



# AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8501	
<b>Aircraft Registration</b>	ZS-LBP	<b>Date of Accident</b>	26 May 2008		<b>Time of Accident</b>	0730Z
<b>Type of Aircraft</b>	Cessna R182 (Aeroplane)		<b>Type of Operation</b>		Training	
<b>Pilot-in-command Licence Type</b>		Commercial Pilot	<b>Age</b>	63	<b>Licence Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>		Total Flying Hours	4300		Hours on Type	150
<b>Last point of departure</b>		Vereeniging Aerodrome (FAVV) – Gauteng Province				
<b>Next point of intended landing</b>		Rustenburg Aerodrome ( FARG) – North West Province				
<b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>						
Runway 16 at Rustenburg Aerodrome (GPS position: South 25°38.564 East 027° 28.226)						
<b>Meteorological Information</b>		Surface wind: 220-240°/5-10knots, Temperature:18°C, Cloud cover: None				
<b>Number of people on board</b>	1+1	<b>No. of people injured</b>	1	<b>No. of people killed</b>	0	
<b>Synopsis</b>						
<p>The flight instructor and the student pilot were on a cross-country navigational test flight from Vereeniging Aerodrome to Rustenburg Aerodrome. From Rustenburg Aerodrome they intended to fly to Potchefstroom Aerodrome and then back to Vereeniging Aerodrome. The flight instructor was the pilot-in-command and the student was the pilot-flying.</p> <p>Runway 16 was elected for the landing at Rustenburg Aerodrome and full flaps were selected. Whilst attempting to land on Runway 16, the aircraft bounced on touchdown. The student pilot then applied maximum power (full throttle) in an attempt to perform a go-around, however, the aircraft stalled; the left wing dropped and impacted the grass surface to the left of Runway 16. The aircraft then nosed over and came to rest in an inverted attitude approximately 30 metres from the edge of the runway.</p> <p>The flight instructor sustained minor injuries to both of his hands and the student was not injured. The aircraft was substantially damaged.</p>						
<b>Probable Cause</b>						
<p>The aircraft bounced on landing and the instructor was unable to intervene in time and prevent the aircraft from stalling when the student applied power to go around.</p>						
<b>IARC Date</b>				<b>Release Date</b>		

## AIRCRAFT ACCIDENT REPORT

**Name of Owner/Operator** : Riverpak Steel (PTY) LTD  
**Manufacturer** : Cessna Aircraft Company  
**Model** : Cessna 182R  
**Nationality** : South African  
**Registration Marks** : ZS-LBP  
**Place** : Rustenburg Aerodrome  
**Date** : 26 May 2008  
**Time** : 0730Z

*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 flight instructor and the student pilot were on a cross-country navigational test flight from Vereeniging Aerodrome to Rustenburg Aerodrome. From Rustenburg Aerodrome they intended to fly to Potchefstroom Aerodrome and then back to Vereeniging Aerodrome.
- 1.1.2 The flight instructor was the pilot-in-command and the student pilot was the pilot-flying with the flight instructor evaluating the student.
- 1.1.3 Runway 16 was elected for the landing at Rustenburg Aerodrome and full flaps were selected. At 0730Z whilst attempting to land at Runway 16 the aircraft bounced on touchdown. The student pilot then applied maximum power in an attempt to perform a go-around. The aircraft stalled, the left wing dropped and impacted the grass surface to the left of Runway 16. The aircraft nosed over and came to rest in an inverted attitude approximately 30 metres from the runway edge.
- 1.1.4 The accident occurred during daylight conditions at a geographical position determined to be South 25°38.564 East 027° 28.226 elevation 3444 feet AMSL (Above Mean Sea Level).

## 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 aircraft sustained substantial damage.

## 1.4 Other Damage

1.4.1 No other damages were caused.

## 1.5 Personnel Information

### 1.5.1 Flight Instructor

Nationality	South African	Gender	Male	Age	63
Licence Number	*****	Licence Type	Commercial Pilot		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instructor Rating; Instrument Rating				
Medical Expiry Date	31 December 2008				
Restrictions	Corrective Lenses				
Previous Accidents	Nil				

Flying Experience:

Total Hours	4300.0
Total Past 90 Days	80.0
Total on Type Past 90 Days	4.0
Total on Type	150.0

### 1.5.2 Student Pilot

Nationality	South African	Gender	Male	Age	39
Licence Number	*****	Licence Type	Student Pilot		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	31 December 2008				
Restrictions	Corrective Lenses				
Previous Accidents	Nil				

Flying Experience :

Total Hours	55.5
Total Past 90 Days	5.3
Total on Type Past 90 Days	5.3
Total on Type	55.5

- 1.5.3 The flight instructor and the student pilot were on a cross-country navigational test flight. The flight instructor was the pilot-in-command and the student pilot was the pilot-flying with the flight instructor evaluating the student. This was the student pilot's final test.

## 1.6 Aircraft Information

### 1.6.1 Airframe:

Type	Cessna R182	
Serial Number	R182-01721	
Manufacturer	Cessna Aircraft Company	
Date of Manufacture	1981	
Total Airframe Hours (At time of Accident)	2240.5	
Last MPI (Hours & Date)	2182.7	05 July 2007
Hours since Last MPI	57.8	
C of A (Issue Date)	12 August 1981	
C of R (Issue Date) (Present owner)	27 July 2007	
Operating Categories	Standard	

### Engine:

Type	Lycoming O-540
Serial Number	L23022-40A
Hours since New	2240.5
Hours since Overhaul	415.7

### Propeller:

Type	McCauley B3D34C
Serial Number	810766
Hours since New	2240.5
Hours since Overhaul	136.1

- 1.6.2 According to the hobbs meter reading in the aircraft that was recorded at the accident, the duration of the flight was approximately 0.9 of an hour (54 minutes) from take-off until the time of the accident.
- 1.6.3 The aircraft was authorized to use Avgas 100LL. The aircraft was refuelled to capacity with Avgas 100LL prior to take-off. Approximately 200 litres of fuel had remained at the time of the accident. This amount was obtained from the Pilot Questionnaire and Flight Folio.

## 1.7 Meteorological Information

1.7.1 The weather information was obtained from the Pilot Questionnaire.

Wind direction	220-240°	Wind speed	5-10 knots	Visibility	Good
Temperature	18°C	Cloud cover	None	Cloud base	unknown
Dew point	unknown				

1.7.2 The intention was to land the aircraft on Runway 16 where the wind direction was 220° to 240°. This indicates that crosswind conditions prevailed.

## 1.8 Aids to Navigation

1.8.1 No malfunctioning of the navigational aids was reported.

## 1.9 Communications

1.9.1 No malfunctioning of the communication equipment were reported.

1.9.2 The accident occurred at a licensed, unmanned aerodrome.

## 1.10 Aerodrome Information

1.10.1 The accident occurred during landing at Rustenburg Aerodrome (FARG).

1.10.2 Rustenburg Aerodrome was a licensed, unmanned aerodrome.

Aerodrome Location	Rustenburg Aerodrome
Aerodrome Co-ordinates	S25°39'00.0 E027°17'00.0
Aerodrome Elevation	3700 feet
Runway Designations	16/34
Runway Dimensions	1225 metres x 15.4 metres
Runway Used	16
Runway Surface	Asphalt
Approach Facilities	Non Directional Beacon
Aerodrome Status	Licensed

## 1.11 Flight Recorders

1.11.1 The aircraft 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 aircraft.

## **1.12 Wreckage and Impact Information**

1.12.1 On touchdown on Runway 16 the aircraft bounced and stalled. The left wing dropped and impacted the grass surface to the left of Runway 16. The aircraft nosed over and came to rest in an inverted attitude approximately 30 metres from the runway's edge.

1.12.2 The nose wheel of the aircraft broke off at the impact with the grass surface. The aircraft sustained damage to the landing gear, propeller, left wing, right wing, vertical stabilizer, rudder and fuselage. The nose wheel was located approximately 4 metres from the wreckage.



**Figure 1.** A view of the wreckage in an inverted attitude on the grass surface next to the runway.

## **1.13 Medical and Pathological Information**

1.13.1 The instructor pilot sustained minor injuries to both of his hands.

## **1.14 Fire**

1.14.1 There was no evidence of fire in-flight or after impact.

## **1.15 Survival Aspects**

- 1.15.1 The cabin area was not damaged and the occupants were properly restrained at the time of the accident by the aircraft-equipped safety harnesses which subsequently prevented serious injuries.

## **1.16 Tests and Research**

- 1.16.1 None considered necessary.

## **1.17 Organisational and Management Information**

- 1.17.1 The ATO (Aviation Training Organisation) was in possession of a valid CAA Accreditation Certificate No. CAA/0041 at the time of the accident. The flight in question was duly authorised prior to take-off.
- 1.17.2 The last maintenance that was carried out on the aircraft prior to the accident was conducted by AMO (Aircraft Maintenance Organisation) No. 1029. The AMO was in possession of a valid AMO Approval certificate to perform the required maintenance.

## **1.18 Additional Information**

- 1.18.1 The actual aircraft configuration for landing was 70 knots (KIAS) indicated airspeed and flaps selection at 40° (full flaps) as stated in the Pilot Questionnaire. The required aircraft configuration for landing was 65-75 KIAS and flaps selection at 40° (full flaps) as stated in the aircraft (POH) Pilot's Operating Handbook. The aircraft configuration was within limits.

- 1.18.2 The Cessna 182 POH page 4-21 states:

*Crosswind landing*

*When landing in a strong crosswind, use the minimum flap setting required for the field length.*

- 1.18.3 The Flight Training Handbook AC 61-21A page 127-128 states:

*Bouncing During Touchdown*

*When a bounce is severe, the safest procedure is to EXECUTE A GO-AROUND IMMEDIATELY. No attempt to salvage the landing should be made. Full power should be applied while simultaneously maintaining directional control and lowering the nose to a safe attitude. The go-around procedure should be continued even though the airplane may descend and another bounce may be encountered.*

*Extreme caution and alertness must be exercised anytime a bounce occurs, but particularly when there is a crosswind. The crosswind correction will almost invariably be released by inexperienced pilots when the aircraft bounces. When one main wheel of the airplane strikes the runway, the other wheel will touchdown immediately afterwards, and the wings will become level. Then, with no crosswind*

*correction as the aircraft bounces, the wind will cause the aircraft to roll with the wind, thus exposing even more surface to the crosswind and drifting the airplane more rapidly.*

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

1.19.1 None considered necessary.

## **2. ANALYSIS**

- 2.1 The flight instructor and the student pilot were on a navigational flight. The flight instructor was the pilot-in-command and the student pilot the pilot-flying.
- 2.2 Runway 16 was elected for the landing at Rustenburg Aerodrome and full flaps were selected.
- 2.3 It is the opinion of the investigator that the aircraft bounced on touchdown due to the aircraft's rate of descent that was too high. The student pilot then applied maximum power in an attempt to perform a go-around. It is the opinion of the investigator that whilst not compensating for the crosswind condition that prevailed at landing the aircraft stalled. The left wing then dropped and impacted the grass surface left of Runway 16. The aircraft nosed over and came to rest approximately 30 metres from the runway edge.
- 2.4 The investigator is of the opinion that the flight instructor could have been more attentive and could have successfully controlled the go-around manoeuvre in the crosswind conditions. His experience included 4300 flying hours in total and 150 flying hours on this aircraft type.
- 2.5 The pilot could also have elected to use a different aircraft landing configuration as stated by the POH as the landing was executed in crosswind conditions. The runway length accommodated for the selection of a lower flap setting.

## **3. CONCLUSION**

### **3.1 Findings**

- 3.1.1 The flight instructor was the holder of a valid commercial pilot's licence and instructor rating.
- 3.1.2 The flight instructor was correctly type-rated and the aircraft type endorsed his logbook.
- 3.1.3 The student pilot was the holder of a valid student pilot's licence and had the type endorsed in the pilot's licence.
- 3.1.4 The aircraft had a valid Certificate of Airworthiness at the time of the accident.
- 3.1.5 The flight authorisation book was signed by the student as well as the flight instructor prior to the flight.



- 3.1.6 The aircraft had sufficient fuel on board for the flight.
- 3.1.7 The aircraft bounced on touchdown.
- 3.1.8 The pilot-flying stalled the aircraft in an attempt to execute a go-around.
- 3.1.9 The instructor failed to intervene to control the go-around manoeuvre.
- 3.1.10 The left wing impacted the grass surface left of Runway 16.
- 3.1.11 The nose wheel of the aircraft broke off at the impact with the grass-covered area and the aircraft nosed over.
- 3.1.11 The aircraft came to rest in an inverted attitude approximately 30 metres from the runway's edge.
- 3.1.12 The flight instructor sustained minor injuries.

### **3.1 Probable Cause/s**

- 3.2.1 The aircraft bounced on landing and the instructor was unable to intervene in time and prevent the aircraft from stalling when the student applied power to go around.

## **4. SAFETY RECOMMENDATIONS**

- 4.1 None.

## **5. APPENDICES**

- 5.1 None.

-END-

Report reviewed and amended by the Advisory Safety Panel  
24 February 2009