



<b>AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY</b>
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				Reference:	CA18/2/3/8935	
<b>Aircraft Registration</b>	ZU-RFR	<b>Date of Accident</b>	18 June 2011		<b>Time of Accident</b>	0830Z
<b>Type of Aircraft</b>	Magni Gyro 24 - Orion		<b>Type of Operation</b>	Private		
<b>Pilot-in-command Licence Type</b>		Gyroplane Pilot	<b>Age</b>	54	<b>Licence Valid</b>	NO
<b>Pilot-in-command Flying Experience</b>		Total Flying Hours	133.4 as per the last licence renewal on file		Hours on Type	unknown
<b>Last point of departure</b>		FAAL (All Days Aerodrome) - Limpopo				
<b>Next point of intended landing</b>		FAAL (All Days Aerodrome) - Limpopo				
<b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>						
The gravel road close to All Days Aerodrome (GPS Position: S22°39,402' E29°03,335')						
<b>Meteorological Information</b>						
<b>Number of people on board</b>	1+1	<b>No. of people injured</b>	0	<b>No. of people killed</b>	2	
<b>Synopsis</b>						
<p>On 18 June 2011, a pilot and a passenger departed from Alldays aerodrome on a local scenic flight, along with four other gyro aircraft. After take-off the pilot of ZU-RFR reported that the 'gull-wing' door opened in flight, came off and struck the propeller. The pilot attempted to execute a forced landing on the gravel road. During the landing sequence the aircraft struck a telephone line and subsequently landed hard on a gravel road. The aircraft rolled approximately 17 metres from the first burn mark (fire trail) then rolled over and burnt.</p> <p>The aircraft was destroyed by the post impact fire, and both occupants were seriously injured and taken to hospital where they later succumbed to their injuries.</p>						
<b>Probable Cause</b>						
The aircraft collided with telephone lines while attempting to perform a forced landing as a result of a component becoming dislodged.						
<u>Contributing Factors</u>						
<p>Door opened in flight, came off and struck the propeller.  Aircraft collided with an obstacle (flew through telephone lines) when attempting to land.  The aircraft landed hard.</p>						
IARC Date				Release Date		



## AIRCRAFT ACCIDENT REPORT

**Name of Owner/Operator** : Llewellyn Parker  
**Manufacturer** : Magni Gyro  
**Model** : M-24 Orion  
**Nationality** : South African  
**Registration Marks** : ZU-RFR  
**Place** : Gravel road (GPS Position: S22°39,402' E29°03,335')  
**Date** : 18 June 2011  
**Time** : 0830Z

*All times given in this report is 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 given without prejudice to the rights of the CAA, which are reserved.*

## 1. FACTUAL INFORMATION

### 1.1 History of Flight (Chronological order)

- 1.1.1 On 17 and 18 June 2011, Alldays Flight Club held a fly-inn festival. On 18 June 2011, a group of 5 gyro aircraft had planned to embark on a scenic flight along the Limpopo River.
- 1.1.2 The 5 gyro aircraft departed as planned.
- 1.1.3 After take-off, the pilot of ZU-RFR made a Mayday call and notified the Air Traffic Controller that he needed to make an emergency landing as the door had opened in flight and he intended to return to the airfield.
- 1.1.4 Moments after ZU-RFR made the mayday call, the Safety officer and several other people in the tower saw the aircraft descend and then saw smoke.
- 1.1.5 Emergency services and a SACAA airworthiness inspector, who was also at the aerodrome dispatched immediately to the area where the aircraft was last seen.
- 1.1.6 On arrival at the side they found the pilot and his passenger outside the gyro aircraft after being evacuated by helpers. The pilot and the passenger were serious injured.
- 1.1.7 They were taken to the airfield, airlifted to Polokwane and then to Johannesburg. The pilot and the passenger later succumbed to their injuries that evening.

1.1.8 The aircraft was destroyed by the post impact fire.

## 1.2 Injuries to Persons

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

## 1.3 Damage to Aircraft

1.3.1 The aircraft was destroyed by the post impact fire.



Fig. 1 – Aircraft consumed by the fire

## 1.4 Other Damage

1.4.1 Aircraft collided with the telephone lines crossing the gravel road.

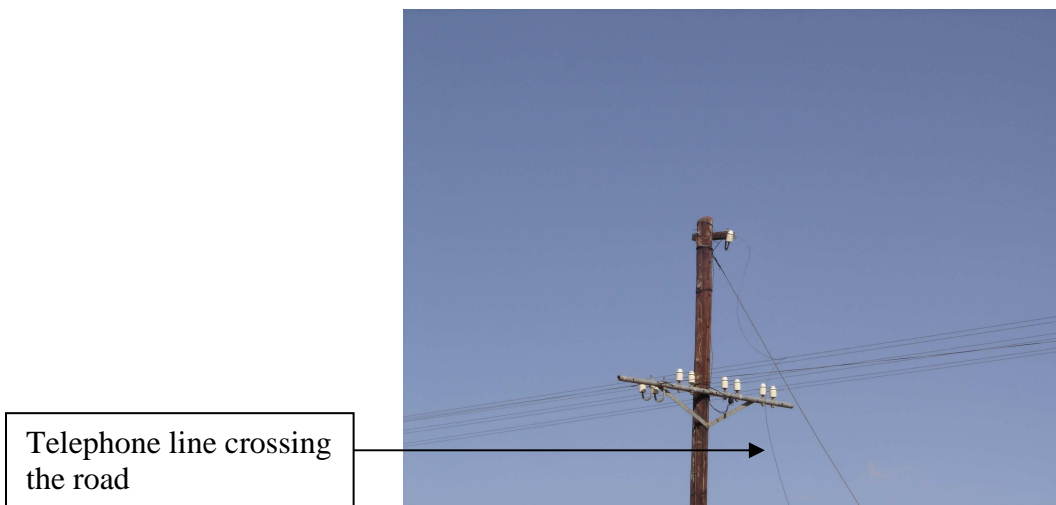


Fig. 2 – Telephone lines

## 1.5 Personnel Information

Nationality	South African	Gender	Male	Age	54
Licence Number	0271063471	Licence Type	Gyroplane Pilot		
Licence valid	No	Type Endorsed	Yes		
Ratings	Gyroplane				
Medical Expiry Date	30 November 2009				
Restrictions	Must wear corrective lenses or glasses				
Previous Accidents	None as per the Pilot file on SACAA records				

Note: Medical not valid as per CAA records

### 1.5.1 Flying Experience:

Total Hours	133.4 as per the last licence renewal on file
Total Past 90 Days	unknown
Total on Type Past 90 Days	unknown
Total on Type	88.6 hours

Note: The hours provided on the table above is according to SACAA/RAASA pilot file on last application, for the pilot licence renewal dated 16/11/2007

## 1.6 Aircraft Information



**Fig. 3 – shows a similar aircraft to ZU-RFR**

### Airframe:

Type	M-24 Orion	
Serial Number	24-09-5404	
Manufacturer	Magni Gyro	
Year of Manufacture	2009	
Total Airframe Hours (At time of Accident)	unknown	
Last annual inspection (Date & Hours)	26/07/2010	10.7 hours
Hours since Last Annual	unknown	
Authority to Fly (Issue Date)	26 July 2010	
C of R (Issue Date) (Present owner)	02 July 2010	
Operating Categories	Private Operation Authority to Fly	

**Engine:**

Type	Rotax UL914
Serial Number	6773366
Hours since New	10.7 hours
Hours since Overhaul	TBO not yet reached

**Propeller:**

Type	Arplast
Serial Number	5220
Hours since New	10.7 hours
Hours since Overhaul	TBO not yet reached

Note: The aircraft hours on the tables above, are not the hours at the time of accident, the aircraft log books were burnt with the aircraft during the accident. The hours provided, are as per the last renewal of the authority to fly on the SACAA aircraft file dated 26/07/2010.

**1.7 Meteorological Information**

1.7.1 Information obtained from the South African Weather Services for nearby weather stations

**Station FAPP - Polokwane**

Wind direction	040	Wind speed	11kts	Visibility	good
Temperature	15°C	Cloud cover	Clear	Cloud base	unknown
Dew point	04				

**Station FAER – Lephalale**

Wind direction	070	Wind speed	6kts	Visibility	good
Temperature	18°C	Cloud cover	Clear	Cloud base	unknown
Dew point	05				

**1.8 Aids to Navigation**

1.8.1 The aircraft was equipped with standard navigational equipment as approved by the regulator for the aircraft type. There were no recorded defects that the navigation system was unserviceable prior to or during the flight.

**1.9 Communications.**

1.9.1 The aircraft was equipped with standard communication equipment as approved by the regulator for the aircraft type and there were no recorded defects prior to or during the flight.

1.9.2 The aircraft communicated a Mayday call on frequency 120.2.

## 1.10 Aerodrome Information

1.10.1 The accident occurred on a gravel road close to All Days Aerodrome (GPS Position: S22°39,402' E29°03,335')

## 1.11 Flight Recorders

1.11.1 The aircraft was not equipped with a Flight Data Recorder (FDR) or a Cockpit Voice Recorder (CVR) and neither was required by the regulations.

## 1.12 Wreckage and Impact Information (Pattern of wreckage)

1.12.1 The aircraft door open and came off in flight, and was found about a kilometre from the crash site on the aircraft flight path. The door had marks and residue of the materials the propeller is made of. (Indicating a propeller strike)

1.12.2 The aircraft touched down 50m after colliding with the telephone lines crossing the gravel road. See fig. 4

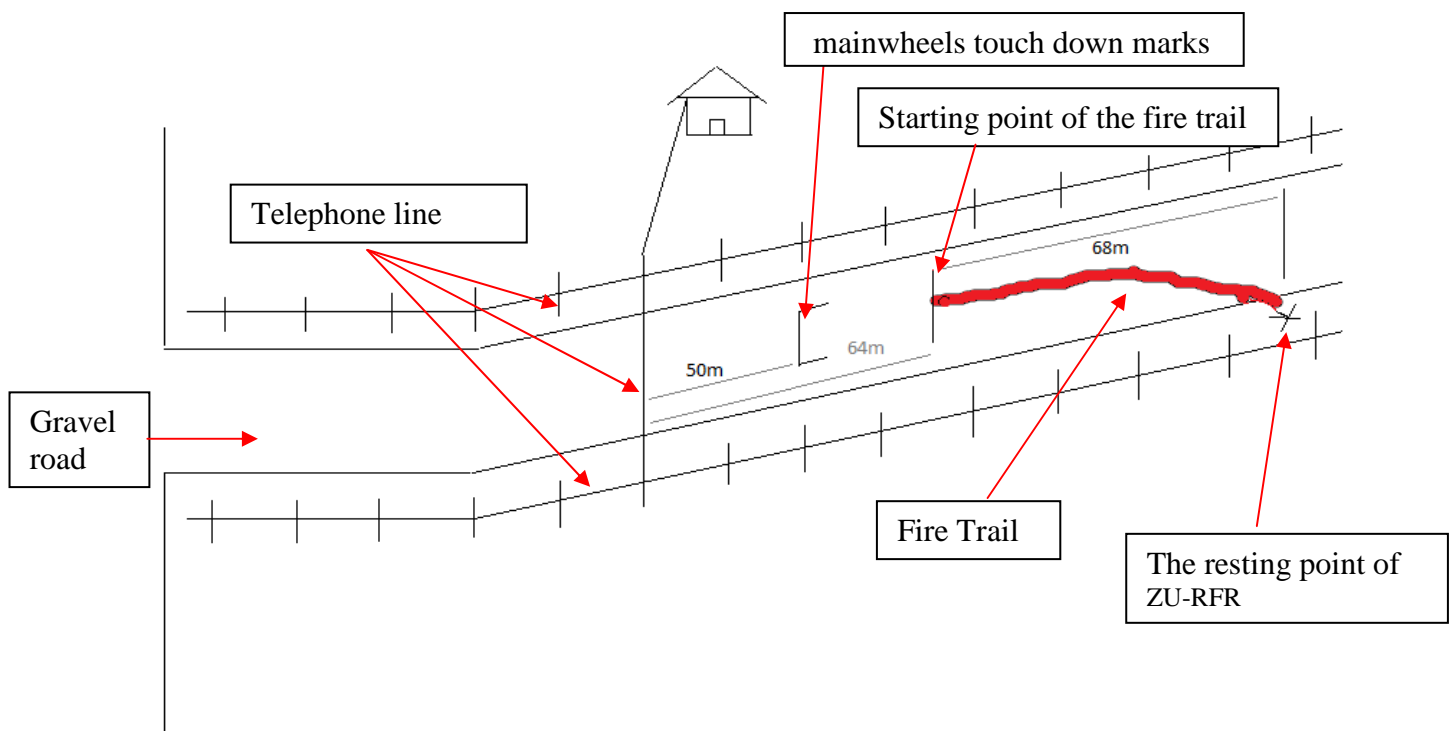


Fig. 4

1.12.3 Windshield pieces were found around the telephone line as per fig. 4 and the pieces had marks of cable scraping. See fig.4

1.12.4 The fire trail started 14m after the touch down marks and the trail continued for 68m until the aircraft came to rest. See fig.4

1.12.5 The aircraft was completely destroyed by the fire.

### **1.13 Medical and Pathological Information**

1.13.1 The post mortem report was not available at the time of compiling this report. Should the post mortem report have any bearing on this report, it will be considered as new evidence and the investigation re opened.

1.13.2 The pilot SACAA medical was invalid.

### **1.14 Fire**

1.14.1 The aircraft caught fire after a hard landing and burnt. The aircraft was destroyed by the fire.

1.14.2 The pilot and passenger were both badly burnt and later succumbed to their injuries.

### **1.15 Survival Aspects**

1.15.1 The accident was not considered survivable due to the high impact force and the post impact fire, even though the pilot and the passenger were evacuated.

### **1.16 Tests and Research**

1.16.1 None

### **1.17 Organizational and Management Information**

1.17.1 The aircraft was maintained by an Approved Person.

1.17.2 The aircraft was certified and maintained in accordance with existing regulations and approved procedures.

1.17.3 The aircraft had a valid Authority to Fly issued by the SACAA.

1.17.4 The aircraft was airworthy when dispatched for the flight.

### **1.18 Additional Information**

1.18.1 Magni Gyro distributed a Service Information Letter regarding the Pre-flight door checks, prior to the accident. Kindly refer to Appendices for a copy of the Service Information Letter. (see Appendix A)

### **1.19 Useful or Effective Investigation Techniques**

1.19.1 None.

## **2. ANALYSIS**

- 2.1 During the Alldays Flight club, fly inn festival 5 gyro aircraft departed on a scenic flight along the Limpopo River.
- 2.2 The pilot of ZS-RFR made a Mayday call and notified the Air Traffic Controller that he needed to make an emergency landing as the door had opened in flight and he intended to return to the airfield.
- 2.3 Moments after the door opening in flight, the pilot had to execute a forced landing. He could not return to the aerodrome as per his communication with the Air Traffic Controller.
- 2.4 The forced landing was due to the loss of forward motion as a result of the aircraft's door striking the propeller after it came off.
- 2.5 During the forced landing the aircraft collided with the telephone line crossing the gravel road and a hard landing followed.
- 2.6 The fuel tank might have ruptured as a result of the hard landing and the airflow around the aircraft directed the fuel to the hot engine, igniting the fuel/airflow.

## **3. CONCLUSION**

### **3.1 Findings**

- 3.1.1 The aircraft was certified and maintained in accordance with existing regulations and approved procedures.
- 3.1.2 The aircraft had a valid Authority to Fly issued by the SACAA.
- 3.1.3 The aircraft was airworthy when dispatched for the flight.
- 3.1.4 The aircraft was destroyed by impact forces and a post-impact fire.
- 3.1.5 The pilot's license was invalid at the time of the accident.
- 3.1.6 The pilot's medical certificate was invalid.
- 3.1.7 The accident was not survivable due to the magnitude of the deceleration forces and the severity of the post-impact fire.
- 3.1.8 Magni Gyro distributed a Service Information Letter regarding the Pre-flight door checks
- 3.1.9 The door of ZU-RFR opened and came off in flight and struck the propeller.
- 3.1.10 The aircraft collided with the phone line during forced landing.
- 3.1.11 The aircraft landed hard.



### **3.2 Probable Cause/s**

3.2.1 The aircraft collided with telephone lines while attempting to perform a forced landing as a result of a component becoming dislodged.

#### Contributing Factors

3.2.2 The Door opened in flight, detached and struck the propeller.

3.2.3 Aircraft collided with an obstacle (telephone lines) when attempting to do the forced landing.

3.2.4 The aircraft landed hard.

## **4. SAFETY RECOMMENDATIONS**

4.1 South African Civil Aviation Authority to report the accident to the manufacture and insure that, the outcome of the investigation after reporting is received back by the CAA.

## **5. APPENDICES A**

5.1 Service Information Letter from Magni Gyro



**SAFETY INFORMATION LETTER**

**PRE-FLIGHT DOOR CHECKS  
MAGNI M24 (M24C) ORION GYROPLANE**

**APPLICABILITY:** All Owners and Operators of Magni M24 (M24C) Orion Gyroplanes

Since we've started the production of this model, the experience has highlighted that sometimes the operators of our M24 (M24C) Orion do not check doors are correctly closed and latched before take-off. This resulted in doors come open just after take-off.

The in-flight opening of the doors is an occurrence that can be handled safely but oblige the pilot to an emergency landing and shouldn't happened if doors are correctly closed and latched.

Magni Gyro Srl wish to highlight to owners and operators of such gyroplanes the importance of performing checks on the security of the door latching, prior to commencing take-off. Magni Gyro Srl recommends that after latching, both doors are pushed from inside the cabin to ensure that both the forward and aft catches of each door are secure.

***This check should be carried out on both the pilot's, and passenger's side doors.***

We can confirm that should the door come open in flight it is unlikely to become detached or adversely affect the aircraft's handling. However should a door open in flight it is recommended that the airspeed be limited to around 50-60 MPH and the aircraft landed in an unhurried and controlled fashion as soon as is possible.

All occurrences of doors opening in flight should be reported immediately to Magni Gyro Srl.

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