SOUTH AFRICAN CIVIL AVIATION AUTHORITY

Section/division **Occurrence Investigation** Form Number: CA 12-12a

AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8950		
Aircraft Registration	**ZS-FPK**	**Date of Accident**	30 July 2011		**Time of Accident**	0800Z	
Type of Aircraft	Cessna 177A		**Type of Operation**		Training		
Pilot-in-command Licence Type		Airline Transport	**Age**	23	**Licence Valid**	Yes	
Pilot-in-command Flying Experience		Total Flying Hours	1 594.5		Hours on Type	Unknown	
Last point of departure	Brits Aerodrome (FABS), North West						
Next point of intended landing	Grand Central Aerodrome (FAGC), Gauteng Province						
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)							
Magaliesburg ridge (GPS co-ordinates: S25˚41.770' E027˚54.890') at 5 000 ft							
Meteorological Information	Surface wind 130˚ at 3 kt, temperature 15 ˚C, cloud base nil						
Number of people on board	1 + 1	**No. of people injured**	0	**No. of people killed**	2		

Synopsis

A flight instructor accompanied by a pilot under training, who held a valid Airline Transport Pilot licence, took off from Grand Central Aerodrome (FAGC) on a patter training flight (for an instructor's rating) under the auspices of an aviation training organisation (ATO). After take-off from FAGC they flew to Brits Aerodrome (FABS) where an uneventful landing occurred. They then took off from FABS to FAGC on a low-level flight, but impacted with terrain en route.

Both occupants were fatally injured.

The aircraft was destroyed during the impact.

Probable Cause

Failure to maintain flying speed or safe flying height.

IARC Date		Release Date	

AIRCRAFT ACCIDENT REPORT

Name of Owner : Aviation Outsourcing Services (PTY) LTD
Name of Operator : Flight Training Services
Manufacturer : Cessna Aircraft Company
Model : 177A
Nationality : South Africa
Registration Marks : ZS-FPK
Place : Magaliesberg mountain range
Date : 30 July 2011
Time : 0800Z

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 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 A flight instructor accompanied by a student pilot, who held a valid Airline Transport Pilot licence, took from Grand Central Aerodrome (FAGC) on a patter training flight (for an instructor's rating) under the auspices of an aviation training organisation (ATO). After take-off from FAGC, they flew to Brits Aerodrome (FABS) where an uneventful landing occurred. They took off again from FABS to FAGC on a low-level flight, but the aircraft impacted with terrain en route.

1.1.2 According to an eye witness's statement, on 30 July 2011 at approximately 0800Z, the eye witness was outside his house when he noticed a white and blue small aircraft pass overhead his house. The witness identified that the aircraft was flying at low altitude. After a short while he heard a loud bang. The bang drew his attention and when he checked the mountain, he noticed a crashed aircraft in the valley. He then contacted the neighbourhood watch radio and reported the accident to them. The police and the emergency services were also notified. The witness went up the mountain and reached the plane at approximately 0845Z.

On arrival at the scene he found that the aircraft was upside down. Being a medical doctor, the witness assessed the two occupants' vital signs (pulse and breathing) and came to the conclusion that both had perished in the accident. Upon arrival of

the emergency personnel and police at the scene, he handed over to the police services.

1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	2	-	-	-
Serious	-	-	-	-
Minor	-	-	-	-
None	-	-	-	-

1.3 Damage to Aircraft

1.3.1 The aircraft was destroyed during the accident sequence.

Figure 1: The wreckage of the aircraft

1.4 Other Damage

1.4.1 None

1.5 Personnel Information

1.5.1 Pilot-in-command:

Nationality	South African	Gender	Male	Age	23
Licence Number	0271075913	Licence Type	ATPL		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instrument, Instructor Grade II				
Medical Expiry Date	31 July 2012				
Restrictions	None				
Previous Accidents	None				

Pilot-in-command flying experience:

Total Hours	1 595.1
Total Past 90 Days	Unknown
Total on Type Past 90 Days	Unknown
Total on Type	Unknown

Note: The last entry in the logbook of the pilot was July 2010. The last entries made in the pilot's logbook were inaccurate, however the total flying hours obtained from the South African Civil Aviation Authority pilot's file at the time of renewal, dated 12 January 2011, was 1 595.1.

1.5.2 Pilot-under-instruction:

Nationality	South African	Gender	Male	Age	26
Licence Number	0271047078	Licence Type	ATPL		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instrument				
Medical Expiry Date	31 October 2011				
Restrictions	None				
Previous Accidents	Yes				

Note: On 18 December 2008 while flying ZS-NXH, the pilot experienced a landing gear indication problem on an approach for landing on Runway 06L at Lanseria Aerodrome (FALA). He elected to execute a fly-by past the FALA tower to ascertain if the landing gears were down. The air traffic controller at FALA confirmed that the landing gears were down and the pilot elected to go ahead with the landing. Two attempts were made by the crew; on both occasions the main landing gears collapsed and the crew applied power for a go-around. On the third attempt, following a mayday call and passenger briefing, the pilot executed a landing. On touchdown the pilot kept the aircraft nose down in an attempt to bleed off the speed. It was during this time that the landing gears partially collapsed, resulting in the rear bottom section of the fuselage making contact with the runway surface. No injuries were sustained, but the aircraft sustained substantial damages to the rear fuselage, both inboard flaps and starboard landing gear doors.

The pilot' under instruction logbook could not be found, however the total flying hours obtained from the South African Civil Aviation Authority pilot's file at the time of renewal dated 7 April 2011 was 3 342.

Pilot-under-instruction flying experience:

Total Hours	3 342
Total Past 90 Days	Unknown
Total on Type Past 90 Days	Unknown
Total on Type	Unknown

1.6 Aircraft Information

1.6.1 Airframe:

Type	Cessna 177	
Serial Number	177-01299	
Manufacturer	Cessna Aircraft Company	
Year of Manufacture	1969	
Total Airframe Hours (At time of Accident)	3 063.3	
Last MPI (Date & Hours)	10 June 2011	3 030.10
Hours since Last MPI	33.2	
C of A (Issue Date)	9 June 1969	
C of R (Issue Date) (Present owner)	17 May 2007	
Operating Categories	Standard	

1.6.2 Engine:

Type	Lycoming O-360-A2B
Serial Number	L-13653-36A
Hours since New	3 030.10
Hours since Overhaul	789.10

1.6.3 Propeller:

Type	McCauley 1A170-EFA76-50
Serial Number	30974
Hours since New	3 030.10
Hours since Overhaul	141.60

1.7 Meteorological Information

1.7.1 Weather information as obtain from the South African Weather Services:

Wind direction	130˚	Wind speed	3 kt	Visibility	CAVOK
Temperature	12˚C	Cloud cover	Nil	Cloud base	Nil
Dew point	–0.3				

1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard navigation equipment approved by the regulator for the aircraft type. No defects were reported prior to the accident.

1.9 Communications

1.9.1 The aircraft was equipped with VHF radio communication equipment approved by the regulator for the aircraft type. No defects were reported prior to the accident.

1.10 Aerodrome Information

1.10.1 The accident did not occur at or near any aerodrome. The accident occurred at the following GPS co-ordinates: S25˚41.770' E027˚54.890'.

1.11 Flight Recorders

1.11.1 The aircraft was not equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was either required by regulations to be fitted to this type of aircraft.

1.12 Wreckage and Impact Information

1.12.1 Prior to the accident the aircraft was flying in a southerly direction at a low altitude. It appears that the aircraft impacted a tree with the left-hand wing before it impacted with the ground and flipped over. The onsite investigation revealed no anomalies with the control surfaces or control cables.

Figure 2: The propeller separated from the aircraft

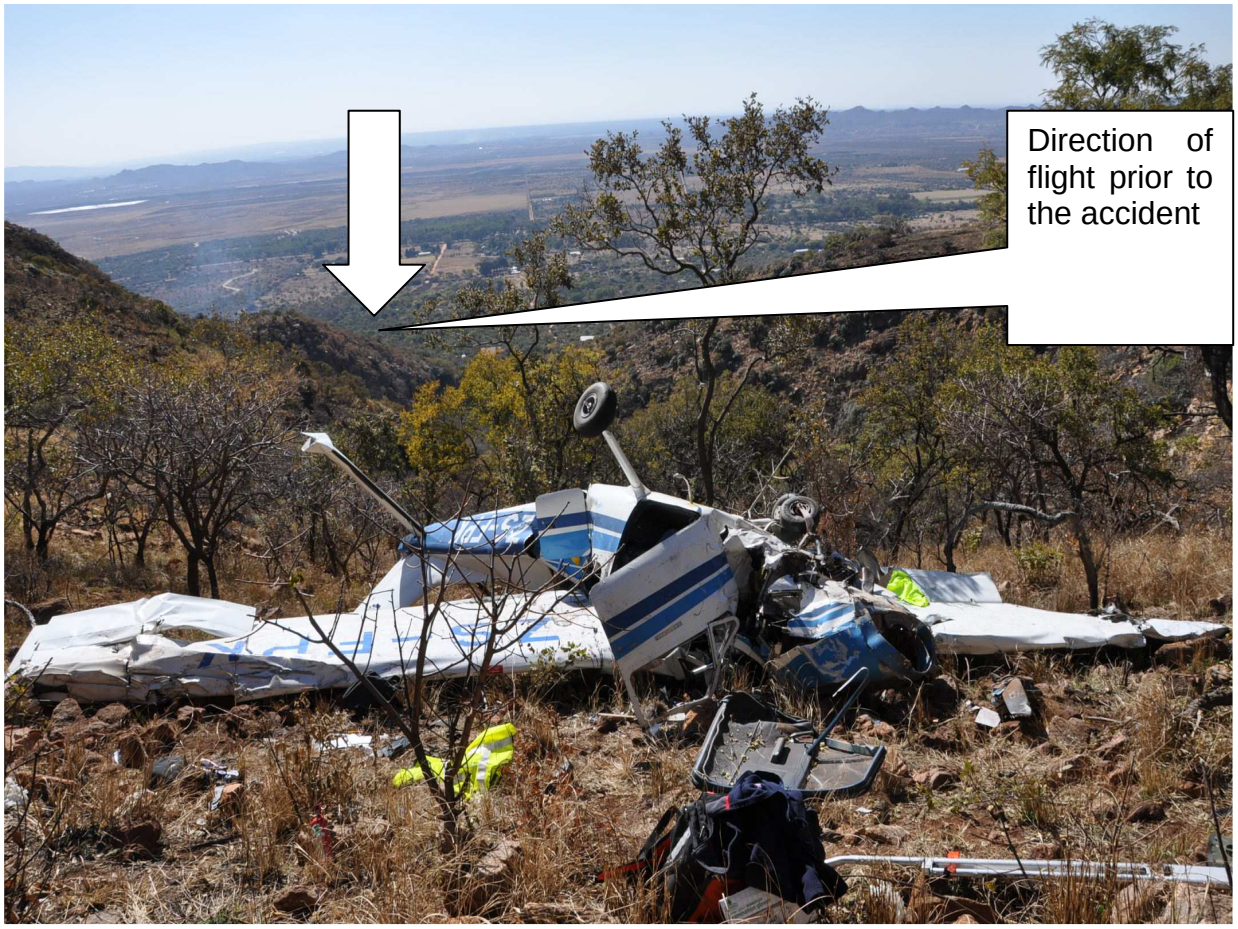

Figure 3: The wreckage of the aircraft

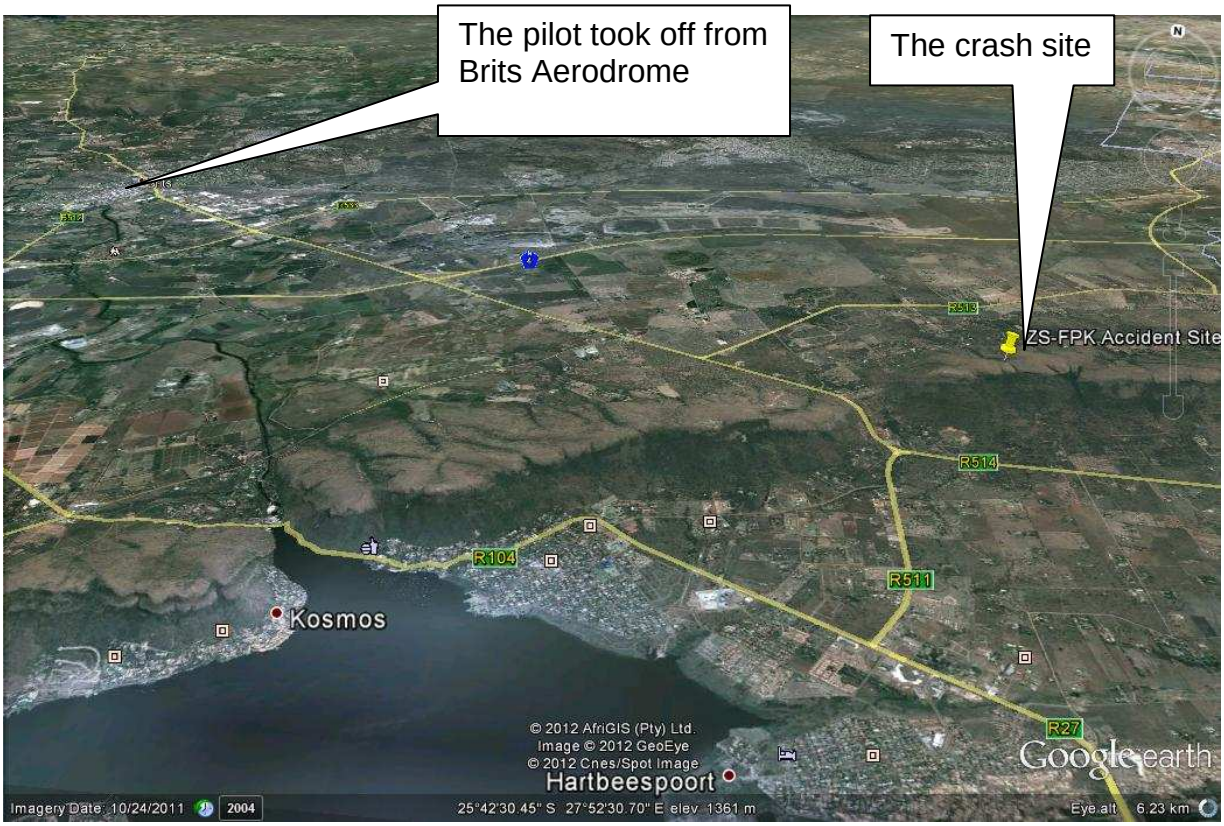

Figure 4: The crash site in relation to Brits Aerodrome

1.13 Medical and Pathological Information

1.13.1 At the time this report was concluded the post-mortem and toxicological reports for both occupants were still outstanding.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The crew were properly restrained with safety harnesses.

1.15.2 Due to high-impact forces associated with the accident, it was not considered survivable.

1.16 Tests and Research

1.16.1 The onsite investigations revealed no anomalies with the reference to control continuity.

1.17 Organisational and Management Information

1.17.1 This was a training flight.

1.17.2 The training school had a valid ATO accreditation and the author sheet was signed. The author sheet indicates the purpose of the flight as patter training.

1.17.3 The aircraft maintenance organisation (AMO) responsible for maintenance of the aircraft had a valid AMO approval certificate. The AMO was appropriately authorised to conduct maintenance on the aircraft type.

1.18 Additional Information

1.18.1 None.

1.19 Useful or Effective Investigation Techniques

1.19.1 None

2. ANALYSIS

2.1 The instructor pilot and the student pilot took off from FAGC on a training flight. They elected to land at Brits, which was uneventful. They took off again from FABS to FAGC. A witness saw the aircraft flying at a low altitude towards the Magaliesburg ridge, and after a while he heard a loud bang and realised that the aircraft had crashed. From the witness's statement it is clear that the aircraft was flying at a low altitude in a mountainous area known for turbulence, which can result in a loss of lift.

2.2 The aircraft was properly maintained and there was no evidence of mechanical failure that could have resulted in the accident.

2.3 The available information revealed that fine weather conditions prevailed in the area 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 instructor pilot had a valid pilot licence and he was properly rated on the aircraft type.

3.1.2 The student pilot had a valid pilot licence and he was properly rated on the aircraft type.

3.1.2 The instructor pilot had a valid medical certificate which expired on 13 July 2011.

3.1.3 The student pilot had a valid medical certificate which expired on 31 October 2011.

3.1.4 The aircraft was properly maintained.

3.1.5 The flight was duly authorised by the ATO.

3.1.6 Weather was not a contributory factor to the accident.

3.2 Probable Cause/s

3.2.1 Failure to maintain flying speed or safe flying height.

4. SAFETY RECOMMENDATIONS

4.1 None

5. APPENDICES

5.1 None

Compiled by:

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For: Director of Civil Aviation

Investigator-in-charge: Koketjo Babili Date: ……..

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