



REPUBLIC OF NAMIBIA

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Date: 03 April 2017

To : Minister of Works and Transport  
From : Director: Aircraft Accident Investigation

### RE: CIVIL AIRCRAFT ACCIDENT REPORT

Please find attached the final report on the above subject accident. In accordance with the International Civil Aviation Organization Annex 13 – Aircraft Accident and Incident Investigation – Standard 6.13, final reports shall be published as soon as possible in the interest of accident prevention.

It is recommended that copies of these final reports be made available to the public and other interested parties upon request. Your approval is therefore sought to release the said reports.

  
Ericksson M. Nengola

*03/03/2017*  
**DIRECTOR: AIRCRAFT ACCIDENT INVESTIGATION**

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*"Effective and Efficient Delivery of Service"*

All official correspondence must be addressed to the Permanent Secretary

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## FOREWORD

This report presents the factual information, data analysis, conclusions, and safety recommendations reached during the investigation. The purpose of the investigation was to establish the circumstances surrounding this accident.

In accordance with the provisions of Annex 13 to the convention on International Civil Aviation Organization, and Aviation Act, (Act No. 6 of 2016), the accident's analysis, conclusions, and safety recommendations contained therein are intended neither to apportion blame nor to single out any individual or group of individuals. The main objective was to identify the systematic deficiencies and draw lessons, from the occurrence, which might help to prevent accidents and incidents in the future. To this end, many a time, the reader may be interested in whether or not an issue was a direct cause of the accident (that has already taken place), whereas the investigator is mainly concerned with the prevention of future accidents/incidents.

As a result, usage of this report for any purpose other than (the latter and spirit of Annex 13 and Aviation Act, (Act No. 6 of 2016 or other relevant statutes) prevention of similar occurrences in the future might lead to erroneous interpretations and applications.

## ABBREVIATIONS

<b>ACCID</b>	-	<b>Accident</b>
<b>AD</b>	-	<b>Airworthiness Directives</b>
<b>AMO</b>	-	<b>Approved Maintenance Organization</b>
<b>ATC</b>	-	<b>Air Traffic Controller</b>
<b>°C</b>	-	<b>Degrees Celsius</b>
<b>C. of .A</b>	-	<b>Certificate of Airworthiness</b>
<b>C. of .R</b>	-	<b>Certificate of Registration</b>
<b>CPL</b>	-	<b>Commercial Pilot License</b>
<b>CSU</b>	-	<b>Constant speed unit</b>
<b>CVR</b>	-	<b>Cockpit Voice Recorder</b>
<b>DAAI</b>	-	<b>Directorate of Aircraft Accident Investigation</b>
<b>FDR</b>	-	<b>Flight Data Recorder</b>
<b>ICAO</b>	-	<b>International Civil Aviation Organization</b>
<b>MHz</b>	-	<b>Mega Hertz</b>
<b>MPI</b>	-	<b>Mandatory Periodic Inspection</b>
<b>NAM-CARS</b>	-	<b>Namibia Civil Aviation Regulations</b>
<b>N/A</b>	-	<b>Not Applicable</b>
<b>PPL</b>	-	<b>Private Pilot License</b>
<b>RSA</b>	-	<b>Republic of South Africa</b>
<b>RPM</b>	-	<b>Revolution per minute</b>
<b>SACAA</b>	-	<b>South African Civil Aviation Authority</b>
<b>SB</b>	-	<b>Service Bulletin</b>
<b>UTC</b>	-	<b>Universal Time Coordinated</b>



## DIRECTORATE OF AIRCRAFT ACCIDENT INVESTIGATION ACCIDENT REPORT – EXECUTIVE SUMMARY

<b>Aircraft Registration</b>	V5-JAG	<b>Date of Accident</b>	15 October 2016	<b>Time of Accident</b>	11:37 UTC
<b>Type of Aircraft</b>	CESSNA 210N	<b>Type of Operation</b>	Charter		
<b>Pilot – In - Command License Type</b>	CPL	<b>Age</b>	26	<b>License Valid</b>	Yes
<b>Pilot – In - Command Flying Experience</b>	Total Flying Hours	529.1	<b>Hours on Type</b>	37.6	

**Last point of departure** Eros Airport (FYWE)

**Next point of intended landing** Hosea Kutako Int. Airport (FYWH)

**Location of the accident site with reference to easily defined geographical points (GPS readings if possible)**

S 22° 34' 50" E 17° 04' 4" Pionierspark, Windhoek

**Meteorological Information** Wind: 320°, Wind speed: 10 knots, Visibility: <10 km, Temperature: 32°C, Cloud cover: None, Cloud base: None, Dew point: -2°C

<b>Number of people on board</b>	1 + 0	<b>No. of people injured</b>	1	<b>No. of people killed</b>	0
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### Synopsis

On the 15<sup>th</sup> of October 2016 a Cessna 210N aircraft with registration number V5-JAG, took off from Eros Airport on a charter flight to Hosea Kutako International Airport where the pilot was supposed to pick up four passengers who were destined to Desert lodge at Sossusvlei. Immediately after takeoff from runway 01, the pilot reported loss of engine power and crash landed west of Pionierspark Cemetery. The pilot was injured during the accident. The flight only lasted approximately 1 minute from take-off to where the accident occurred. The accident was reported to the Directorate of Aircraft Accident Investigation (DAAI) in the Ministry of Works and Transport that conducted the investigation. No accredited representatives were invited to take part in the investigation. The Directorate of Aircraft Accident Investigation (DAAI) released the report.

The aircraft was substantially damaged. There were some damages to the fence in which the aircraft initially impacted before hitting a tree.

The pilot was a holder of a South African Commercial Pilot License and was issued with a Namibian validation by the Regulatory Authority. The pilot's medical certificate was valid with no restrictions. The aircraft type was endorsed in his license.

The weather at the time of the accident was fine with unrestricted visibility.

The last Mandatory Periodic Inspection (MPI) was certified on 04 October 2016 at 15869.1 airframe hours. At the time of the accident the aircraft had accumulated a further 10.4 hours since the last MPI was certified.

According to the records, the Aircraft Maintenance Organization (AMO) that certified the last MPI on the aircraft prior to the accident was in possession of an extended AMO Approval No. 004 with the expiry date of 30 November 2015. The last physical AMO audit conducted on AMO 004 was in November 2010. The Regulatory Authority started conducting a 5 Phase Certification Process on AMO 004 on 18 March 2013 as per NAMCARS and ICAO requirement, which ended up with an AMO audit in October 2016. Since that time, the AMO has been operating on an extension until the time they were issued with the current AMO Approval that was issued on 28 October 2016 and valid until 27 October 2017. The AMO submitted the Statement of Compliance where it indicated that it has complied with all the necessary requirements. All Airworthiness Directives (AD) and Service Bulletins (SB) were complied with as certified in the last MPI dated 04 October 2016. Cessna 210 was type accepted in Namibia before 21 March 1990.

### Probable Cause

Loss of engine power due to improper mixture setting.

### Contributing factors

The investigation revealed that inadequate experience on type contributed to the accident.



# AIRCRAFT ACCIDENT REPORT

**Name of Owner** : O+H Aviation  
**Operator** : Scenic Air (Pty) Ltd  
**Manufacturer** : Cessna Aircraft Company  
**Model** : 1980  
**Nationality** : Namibian  
**Registration Marks** : V5-JAG  
**Place** : Pionierspark, Windhoek  
**Date** : 15 October 2016  
**Time** : 11:37 UTC

All times given in this report are Co-ordinated Universal Time (UTC).

## Disclaimer:

This report is given without prejudice to the rights of the Directorate of Aircraft Accident Investigation, which are reserved.

## Purpose of the Investigation :

In terms of the Aviation Act (Act No.6 of 2016) and ICAO Annex 13, 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**.

This report contains fact relating to aircraft accidents or incidents which have been determined at the time of issue. The report may therefore be revised should new and substantive facts be made available to the investigator(s).

## 1. FACTUAL INFORMATION

### 1.1 History of Flight

- 1.1.1 On the 5<sup>th</sup> of August 2016 at around 11:36 UTC, a Cessna 210N registered as V5-JAG took off from Eros Airport on a charter flight to Hosea Kutako International Airport where the pilot was supposed to pick up four (4) passengers who were destined to Desert Lodge at Sossusvlei.
- 1.1.2 The pilot stated that before take-off, he completed all the checks as required and no abnormalities were detected. He applied the take-off power to 2950 RPM, reduced it to 2850 RPM and reduced the fuel flow from 138 lbs/hr to 128 lbs/hr.
- 1.1.3 After take-off, the pilot stated that the engine sounded abnormal and he noticed the fuel flow dropping to 80 lbs/hr. Since there was no runway remaining, he tried to maintain the climb power.
- 1.1.4 He further stated that he tried to increase and applied full power as well as the mixture and pitch to get the most suitable power. He further stated that he called the ATC to request joining the downwind in order to return to the field and later called the "May Day" about 3 times before executing a forced landing next to the Pionierspark cemetery.

### 1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Other
Fatal	0	0	0	0
Serious	1	0	0	0
Minor	0	0	0	0
None	0	0	0	0

### 1.3 Damage to Aircraft

1.3.1 The aircraft was substantially damaged.

### 1.4 Other Damage

1.4.1 There were some damages to the boundary fence in which the aircraft impacted before hitting a tree.

### 1.5 Personnel Information

Nationality	South African				
Licence No	0272276874	Gender	Male	Age	26
Licence valid	Yes	Type Endorsed	Yes		
Ratings	Instrument and night ratings				
Medical Expiry Date	30 September 2017				
Restrictions	None				
Previous Accidents	None				

**Note:** The pilot was issued with a work visa by the Ministry of Home Affairs and Immigration on 18 July 2016 which was valid until 17 October 2016. The visa was strictly to work for Scenic Air only. The Regulatory Authority issued the pilot with a validation certificate without a validation reference number.

Flying Experience :

Total Hours	524.1
Total Past 90 Days	30.5
Total on Type Past 90 Days	30.5
Total on Type	37.6

### 1.6 Aircraft Information

**Airframe :**

Type	Cessna 210N	
Manufacturer	Cessna Aircraft Company	
Aircraft Serial Number	210-63916	
Year of Manufacture	1980	
Total Airframe Hours (At time of Accident)	15879.5 Hrs	
Last Annual Inspection (Date & Hours)	04 October 2016	15869.1Hrs
Hours since Last Annual Inspection	10.4 Hrs	
C of A (Issue Date)	16 October 2006	
C of A (Expiry Date)	04 October 2017	
C of R (Issue Date) (Present owner)	14 February 2002	
Operating Categories	Standard	



**Engine:**

Type	Continental IO-520-L
Engine Serial Number	1009353
Hours since New	1022.8
Hours since Overhaul	Hours not reached

**Propeller :**

Type	PHC-J3YF-1RF
Propeller Serial Number	FP 1461B
Hours since New	5877.6
Hours since Overhaul	1455.1

**1.7 Meteorological Information**

1.7.1 The following weather information was obtained from the pilot's accident questionnaire.

Wind direction	320°	Wind speed	10 kts	Visibility	<10 km
Temperature	32°C	Cloud cover	None	Cloud base	None
Dew point	-2°C				

**1.8 Aids to Navigation**

1.8.1 The aircraft was equipped with standard navigation equipment and no difficulties with Navigation Aids were reported.

**1.9 Communications.**

1.9.1 The pilot was transmitting on frequency 118.7 MHz for Eros Airport. There was no communication problem reported

**Aerodrome Information**

1.10.1 Not applicable.

**1.11 Flight Recorders**

1.11.1 The aircraft was not equipped with Flight Data Recorder (FRD) or Cockpit Voice Recorder (CVR) nor was it required by the regulation.

**1.12 Wreckage and Impact Information**

1.12.1 The aircraft first impacted the boundary fence nose dive from the southern direction before hitting a tree with the left hand vertical stabilizer. The nose wheel broke off during impact and was found lying approximately 13 meters south west of the main wreckage.

1.12.2 The aircraft ploughed approximately 10 meters before hitting a tree and turned 30 degrees to the left and was found facing to the western direction. The right hand wing and the right hand main wheel impacting the ground hard which caused the wing to break in the middle and bent rear ward. The right hand main wheel broke off due to hard impact and was found lying some few meters from the main wreckage. The front wind screen popped out on the right hand side.

1.12.3 The site where aircraft crashed contained some trees and a lot of shrubs with thick grass. The fence in which the aircraft impacted span from east to the western direction in front of the building that can be seen in the photo on page 5 of this report.



**Figure 1: The wreckage came to rest facing in a westerly direction.**



**Figure 2: Another view of the wreckage at the accident site.**



Figure 3: Damaged fence during impact sequence.



Figure 4: The damaged tail section.



**Figure 7: The nose wheel broken off due to high impact forces.**

### **1.13 Medical and Pathological Information**

1.13.1 There was no evidence that physiological factors or incapacitation affected the performance of the pilot.

### **1.14 Fire**

1.14.1 There were no pre - or post impact fire.

### **1.15 Survival Aspects**

The accident was survivable.

### **1.16 Tests and Research.**

1.16.1 The engine was installed in another aircraft, which served as a test bench with a standby propeller fitted.

1.16.2 A visual and pressure test inspection on the fuel, oil and pneumatic lines were conducted on the wreckage and no abnormalities were revealed.

1.16.3 The engine was run at different rpm settings. Magneto test and the propeller pitch cycles were carried out. No discrepancies were revealed

1.16.4 After the engine run-up and all test completed, the air intake was removed and inspected for any obstruction. A further blow-by test was carried out on the cylinders and all figures were within limits.

1.16.5 It was also further recommended that the engine driven fuel pump, the two magnetos be sent to an approved facility for a further check-up. The items were sent to Aircraft Power plant Company (APCO) at Wonderboom Airport in South Africa where the tests were carried out as per APCO Job Number 43748 and no abnormalities were found.

## **1.17 Organizational and Management Information**

1.17.1 This was a charter operation.

1.17.2 The aircraft belongs to O+H Aviation and was operated by Scenic Air (Pty) Ltd.

1.17.3 At the time of the accident, Approved Maintenance Organisation (AMO) 004 at Eros Airport carried out Mandatory Periodic Inspection.

1.17.4 The last Physical AMO Audit conducted to AMO 004 was on November 2010. Since that time the AMO has been operating on extensions until it was issued with its last AMO Approval on 1 December 2014. The Regulatory Authority started with a 5 Phase Certification Process on 18 March 2013 as per NAMCARS and ICAO requirements. The process was completed on 28 October 2016.

## **1.18 Additional Information**

1.18.1 None

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

1.19.1 None

## **2. ANALYSIS**

2.1 The pilot was on a charter flight from Eros Airport to Hosea Kutako International Airport when the accident happened.

2.2 The purpose of the flight was to pick up four (4) passengers who were destined to Desert Lodge at Sossusvlei.

2.3 Another pilot who supposed to fly the same aircraft at around 09:00 UTC realised that the aircraft's constant speed unit (CSU) was out of function limit and snagged it in the Flight Folio.

2.4 The duty engineer was called in to come and rectify the defect.

2.5 The CSU was adjusted to cycle at 1700 rpm with an rpm drop of 150 to 200 rpm as recommended.

2.6 The aircraft was scheduled for another flight at 11:36 UTC. Shortly after take-off, the pilot declared an emergency and executed a force landing at Pionierspark cemetery.

2.7 The last Mandatory Periodic Inspection was carried out by an approved local AMO 004.

2.8 The Regulatory Authority conducted an audit to AMO 004 during November 2010. Since that time, the AMO has been operating on extensions until it was issued with its last AMO Approval on 1 December 2014.

2.9.1 The Regulatory Authority started with a 5 Phase Certification Process on 18 March 2013.

2.10 The weather was fine with unrestricted visibility with the temperature ranging up to 32°C.

2.11 The weight and balance was within the required limit at the time of the accident.

2.12 The aircraft had a total of 250 liters of fuel on board before takeoff.

## **3. CONCLUSION**

### **3.1 Findings**

- 3.1.1 The pilot's licence was valid at the time of the accident.
- 3.1.2 The pilot's medical certificate was valid with the aircraft type endorsed in his license.
- 3.1.3 The aircraft's Certificate of Airworthiness (C of A) and that of Registration (C of R) were valid at the time of the accident.
- 3.1.4 The engineer rectified the defect on the CSU and released the aircraft back to service.
- 3.1.5 The accident flight took off from Eros Airport at around 11:36 UTC.
- 3.1.6 A minute later, the aircraft crashed next to Pionierspark cemetery.
- 3.1.7 The engine test run carried out revealed no evidence of abnormalities. Neither engine components sent for further tests revealed any defect.
- 3.1.8 The last Mandatory Periodic Inspection (MPI) to the aircraft prior to the accident was carried out by a local AMO at Eros Airport on 4 October 2016.
- 3.1.9 AMO 004 Approval was issued on 1<sup>st</sup> December 2014 valid until 30 November 2015. Since then, the company has been operating on extension.
- 3.1.10 No physical audit on AMO 004 has been conducted since November 2010.
- 3.1.11 The Regulatory Authority could not comply with its obligation of carrying out the physical AMO audits due to lack of capacity and only kept the company operational on extensions.
- 3.1.12 The Validation Certificates issued by the Regulatory Authority to pilots with foreign licenses does not have validation reference numbers.

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

- 3.2.1 Loss of engine power due to improper mixture setting.

### **3.3 Contributing factor/s**

- 3.3.1 The investigation revealed that inadequate experience on type contributed to the accident.

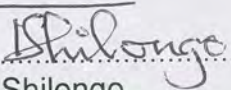
## **4. SAFETY RECOMMENDATIONS**

- 4.1 None.

## **5. APPENDICES**

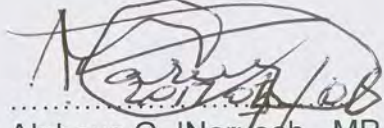
- 5.1 None.

Compiled by :

  
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T. Shilongo  
Investigator-In-Charge

Date : 03/04/2017

Released by:

  
.....  
Alpheus G. Naruseb, MP  
**MINISTER: MINISTRY OF WORKS AND TRANSPORT**



Date 2017/04/06