



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/9177	
Aircraft Registration	ZU-DTD	Date of Accident	25 May 2013		Time of Accident	1100Z
Type of Aircraft	RAF 2000 GTX SE F1 Gyrocopter		Type of Operation	Private		
Pilot-in-command Licence Type		National Pilot License	Age	54	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	176.7		Hours on Type	49.9
Last point of departure		Clanwilliam (Western Cape province)				
Next point of intended landing		Town of Loeriesfontein (Northern Cape province)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
On the farm Papkuilsfontein at GPS position S 31°33'37.9" E 019°10'59.9"						
Meteorological Information		Wind: 220°08 kts Visibility:10000m Temperature:18°C Dew point:0°C Cloud cover: Nil: Cloud base: N/A				
Number of people on board	1	No. of people injured	0	No. of people killed	1	
Synopsis						
<p>On Saturday 25 May 2013 two gyrocopters took off from Morningstar aerodrome near Cape Town on a pleasure flight to the town of Loeriesfontein in the Northern Cape province. The pilots communicated with each other every 15 minutes during the duration of the flight to establish position and operations normal.</p> <p>When, during one of the 15 minute calls the lead pilot could not establish radio communication with the second gyrocopter, he turned around and flew back on their track to look for the second gyrocopter. When he could not find the second gyrocopter, he decided to continue with the flight to Loeriesfontein and wait there for him to arrive.</p> <p>Sometime after he landed at Loeriesfontein he received a phone call whereby he was informed that the wreckage of ZU-DTD was found on the farm Papkuilsfontein where it had crashed. The pilot was fatally injured and the gyrocopter destroyed during the sequence of the accident.</p>						
Probable Cause						
<p>The pilot suffered from a cardiovascular event in-flight, which resulted in incapacitation in the air, rendering the gyrocopter uncontrollable with ground impact inevitable.</p>						
ASP Date				Release Date		



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Joubert GF
Manufacturer : Rotary Air Force Marketing INC
Model : RAF 2000 GTX SE F1
Nationality : South African
Registration Marks : ZU-DTD
Place : Farm Papkuilsfontein in the Nieuwoudville area,
 Northern Cape province
Date : 25 May 2013
Time : 1100Z

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 interest 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 produced without prejudice to the rights of the CAA, which are reserved.

1. FACTUAL INFORMATION

1.1 History of flight

- 1.1.1 On Saturday 26 May 2013 at approximately 1100Z two gyrocopters ZU-DTD and ZU-RBN took off from Morningstar aerodrome near Cape Town on a pleasure flight to the town of Loeriesfontein in the Northern Cape province. The flight was conducted under visual meteorological conditions, (VMC).
- 1.1.2 ZU-RBN was the leader of the formation of two gyrocopters. The pilot of ZU-RBN stated he was in radio contact with the pilot of ZU-DTD every 15 minutes to ensure his operation was normal. After approximately one and a half hours of flying, both gyrocopters landed at Clanwilliam aerodrome. Both gyrocopters were refuelled to maximum capacity. (Approximately 50L of fuel was uplifted by each gyrocopter)
- 1.1.3 Sometime after take-off from Clanwilliam, the lead pilot made contact with the pilot of ZU-DTD for a position report. The pilot of ZU-DTD reported he was 1500 feet above ground level (AGL) and approximately 2 miles behind. The pilot in the lead gyrocopter then immediately reduced power to an airspeed of approximately 75 miles per hour (mph). Once ZU-DTD caught up they decided to maintain a speed of 75 mph for the duration of the flight.
- 1.1.4 At this stage of the flight, ZU-DTD was positioned to the right and slightly behind ZU-RBN. After approximately 15 minutes the lead pilot once again made radio contact with the pilot of ZU-DTD. This time radio communication was not clear and

the lead pilot had to repeat himself to the pilot of ZU-DTD as he could not hear what was answered by the pilot of ZU-DTD due to a loud background noise on the radio.

1.1.5 Fifteen minutes later the lead pilot once again called the pilot of ZU-DTD to establish his position. The leader was not able to establish radio contact with ZU-DTD and decided to turn around to see where he was. The leader could not see him and decided to fly back on their track towards Clanwilliam to see if ZU-DTD did not land due to a problem. As the leader could not find him, he decided to continue with the flight to Loeriesfontein.

1.1.6 Sometime after the lead pilot had landed at Loeriesfontein, he received a cell phone call informing him that the wreckage of ZU-DTD was found on the farm Papkuilsfontein in the Nieuwoudville area where it had crashed.

1.1.7 The pilot was fatally injured and the gyrocopter destroyed during the impact sequence of the accident.

1.2 Injuries to persons

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

1.3 Damage to aircraft

The gyrocopter was destroyed during the impact sequence of the accident.



Figure 1 The wreckage after the accident.

1.4 Other damage

No other damage was caused during the sequence of the accident.

1.5 Personnel information

Nationality	South African	Gender	Male	Age	54
Licence Number	0271015471	Licence Type	National Pilot License		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	30 September 2013				
Restrictions	Corrective Lenses				
Previous Accidents	None				

Corrective lenses were found next to the wreckage.

Flying Experience:

Total Hours	176.7
Total Past 90 Days	2.7
Total on Type Past 90 Days	2.7
Total on Type	49.9

1.6 Aircraft information

Airframe :

Type	RAF 2000 GTX SE F1	
Serial Number	H2-04-15-615	
Manufacturer	Rotary Air Force INC	
Year of Manufacture	2004	
Total Airframe Hours (At time of Accident)	The total hours at the time of the accident is not known as the hobbs meter was destroyed during the sequence of the accident.	
Last Annual inspection (Date & Hours)	15 April 2013	373.9
Hours since last Annual inspection	Unknown	
Authority to Fly (Issue Date)	6 May 2013	
C of R (Issue Date) (Present owner)	7 May 2012	
Operating Categories	Private	

Engine:

Type	Subaru
Serial Number	207852
Hours since New	373.9
Hours since Overhaul	TBO not yet reached.

Propeller:

Type	Warp
Serial Number	N14393
Hours since New	373.9
Hours since Overhaul	TBO not yet reached.

1.7 Meteorological information

1.7.1 Metrological information was obtained from the South African Weather Service. The most likely weather conditions at the time of the accident are given in the table below.

Wind direction	220°M	Wind speed	8 kts	Visibility	10 km
Temperature	18°C	Cloud cover	Nil	Cloud base	N/A
Dew point	0°C				

1.8 Aids to navigation

1.8.1 The aircraft was equipped with standard navigational equipment as required by the Regulator. There were no recorded defects to the navigational equipment prior to the flight.

1.9 Communications.

1.9.1 The aircraft was equipped with standard communication equipment as required by the Regulator. There were no recorded defects to the communication equipment prior to the flight.

1.9.2 During the flight the pilot did communicate with the lead aircraft on very high frequency (VHF) 119.2 MHz.

1.10 Aerodrome information

1.10.1 The accident did not occur at or near an aerodrome.

1.11 Flight recorders

1.11.1 The gyrocopter was not fitted with a cockpit voice recorder (CVR) or a flight data recorder (FDR) and neither was required by regulations to be fitted to this type of gyrocopter.

1.12 Wreckage and impact information

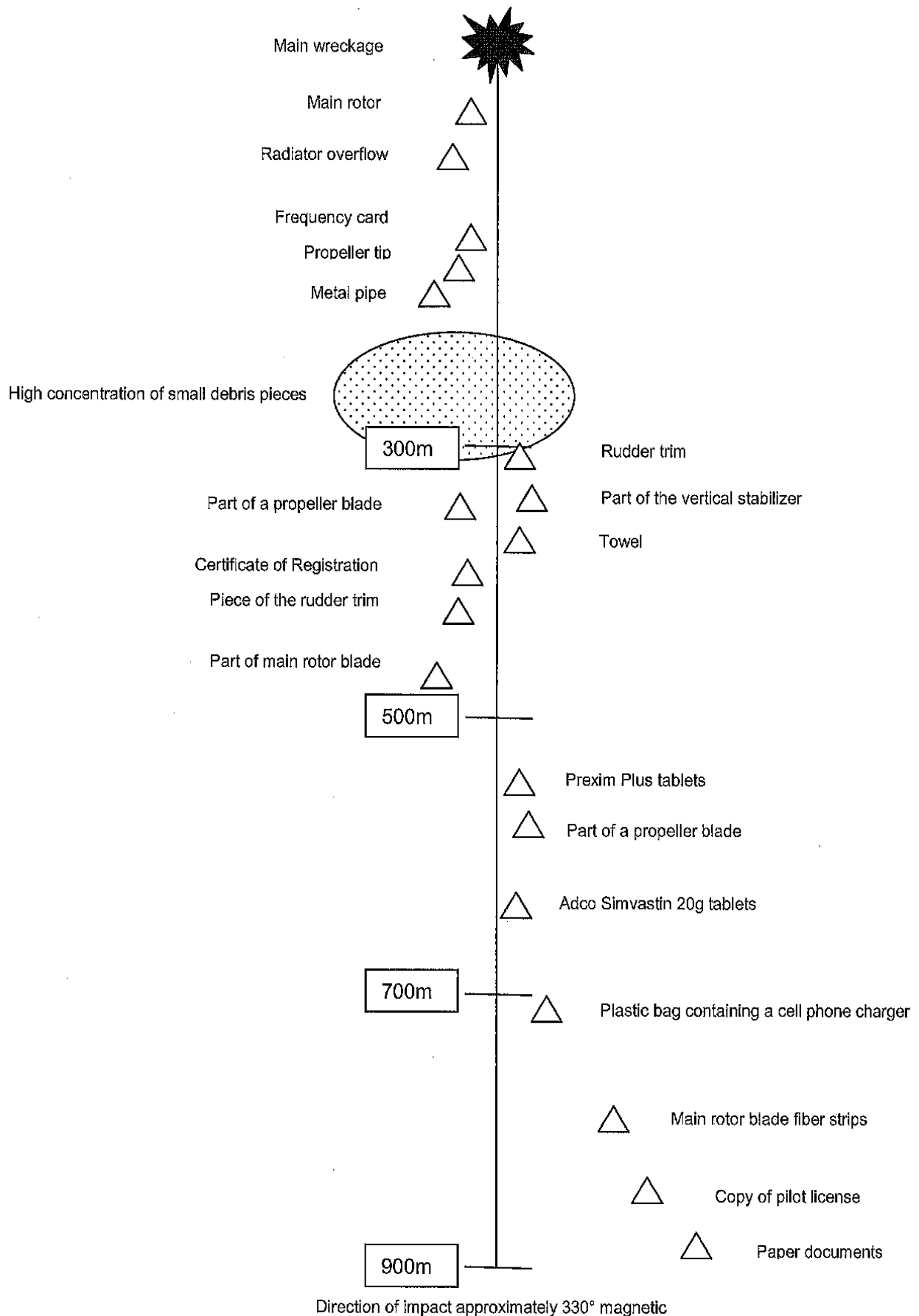


Figure 2 Wreckage diagram (Not to scale).

1.12.1 Final position of the flight path:

The gyrocopter was flying in a direction of approximately 330 degrees magnetic and collided with the ground in a direction of approximately 057 degrees magnetic at GPS position S31°33'37.9" E 019°10'59.9".

1.12.2 Impact sequence:

Evidence at the scene indicate the rotor blades made contact with the vertical stabilizer and rudder while in flight at a GPS position of S 31°33'46.2" E 019°11'05.6". The gyrocopter then continued to fly for another 300 meters before impacting the ground.

1.13 Medical and pathological information

1.13.1 A post mortem examination was carried out on the deceased pilot on Tuesday 28 May 2013. Due to protocol that was not followed (a doctor was doing the examination and not a pathologist); the Investigator in Charge (IIC) requested a second post mortem examination.

1.13.2 During the second post mortem a complete obstruction of the right circumflex artery where it curves around the right ventricle was found. Severe atherosclerosis with a thrombus which occludes the lumen 100% was found in the right ventricle. The left circumflex artery and left anterior descending coronary arteries show up to grade III atherosclerosis. It was there for concluded that the pilot suffered a myocardial infarction (heart attack) in flight.

1.13.3 Blood samples for DNA testing were also taken from the aorta.

1.13.4 Samples for toxicology tests were retained. The results of these tests were not available at the time the report was compiled. Should any of the results once received indicate that other medical aspects may have affected the performance of the pilot, this will be considered as new evidence and the investigation re-opened.

1.14 Fire

1.14.1 There was no pre- or post-impact fire although the battery was found melted after the accident.

1.15 Survival aspects

1.15.1 Apart from the fact that the pilot suffered a heart attack, the accident was considered not survivable as a result of the high kinetic forces associated with the impact.

1.16 Tests and research

1.16.1 None.

1.17 Organizational and management information

1.17.1 The last annual inspection was done on 15 April 2013 by an Approved Person (AP) at 373.9 airframe hours.

1.18 Additional information

1.18.1 During an interview with the wife of the deceased pilot after the accident, she informed the IIC her husband was complaining he was tired in the week preceding the accident flight. She also informed the IIC that he had a family history of cardiovascular conditions.

1.19 Useful or effective investigation techniques

1.19.1 None

2. ANALYSIS

2.1 The pilot was the holder of a valid National Pilot License at the time of the accident and had the aircraft endorsed in it. The pilot was in possession of a valid medical certificate with only corrective lenses as a restriction imposed on it.

2.2 The pilot suffered a myocardial infarction (heart attack) in flight which resulted in a loss of control of the gyrocopter where after the gyrocopter collided with the ground.

2.3 Maintenance documents revealed the gyrocopter was properly maintained and all work done was properly certified. The last Annual inspection on the gyrocopter prior to the accident flight was on 15 April 2013 at 373.9 airframe hours by a certified Approved Person.

2.4 Fine weather conditions prevailed at the time of the accident.

3. CONCLUSION

3.1 Findings

3.1.1 The pilot was properly certified and qualified according to current regulations to perform this flight.

3.1.2 The pilot was incapacitated during flight due to a heart attack which resulted in a collision with the ground.

3.1.3 The aircraft had a valid Authority to Fly and was recorded as being serviceable at the time of the flight.

3.1.4 Prevailing weather conditions at the time of the accident did not have an effect on the accident.

3.2 Probable cause/s

3.2.1 The pilot suffered from a cardiovascular event in-flight, which resulted in incapacitation in the air, rendering the gyrocopter uncontrollable with ground impact inevitable.

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3.3 Contributing factor/s

3.3.1 None

4. SAFETY RECOMMENDATIONS

4.1 None.

5. APPENDICES

5.1 None