



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/9220	
Aircraft Registration	ZU-RGL	Date of Accident	8 September 2013		Time of Accident	1445Z
Type of Aircraft	Autogyro MTO		Type of Operation		Private	
Pilot-in-command Licence Type		National Pilot's Licence	Age	53	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	107,6		Hours on Type	107,6
Last point of departure		Private airfield, Klipplaat farm, near Brits, North West				
Next point of intended landing		Private airfield, Klipplaat farm, near Brits, North West				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
Dense bush near Klipplaat farm (GPS S25°38'40.6+E027°16'44.82+ at an elevation of 3 700ft above mean sea level)						
Meteorological Information		Wind direction: 360°; Wind speed: 5kt; Visibility: 10km; Cloud base: Nil				
Number of people on board	1 + 1	No. of people injured	1	No. of people killed	0	
Synopsis						
<p>The pilot, accompanied by a passenger, took off from Klipplaat farm on a game surveillance flight, with the intention of returning to the farm. After take-off, they climbed to 800ft above ground level (AGL) and proceeded with the surveillance flight. Half an hour later, they sighted animals and the pilot turned the autogyro to obtain a better view. According to the pilot, they suddenly experienced a severe downdraft and lost height. The pilot applied full power but was unable to regain sufficient height. He levelled out, realised he was about to collide with tall trees. The autogyro crashed into small trees and flipped onto its right-hand side.</p> <p>The pilot sustained minor injuries but the passenger was not hurt. The autogyro was substantially damaged.</p> <p>The investigation found that the pilot had been distracted by watching animals on the ground whilst manoeuvring the autogyro at low level. He had failed to monitor and maintain proper airspeed and the gyro had lost height and could not recover.</p>						
Probable Cause						
<ul style="list-style-type: none"> • The pilot was distracted by watching animals on the ground whilst manoeuvring the autogyro and lost control. • Poor technique/ Airmanship 						
<u>Contributing factor:</u>						
Distraction/Diverted Attention						
IARC Date					Release Date	



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Avengo 31 (Pty) Ltd
Manufacturer : Autogyro GmbH
Model : MTO Sport
Nationality : South African
Registration Marks : ZU-RGL
Place : Klipplaat farm near Brits, North West
Date : 8 September 2013
Time : 1445Z

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 of the Investigation

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (1997), this report was compiled in the interests of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents and **not to establish legal liability.***

Disclaimer

This report is given without prejudice to the rights of the CAA, which are reserved.

1. FACTUAL INFORMATION

1.1 History of Flight

- 1.1.1 The pilot planned to depart with a passenger from a private airstrip on Klipplaat farm to conduct a game surveillance flight in the area, and return directly to the farm. Visual meteorological conditions prevailed.
- 1.1.2 The pilot conducted a pre-flight inspection, started the autogyro and carried out pre-departure checks before entering the runway. The pilot took off on a heading of 050°, climbed to 800ft above ground level (AGL) and he and the passenger proceeded with the animal surveillance. Half an hour later, they sighted several animals and the pilot turned the autogyro to obtain a better view. According to the pilot, they then experienced a sudden downdraft and lost height. The pilot applied full power to recover, but could not regain sufficient height. He levelled out, then realised that they were about to collide with tall trees. The autogyro crashed into small trees and flipped onto its right-hand side.
- 1.1.3 The pilot sustained minor injuries and the passenger was not injured, and both climbed out the autogyro unaided. After switching off the engine. The autogyro was substantially damaged.
- 1.1.4 The accident occurred during daylight conditions at 1445Z, at the co-ordinates S25°20'0.64"E027°41'0.9" and at an elevation of 3 700ft above mean sea level (AMSL).



Figure1: Location of the accident site (Google Earth image).

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	-	-	-	-
Serious	-	-	-	-
Minor	1	-	-	-
None	-	-	1	-

1.3 Damage to Aircraft

- 1.3.1 The autogyro sustained damage to the rotor blades, windshield, fuselage and underbelly.



Figure 2: The autogyro fell over onto its right side after striking the trees.

1.4 Other Damage

1.4.1 Damage was limited to the trees in the area.

1.5 Personnel Information

1.5.1 Pilot-in-command

Nationality	South African	Gender	Male	Age	53
Licence Number	0279020077	Licence Type	NPL		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	25 February 2014				
Restrictions	None				
Previous Accidents	None				

1.5.2 Pilot-in-command flying experience

Total Hours	107,6
Total Past 90 Days	39,7
Total on Type Past 90 Days	39,7
Total on Type	107,6

1.6 Aircraft Information

1.6.1 Aircraft description

The Autogyro MTO Sport is a two-seater gyroplane manufactured by Autogyro GmbH. It is powered by a Rotax 914 ULS engine,



Figure 2: ZU-RGL in flight.

1.6.2 Airframe

Type	MTO sport	
Serial Number	ZA 10 S 08	
Manufacturer	Autogyro GmbH	
Date of Manufacture	2011	
Total Airframe Hours (At time of Accident)	338,91	
Last MPI (Date & Hours)	27 June 2013	296
Hours since Last MPI	42,91	
Authority to fly (Issue Date)	24 April 2013	
Authority to fly (Expiry Date)	11 April 2014	
C of R (Issue Date)	24 April 2013	
Type of fuel used	Avgas LL100	
Operating Categories	Part 24	

1.6.3 Engine

Type	Rotax 914
Serial Number	6774327
Hours since New	338,91
Hours since Overhaul	TBO not reached

1.6.4 Propeller

Type	HTC 3B CW 172,5
Serial Number	1037
Hours since New	338,91
Hours since Overhaul	TBO not reached

1.6.5 Fuel

There was sufficient fuel for the flight. During the post-accident interview, the pilot reported that he had uplifted 40 of fuel the day before the accident, providing two hours endurance. The accident flight lasted only 45 minutes.

1.7 Meteorological Information

1.7.1 The following weather conditions at the time and place of the accident were reported by the pilot on the pilot's questionnaire:

Wind direction	360°	Wind speed	5kts	Visibility	>10km
Temperature	Unknown	Cloud cover	None	Cloud base	None
Dew point	Unknown				

1.7.2 The following weather conditions at nearby aerodromes were obtained from the SA Weather Service:

Pilanesburg Aerodrome
Wind direction and speed: variable at 2kts; CAVOK

Wonderboom Aerodrome
Wind direction and speed: variable at 2kts; CAVOK

Note: There is no weather station based at Brits. The investigator therefore had to rely on the weather information provided by the pilot.

1.8 Aids to Navigation

1.8.1 The autogyro was equipped with a GPS. This was serviceable prior to the accident.

1.9 Communications

1.9.1 The autogyro was equipped with a two-way radio. No defects to the radio were reported prior to the accident.

1.10 Aerodrome Information

1.10.1 The accident did not occur on an aerodrome but on a farm at GPS S25°38'40.67+
E027°16'44.82+at an elevation of 3 700ft AMSL.

1.11 Flight Recorders

1.11.1 The autogyro was not fitted with a flight data recorder or a cockpit voice recorder. Neither was required by regulations.

1.12 Wreckage and Impact Information

1.12.1 The accident occurred in daylight conditions during an animal surveillance flight on Klipplaat farm. The pilot reported that the aircraft experienced a downdraft and lost height. It then crashed in a bushy area and flipped onto its right-hand side. The propeller, cockpit cabin area and most of the instruments were damaged, as were the rotor blades and tail assembly. The front windscreen was destroyed and the rudder pedals were damaged.

1.13 Medical and Pathological Information

1.13.1 The pilot sustained minor injuries and the passenger was unhurt.

1.14 Fire

1.14.1 There was no evidence of a pre- or post-impact fire.

1.15 Survival Aspects

1.15.1 The accident was considered to be survivable. The cockpit cabin area remained intact and both occupants were wearing aircraft-equipped safety harnesses. Both pilot and passenger managed to exit the aircraft without assistance. The pilot sustained minor injuries and the passenger was unharmed.

1.16 Tests and Research

1.16.1 The pilot reported that 30 minutes into the flight they sighted animals and turned downwind. The pilot claimed that they then experienced a sudden severe downdraft and lost altitude. He applied full power but was unable to regain sufficient height. He then levelled out and landed in dense bush as he could not reach an open area. The autogyro collided with small trees and flipped onto its right hand side. The investigation revealed that a downdraft could not have occurred as there were no thunderstorms developing in the vicinity and there was no rising terrain.

1.16.2 While watching the animals and manoeuvring the autogyro at low level, the pilot failed to monitor and maintain proper airspeed and the autogyro lost height and could not recover.

1.16.3 According to the photographs, the wreckage revealed that all of the structural damage was consistent with impact, and there was no evidence to suggest that there had been any pre-impact failure of the primary structure.

1.17 Organisational and Management Information

1.17.1 This was a general animal surveillance flight.

1.17.2 The autogyro was maintained by an Aero Club of SA-approved person, who was in possession of a valid approval certificate issued by the SA Civil Aviation Authority, the regulating authority.

1.18 Additional Information

1.18.1 None

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 The pilot held the required licence and had the autogyro endorsed in his logbook. The autogyro was maintained in accordance with the manufacturer's approved procedures. There were no recorded defects or malfunctions with the aircraft that could have had any effect on the accident. The autogyro had flown a total of 42, 91 hours since the last annual inspection.

- 2.2 Although the pilot reported a sudden downdraft at 800ft AGL, the investigation revealed that there was no possibility of downdrafts as no thunderstorms were developing in the vicinity of the area and there was no rising terrain. The pilot was distracted by watching the animals on the ground whilst manoeuvring the autogyro at low level. He failed to maintain proper airspeed and the autogyro lost height and could not recover. He then applied full power but was unable to regain or recover due to insufficient height. The autogyro lost height, collided with small trees and flipped onto its right side.
- 2.3 Examination of the wreckage revealed that the aircraft had been intact before colliding with the trees and crashing to the ground. Investigation and analysis of the engine and propeller revealed that there were no deficiencies with the aircraft prior to the accident.
- 2.4 Fine weather conditions prevailed in the area at the time of the accident. The prevailing weather conditions were therefore not considered to have had bearing on the accident.

3. CONCLUSION

3.1 Findings

- 3.1.1 The aircraft had a valid authority to fly and had been maintained in compliance with the regulations.
- 3.1.2 The pilot was a holder of a valid National Pilot's Licence.
- 3.1.3 The pilot was distracted by watching the animals on the ground whilst manoeuvring the autogyro at low level, and did not concentrate on flying the aircraft.
- 3.1.4 The pilot was conducting general surveillance and operating at low level.
- 3.1.5 Fine weather conditions prevailed in the area at the time of the accident, and no thunderstorms were developing in the vicinity.
- 3.1.6 The autogyro was refuelled with 40 of fuel, which is two hours endurance. The accident flight lasted 45 minutes.

3.2 Probable cause/s

- 3.2.1 Pilot was distracted by watching animals on the ground instead of concentrating on flying the autogyro.
- 3.2.2 Poor technique

3.3 Contributing factor

- 3.3.1 Distraction/Diverted attention

4. SAFETY RECOMMENDATIONS

4.1 None.

5. APPENDICES

5.1 None