



## AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

|   |  |                       |                   |                      |                  |       |
|---|--|-----------------------|-------------------|----------------------|------------------|-------|
|   |  |                       |                   | Reference:           | CA18/2/3/9022    |       |
| Aircraft Registration   | ZS-NUP   | Date of Accident      | 26 March 2012     |                      | Time of Accident | 0945Z |
| Type of Aircraft  | MOONEY - M20R  |                       | Type of Operation | Private              |                  |       |
| Pilot-in-command Licence Type   |  | Private               | Age               | 78                   | Licence Valid    | Yes   |
| Pilot-in-command Flying Experience  |  | Total Flying Hours    | 4496.6            |                      | Hours on Type    | 2179  |
| Last point of departure   | Durban/Virginia FAVG (VIR) in the KwaZulu-Natal province |                       |                   |                      |                  |       |
| Next point of intended landing  | Ermelo FAEO in the Mpumalanga province                   |                       |                   |                      |                  |       |
| Location of the accident site with reference to easily defined geographical points (GPS readings if possible)   |  |                       |                   |                      |                  |       |
| Runway 13 at Ermelo airfield in the Mpumalanga province   |  |                       |                   |                      |                  |       |
| Meteorological Information  | Temperature 26°C, Visibility: Good                       |                       |                   |                      |                  |       |
| Number of people on board   | 1+0  | No. of people injured | 0                 | No. of people killed | 1                |       |
| <b>Synopsis</b>   |  |                       |                   |                      |                  |       |
| <p>The pilot was on a private flight from Virginia (FAVG) to Ermelo (FAEO) when the accident happened. On landing at Ermelo, during the landing roll, the pilot noticed two people next to the runway on either side of the runway. As the aircraft approached the two persons, the person standing on the left-hand side of the runway began running across the runway. The pilot elected to swerve to the right to avoid the person. The aircraft struck the person with the port-side wing and left horizontal stabiliser.</p> <p>The pedestrian who was struck by the aircraft was fatally injured.</p> <p>The pilot was not injured in the accident sequence.</p> <p>The aircraft suffered damage to the port side wing as well as the horizontal and vertical stabiliser.</p> |  |                       |                   |                      |                  |       |
| <b>Probable Cause</b>   |  |                       |                   |                      |                  |       |
| <p>The aircraft collided with a pedestrian who was crossing the runway during the landing roll.</p>   |  |                       |                   |                      |                  |       |
| IARC Date   |  |                       |                   | Release Date         |                  |       |



|                                 |
|---------------------------------|
| <b>AIRCRAFT ACCIDENT REPORT</b> |
|---------------------------------|

**Name of Owner/Operator** :Rietspruit Crushers  
**Manufacturer** :Mooney  
**Model** :M20R  
**Nationality** :South African  
**Registration Marks** :ZS-NUP  
**Place** :Ermelo in the Mpumalanga province  
**Date** :26 March 2012  
**Time** :0945Z

*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 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 was on a private flight from Virginia (FAVG) to Ermelo (FAEO) when the accident happened.

1.1.2 On landing at Ermelo during the landing roll, the pilot noticed two people next to the runway on either side of the runway. As the aircraft approached the two persons, the person standing on the left-hand side of the runway began running across the runway. The pilot elected to swerve to the right in an attempt to avoid impacting the person.

1.1.3 The aircraft struck the person with the port-side wing and left horizontal stabiliser.

1.1.4 The person who was struck by the aircraft was fatally injured.

1.1.5 The pilot was not injured in the accident sequence.

1.1.6 The aircraft suffered damage to the port-side wing as well as the horizontal and vertical stabiliser.

## 1.2 Injuries to Persons

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

## 1.3 Damage to Aircraft



Figure 1, showing damage to the horizontal and vertical stabiliser.



Figure 2, showing damage to the port-side wing.

## 1.4 Other Damage

1.4.1 No other damage was reported.

## 1.5 Personnel Information

|                     |   |               |         |     |    |
|---------------------|---|---------------|---------|-----|----|
| Nationality         | South African   | Gender        | Male    | Age | 78 |
| Licence Number      | 02700851520   | Licence Type  | Private |     |    |
| Licence valid       | Yes   | Type Endorsed | Yes     |     |    |
| Ratings             | Night, Safety Pilot, Instrument, Flight Test-single engine piston |               |         |     |    |
| Medical Expiry Date | 31/01/2013  |               |         |     |    |
| Restrictions        | Corrective lenses   |               |         |     |    |
| Previous Accidents  | None  |               |         |     |    |

Flying Experience :

|                            |        |
|----------------------------|--------|
| Total Hours                | 4496.6 |
| Total Past 90 Days         | 21.8   |
| Total on Type Past 90 Days | 21.8   |
| Total on Type              | 2179   |

## 1.6 Aircraft Information

**Airframe :**

|  |                   |        |
|--|-------------------|--------|
| Type                                       | Mooney M20R       |        |
| Serial Number                              | 29-0055           |        |
| Manufacturer                               | Mooney            |        |
| Year of Manufacture                        | 1995              |        |
| Total Airframe Hours (At time of Accident) | 1674.2            |        |
| Last MPI (Date & Hours)                    | 23/06/2011        | 1593.6 |
| Hours since Last MPI                       | 78.6              |        |
| C of A (Issue Date)                        | 17 September 2013 |        |
| C of R (Issue Date) (Present owner)        | 20 January 2005   |        |
| Operating Categories                       | Standard part 135 |        |

**Engine :**

|                      |                 |
|----------------------|-----------------|
| Type                 | Continental     |
| Serial Number        | 679131          |
| Hours since New      | 1674.2          |
| Hours since Overhaul | TBO not reached |

**Propeller :**

|                      |             |
|----------------------|-------------|
| Type                 | Mc McCauley |
| Serial Number        | 950507      |
| Hours since New      | 1674.2      |
| Hours since Overhaul | 639.1       |

## 1.7 Meteorological Information

|                |         |             |     |            |      |
|----------------|---------|-------------|-----|------------|------|
| Wind direction | Nil     | Wind speed  | Nil | Visibility | Good |
| Temperature    | 26°C    | Cloud cover | Nil | Cloud base | Nil  |
| Dew point      | Unknown |             |     |            |      |

1.7.1 The weather information tabulated above was taken from the pilot's questionnaire.

## 1.8 Aids to Navigation

1.8.1 The aircraft was fitted with the standard navigation equipment as per the minimum equipment list approved 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 per the minimum equipment list approved by the regulator. There were no recorded defects to the communication equipment prior to the flight.

1.9.2 The pilot communicated his intentions prior to landing on frequency 124.8Mhz.

## 1.10 Aerodrome Information

|                        |                            |     |
|------------------------|----------------------------|-----|
| Aerodrome Location     | Ermelo (FAEO)              |     |
| Aerodrome Co-ordinates | GPS S26°29.460 E029°59.040 |     |
| Aerodrome Elevation    | 5800ft                     |     |
| Runway Designations    | 13/31                      | N/A |
| Runway Dimensions      | 1460mx10m                  | N/A |
| Runway Used            | 13                         |     |
| Runway Surface         | Asphalt                    |     |
| Approach Facilities    | None                       |     |

1.10.1 Ermelo airfield is owned by the local municipality.

## 1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a Cockpit Voice Recorder (CVR) or Flight Data Recorder (FDR) and neither was required by regulations to be fitted to this type of aircraft.

## 1.12 Wreckage and Impact Information

1.12.1 The aircraft impacted the pedestrian with the leading edge of the port wing as well as the tail plane of the aircraft.

1.12.2 The leading edge of the port wing was damaged 1 metre from the fuselage. There was a 50cm wide dent on the port wing of the aircraft.

1.12.3 The tail plane of the aircraft was damaged on the horizontal stabiliser on the port side and on the vertical stabiliser.

## 1.13 Medical and Pathological Information

1.13.1 A post mortem was conducted on the fatally injured pedestrian.

1.13.2 The cause of death was stated as multiple injuries and amputation of the pedestrian at the waist area.

## **1.14 Fire**

1.14.1 There was no pre- or post-impact fire.

## **1.15 Survival Aspects**

1.15.1 The accident was not considered survivable, as the pedestrian sustained multiple injuries as well as amputation.

1.15.2 The pilot was properly restrained and was not injured in the accident.

## **1.16 Tests and Research**

1.16.1 None.

## **1.17 Organisational and Management Information**

1.17.1 The aircraft was maintained by an approved aircraft maintenance organisation (AMO).

1.17.2 The last mandatory periodic inspection was performed on 23 June 2011 at 1593.6 airframe hours.

## **1.18 Additional Information**

1.18.1 Ermelo airfield FAEO runway 13 has an upslope from the runway threshold, followed by a downslope that continues all the way toward the hangars, which are located at the threshold of runway 31.

1.18.2 The airfield has a pedestrian entrance to the airfield as shown in figure 3.

1.18.3 The pedestrian entrance was put there because people were cutting the fence in order to cross the runway.

1.18.4 The gate was placed in such a manner that it allows pedestrians to enter the airfield but does not allow animals to enter the airfield perimeter.

1.18.5 Pedestrians enter the airfield from the town in order to collect firewood and cross the runway again once they have collected the firewood. The path that they take is close to the beginning of runway 13 in the area of the down slope.

1.18.6 The red arrow shows the direction in which the pedestrian was moving when she was struck by the aircraft.

1.18.7 The yellow line shows the direction in which the aircraft landed and the path it took when it impacted the pedestrian.



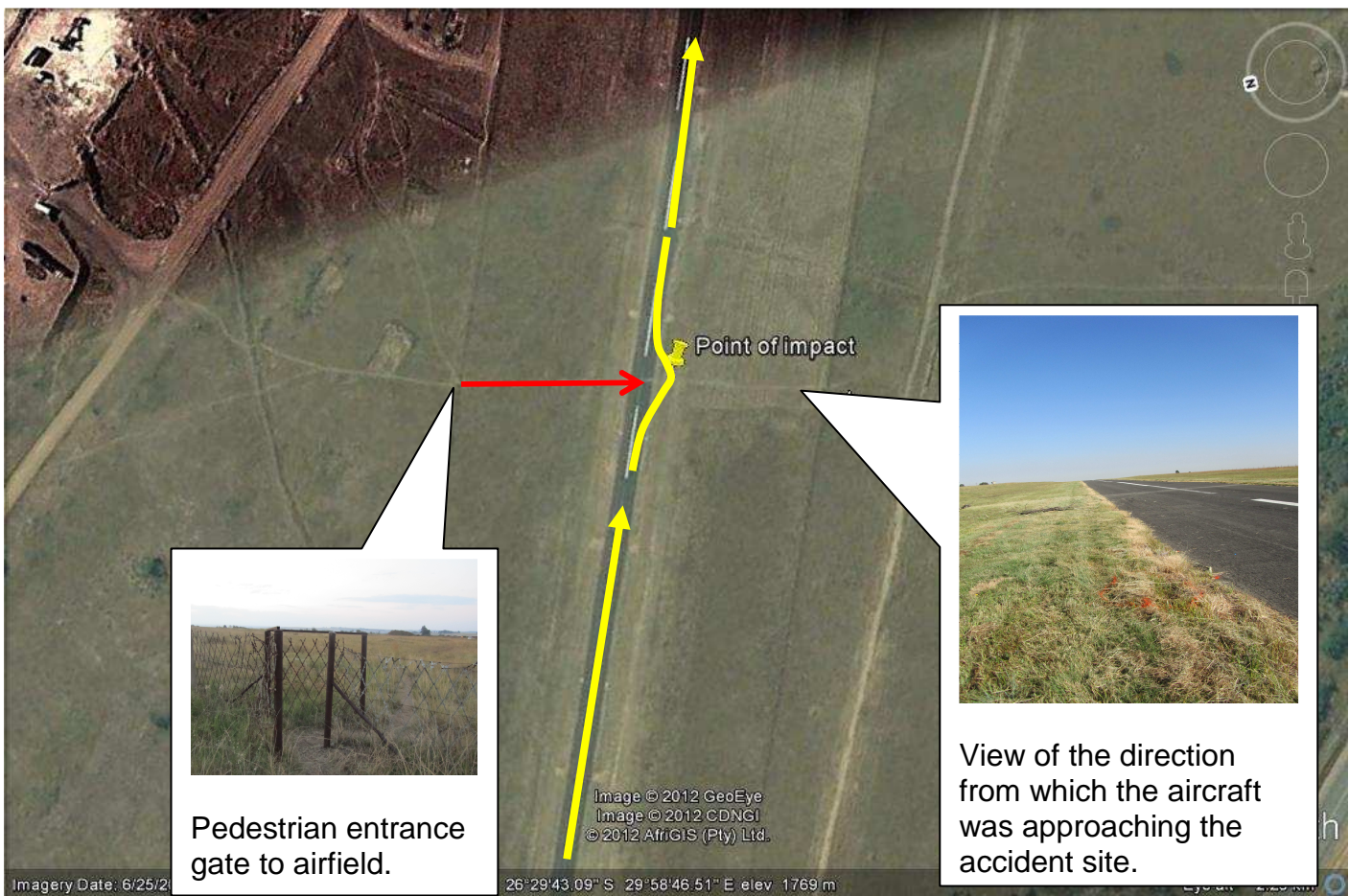


Figure 3, showing point of impact.

1.18.8 On the day of the accident, the two pedestrians had finished collecting their firewood and were returning to the town when they approached the runway. The first pedestrian looked around to see if she could see any aircraft. There was no aircraft that she could see, so she crossed the runway. When she got to the opposite side of the runway, she felt a strong gust of wind that pushed her to the ground. When she got up, she looked around and saw that it was an aircraft that had passed her and that the aircraft had struck her companion who had been walking a short distance behind her when she crossed the runway.

1.18.9 The pilot of the aircraft reported that he came in to land on runway 13. During the landing roll he did not see the pathway that pedestrians use to cross the runway, nor did he see the pedestrians, as neither was visible due to the upward slope of the runway. On reaching the top of the slope, he noticed two women carrying bundles of wood on their heads, standing on either side of the runway. Both the women were stationary at that stage. The pilot continued his landing roll and when he was about 50 metres from the two pedestrians, the one on the left began to run across the runway from left to right.

1.18.10 The pilot turned the aircraft towards the right in an attempt to avoid the pedestrian. The pilot stated that about 80% of the aircraft was off the runway when it collided with the pedestrian.

1.18.11 The pilot then turned the aircraft back onto the runway and continued the landing roll to the hangar.



1.18.12 The pilot returned to the accident site and called the emergency services and the police.

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

1.19.1 None.

## **2. ANALYSIS**

2.1 The pilot was the holder of a valid private pilot's licence. The pilot held the required rating for the aircraft type and was in possession of a valid medical certificate with restrictions imposed thereon. The pilot was required to wear corrective lenses.

2.2 The aircraft was maintained by an approved aircraft maintenance organisation (AMO) and the work performed on the aircraft was properly certified.

2.3 The pilot elected to land on runway 13 at FAEO as there was no wind that would determine his landing direction, and it would allow him to taxi straight to the hangar without having to backtrack, as would have been the case if he had used runway 31 at FAEO.

2.4 During the landing roll he noticed two women carrying bundles of wood on their heads, standing on either side of the runway. When the aircraft was about 50 metres from the two pedestrians, the one on the left ran across the runway from left to right.

2.5 The pilot turned the aircraft towards the right in an attempt to avoid the pedestrian. The pilot turned as far right as he could to try to avoid hitting the pedestrian that was crossing the runway, without hitting the pedestrian who had already crossed the runway.

2.6 The aircraft collided with the pedestrian that was crossing the runway and narrowly missed the pedestrian that had already crossed the runway.

2.7 The pilot then turned the aircraft back onto the runway and continued the landing roll to the hangar.

2.8 The pilot returned to the accident site and called the emergency services and the police.

## **3. CONCLUSION**

### **3.1 Findings**

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

3.2 The aircraft had a valid certificate of airworthiness and was recorded as being serviceable at the time of flight.

3.3 The pilot performed a successful, normal landing on runway 13 at FAEO.

3.4 During the landing roll the aircraft struck a pedestrian that ran across the runway.

3.5 The pedestrian was fatally injured in the accident sequence.

3.6 The pilot did not suffer any injuries in the accident sequence.

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

The aircraft collided with a pedestrian that was crossing the runway during the landing roll.

## **4. SAFETY RECOMMENDATIONS**

4.1 None

## **5. APPENDICES**

5.1 None.

Compiled by :

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for Commissioner for Civil Aviation

Date: .....

Investigator-in-charge: A.Motala

Date: 10 August 2012

Co-Investigator: None

Date: 10 August 2012