



AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/7847	
Aircraft Registration	ZS-CRW	Date of Accident	21 August 2004		Time of Accident	1600Z
Type of Aircraft	Cessna 210A		Type of Operation		Sport (Para-dropping)	
Pilot-in-command Licence Type		Commercial	Age	35	Licence Valid	Yes
Pilot-in-command Flying Experience		Total Flying Hours	396,7		Hours on Type	3,5
Last point of departure		Klerksdorp Aerodrome (FAKD)				
Next point of intended landing		Klerksdorp Aerodrome (FAKD)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)						
Bush-type terrain 500m short of Runway 36 at Klerksdorp Aerodrome. GPS position: S26°52.947' E026°43.277'						
Meteorological Information		North-westerly wind at 8kts. CAVOK				
Number of people on board	1 + 0	No. of people injured	1	No. of people killed	0	
Synopsis						
<p>The pilot was approached by the operator to assist with a para-dropping operation at Klerksdorp Aerodrome (FAKD). On the day prior to the operation, the pilot completed his type conversion onto the Cessna 210. The conversion training was done by a Grade II instructor. The pilot stated that during the conversion training flight, both fuel tanks of the aircraft had been filled to capacity. The duration of the flight had been approximately one hour, and only the left-hand side tank had been selected.</p> <p>On the day of the operation, when the pilot collected the aircraft, the fuel levels were the same as he had left them the previous day. On start-up, the battery was found to be not fully charged; it was therefore fast-charged for approximately 10 minutes, and the engine was started. The pilot then taxied the aircraft to the apron to collect the passengers and the aircraft took off for FAKD. The duration of the flight was one hour. The right-hand side fuel tank was selected for the duration of the flight. On arrival at FAKD, the pilot was unable to proceed immediately with the para-dropping exercise because of the prevailing weather conditions (a north-westerly wind at 15kts).</p> <p>Once weather conditions improved, the pilot took off. The gauges indicated that both fuel tanks were half-full. The first drop was executed, and the aircraft landed and took off for the second drop. The pilot stated that after the last drop he had immediately lowered the undercarriage at 80mph and selected full flaps to try a different descending technique – that is, a greater rate of descent with minimum power and lower airspeed so as not to super-cool the engine.</p> <p>The pilot said that approximately halfway through the final approach on Runway 36, he had closed the throttle completely to regain the correct glide slope and prevent overshooting the threshold of the runway. When the glide slope was regained, he applied power but there was no response from the engine. After various attempts to regain power had failed, the pilot realised that the aircraft was not going to make it to the threshold of the runway. The aircraft struck the tops of some trees at a speed of approximately 70 to 80 mph as it continued to glide in. It then collided with several more trees and came to an abrupt stop in an open area.</p>						
Probable Cause						
<p>The use of an unapproved descent technique produced cooling and ice formation in the air inlet induction system. This resulted in an incorrect air/fuel mixture, which caused the engine stoppage and power loss. During the subsequent forced landing short of the runway, the aircraft collided with several trees and suffered damage</p>						
IARC Date	23 October 2007		Release Date			



AIRCRAFT ACCIDENT REPORT

Name of Owner/Operator : Philips Air Charter (PTY) LTD
Manufacturer : Cessna Aircraft Corporation
Model : C210A
Nationality : South African
Registration Marks : ZS-CRW
Place : 500m short of Runway 36 at Klerksdorp Aerodrome
 GPS position: S26°52.947' E026°43.277'
Date : 21 August 2004
Time : 1600Z

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 approached by the operator to assist with a para-dropping operation at Klerksdorp Aerodrome (FAKD). On the day prior to the operation, the pilot completed his type conversion onto the Cessna 210. The conversion training was done by a Grade II instructor. The pilot stated that during the conversion training flight, both fuel tanks of the aircraft had been filled to capacity. The duration of the flight had been approximately one hour, and only the left-hand side tank had been selected.

1.1.2 On the day of the operation, when the pilot collected the aircraft, the fuel levels were the same as he had left them the previous day. On start-up, the battery was found to be not fully charged; it was therefore fast-charged for approximately 10 minutes, and the engine was started. The pilot then taxied the aircraft to the apron to collect the passengers and the aircraft took off for FAKD. The duration of the flight was one hour. The right-hand side fuel tank was selected for the duration of the flight.

On arrival at FAKD, the pilot was unable to immediately proceed with the para-

dropping exercise because of the prevailing weather conditions (a north-westerly wind at 15kts).

- 1.1.3 Once weather conditions had improved, the pilot took-off. The gauges indicated that both fuel tanks were half-full. The first drop was executed, and the aircraft landed and took off for the second drop.
- 1.1.4 The pilot stated that after the last drop he had immediately lowered the undercarriage at 80mph and selected full flaps to try a different descending technique – that is, a greater rate of descent with minimum power and lower airspeed so as not to super-cool the engine.
- 1.1.5 The pilot said that approximately halfway through the final approach on Runway 36, he had closed the throttle completely to regain the correct glide slope and prevent overshooting the threshold of the runway. When the glide slope was regained, he applied power, but there was no response from the engine. After various attempts to regain power had failed, the pilot realised that the aircraft was not going to make it to the threshold of the runway.
- 1.1.6 The aircraft struck the tops of some trees at a speed of approximately 70 to 80 mph as it continued to glide in. It then collided with several more trees and came to an abrupt stop in an open area.

1.2 Injuries to Persons

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

1.3 Damage to Aircraft

- 1.3.1 The aircraft sustained damage to both wings, the right-hand wing strut, left-hand landing gear, lower engine cowling, lower fuselage, nose landing gear and propeller.



1.4 Other Damage

1.4.1 The damage was limited to the surrounding vegetation on the approach path for Runway 36.

1.5 Personnel Information

Nationality	South African	Gender	Male	Age	35
Licence Number	0270413438	Licence Type	Commercial		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instrument rating				
Medical Expiry Date	31 March 2005				
Restrictions	None				
Previous Accidents	None				

Flying Experience:

Total Hours	396,7
Total Past 90 Days	25,2
Total on Type Past 90 Days	3,5
Total on Type	3,5

1.6 Aircraft Information

Airframe

Type	Cessna C210A	
Serial Number	210-57806	
Manufacturer	Cessna Aircraft Corporation	
Date of Manufacture	1961	
Total Airframe Hours (at time of accident)	3 102,68	
Last MPI (Date & Hours)	29 July 2004	3 087,1
Hours since Last MPI	15,58	
C of A (Issue Date)	3 December 1968	
C of R (Issue Date) (Present Owner)	16 May 2002	
Operating Categories	Standard	
Type Acceptance	No records on CAA file	
SB & AD	Yes, as indicated by CAA records	
Recurrency Fee	Yes	

Engine

Type	Continental IO-470E
Serial Number	77852-I-E
Hours since New	3 102,68
Hours since Overhaul	104,28

Propeller

Type	McCauley
Serial Number	670869
Hours since New	Unknown
Hours since Overhaul	104,28

1.7 Meteorological Information

The following weather information was reported by the pilot:

Wind direction	North-westerly	Wind speed	>8kts	Visibility	>10km
Temperature	Unknown	Cloud cover	Unknown	Cloud base	Unknown
Dew point	Unknown				

1.8 Aids to Navigation

- 1.8.1 The aircraft was fitted with standard navigation equipment, none of which was reported unserviceable prior to the flight.

1.9 Communications

1.9.1 No information was available regarding communications.

1.10 Aerodrome Information

1.10.1 The accident occurred in bush-type terrain 500m short of Runway 36 at Klerksdorp Aerodrome (GPS position: S26°52.947' E026°43.277').

1.11 Flight Recorders

1.11.1 The aircraft was not equipped with any flight recorders and nor was this a regulatory requirement.

1.12 Wreckage and Impact Information

1.12.1 The aircraft struck the trees and executed a forced landing 500 metres short of Runway 36 and to the left of the extended centreline of the runway. The distance from the first impact with the trees to where the aircraft came to a stop was 80 metres.



1.13 Medical and Pathological Information

1.13.1 The pilot survived with no injuries.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 Due to low impact forces and the fact that the pilot was correctly restrained, this accident was survivable.

1.16 Tests and Research

1.16.1 None was conducted during the initial investigation.

1.17 Organisational and Management Information

1.17.1 This was a para-dropping operation. No evidence could be found that the operator was in possession of a valid Class 3 (G11) Air Service Licence which was required for this type of operation.

1.17.2 The operator correspondence file number G647D could not be provided by the CAA record-keeping department, hence it could not be established if the audits were conducted or whether this aircraft was listed in their Air Operation Certificate (AOC) OPSPEC.

1.17.2 The Aircraft Maintenance Organisation had been audited in the previous two years; the last audit had been conducted on 27 July 2004 with no major findings.

1.18 Additional Information

1.18.1 On recovery of the aircraft from the accident site, 15 US gallons of fuel were drained from the left-hand fuel tank.

1.19 Useful or Effective Investigation Techniques

1.19.1 None.

2. ANALYSIS

2.1 The pilot's total flying experience on type was 3,5 hours, including the conversion time.

2.2 Because the pilot had used a different descent technique, there was no response from the engine, when he applied power. He had no choice but to execute a forced landing. The aircraft struck the tree tops and crash-landed in an open area.

2.3 The on-site investigation revealed that the left-hand fuel tank content was 15 US gallons at the time of the accident.

2.4 The use of an unapproved descent technique produced cooling and ice formation of the air inlet induction system. This in turn produced an incorrect air/fuel mixture, which caused the engine stoppage and power loss.

3. CONCLUSION

3.1 Findings

- 3.1.1 The pilot was a holder of a valid Commercial Pilot Licence and was correctly type rated. His medical was also valid.
- 3.1.2 According to available records the aircraft was correctly maintained.
- 3.1.3 The Aircraft Maintenance Organisation was audited in the last two years; the last audit was conducted on 27 July 2004.
- 3.1.4 This was a para-dropping operation. No evidence could be found that the operator was in possession of a valid Class 3 (G11) Air Service Licence which was required for this type of operation.
- 3.1.5 The pilot performed an unapproved descent procedure.

3.2 Probable Cause/s

- 3.2.1 The use of an unapproved descent technique produced cooling and ice formation of the air inlet induction system. This in turn produced an incorrect air/fuel mixture, which caused the engine stoppage and power loss.

During the subsequent forced landing short of the runway, the aircraft collided with several trees.

4. SAFETY RECOMMENDATIONS

- 4.1 None.

5. APPENDICES

- 5.1 None.

-END-

Report reviewed and amended by Office of the EM: AIID
September 2008