

**LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL**

<b>Reference Number</b>	CA18/3/2/1433						
<b>Classification</b>	Serious Incident	<b>Date</b>	17 November 2023		<b>Time</b>	0520Z	
<b>Type of Operation</b>	Training (Part 141)						
<b>Location</b>							
Place of Departure	Ballito Microlight Airfield, KwaZulu-Natal Province		Place of Intended Landing	Ballito Microlight Airfield, KwaZulu-Natal Province			
Place of Occurrence	On a field, south of Tugela River and 3nm south of Isithebe						
GPS Co-ordinates	Latitude	29° 09' 06.23" S	Longitude	031° 23' 08.48" E	Elevation	134.5 ft	
<b>Aircraft Information</b>							
Registration	ZU-BGY						
Make; Model; S/N	Solowings, Windlass Aquilla (Serial Number: WA607)						
Damage to Aircraft	Minor			Total Aircraft Hours	599.2		
<b>Pilot-in-command</b>							
Licence Type	National Pilot Licence (NPL)		Gender	Male		Age	38
Licence Valid	Yes	Total Hours	1330		Total Hours on Type	701.9	
Total Hours 30 Days	43.2		Total Flying on Type Past 90 Days	33.5			
<b>People On-board</b>	2 + 0	<b>Injuries</b>	0	<b>Fatalities</b>	0	<b>Other (on ground)</b>	0
<b>What Happened</b>							
<p>On Friday, 17 November 2023, an instructor and a student pilot on-board a Windlass Aquilla Microlight aircraft with registration ZU-BGY took off on a navigational training flight from Ballito Microlight Airfield in KwaZulu-Natal province with the intention to land back at the same airfield. Visual meteorological conditions (VMC) by day prevailed at the time of the flight. The flight was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The instructor stated that they conducted the pre-flight checks, and no anomalies were found. At approximately 0400Z, the crew took off from Runway (RWY) 26. Approximately 55 minutes into the flight whilst cruising at 1700 feet (ft) above ground level (AGL) and routing from Doringkop to Isithebe, the engine ran rough and lost power. The crew followed the troubleshooting procedure to restore power but were unsuccessful. They then executed a precautionary landing on a grass-covered field, south of Tugela River. No persons were injured; the microlight was not damaged.</p> <p>The precautionary landing was executed at Global Positioning System (GPS) determined to be 29° 09' 06.23" S 031° 23' 08.48" E.</p> <p>Post-incident:</p> <p>The aircraft was recovered by road to the operator's facility in Ballito. The pilot reported that during post-examination, the propeller did not turn freely by hand, therefore, the engine teardown was conducted which revealed extreme wear on the number 2 cylinder big end roller bearings bronze</p>							

spacers on both sides of the connecting rod (conrod). A new engine was fitted to the microlight, and re-certified.



**Figure 1:** The precautionary landing site. (Source: Google Earth)



**Figure 2:** The microlight after the precautionary landing. (Source: Operator)



**Figure 3:** The worn number 2 cylinder conrod. (Source: Pilot)

## Findings

### 1. Personnel Information

- 1.1 The instructor licence was issued on 2 July 2023 with an expiry date of 1 July 2025. According to the pilot's logbook, the instructor had flown a total of 701.9 hours as pilot-in-command on the microlight type.
- 1.2 The instructor was issued a Class 2 aviation medical certificate on 3 January 2019 with an expiry date of 31 January 2024 with no restrictions.

### 2. Aircraft Information

- 2.1 The last 100-hour annual inspection that was conducted on the microlight prior to the accident flight was certified on 9 May 2023 at 549.7 airframe hours. The microlight accrued a further 49.5 hours since the last inspection. The last mandatory periodic inspection (MPI) was

conducted on 22 August 2023 at 575.7 airframe hours. The microlight engine was last inspected at 79.4 hours. Time between overhaul (TBO) had not been reached.

2.2 The microlight had a valid Authority to Fly (ATF) certificate that was initially issued on 28 March 2020. The ATF was renewed on 29 May 2023 with an expiry date of 30 June 2024. The microlight's Certificate of Registration (C of R) was issued to the present owner on 18 December 2022.

2.3 The microlight was maintained by an approved person (AP) with an AP Certificate that was issued by the Regulator (SACAA) on 15 December 2022 with an expiry date of 14 December 2024.

2.4 The microlight was issued a Certificate of Release to Service (CRS) on 9 May 2023 with an expiry date of 8 May 2024 or at 650.0 airframe hours, whichever occurs first.

### 3. Meteorological Information

3.1 The weather conditions contributed to this incident. According to the Carburettor Icing Probability Chart, there was a 30% probability of light carburettor icing at cruise power.

### 4. Conclusion

4.1 The bronze spacers of the big end roller bearing on the number 2 cylinder were worn, which caused the engine to run rough, and hence, the subsequent engine power loss. The wear was likely caused by the lack of (or insufficient) oil in the bronze spacer. The crew executed a successful precautionary landing on a field. The microlight was recovered to the operator facility.

#### **Probable Cause(s)**

In-flight engine power loss due to the worn bronze spacer in the number 2 cylinder big end bearing, most likely caused by lack of (or insufficient) oil in the bronze spacer. This led the crew to conduct a successful precautionary landing on a field.

#### **Contributing Factor(s)**

None.

#### **Safety Action(s)**

None.

#### **Safety Message and/or Safety Recommendation/s**

None.

#### **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**

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