°02'25.4" East
Aerodrome Elevation	4330 feet
Runway Headings	09 / 27
Dimensions of Runway Used	1000 m
Heading of Runway Used	27
Surface of Runway Used	Grass
Approach Facilities	Nil
Radio Frequency	124.8 MHz

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 During the forced landing, the aircraft's nose wheel impacted a rock and, consequently, flipped over and skidded before it came to a stop. Both wings and the wing support struts sustained substantial damage. The aircraft's windshield shattered during the accident sequence and pieces of it were found near the nose section. The nose gear was found bent backwards. The fuel tank was damaged which caused the fuel to spill to the ground. There was no visible damage to the engine.



Figure 4: The rock that caused the aircraft to nose over.

1.13 Medical and Pathological Information

1.13.1 To be included in the final report.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The accident was survivable as the cabin structure was not damaged.

1.16 Tests and Research

1.16.1 To be included in the final report.

1.17 Organisational and Management Information

1.17.1 This was a private flight that was conducted under the provisions of Part 94 of the CAR 2011 as amended.

1.18 Additional Information

1.18.1 To be included 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 was initially issued a National Pilot Licence (NPL) on 24 June 2023. The licence was reissued on 17 June 2024 with an expiry date of 16 June 2026. The aircraft type was endorsed on the pilot's licence and logbook.
- 2.2.2 The pilot was issued a Class 4 aviation medical certificate on 14 October 2022 with an expiry date of 1 October 2024 with no medical restrictions.
- 2.2.3 The aircraft had a valid Authority to Fly (ATF) Certificate that was initially issued on 27 September 2019. The latest ATF was renewed on 22 May 2023 with an expiry date of 30 September 2024.

3 ON-GOING INVESTIGATION

- 3.1 The AIID investigation is on-going, and the investigator will be investigating other aspects of this accident 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**