# LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

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| **Reference Number** | CA18/2/3/10326 | | | | | |
| **Classification** | Accident | **Date** | 8 June 2023 | **Time** | 1250Z | |
| **Type of Operation** | Operation of Non-type Certificated Aircraft – Private (Part 94) | | | | | |
| **Location** | | | | | | |
| Place of Departure | Letaba Aerodrome, Limpopo Province | Place of Intended Landing | Phalaborwa Aerodrome (FAPH), Limpopo Province | | | |
| Place of Occurrence | On S131 gravel road between Letaba and Phalaborwa in the Kruger National Park, Limpopo Province | | | | | |
| GPS Co-ordinates | Latitude | 23°52'26.14" S | Longitude | 031°23'57.12" E | Elevation | 1 165 feet |
| **Aircraft Information** | | | | | | |
| Registration | ZU-IXD | | | | | |
| Make; Model; S/N | Micro Aviation SA; Bat Hawk R (Serial Number: 0103) | | | | | |
| Damage to Aircraft | Substantial | | Total Aircraft Hours | 202.9 | | |
| **Pilot-in-command** | | | | | | |
| Licence Type | Private Pilot Licence | | Gender | Male | Age | 49 |
| Licence Valid | Yes | Total Hours | 1 564.7 | Total Hours on Type | | 1 482.6 |
| Total Hours 90 Days | 135.9 | | Total Flying on Type Past 90 Days | 135.9 | | |
| **People On-board** | 1 + 0 | **Injuries** 1 | **Fatalities** | 0 | **Other (on ground)** | 0 |

**What Happened**

On Thursday afternoon, 8 June 2023, a pilot on-board a Bat Hawk R Non-type Certified Aircraft (NTCA) with registration ZU-IXD took off on a surveillance flight from Letaba Aerodrome, Limpopo province, with the intention to land at Phalaborwa Aerodrome (FAPH) 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.

According to the pilot, he took off from Letaba Aerodrome at 1240Z. The aircraft had 100 litres of fuel on-board at take-off. Approximately 10 minutes into the flight at approximately 500 feet (ft) above ground level (AGL), the pilot noticed a clear liquid which looked and smelled like fuel, dripping onto his left shoulder. Splashes of the liquid were also on the windscreen and leading edge of the left wing. The pilot assumed that there might be a fuel leak, possibly from the carburettor, and was concerned that it could ignite if it came into contact with the hot exhaust pipes. The pilot scanned the area and noticed the S131 gravel road, which was devoid of traffic and decided to perform a precautionary landing on the road, approximately 10 nautical miles (nm) west of Letaba Aerodrome. The pilot selected the flaps for landing, and the aircraft touched down smoothly, whereafter he closed the fuel selector valve and switched off the master switches. The pilot stated that he could not slow down the aircraft fast enough as the road surface was corrugated. Approximately 75 metres (m) during the landing roll whilst the aircraft travelled at an estimated speed of 45 kilometres an hour

(km/h), the right wing struck a small mopani tree and the aircraft flung to the right and veered off the road, colliding with another mopani tree. The aircraft sustained substantial damage.

Once the aircraft came to a stop, the pilot disembarked unassisted. He removed all his belongings from the aircraft and assessed the liquid that was leaking during flight. He stated that *"it smelled less like fuel and was more a watery oil".*

The pilot was bruised on his left side from head to hip. The pilot had no cellular phone or radio (handheld) communication at the accident site. He was later assisted by the people who arrived first at the scene and took him to a hospital in Phalaborwa for a medical check-up. Thereafter, he was able to inform the relevant parties about the accident.

The accident occurred during daylight at Global Positioning System (GPS) co-ordinates determined to be 23°52'26.14" South 031°23'57.12" East, at an elevation of 1 165 feet (ft).

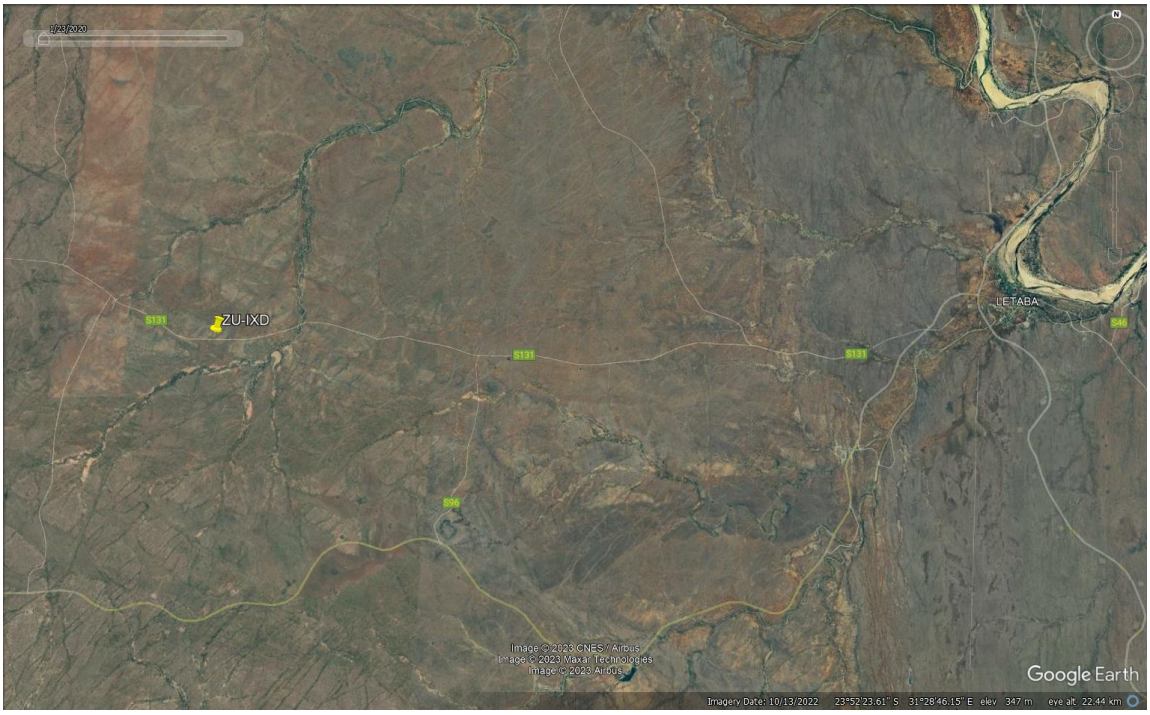


**Figure 1:** The pilot landed on the S131 gravel road, 10nm west of Letaba. (Source: Google Earth)

**Figure 2:** The S131 gravel road on which the pilot landed. (Source: SANParks Airwing)

**Figure 3:** The aircraft as it came to rest against a mopani tree. (Source: Pilot)


**Figure 4:** The front view of the aircraft post-accident. (Source: Pilot)


**Figure 5:** The oil breather container with the drain plug missing. (Source: Pilot)

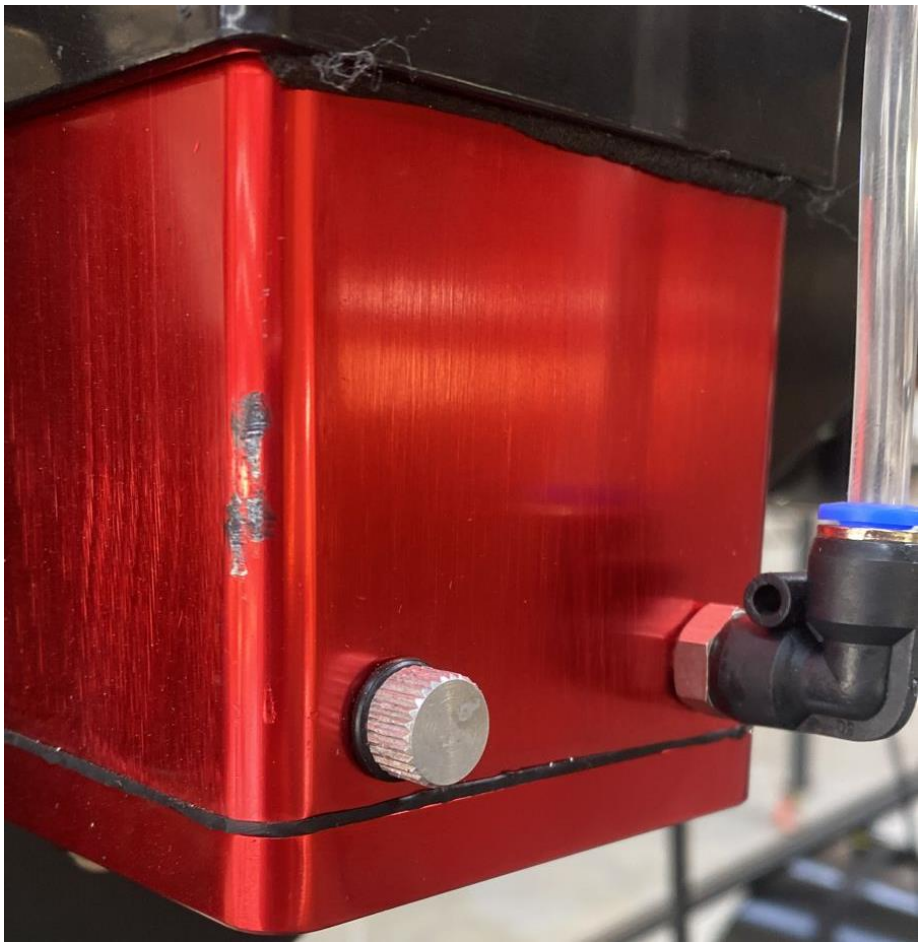

**Figure 6:** The oil breather container with the drain plug installed. (Source: Micro Aviation)

**Findings**

1. Personnel Information

1.1 The pilot had a Private Pilot Licence. His licence was initially issued on 24 November 2014. The last renewal of the pilot's licence was on 27 November 2022 with an expiry date of 30 November 2024. The pilot had flown a total of 1 564.7 hours, of which 1 482.6 hours were on the aircraft type.

1.2 The pilot had a Class 2 aviation medical certificate that was issued on 14 November 2022 with an expiry date of 11 November 2023.

1.3 The pilot was properly licensed and medically fit to conduct the flight in accordance with the existing regulations.

1.4 The pilot sustained bruises to his left side; he was taken to the hospital for a medical check-up, whereafter he was discharged.

1.5 The pilot stated that the inspection of the drain plug on the oil breather container is part of the pre-flight inspection, but he could not recall if he had specifically checked the drain plug before the flight. He stated that *"I would have noticed had it been missing as it is quite obvious".*

2. Aircraft Information

2.1 The last maintenance inspection that was carried out on the aircraft prior to the accident flight was certified on 6 June 2023 at 199.3 airframe hours. Since the inspection, a further 3.6 hours were flown on the aircraft.

2.2 The aircraft had a valid Authority to Fly (ATF) that was issued on 8 August 2022 with an expiry date of 7 August 2023. The aircraft was airworthy when it dispatched for the flight.

2.3 The aircraft's Certificate of Registration (C of R) was issued on 19 July 2022.

2.4 The aircraft was issued a Certificate of Release to Service (CRS) on 6 June 2023 with an expiry date of 15 May 2024 or at 299.3 airframe hours, whichever occurs first.

2.5 The aircraft was fitted with a Rotax 912 ULS engine with serial number 9144538. The engine was fitted with an oil breather container, located on the left side of the engine (when looking from the aft). During the maintenance inspection on 6 June 2023, the oil breather container was drained. A post-maintenance acceptance flight was conducted, and no anomalies were noted.

2.6 The drain plug on the oil breather container is only removed during maintenance.

2.7 The aircraft was fitted with a three-bladed composite E-propeller with serial number DUR-3-190-C4-T.

3. Weather

3.1 The weather information entered below was obtained from the pilot questionnaire (Form CA 12- 03).

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|---|---|
| Wind: | 360°/10 knots |
| Temperature: | 31°C |
| Dew point: | 16°C |
| Visibility: | CAVOK |

**Probable Cause**

During flight, a liquid leaked from the engine and onto the pilot who then performed an unsuccessful precautionary landing; the aircraft veered off the road and impacted a tree.

**Contributing Factor**

1. The drain plug on the oil breather container located on the left side of the engine (when looking from the aft position) had no lock mechanism and, most probably, vibrated and loosened during flight before it fell out. This caused moisture (watery oil-based liquid) that was in the container to drip onto the pilot.

**Safety Action(s)**

None.

**Safety Recommendation**

1. It is recommended to the aircraft manufacturer to amend the maintenance manual and issue an advisory letter to all maintenance organisations/facilities that conduct maintenance on the aircraft type to apply torque sealant on the drain plug once it has been properly secured to ensure that it does not loosen during flight. Thus, the seal could be easily identified during the pre-flight inspection to prevent a recurrence of this accident.

**About this Report**

*The decision to conduct a limited investigation is based on factors including whether the cause is known and the evidence supporting the cause is clear, the level of safety benefit likely to be obtained from an investigation and that will determine the scope of an investigation. For this occurrence, a limited investigation has been conducted, and the Accident and Incident Investigations Division (AIID) has relied on the information submitted by the affected person/s and organisation/s to compile this limited report. The report has been compiled using information supplied in the initial notification, as well as from follow-up desk top enquiries to bring awareness of potential safety issues to the industry in respect of this occurrence, as well as possible safety action/s that the industry might want to consider in preventing a recurrence of a similar occurrence.*

*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.*

***Purpose***

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011 and ICAO Annex 13, 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.*

**Disclaimer**



**This report is issued by:**
**Accident and Incident Investigations Division**
**South African Civil Aviation Authority**
**Republic of South Africa**