



## AIRCRAFT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/8993	
<b>Aircraft Registration</b>	ZS-PLR	<b>Date of Accident</b>	18 December 2011	<b>Time of Accident</b>	0750Z	
<b>Type of Aircraft</b>	Cessna 206		<b>Type of Operation</b>	Private		
<b>Pilot-in-command Licence Type</b>		Commercial	<b>Age</b>	52	<b>Licence Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>		Total Flying Hours	2284		Hours on Type	1689
<b>Last point of departure</b>		Secunda Aerodrome (FASC) (Mpumalanga)				
<b>Next point of intended landing</b>		Kimberley (FAKM) ( Northern Cape)				
<b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>						
On a corn field near Parys in the Free State Province						
<b>Meteorological Information</b>		Surface wind: 315° 10 knots, temperature: 24°, v isibility: CAVOK				
<b>Number of people on board</b>	1+1	<b>No. of people injured</b>	0	<b>No. of people killed</b>	0	
<b>Synopsis</b>						
<p>On 18 December 2011, the pilot accompanied by a passenger was engaged on a private flight from Secunda Aerodrome (FASC) to Kimberley (FAKM). After approximately 46 minutes into the flight the pilot noticed that the engine oil pressure had dropped to zero. He immediately notified the Kimberly Air Traffic Control (ATC) of the problem and his intention to divert to the nearest airfield for a precautionary landing. He then decided to divert to Parys Aerodrome (FAPY).</p> <p>Four minutes after the pilot advised ATC of his intention to divert to FAPY, the engine failed. The pilot then executed a forced landing on a corn field, seven nautical miles south of FAPY. During the landing the nose gear dug into soft ground and broke off. This led to the aircraft sustaining substantial damage.</p> <p>The aircraft was recovered to an approved maintenance facility. The engine was removed from the airframe. During the engine examination, it was discovered that the engine had seized. The cause was attributed to a complete engine oil loss. The source of the oil leak from the engine was traced to an oil filter arm gland nut which was found loose</p>						
<b>Probable Cause</b>						
Unsuccessful forced landing after the engine failed in flight.						
<b>Contributory:</b> Engine lubrication system failed.						
IARC Date				Release Date		



## AIRCRAFT ACCIDENT REPORT

**Name of Owner/Operator** : Lojanama Aviation CC  
**Manufacturer** : Cessna  
**Model** : U206D  
**Nationality** : South African  
**Registration Marks** : ZS-PLR  
**Place** : Parys  
**Date** : 18 December 2011  
**Time** : 0750Z

*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 On 18 December 2011, the pilot, accompanied by a passenger was engaged on a private flight from Secunda Aerodrome (FASC) to Kimberley (FAKM).
- 1.1.2 After approximately 46 minutes into the flight the pilot noticed that the engine oil pressure had dropped to zero. He immediately notified Kimberly Air Traffic Control (ATC) of the problem and his intention to divert to the nearest airfield for a precautionary landing. He then decided to divert to Parys Aerodrome (FAPY).
- 1.1.3 Four minutes after the pilot advised ATC of his intention to divert to FAPY, the engine failed. The pilot then executed a forced landing on a corn field, seven nautical miles south of FAPY. During the landing the nose gear dug into soft ground and broke off. This led to the aircraft sustaining substantial damage.
- 1.1.4 The accident happened in daylight conditions, at approximately 0750Z, on a corn field near Parys, GPS position S 27°57.3 ' E027°34.3 '.

## 1.2 Injuries to Persons

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

## 1.3 Damage to Aircraft

1.3.1 The aircraft sustained substantial damage to the nose gear, the left wing tip, the propeller as well bottom side of the engine cowling.

## 1.4 Other Damage

1.4.1 There was no other damage.

## 1.5 Personnel Information

Nationality	South African	Gender	Male	Age	52
Licence Number	0270206139	Licence Type	Commercial		
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Flight Test, and Instrument				
Medical Expiry Date	27 February 2012				
Restrictions	None				
Previous Accidents	None				

Flying Experience :

Total Hours	2284
Total Past 90 Days	43
Total on Type Past 90 Days	43
Total on Type	1689

## 1.6 Aircraft Information

**Airframe :**

Type	Cessna 206	
Serial Number	U206-1345	
Manufacturer	Cessna	
Year of Manufacture	1969	
Total Airframe Hours (At time of Accident)	10815	
Last MPI (Date & Hours)	22 September 2011	10773
Hours since Last MPI	42	
C of A (Issue Date)	07 June 2011	
C of R (Issue Date) (Present owner)	19 July 2006	
Operating Categories	Standard	

## Engine :

Type	TCM IO 520F
Serial Number	810043-R
Hours since New	2818.78
Hours since Overhaul	1112.78

## Propeller :

Type	Mc McCauley 3432C90-RO
Serial Number	901051
Hours since New	4905.68
Hours since Overhaul	721.18

## 1.7 Meteorological Information

1.7.1 This weather information was obtained from the pilot questionnaires.

Wind direction	315°	Wind speed	10 knots	Visibility	Cavok
Temperature	24°	Cloud cover	Nil	Cloud base	Nil
Dew point	N/A				

## 1.8 Aids to Navigation

1.8.1 The aircraft was equipped with standard navigation equipment. All the navigation equipment was serviceable prior to the accident.

## 1.9 Communications.

1.9.1 The aircraft was equipped with standard communication systems and none was reported unserviceable prior to or during the accident.

1.9.2 The pilot broadcasted his intentions on the VHF frequency 118.2 Mhz.

## 1.10 Aerodrome Information

1.10.1 The accident occurred on a cornfield in a private farm, seven nautical miles south of Parys. The GPS position was determined to be S27°57'.3' E027°34.3'.

## 1.11 Flight Recorders

1.11.1 The aircraft was not fitted with a Flight Data Recorder (FDR) or a Cockpit Voice Recorder (CVR), nor was it required by regulation.

## 1.12 Wreckage and Impact Information

1.12.1 The accident happened on a corn field. The aircraft landed at relatively high speed, the nose gear dug into soft ground and broke off, before it came to rest in a nose down attitude.

1.12.2 The aircraft sustained substantial damage to the undercarriage and the engine cowling.



Photo 1: Showing the aircraft after it came to rest

## 1.13 Medical and Pathological Information

1.13.1 The pilot and passenger sustained no injuries as a result of the accident.

## 1.14 Fire

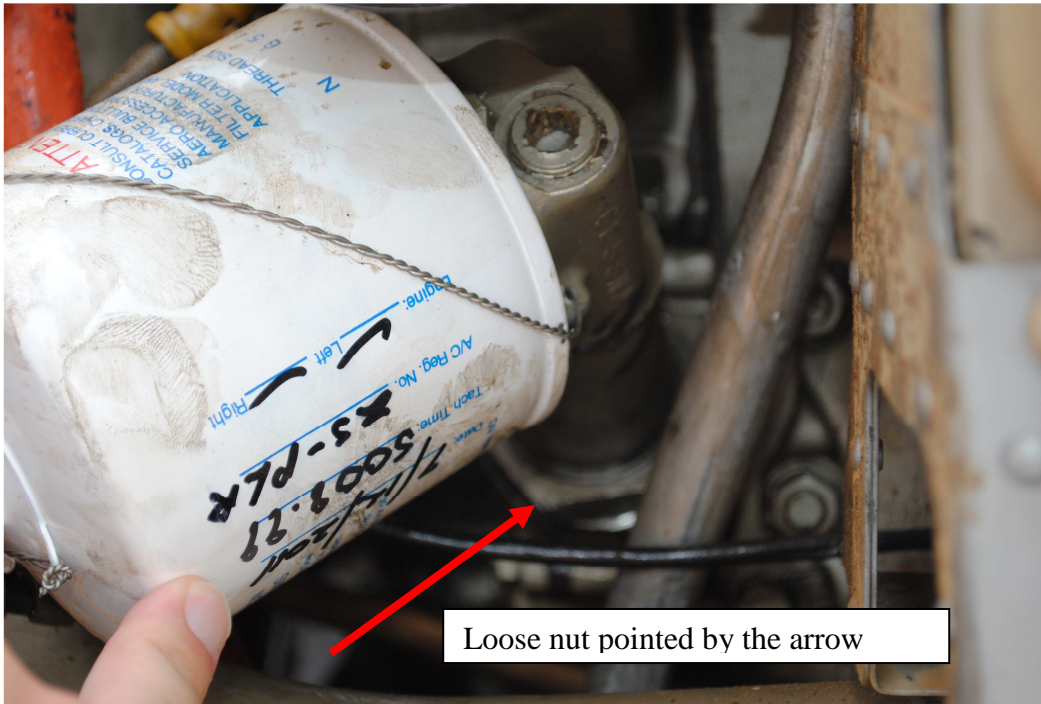
1.14.1 There was no evidence of pre- or post-impact fire.

## 1.15 Survival Aspects

1.15.1 The accident was considered to be survivable as both the pilot and passenger were securely strapped to their seats.

## 1.16 Tests and Research

- 1.16.1 The aircraft was recovered to an approved maintenance facility for further investigation. The engine was removed from the airframe to determine the cause of failure.
- 1.16.2 During the examination it was discovered that the engine seized in flight. The cause of the engine seizure was established to be loss of oil. Further investigation to why the engine lost oil, it was discovered that the oil filter arm gland nut was loose. This nut was found loose even though it was wire locked. This gave the indication that the nut might have been improperly tightened before the wire locking was done.



**Photo 2: Showing the oil filter**

## 1.17 Organizational and Management Information

- 1.17.1 This was a private flight, and the aircraft was privately owned.

## 1.18 Additional Information

- 1.18.1 The pilot stated that on his pre flight checks, he checked the oil level and found it to be within limits.
- 1.18.2 According to information from the engine log book, the aircraft was reported to have had a low oil pressure problem. On the 2<sup>nd</sup> of December 2011 it was taken to an approved AMO for repair. The relief valve was removed and a sliver of metal was found underneath, and was cleared and the valve reinstalled. During that maintenance process the oil filter was also removed and inspected and then reinstalled.

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

1.19.1 None.

## **2. ANALYSIS**

- 2.1 On 18 December 2011, the pilot, accompanied by a passenger was engaged on a private flight from Secunda Aerodrome (FASC) to Kimberley (FAKM). After approximately 46 minutes in the flight the pilot noticed that the oil pressure had dropped to zero. He immediately notified Air Traffic Control (ATC) of the problem and his intention to divert to the nearest airfield for a precautionary landing. He then decided to divert to Parys Aerodrome (FAPY).
- 2.2 The aircraft was recovered to an approved maintenance facility. The engine was removed from the airframe. During the engine examination, it was discovered that the engine had seized. The cause was attributed to a complete engine oil loss in flight. The source of the oil leak from the engine was traced to an oil filter arm gland nut which was found loose.
- 2.3 Although the locking wire was found intact, there is a possibility that the oil filter arm gland nut was not properly tightened before the wire locking was done.

## **3. CONCLUSION**

### **3.1 Findings**

- 3.1.1 The pilot was a holder of a valid private pilot licence.
- 3.1.2 The aircraft had a valid airworthiness certificate.
- 3.1.3 Weather conditions were reported to be fine; it was not a factor in this accident.
- 3.1.4 The accident happened in daylight conditions.
- 3.1.5 Post accident examination of engine system revealed that the engine failed due to a complete engine oil loss.
- 3.1.6 The engine oil leak was caused by a loose oil filter arm gland nut.

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

- 3.2.1 Unsuccessful forced landing after the engine failed in flight.

### **3.3 Contributory**

- 3.3.1 Engine lubrication system failed.

**4. SAFETY RECOMMENDATIONS**

4.1 None.

**5. APPENDICES**

5.1 None.

Compiled by

Musa Maseko

Date: .....

**For: Director of Civil Aviation**

Investigator-in-charge: .....

Date: .....

Co-investigator: .....

Date: .....