AIRCRAFT SERIOUS INCIDENT REPORT AND EXECUTIVE SUMMARY

			Reference:	**CA18/3/2/1496**	
Aircraft Registration	**ZU-IHA**	**Date of Incident**	16 August 2025	**Time of Incident**	0800Z
Type of Aircraft	Apollo T AL-60		**Type of Operation**	Parachute (Part 105)	
Pilot-in-command Licence Type	Private Pilot Licence (PPL)		**Age**	63	**Licence Valid**	Yes
Pilot-in-command Flying Experience		**Total Flying Hours**	8 118.3	**Hours on Type**	1387.7
Last Point of Departure	Parys Aerodrome (FAPY), Free State Province				
Next Point of Intended Landing	Parys Aerodrome (FAPY), Free State Province				
Damage to Aircraft	Substantial				

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

Approximately 90 metres (m) short of Runway 07, Parys Aerodrome, at Global Positioning System co-ordinates determined to be South 26º53'44.8" East 027º29'24.1"

Meteorological Information	Surface wind: 060º/15kts; Temperature: 08ºC; Dew point: 03ºC; Visibility: CAVOK						
Number of People On-board	1+7	**Number of People Injured**	0	**Number of People Killed**	0	**Other (On the Ground)**	0

Synopsis

On Saturday afternoon, 16 August 2025, a pilot with seven skydivers on-board an Apollo T AL-60 aircraft registered ZU-IHA took off on a skydiving (parachute drop-off) flight from Parys Aerodrome (FAPY) in Free State province with the intention to land at the same aerodrome.

According to the pilot, he opened the throttle to 2 000 revolutions per minute (RPM) at 0740Z, and the engine parameters were normal with a positive fuel flow. Thereafter, he commenced with the take-off roll and the aircraft rotated and climbed to flight level 135 (FL135). After a few minutes, he felt a sudden vibration on the cockpit floor near his footrest and, about 30 seconds later, he saw flames emanating from the engine's left exhaust pipe, followed by a loss of engine power. He then instructed the skydivers to jump out of the aircraft after which he initiated a descent to conduct a forced landing. During descent, the flames died down. The pilot glided the aircraft and executed a forced landing on an open area about 90 metres (m) short of Runway 07. The aircraft was substantially damaged. The skydivers landed safely, and the pilot was not injured.

Post-serious incident teardown inspection of the engine revealed first-stage turbine wheel fracture on the axial turbine rotor blades. The fracture was consistent with exposure to elevated operating temperatures. There was no evidence of foreign object damage (FOD) as no localised impact or irregular damage pattern was observed.

Probable Cause

Engine power loss caused by the fractured first-stage turbine wheel on the axial turbine rotor blades prompted a forced landing which was unsuccessful approximately 90m short of FAPY Runway 07.

SRP Date	10 February 2026	Publication Date	11 February 2026

Occurrence Details

Reference Number	**:** CA18/3/2/1496
Occurrence Category	**:** Category 2 (Serious Incident)
Type of Operation	**:** Parachute (Part 105)
Name of Operator	**:** Skydivers Parys
Aircraft Registration	**:** ZU-IHA
Aircraft Make and Model	**:** Apollo T AL-60
Nationality	**:** South African
Place	**:** Approximately 90 metres (m) short of FAPY Runway 07
Date and Time	**:** 16 August 2025 at 0800Z
Injuries	**:** None
Damage	**:** Substantial

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 and Incident Investigations Division (AIID) was notified of the occurrence which took place on 16 August 2025 at 0800Z. The occurrence was classified as a serious incident according to the CAR 2011 Part 12 and the International Civil Aviation Organisation (ICAO) STD Annex 13 definitions. The notifications were sent to the State of Registry, Operator, and Design and Manufacturer in accordance with the CAR 2011 Part 12 and the ICAO Annex 13 Chapter 4. The States did not appoint an accredited representative and/or advisor. The investigators did not dispatch to the serious incident site.

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Notes:

1. *Whenever the following words are mentioned in this report, they shall mean the following:*
   Serious Incident — this investigated serious incident
   Aircraft — the Apollo T AL-60 involved in this serious incident
   Investigation — the investigation into the circumstances of this serious incident
   Pilot — the pilot involved in this serious incident
   Report — this serious incident 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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Abbreviation	Description
°	Degrees
°C	Degrees Celsius
AIID	Accident and Incident Investigations Division
AMM	Aircraft Maintenance Organisation
AMO	Aircraft Maintenance Organisation
AGL	Above Ground Level
ATF	Authority-to-Fly
EMM	Engine Maintenance Manual
C of R	Certificate of Registration
CRS	Certificate of Release to Service
CVR	Cockpit Voice Recorder
E	East
FAPY	Parys Aerodrome
FDR	Flight Data Recorder
FL	Flight Level
F	Feet
GPS	Global Positioning System
hPa	Hectopascal
Km	Kilometre/s
Kt	Knot/s
M	Metre/s
METAR	Meteorological Aerodrome Report
MHz	Megahertz
POH	Pilot's Operating Handbook
PPL	Private Pilot Licence
QNH	Barometric Pressure Adjusted to Sea Level
RPM	Revolutions Per Minute/s
RWY	Runway
SACAA	South African Civil Aviation Authority
SAHPA	South African Hang-gliding and Paragliding Association
SACAR	South African Civil Aviation Regulations
SAWS	South African Weather Service
SB	Service Bulletin
SOP	Standard Operating Procedure
Z	Zulu (Term for Universal Co-ordinated Time

1. FACTUAL INFORMATION

1.1. History of Flight

1.1.1. On Saturday afternoon, 16 August 2025, a pilot and seven skydivers on-board an Apollo T AL-60 aircraft registered ZU-IHA took off on a skydiving flight from Parys Aerodrome (FAPY) in Free State province with the intention to land at the same aerodrome. The intention of the flight was for the pilot to drop off the skydivers. The flight was conducted under visual meteorological conditions (VMC) and under the provisions of Part 105 of the Civil Aviation Regulations (CAR) 2011, as amended.

1.1.2. A pre-flight inspection of the aircraft was conducted prior to departure during which no defects were identified. The aircraft had 320 litres (L) of Jet A-1 fuel in the tanks. Once the aircraft was ready, the pilot alerted the skydivers, who had just completed inspecting their gear in accordance with the Standard Operating Procedures (SOP) of the South African Hang Gliding and Parachute Association (SAHPA), to board the aircraft. *The skydivers' inspection included confirming that each parachute was fitted with a serviceable Automatic Activation Device (AAD), and that all altimeters, whether wrist worn or helmet mounted, were operational*. At 0740Z, the pilot opened the throttle to 2 000 revolutions per minute (RPM) and all the engine parameters were normal with a positive fuel flow. The pilot later commenced with the take-off roll and the aircraft rotated and climbed to flight level 135 (FL135). Thereafter, he reduced the RPM to 1 900 whilst cruising at a speed of 95 miles per hour (mph).

1.1.3. Just before contacting Johannesburg South to request a descent clearance to drop off the skydivers overhead the aerodrome (FAPY), the pilot felt a sudden vibration on the cockpit floor near his footrest. Approximately 30 seconds later, he saw flames emanating from the engine's left exhaust pipe, followed by a loss of engine power. He immediately instructed the skydivers to disembark (jump off) from the aircraft. During descent, the flames died down. Thereafter, he switched off the power, feathered the propeller, closed the condition lever as well as shut off the right fuel tank selector and pump. He then called Johannesburg Information on frequency 119.5-Megahertz (MHz) and reported engine failure before gliding the aircraft towards Runway 07. The aircraft touched down on the grass-covered area approximately 90 metres (m) short of Runway 07 threshold; it rolled and came to a stop about 20m from the threshold. The aircraft was substantially damaged. The skydivers landed safely, and the pilot was not injured.

1.1.4. The serious incident occurred during daylight at Global Positioning System (GPS) co-ordinates determined to be South 26º53'44.8" East 027º29'24.1", at an elevation of approximately 4 740 feet (ft).

Figure 1: The yellow pin indicates the approximate area where the aircraft had stopped. (Source: Google Earth)

1.2. Injuries to Persons

Injuries	Pilot	Crew	Pass.	Total On-board	Other
Fatal	-	-	-	-	-
Serious	-	-	-	-	-
Minor	-	-	-	-	-
None	1	-	7	8	-
Total	**1**	**-**	**7**	**8**	**-**

Note: Other means people on the ground.

1.3. Damage to Aircraft

1.3.1. The aircraft sustained substantial damage.

Figure 2: The aircraft post-serious incident. (Source: Pilot)

1.4. Other Damage

1.4.1. None.

1.5. Personnel Information

Nationality	South Africa	Gender	Male	Age	63
Licence Type	Private Pilot Licence (PPL)				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Night and test pilot ratings				
Medical Expiry Date	30 November 2025				
Restrictions	Suitable corrective lenses				
Previous Incidents	Yes; reference CA18/2/3/10362				

Note: Previous incidents refer to past serious incidents the pilot was involved in, when relevant to this serious incident.

Flying Experience:

Total Hours	8 118.3
Total Past 24 Hours	0
Total Past 7 Days	0.4
Total Past 90 Days	138.8
Total on Type Past 90 Days	128.2
Total on Type	1387.7

1.5.1. The pilot had a Private Pilot Licence (PPL) that was initially issued on 28 July 2005 under the provisions of Part 61 of the CAR 2011. The licence was revalidated on 13 June 2025 with an expiry date of 31 May 2027.

1.5.2. The pilot had a Class 2 aviation medical certificate that was issued on 11 November 2024 with an expiry date of 30 November 2025.

1.6. Aircraft Information

1.6.1. Aircraft Description (Source: Pilot's Operating Handbook [POH])

The Apollo T is formerly a single engine, six-seat, light utility Aermacchi AL-60 Trojan aircraft manufactured by Lockheed Corporation in the United States of America (USA). The aircraft has short take-offs and landing capability and is designed for operation from unprepared landing areas. The aircraft was initially powered by a Lycoming IO-720-A1A 8-cylinder fuel injected engine rated at 400 horsepower (hp) and was later fitted with a Diemech M601D turbo-prop engine capable of developing 650 house power (hp), driving the Avia V508D 3-bladed aluminium alloy reversable pitch propeller.

Figure 3: The file picture of the aircraft. (Source: www.jetphotos.co.za)

Airframe:

Manufacturer/Model	Lockheed Corporation/Apollo T	
Serial Number	AC001	
Year of Manufacture	2015	
Total Airframe Hours (At Time of Serious Incident)	2 031.1	
Last Inspection (Date & Hours)	25 April 2025	1 986.1
Airframe Hours Since Last Inspection	45	
CRS Issue Date	25 April 2025	
ATF (Issue Date & Expiry Date)	20 November 2024	31 January 2026
C of R (Issue Date) (Present Owner)	18 September 2015	
Operating Category	Private (Part 105)	
Type of Fuel Used	Jet A1	
Previous Incidents	On Saturday afternoon, 2 September 2023, the aircraft experienced an engine power loss overhead New Tempe (FATP) Aerodrome in Free State province after the pilot had dropped the parachutist 11 feet (ft) above ground level (AGL). The pilot performed a forced landing on an open field approximately 0.83 nautical miles (nm) west of FATP. Accident report reference: CA18/2/3/10362	

Note: Previous incidents refer to past serious incidents the aircraft was involved in, when relevant to this serious incident.

Engine:

Manufacturer/Model	Diemech Turbines/Diemech M601D
Serial Number	901003
Past Number	Unknown
Hours Since New	1 115.3
Hours Since Overhaul	Time Between Overhaul (TBO) interval not reached (3 000)

1.6.2. According to the aircraft maintenance manual (AMM), the engine time between overhaul (TBO) interval is 3000 hours, and the engine had accumulated a total of 1 115.3 hours. Examination of the engine logbook indicated no modifications to the engine. All applicable Service Bulletins (SBs) and Airworthiness Directives (ADs) that were issued by the engine manufacturer were complied with.

1.6.3. Engine (Source: Engine Maintenance Manual [EMM])

The Diemech M601D engine is a two-spool engine comprising a gas generator that drives a power turbine, which drives a reduction gearbox. The gas generator compressor consists of two axial flow stages and one centrifugal stage. Inlet air enters the compressor section radially just forward of the accessory section and travels forward through the compressor. The exiting compressor air enters an annular combustor to mix with fuel for the combustion process.

The gas generator turbine nozzles then direct the expanded flow path gases to the gas generator turbine, which directs the exiting gases to the power turbine for the final power extraction before exiting the engine forward of the compressor inlet. The power turbine drives the propeller by means of the reduction gearbox. The accessory gearbox, which is located on the aft end of the engine drives all engine accessories by a direct shaft coming from the compressor spool. Typical engine accessories are the main fuel pump, FCU, starter/generator, hydraulic pump, and the propeller governor which is driven by the reduction gearbox located at the front of the engine.

The oil system is a circulatory pressure system with an integral oil tank incorporated into the accessory gearbox. This system provides lubrication for all areas of the engine and oil pressure for the torque meter and propeller pitch control. The powerplant is controlled by three sets of levers. The power lever controls the power output of the engine, and the propeller blade angles in Beta and reverse. The propeller lever controls the propeller speed via the primary propeller governor and emergency propeller feathering. The condition lever actuates the fuel shut-off valve and if an emergency circuit is on, controls the engine power

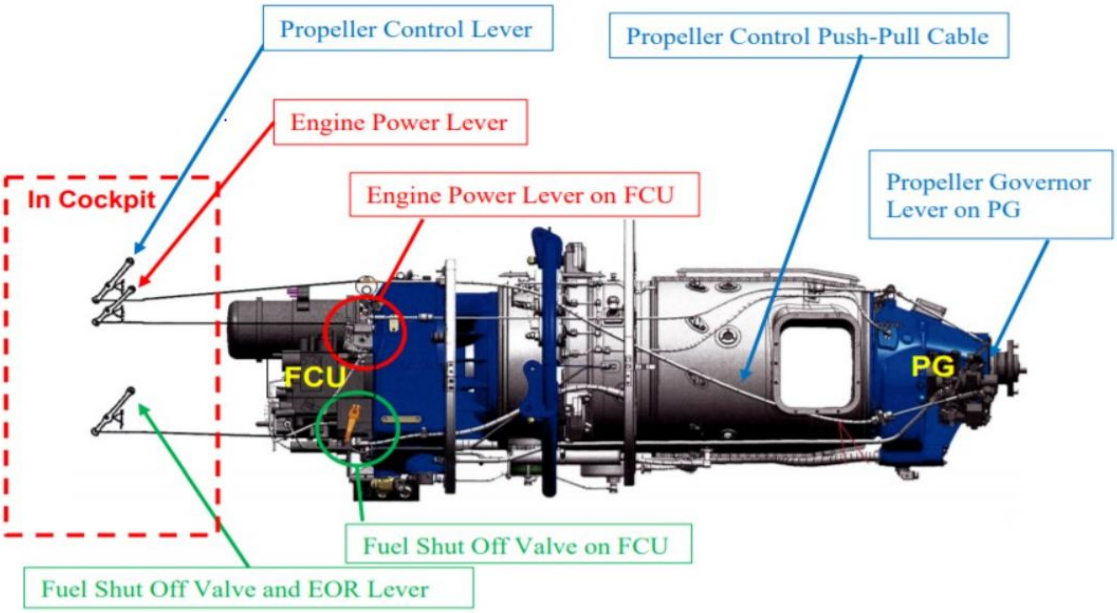


Diagram 1: A diagram of the aircraft engine. (Source: EMM)

Propeller:

Manufacturer/Model	Avia propeller Ltd/Avia V508D
Serial Number	01065713
Hours Since New	1 986.1
Hours Since Overhaul	TBO interval 3 000 not reached

1.7. Meteorological Information

1.7.1. The weather information below was obtained from the South African Weather Service (SAWS) on 16 August 2025 at 0810Z.

Wind Direction	060°	Wind Speed	15kt	Visibility	9 999m
Temperature	08°C	Cloud Cover	Nil	Cloud Base	Nil
Dew Point	03°C	QNH	1027hPa		

1.8. Aids to Navigation

1.8.1. The aircraft was equipped with standard navigational equipment as approved by the Regulator (SACAA). There were no records indicating that the navigational equipment was unserviceable prior to the flight.

1.9. Communication

1.9.1. The aircraft was equipped with a standard communication system as approved by the Regulator (SACAA). There were no recorded defects with the communication system prior to the flight.

1.10. Aerodrome Information

1.10.1. The aerodrome information IAW the Aeronautical Information Publication (AIP).

Aerodrome Location	Parys, Free State Province
Aerodrome Name	Parys Aerodrome (FAPY)
Aerodrome Status	Licensed
Aerodrome GPS coordinates	26°53’00.00” South, 027°30’19” East
Aerodrome Elevation	4 740ft
Runway Headings	043°/ 063°
Dimensions of Runway Used	1 343m x 20m
Heading of Runway Used	043°
Surface of Runway Used	Grass
Approach Facilities	None
Radio Frequency	124.85-MHz and 123.500-MHz

1.11. Flight Recorders

1.11.1. The aircraft was neither equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR), nor was it required by regulation to be fitted to the aircraft type.

1.12. Wreckage and Impact Information

1.12.1 The nose gear was severed and the propeller was damaged. The fuselage and wings had remained intact.

Figure 4: The severed nose gear.

Figure 5: The damaged propeller blades.

1.13. Medical and Pathological Information

1.13.1. None.

1.14. Fire

1.14.1. Flames were observed from the engine's left exhaust pipe; however, they died down during descent.

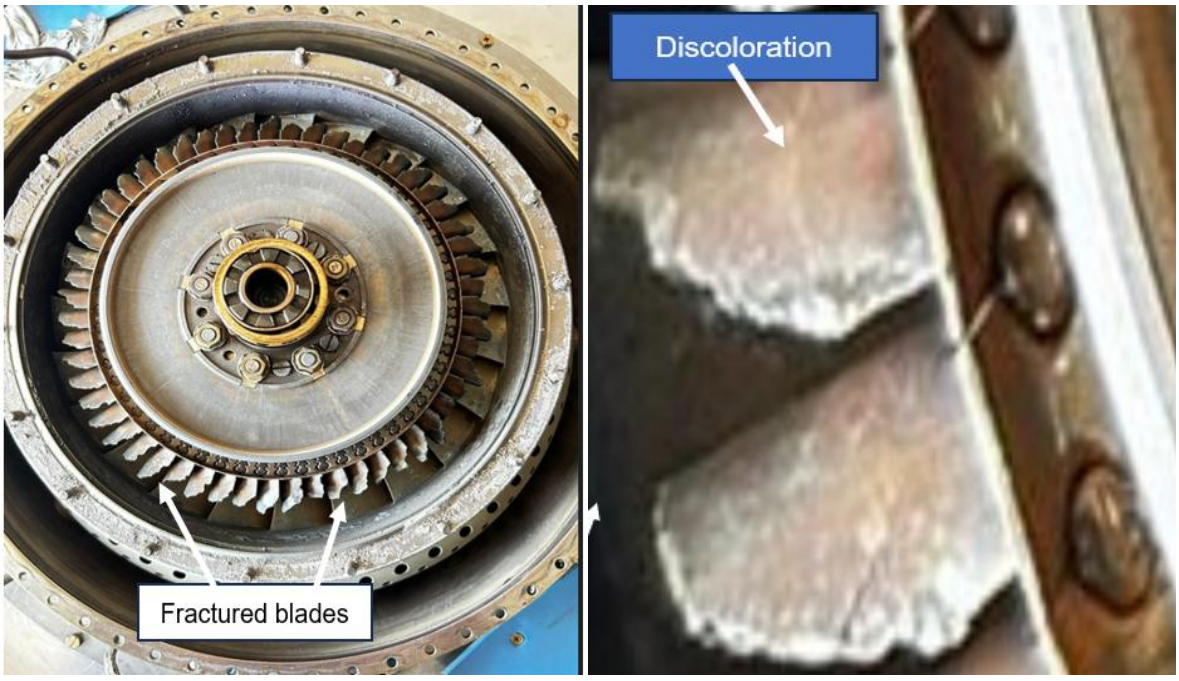
1.15. Survival Aspects

1.15.1. The serious incident was considered survivable because the cockpit structure had remained intact and the pilot had made use of the aircraft safety harnesses.

1.16. Tests and Research

1.16.1. The engine with serial number 901003 was removed from the aircraft and sent to a SACAA-approved aircraft maintenance organisation (AMO) for a teardown inspection.

The examination of the engine revealed a fracture on the axial turbine rotor blades (the first-stage turbine wheel). The damage was observed across multiple blades, with fractures at a similar height. The blades surface exhibited signs of thermal distress, including discolouration, oxidation and a rough texture, which was consistent with exposure to elevated operating temperatures. There was no evidence of foreign object damage (FOD) as no localised impact or irregular damage patterns were observed.



Figures 6 and 7: Fractured axial turbine rotor blades (left picture). Discolouration on the turbine axial rotor blades (right picture).

1.17. Organisational and Management Information

1.17.1. The flight was conducted under the provisions of Part 105 of the CAR 2011, as amended.

1.17.2. The last 100-hour annual inspection of the aircraft was conducted and certified on 24 April 2025 at 1 986.1 airframe hours. The serious incident occurred at 2 031.1 total airframe hours; therefore, the aircraft had accrued 45 airframe hours since the mentioned annual inspection.

1.17.3 The aircraft was issued a Certificate of Release to Service (CRS) on 25 April 2025 with an expiry date of 20 April 2026 or at 2 86.0 airframe hours, whichever occurs first.

1.18. Additional Information

1.18.1. Engine Failure During Flight (Source: Apollo T POH, Page 58)

- *Fly the aircraft*
- *Indicated Air Speed (IAS)……. 90 mph*
- *Pitch trim ……. FULL NOSE UP*
- *Flaps……. FIRST SETTING*
- *Confirm engine is dead……. N1 INDICATES 0%*
- *Plan descent to emergency field*
- *If aircraft is empty……. 80-85 miles per hour (mph) glide if the aircraft has skydivers on board……. 90-95 mph glide*
- *Confirm fuel starvation or mechanical failure. If fuel is sufficient and no mechanical failure, a restart can be attempted above 3 000ft AGL. The aircraft descent rate is from 1 200ft per minute. If there is no time to restart the engine, concentrate on flying.*

1.19. Useful or Effective Investigation Techniques

1.19.1. None.

2. ANALYSIS

2.1. General

From the available evidence, the following analysis was made with respect to this serious incident. This shall not be read as apportioning blame or liability to any organisation or individual.

2.2. Analysis

Pilot

2.2.1. The pilot's licence and medical certificate were valid, and he met all regulatory requirements for operating the aircraft, including type endorsements and medical fitness.

Mission

2.2.2. This was a parachute drop-off flight that was conducted under the provisions of Part 105 of the CAR 2011, as amended.

Aircraft

2.2.3. Post-serious incident examination of the technical documentation indicated that the last 100-hour annual inspection of the aircraft was certified on 25 April 2025 at 1 986.1 airframe hours. The aircraft was issued a Certificate of Release to Service (CRS) on 25 April 2025 with an expiry date of 20 April 2026 or at 2 86.0 airframe hours, whichever occurs first. The aircraft was flown a further 45 hours since the mentioned inspection. The aircraft maintenance history was scrutinised, and all the entries were found to be in order and the aircraft properly certified. No evidence of open or pending defects was found. The aircraft was maintained by a SACAA-approved AMO which was issued an AMO Certificate on 20 May 2025 with an expiry date of 30 April 2026.

2.2.4. Teardown examination of the engine revealed the fractured first-stage turbine wheel on the axial turbine rotor blades. The fracture was consistent with exposure to elevated operating temperatures. There was no evidence of foreign object damage (FOD) as no localised impact or irregular damage patterns were observed.

Environment

2.2.5. Fine weather conditions prevailed at the time of the flight; the weather conditions had no bearing on this serious incident.

3. CONCLUSION

3.1. General

From the available evidence, the following findings, causes and contributing factors were made with respect to this serious incident. These shall not be read as apportioning blame or liability to any organisation or individual.

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

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

- **Causes —** are actions, omissions, events, conditions, or a combination thereof, which led to this serious incident.
- **Contributing factors —** are actions, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the serious incident occurring, or would have mitigated the severity of the consequences of the serious incident. The identification of contributing factors does not imply the assignment of fault or the determination of administrative, civil, or criminal liability.

3.2. Findings

Pilot

3.2.1. The pilot had a Private Pilot Licence (PPL) that was initially issued on 28 July 2005 under the provisions of Part 61 of the CAR 2011. The licence was revalidated on 13 June 2025 with an expiry date of 31 May 2027. The pilot was appropriately licensed and had the aircraft type endorsed on his licence.

3.2.2. The pilot was issued a Class 2 aviation medical certificate on 11 November 2024 with an expiry date of 30 November 2025. The pilot was properly certified and medically fit to undertake the flight.

Weather

3.2.3 Fine weather conditions prevailed at the time of the flight; the weather had no bearing on this serious incident.

Aircraft

3.2.3. The last 100-hour annual inspection of the aircraft was certified on 25 April 2025 at 1 986.1 airframe hours.

3.2.4. The aircraft was maintained by an approved aircraft maintenance organisation (AMO) that was issued an AMO Certificate on 20 May 2025 with an expiry date of 30 April 2026.

3.2.5. The aircraft was issued a Certificate of Release to Service (CRS) on 25 April 2025 with an expiry date of 20 April 2026 or at 2 86.0 airframe hours, whichever occurs first.

3.2.6. The aircraft was flown a further 45 airframe hours since the said 100-hour annual inspection. The aircraft maintenance history was scrutinised, and all the entries were found to be in order and the aircraft properly certified. No evidence of open or pending defects was found. All applicable Service Bulletins (SBs) and Airworthiness Directives (ADs) were complied with.

3.2.7. Teardown examination of the engine revealed the fractured first-stage turbine wheel on the axial turbine rotor blades. The fracture was consistent with exposure to elevated operating temperatures. There was no evidence of foreign object damage (FOD) as no localised impact or irregular damage patterns were observed.

3.2. **Probable Cause**

3.3.1. Engine power loss caused by the fractured first-stage turbine wheel on the axial turbine rotor blades prompted a forced landing which was unsuccessful approximately 90 metres (m) short of FAPY Runway 07.

3.3. Contributory Factors

3.4.1. Progressive clearance loss due to sustained elevated temperatures.

4. SAFETY RECOMMENDATIONS

4.2. General

The safety recommendations listed in this report are proposed according to paragraph 6.8 of Annex 13 to the Convention on International Civil Aviation and are based on the conclusions listed in heading 3 of this report. The AIID expects that all safety issues identified by the investigation are addressed by the receiving States and organisations.

4.3. Safety Recommendation/s

4.3.1. None.

5. APPENDICES

5.3. None.

This report is issued by:

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