SOUTH AFRICAN CIVIL AVIATION AUTHORITY

Section/division **Occurrence Investigation**

Form Number: CA 12-12b

AIRCRAFT INCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/3/2/0681		
Aircraft Registration	**ZS-SDA**	**Date of Incident**	24 October 2008		**Time of Incident**	1215Z	
Type of Aircraft	Cessna C172		**Type of Operation**		Training		
Pilot-in-command Licence Type		Student	**Age**	20	**Licence Valid**	Yes	
Pilot-in-command Flying Experience		Total Flying Hours	46		Hours on Type	14.3	
Last point of Departure	Rand Aerodrome (FAGM)						
Next point of Intended Landing	Rand Aerodrome (FAGM)						
Location of the Incident Site with Reference to Easily Defined Geographical Points (GPS readings if possible)							
Runway 35 at Rand Aerodrome, Gauteng Province							
Meteorological Information	The pilot reported that the weather was fine at the time of the accident.						
Number of People on Board	1 + 0	**No. of People Injured**	0	**No. of People Killed**	0		

Synopsis

The student pilot was engaged on a solo training flight, practising circuit and landing exercises at Rand Aerodrome when the accident occurred. During a landing, the aircraft ballooned, and in an attempt to recover the pilot landed the aircraft hard on the nose landing gear. The nose landing gear collapsed and the propeller struck the ground.

The student sustained no injuries.

The aircraft sustained damage to the nose wheel, the propeller blades, cowling and fire wall, which broke off.

Probable Cause

The aircraft ballooned during landing and in an attempt to recover, the pilot landed the aircraft on its nose landing gear. As a result, the nose landing gear collapsed.

IARC Date		Release Date	

AIRCRAFT INCIDENT REPORT

Name of Owner/Operator : South African Flight Training Academy CC
Manufacturer : Cessna Aircraft Company
Model : C172P
Nationality : South African
Registration Marks : ZS-SDA
Place : Rand Aerodrome
Date : 24 October 2008
Time : 1215Z

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 two 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 student pilot reported that he was engaged on a training flight with the instructor prior to the solo flight. During the training with the instructor, they executed a simulated engine failure after take-off, one glide approach, a flapless landing and one go-around on Runway 35. All six landings were carried out by the student pilot in a safe and satisfactory manner, which resulted in him being sent solo by the instructor.

1.1.2 The student pilot took off and flew without incident. While coming for a landing, the air traffic control tower told him to go-around since there was traffic on the runway. When the student came for final approach again, he maintained a speed of 70 kts and aimed for the numbers on the threshold. On touchdown, the aircraft ballooned and in an attempt to recover, the student landed the aircraft hard – the nose wheel broke off and the propeller blades struck the asphalt.

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

1.3.1 The aircraft sustained damage on the nose wheel, the propeller blades, cowling and the fire wall, which broke off.

Figure 1: The aircraft after the accident

1.4 Other Damage

1.4.1 There was no other damage.

1.5 Personnel Information

1.5.1 Student pilot:

Nationality	South African	Gender	Male	Age	20
Licence Number	**********	Licence Type	Student		
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	None				
Medical Expiry Date	30 June 2010				
Restrictions	None				
Previous Accidents	None				

1.5.2 Flying Experience:

Total Hours	46
Total Past 90 Days	39.5
Total on Type Past 90 Days	14.3
Total on Type	14.3

1.6 Aircraft Information

1.6.1 Airframe:

Type	Cessna C172P	
Serial No.	17276251	
Manufacturer	Cessna Aircraft Company	
Date of Manufacture	1984	
Total Airframe Hours (At Time of Incident)	12 565.5	
Last MPI (Date & Hours)	27 August 2008	12 480.9
Hours Since Last MPI	84.6	
C of A (Issue Date)	18 September 2008	
C of R (Issue Date) (Present Owner)	25 April 2008	
Operating Categories	Standard	

1.6.2 Engine:

Type	Textron Lycoming
Model	0-320-D2J
Serial No.	L-17123-39A
Hours Since New	3 769.9
Hours Since Overhaul	1 761.5

1.6.3 Propeller:

Type	McCauley
Model	1C160 DTM 7557 M-1
Serial No.	CC230
Hours Since New	84.6
Hours Since Overhaul	TBO not yet reached

1.6.4 According to the aircraft maintenance organisation's available records at the time of compiling this report, both the total hours since new and date of manufacture were unknown. The total hours since overhaul were reported to be zero during the last maintenance inspection prior to the incident. The information was obtained from propeller book number one.

1.7 Meteorological Information

The following information is as provided by the pilot on the pilot questionnaire:

Wind Direction	330°	Wind Speed	10 kts	Visibility	>10 km
Temperature	Unknown	Cloud Cover	Broken	Cloud Base	2 500 ft
Dew Point	Unknown				

1.8 Aids to Navigation

1.8.1 The aircraft was fitted with standard navigational aids certified for this type of aircraft. There was no record of reports of failures on the navigational aids prior to the accident.

1.9 Communications

1.9.1 The aircraft was fitted with standard communication equipment for the aircraft type and there were no reported failures on the communication system prior to the accident.

1.9.2 The pilot was broadcasting on frequency of 118.7 MHz.

1.10 Aerodrome Information

Aerodrome Location	Germiston/Rand Aerodrome	
Aerodrome Co-ordinates	S26˚14'31.1˝ E028˚09'04.8˝	
Aerodrome Elevation	5 483 ft	
Runway Designations	11/29	17/35
Runway Dimensions	1 660 m x 15 m	1 493 m x 15 m
Runway Used	35	
Runway Surface	Tar	
Approach Facilities	VOR, NDB and DME	

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 to be fitted to this type of aircraft according to regulations.

1.12 Wreckage and Impact Information

1.12.1 During the landing, the aircraft ballooned and in an attempt to recover, the student pilot landed the aircraft hard on the nose landing gear. As a result, the nose landing gear collapsed and the propeller struck the ground. The aircraft came to a halt approximately 20 m from the intersection of runways 35 and 29. The onsite investigations after the aircraft had been recovered to the hanger revealed no anomalies with the control surfaces or control cables.

Figure 2: The collapsed nose wheel of the aircraft

1.13 Medical and Pathological Information

1.13.1 Not applicable.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The accident was considered survivable as there was no damage to the cockpit or cabin, which could have resulted in injuries to the pilot. The pilot was restrained with the safety harness.

1.16 Tests and Research

1.16.1 Not applicable.

1.17 Organisational and Management Information

1.17.1 This was a training flight.

1.17.2 The training school had a valid Aviation Training Organisation Certificate dated 28 June 2008, with an expiry date of 21 June 2009.

1.17.3 The aircraft maintenance organisation (AMO) responsible for the maintenance of the aircraft had a valid certificate issued on 01 February 2008. The last audit prior to the accident was carried out on 22 January 2008 and no major findings that could have contributed to the accident or maintenance of the aircraft were identified.

1.18 Additional Information

1.18.1 Not applicable.

1.19 Useful or Effective Investigation Techniques

1.19.1 Not applicable.

2. ANALYSIS

2.1 The student pilot was engaged in a solo training flight, practising circuit and landing exercises at Rand Aerodrome when the accident occurred. During the landing, the aircraft ballooned and in an attempt to recover, the student pilot landed the aircraft hard on the nose landing gear. As a result, the nose landing gear collapsed and the propeller struck the ground.

2.2 The aircraft was properly maintained and, according to available documentation, the aircraft did not have any defect or malfunction that could have contributed to or have caused the accident.

2.3 The available information revealed that fine weather conditions prevailed at the time of the flight and subsequent accident. Therefore, it is concluded that weather was not a contributory factor to the accident.

3. CONCLUSION

3.1 Findings

3.1.1 The student pilot had a valid student pilot licence at the time of accident.

3.1.2 The student pilot had a valid medical certificate with no restrictions.

3.1.3 The aircraft was properly maintained.

3.1.4 The aircraft had a valid certificate of airworthiness and certificate of registration.

3.1.5 The aircraft ballooned, and in an attempt to recover the student pilot landed hard on the nose landing gear, which then collapsed.

3.1.6 The onsite investigation revealed no anomalies with the flight control surfaces and the integrity thereof.

3.1.7 Weather was not a contributing factor to this accident.

3.2 Probable Cause/s

3.2.1 The aircraft ballooned during landing and in an attempt to recover, the student pilot landed the aircraft hard on its nose landing gear. As a result, the nose landing gear collapsed.

4. SAFETY RECOMMENDATIONS

4.1 None

5. APPENDICES

5.1 Not applicable.

Report reviewed and amended by the Advisory Safety Panel on 16 March 2010

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