LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10605						
Classification	Accident	**Date**	4 October 2025		**Time**	1200Z	
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Vleesbank Private Farm Airstrip, Western Cape Province	Place of Intended Landing	Vleesbank Private Farm Airstrip, Western Cape Province				
Place of Occurrence	On a grass-covered runway at Vleesbank Private Farm Airstrip, Western Cape Province						
GPS Co-ordinates	Latitude	33° 29' 35.39" S	Longitude	018° 59' 3.69" E	Elevation	264 ft	
Aircraft Information							
Registration	ZU-EMD						
Make; Model; S/N	Magni; Gyroplane-M22 (Serial Number: 22063904)						
Damage to Aircraft	Substantial	Total Aircraft Hours	705.5				
Pilot-in-command							
Licence Type	National Pilot Licence (NPL)	Gender	Male	Age	47		
Licence Valid	Yes	Total Hours	46.4	Total Hours on Type	18.8		
Total Hours 30 Days	5.6	Total Flying on Type Past 90 Days	13.8				
People On-board	1+1	**Injuries**	0	**Fatalities**	0	**Other (on ground)**	0

What Happened

On Saturday afternoon, 4 October 2025, a pilot and a passenger on-board a Magni Gyroplane M22 registered ZU-EMD took off on a private local scenic flight from Vleesbank Farm airstrip in Western Cape province with the intention to land back at the same farm. 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, who is the owner of the Gyroplane, he conducted a pre-flight inspection and did not find anomalies. The Gyroplane had a total of 25 litres (L) of Aviation Gasoline 100 low-lead (AVGAS 100LL) in the fuel tank. He stated that he took off on a local scenic flight with the weather conditions reportedly good. After completing the flight, he returned to the airstrip for a full-stop landing on the grass runway. After touchdown at approximately 20 miles per hour (mph), the Gyroplane encountered a sudden low-level wind shear from the left and he lost directional control. Consequently, the Gyroplane veered off to the right side of the runway covered with tall wheat crops. Subsequently, the rotor blades struck the wheat crops which caused the Gyroplane to turn and roll over to the right. The Gyroplane came to rest on its right side; it was substantially damaged. The pilot and the passenger were not injured during the accident sequence.

Figure 1: The grass runway at Vleesbank Farm (yellow lines) and the Gyroplane's direction of landing. (Source: Google Earth)

Figure 2: The Gyroplane at the accident site and the wheat crops cut by the rotor blades. (Source: Operator)

Landing Procedure (Source: Magni M-22 Flight Manual)

Landing
Power set to Idling
Speed 65 mph
Maintain alignment with runway with rudder pedals and control stick.
At 2-3 metres from ground - first flare gently to reduce the glide path with a slight reduction of speed.
Continue to progressive flare to level in ground effect.
In ground effect, continue the flare until the main wheels touch the ground.

Ground roll for a full-flare landing is typically under 50 feet, and touchdown speed under 20 mph. If a 20 mph or greater headwind exists, it may be necessary to decrease the length of the flare and allow the gyroplane to touch down at a slightly higher airspeed to prevent it from rolling backwards on landing. After touchdown, rotor rpm decays rather rapidly. On landings where brakes are required immediately after touchdown, apply them lightly, as the rotor is still carrying much of the weight of the aircraft, and too much braking causes the tyres to skid.

To stop the gyroplane upon contact with the ground, progressively move the control stick to the rear limit stop. Use the rudder pedals to control the gyroplane's direction.

Landing with a crosswind
The procedure for landing with a crosswind is identical to that of a normal landing. The alignment with the runway must be maintained with the rudder and into-wind control stick.

Australian Sport Rotorcraft Association (ASRA): Basic Aeronautical Knowledge Published Date: 28 December 2024

Wind Shear
Wind shear is a sudden change in wind speed or direction caused by factors such as turbulence and gusts. It directly affects an aircraft's airspeed and, therefore, the lift produced by its wings. Severe wind shear has contributed to the loss of numerous aircraft, including large passenger transports.

Example of Wind Shear
When surface winds are light, a few hundred feet above the ground, conditions change abruptly to a stronger, steady wind. An aircraft on approach will experience wind shear as it descends through this layer. The worst case is a sudden loss of airspeed while already at a low approach speed, producing an immediate increase in rate of descent, highly hazardous during low-level final approach.

- *The causes of wind shear include wind deceleration due to surface roughness, abrupt terrain changes, thunderstorms and cumulonimbus clouds, large cumulus clouds (downbursts and gust fronts), low-level jet streams, frontal systems, thermal activity, and sea-breeze effects.*

Findings

Man

1. The pilot had a National Pilot Licence (NPL) that was initially issued by the Regulator (SACAA) on 12 September 2025 with an expiry date of 11 September 2026.

2. The pilot's Class 2 aviation medical certificate was issued on 29 July 2024 with an expiry date of 29 July 2026.

3. The pilot had a total of 46.4 flying hours of which 18.8 hours were accumulated on the Gyroplane type. The Gyroplane type was endorsed in the pilot's licence.

4. The pilot was licensed, medically fit and qualified for the flight.

Machine

5. The aircraft had a valid Authority-to-Fly (ATF) Certificate that was issued by the Regulator on 29 July 2025 with an expiry date of 22 July 2026.

6. The Certificate of Registration (C of R) was issued on 3 July 2024 to the current owner.

7. The latest annual inspection of the Gyroplane was conducted and certified on 10 July 2025 at 690.2 total airframe hours after which a Certificate of Release to Service (CRS) was issued with an expiry date of 10 July 2026 or at 750.2 hours, whichever comes first. The Gyroplane had a total of 705.5 hours at the time of the accident. It had accumulated a total of 15.3 hours since the annual inspection.

8. An approved Person (AP) who conducted the annual inspection of the aircraft had an AP Certificate that was issued on 13 December 2024 with an expiry date of 31 December 2025. The aircraft type was endorsed in the AP's Operational Specifications Certificate.

Environment

9. The weather conditions were good during the flight, with reported localised low-level wind shear in the area.

Mission

10. Directional control was lost after encountering a sudden low-level wind shear from the left during the landing roll.

Probable Cause(s)

Loss of directional control during the landing roll on a grass runway after encountering a sudden low-level wind shear from the left; consequently, the Gyroplane exited the runway and rolled onto the tall wheat crops during which the rotor blades struck the wheat and flipped over to the right.

Contributing Factor(s)
Poor landing technique.
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 desktop 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