

PRELIMINARY ACCIDENT REPORT

Accident and Incident Investigations Division

Accident
- Preliminary Report -
AIID Ref No: CA18/2/3/10030



Figure 1: The aircraft as it came to rest. (Source: Pilot)

Description:

The pilot on-board a PA-18A-150 with registration mark ZS-CKP took off from Runway 28L (RWY 28L) at Port Alfred Airfield (FAPA) with the intention to conduct a post-maintenance test flight. Shortly after take-off at approximately 600 feet above ground level (AGL), the aircraft engine stopped. The engine restarted momentarily after the pilot had switched tanks, but it stopped again. The pilot opted to conduct a forced landing on RWY 10L. During the forced landing, the aircraft overshot the runway and landed hard on the left-side of RWY 10L. The flight was conducted in Visual flight Rules (VFR) in daylight conditions under the provisions of Part 43 of the Civil Aviation Regulations (CAR) 2011 as amended.

INTRODUCTION

Reference Number : CA18/2/3/10030
Name of Owner/Operator : Simon Bennett
Manufacturer : Piper Aircraft Company
Model : PA-18A-150 (Super Cub)
Nationality : South African
Registration Marks : ZS-CKP
Place : Port Alfred (FAPA), Eastern Cape province
Date : 23 August 2021
Time : 1035Z

Purpose of the Investigation:

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011, 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 apportion blame or liability.***

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.

Investigation Process:

The accident was notified to the Accident and Incident Investigations Division (AIID) on 23 August 2021 at about 1050Z. The AIID has appointed an investigator-in-charge. The investigator did not dispatch to the site; however, an off-site investigation was conducted. The AIID will lead the investigation and issue the final report.

The information contained in this preliminary report is derived from the factual information gathered during the on-going investigation into the occurrence. Later, an interim report or the final report may contain altered information in case new evidence is found during the on-going investigation that require changes to the information depicted in this report.

The AIID reports are made available to the public at:

<http://www.caa.co.za/Pages/Accidents%20and%20Incidents/Aircraft-accident-reports.aspx>

Notes:

1. *Whenever the following words are mentioned in this report, they shall mean the following:*

- *Accident — this investigated accident*
- *Aircraft — the PA-18A-150 (Super Cub) involved in this accident*
- *Investigation — the investigation into the circumstances of this accident*
- *Pilot — the pilot involved in this accident*
- *Report — this accident report*

2. *Photos and figures used in this report were taken from different sources and may have been adjusted from the original for the sole purpose of improving clarity of the report. Modifications to images used in this report were limited to cropping, magnification, file compression; or enhancement of colour, brightness, contrast; or addition of text boxes, arrows or lines.*

Disclaimer:

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1. FACTUAL INFORMATION

1.1. History of Flight

- 1.1.1 On Monday 23 August 2021, a pilot flying solo on-board a PA-18A-150 aircraft with registration ZS-CKP took off from Port Alfred Airfield (FAPA) with the intention to conduct a post-maintenance test flight. The aircraft had undergone a Mandatory Periodic Inspection (MPI).
- 1.1.2 The pilot started the aircraft and taxied to the fuel bay for refuelling. The aircraft was then taxied to the run-up bay for pre-flight checks. Thereafter, the pilot took off for a test flight from Runway 28 left (RWY28L). The flight was conducted in Visual Flight Rules (VFR) in daylight conditions under the provisions of Part 43 of the Civil Aviation Regulations (CAR) 2011 as amended.
- 1.1.3 The pilot reported that he took off without incident; however, at approximately 600 feet (ft) above ground level (AGL), the aircraft engine stopped. The pilot then switched tanks and restarted the engine, which ran momentarily but stopped again. The pilot then elected to execute a teardrop manoeuvre to conduct a forced landing on RWY10L, but he overshot the runway.
- 1.1.4 The aircraft landed hard on an open grass field on the left of RWY10L. It sustained damage to the propeller, main landing gear and fuselage. The pilot was not injured during the landing sequence.



Figure 2: The aircraft path after take-off. (Source: Google Earth)

- 1.1.5 The accident occurred during daylight conditions at a Global Positioning System (GPS) determined to be 33°33'14.72" S 026°52'24.60, at an elevation of 324 feet.

1.2. Injuries to Persons

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

Note: Other means people on ground.

1.3. Damage to Aircraft

1.3.1 The aircraft sustained substantial damage to the propeller, landing gear and fuselage.



Figure 3: The aircraft sustained damage to the propeller, landing gear and fuselage.

1.4. Other Damage

1.4.1 None.

1.5. Personnel Information

Nationality	South African	Gender	Male	Age	68
Licence Number	*****	Licence Type	Commercial Pilot Licence		
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Instrument, Test Pilot				
Medical Expiry Date	31 August 2021				
Restrictions	Corrective Lenses				
Previous Accidents	None				

Note: Previous accidents refer to past accidents the pilot was involved in, when relevant to this accident.

- 1.5.1 The pilot was initially issued a Commercial Pilot Licence on 16 August 1993 and had undergone a competency evaluation on 10 February 2021. The pilot's licence was reissued on 10 February 2021 with an expiry date of 28 February 2022.
- 1.5.2 The pilot had a Class I medical certificate issued on 1 February 2021, which was valid from 1 February 2021 until 31 August 2021, with a restriction to wear corrective lenses.

Flying Experience:

Total Hours	4174.6
Total Past 24 Hours	1.5
Total Past 7 Days	8.2
Total Past 90 Days	26.9
Total on Type Past 90 Days	26.9
Total on Type	26.9

1.6. Aircraft Information

- 1.6.1 The Piper PA-18A-150 Super Cub is a two-seat in tandem high-wing monoplane, first launched in 1949. It is constructed from steel tube frame (fuselage) and wood and aluminium (wing) with cloth covering. The aircraft is powered by a 160-180 horsepower Lycoming O-360 powerplant.

Airframe:

Manufacturer/Model	Piper Aircraft Company/ PA-18A-150	
Serial Number	18-6711	
Year of Manufacture	1990	
Total Airframe Hours (At Time of Accident)	8035.12	
Last MPI (Date & Hours)	20 August 2021	8035.10
Hours Since Last MPI	0.02	
C of A (Issue Date)	8 April 2013	
C of A Expiry Date	30 April 2022	
C of R (Issue Date) (Present Owner)	8 August 2000	
Type of Fuel Used in the Aircraft	Avgas	
Operating Categories	Standard Normal Category (Part 91)	
Previous Accidents	None	

Note: Previous accidents refer to past accidents the aircraft was involved in, when relevant to this accident.

- 1.6.2 The aircraft had a valid Certificate of Airworthiness issued by the Regulator (SACAA) on 8 April 2013 with an expiry date of 30 April 2022. The aircraft was issued a Certificate of Registration on 8 August 2000.
- 1.6.3 The aircraft was issued a Certificate of Release to Service on 20 August 2021 at 8035.10 airframe hours, with an expiry date of 22 August 2022 or at 8135.10 airframe hours, whichever comes first.

Engine:

Manufacturer/Model	Lycoming O-320-A2B
Serial Number	L-47296-27A
Hours Since New	5220.06
Hours Since Overhaul	474.06

1.6.4 The aircraft was equipped with a four-cylinder Lycoming O-320-A2B engine, maintained by an Approved Maintenance Organisation (AMO). The engine had operated for 5220.06 hours since new. It was overhauled on 30 June 2000 and operated for 474.06 hours. Its latest Airworthiness Directive (AD) record was conducted on 25 August 2020.

Propeller:

Manufacturer/Model	Sensenich M74DM-0-54
Serial Number	A53384
Hours Since New	1262.88
Hours Since Overhaul	474

1.7. Meteorological Information

1.7.1 The meteorological information was sourced from the South African Weather Service (SAWS) on 23 August 2021 for Port Elizabeth International Airport (FAPE) weather station at 1030Z.

Wind Direction	030°	Wind Speed	04 kt	Visibility	≥10000m
Temperature	20° C	Cloud Cover	CAVOK	Cloud Base	CAVOK
Dew Point	10° C	QNH	1016 hPa		

1.8. Aids to Navigation

1.8.1 The aircraft was equipped with standard navigational equipment as approved by the Regulator for the aircraft type. There was no record indicating that the navigation system was unserviceable prior to the accident.

1.9. Communication

1.9.1 The aircraft was equipped with standard communication equipment as approved by the Regulator for the aircraft type. There was no record indicating that the communication system was unserviceable prior to the accident. The pilot kept contact with FAPA flight information on frequency 122.0 megahertz (MHz).

1.10. Aerodrome Information

1.10.1 The accident occurred at the aerodrome (FAPA). The engine failed after take-off from RWY28L, and the pilot forced-landed the aircraft on RWY10L but overshoot it (runway).

Aerodrome Location	Port Alfred (FAPA), Eastern Cape
Aerodrome Status (Licensed/Registered/Unlicensed)	Registered
Aerodrome Co-ordinates	S 33°33.62' E 026°52.68'
Aerodrome Altitude	315 feet MSL
Runway Headings	10L/28R 10R/28L 18/36 07/25
Runway Dimensions	1236.77m X 29m
Runway Used	RWY 28 L
Runway Surface	Grass
Approach Facilities	None
Radio Frequency	122.0 MHz

1.11. Flight Recorders

1.11.1 The aircraft was not equipped with a flight data recorder (FDR) or a cockpit voice recorder, (CVR) and neither was required by regulation to be fitted on this aircraft type.

1.12 Wreckage and Impact Information

1.12.1 The pilot executed a forced landing on RWY10L at FAPA, however, the aircraft overshoot the runway. The aircraft landed hard with the main landing gear first on the left-side of the runway, sustaining damage to the main landing gear, propeller and fuselage.



Figure 4: The aircraft as it came to rest.

1.13 Medical and Pathological Information

1.13.1 None.

1.14 Fire

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

1.15 Survival Aspects

1.15.1 The accident was considered survivable as there was minimal impact force in the cockpit. Moreover, the pilot had made use of the safety harness.

1.16 Tests and Research

1.16.1 The fuel was visually examined by the AMO for contaminants and the carburettor was examined for faults. No anomalies were found after both examinations.

1.16.2 The engine was taken for inspection on 3 September 2021. The results of the inspection would be discussed in the final report.

1.17 Organisational and Management Information

1.17.1 The aircraft was operated privately under the provisions of Part 91 of the CAR 2011 as amended.

1.17.2 The aircraft was maintained by the AMO that was in possession of an authorised AMO certificate, issued by the Regulator on 28 October 2020 with an expiry date of 31 October 2021.

1.18 Additional Information

1.18.1 To be discussed in the final report.

1.19 Useful or Effective Investigation Techniques

1.19.1 To be discussed in the final report.

2. Findings

2.1 General

From the available evidence, the following preliminary findings were made with respect to this accident. These shall not be read as apportioning blame or liability to any particular organisation or individual.

To serve the objective of this investigation, the following sections are included in the conclusions heading:

- **Findings** — are statements of all significant conditions, events or circumstances in this accident. The findings are significant steps in this accident sequence, but they are not always causal or indicate deficiencies.

2.2 Findings

Although the investigation is on-going, the following provisional findings were made:

- 2.2.1 The pilot was initially issued a Commercial Pilot Licence on 16 August 1993; he had undergone a competency evaluation on 10 February 2021 and was reissued the licence on 10 February 2021 with an expiry date of 28 February 2022.
- 2.2.2 The pilot had a valid Class I medical certificate issued on 1 February 2021, which was valid from 1 February 2021 until 31 August 2021, with a restriction to wear corrective lenses.
- 2.2.3 The aircraft was issued a Certificate of Registration on 8 August 2000 and the Certificate of Airworthiness on 8 April 2013 with an expiry date of 30 April 2022.
- 2.2.4 The flight was conducted in VFR in daylight conditions under the provisions of Part 91 of the CAR 2011.
- 2.2.5 The aircraft was maintained by an AMO with a certificate issued on 28 October 2020 and with an expiry date of 31 October 2021.
- 2.2.6 The last mandatory periodic inspection (MPI) was carried out on 20 August 2021 at 8035.10 airframe hours, 5220.06 engine hours and 1262.88 propeller hours. The accident occurred 0.02 hours after the last MPI.
- 2.2.7 The aircraft's engine failed shortly after take-off and the pilot attempted to execute a forced landing on RWY10L but overshot the runway.

3. On-going Investigation

3.1 The AIID investigation is on-going and the investigator/s will be looking into other aspects of this occurrence which may or may not have safety implications.

This report is issued by:

**Accident and Incident Investigations Division
South African Civil Aviation Authority
Republic of South Africa**