

**PRELIMINARY ACCIDENT REPORT**

**Accident and Incident Investigations Division**

Accident  
- Preliminary Report -  
AIID Ref No: CA18/2/3/10361



**Figure 1:** The ZU-EIB aircraft. (Source: Previous Owner)

Description:

On Tuesday morning, 29 August 2023, the pilot who was also the owner of the Tri Cubby with registration ZU-EIB was on a private flight from Worcester Aerodrome (FAWC) to Swellendam Aerodrome (FASX), both in the Western Cape province. After arrival at FASX, the approved person (AP) replaced the two rudder cables with the new ones. During the return flight from FASX to FAWC, the aircraft crashed on a farm near Robertson in the Western Cape province. The pilot was fatally injured in the accident.

## Occurrence Details

**Reference Number** : CA18/2/3/10361  
**Occurrence Category** : Accident (Category 1)  
**Type of Operation** : Private (Part 94)  
**Name of Operator** : Private Flight  
**Aircraft Registration** : ZU-EIB  
**Aircraft Make and Model** : Micro Wings Cubby, Tri Cubby  
**Nationality** : South African  
**Place** : Ridgemont Farm, Robertson District, Western Cape Province  
**Date and Time** : 29 August 2023 at 1055Z  
**Injuries** : Fatal  
**Damage** : Destroyed

## 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) of the South African Civil Aviation Authority (SACAA) was notified of a fatal accident involving a Tri Cubby which occurred on a farm in Robertson District in the Western Cape province on 29 August 2023 at 1103Z. The occurrence was classified as an accident according to the CAR 2011 Part 12 and ICAO STD Annex 13 definitions.

The AIID has appointed an investigator-in-charge to conduct a full investigation. Investigators were dispatched to the accident site. The AIID will lead the investigation and issue the final report of this accident in accordance with the CAR 2011 Part 12 and ICAO Annex 13.

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

- Whenever the following words are mentioned in this report, they shall mean the following:  
Accident — this investigated accident  
Aircraft — the Tri Cubby involved in this accident.  
Investigation — the investigation into the circumstances of this accident  
Pilot — the pilot involved in this accident.  
Report — this accident report*
- 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

*This report is produced without prejudice to the rights of the SACAA, which are reserved.*

## Table of Contents

Executive Summary.....	1
Occurrence Details .....	2
Contents Page .....	3
Abbreviations .....	4
1. FACTUAL INFORMATION .....	5
1.1 History of Flight .....	5
1.2 Injuries to Persons .....	6
1.3 Damage to Aircraft .....	6
1.4 Other Damage .....	6
1.5 Personnel Information.....	7
1.5.1 Pilot-in-Command (PIC).....	7
1.6 Aircraft Information .....	8
1.7 Meteorological Information .....	9
1.8 Aids to Navigation.....	10
1.9 Communication .....	10
1.10 Aerodrome Information .....	11
1.11 Flight Recorders .....	11
1.12 Wreckage and Impact Information.....	11
1.13 Medical and Pathological Information.....	14
1.14 Fire.....	14
1.15 Survival Aspects .....	14
1.16 Tests and Research.....	15
1.17 Organisational and Management Information .....	15
1.18 Additional Information .....	15
1.19 Useful or Effective Investigation Techniques.....	15
2. FINDINGS.....	15
3. ON-GOING INVESTIGATION .....	17
4. SAFETY RECOMMENDATION/S .....	17
5. APPENDICES.....	17

<b>Abbreviation</b>	<b>Description</b>
°	Degrees
°C	Degrees Celsius
AIID	Accident and Incident Investigations Division
AMO	Aircraft Maintenance Organisation
AP	Approved Person
ATF	Authority to Fly
CAR	Civil Aviation Regulations
CAVOK	Ceiling And Visibility OK (for VFR flight)
C of R	Certificate of Registration
CPL	Commercial Pilot's Licence
CRS	Certificate of Release to Service
EMS	Emergency Medical Services
FASX	Swellendam Aerodrome
FAWC	Worcester Aerodrome
ft	Feet
GPS	Global Positioning System
hPa	Hectopascal
kg	kilogram(s)
kt	Knot(s)
lbs	Pound(s)
m	Metre(s)
METAR	Meteorological Aerodrome Report
MTOW	Maximum Take-off Weight
nm	Nautical Mile(s)
PIC	Pilot-in-Command
QNH	Pressure Altitude Above Mean Sea Level
SACAA	South African Civil Aviation Authority
SAWS	South African Weather Service
TBO	Time Between Overhaul
UTC	Co-ordinated Universal Time (GMT)
VMC	Visual Meteorological Conditions
Z	Zulu (Term of Universal Co-ordinated Time – Zero Hours Greenwich)

## **1. FACTUAL INFORMATION**

### **1.1 History of Flight**

- 1.1.1 On Tuesday morning, 29 August 2023, a pilot on-board the Tri Cubby aircraft with registration ZU-EIB took off from Worcester Aerodrome (FAWC) to Swellendam Aerodrome (FASX), both located in the Western Cape province. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011 as amended.
- 1.1.2 The flight from FAWC (where the aircraft was hangared) to FASX was approximately 60 nautical miles (nm) and was uneventful. After arriving at FASX, the pilot parked the aircraft at an approved person's (AP's) hangar for him to conduct maintenance of replacing the two rudder cables with the 3mm stainless steel cables. According to the AP, the pilot had an overnight suitcase on the front seat (tandem seating arrangement with the pilot flying from the aft seat) of the aircraft, which he brought with him in the event that he needed to stay over for the night as he was not certain how long the maintenance would take, and in the case of adverse weather conditions prevailing, which would prohibit him from flying back to home base at FAWC. The AP also stated that he had a sports bag and a flight bag placed on top of the suitcase. The suitcase was secured with the aircraft-equipped lap strap. The aircraft was fitted with dual flight controls.
- 1.1.3 At approximately 1020Z, the pilot took off from FASX back to FAWC. At 1055Z whilst flying overhead Robertson area, a farm worker at Ridgemont Farm noticed a light aircraft which was approaching from the direction of the mountain; he saw it spin shortly before it descended in a nose-down and tail-high attitude until it impacted the ground. The aircraft burst into flames upon impact with the ground. The eyewitness rushed to the scene, which was approximately 650 metres (m) from where he was standing at the time. Other farm workers who saw the smoke also made their way to the scene with a water tanker. Due to the intensity of the fire, they were unable to get close to the wreckage, but they managed to contain the fire by spraying water on it. The accident occurred approximately 38 nautical miles (nm) after take-off from FASX whilst en route to FAWC. The aircraft was destroyed by the post-impact fire that erupted following the explosion. The pilot was fatally injured in the accident.
- 1.1.4 The accident occurred during daylight whilst the aircraft was flying from FASX to FAWC at Global Positioning System (GPS) co-ordinates determined to be 33°50'21.64" South 019°46'21.99" East, at an elevation of 580 feet (ft).



**Figure 2:** The route flown by the aircraft, and the accident site. (Source: Google Earth)

## 1.2 Injuries to Persons

Injuries	Pilot	Crew	Pass.	Total On-board	Other
Fatal	1	-	-	1	-
Serious	-	-	-	-	-
Minor	-	-	-	-	-
None	-	-	-	-	-
<b>Total</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>-</b>

Note: Other, means people on the ground.

## 1.3 Damage to Aircraft

- 1.3.1 The aircraft was destroyed during the accident sequence by the fuel-fed post-impact fire that erupted.

## 1.4 Other Damage

- 1.4.1 Minor damage was caused to the vegetation around the accident site.

## 1.5 Personnel Information

### Pilot-in-Command (PIC)

Nationality	South African	Gender	Male	Age	66
Licence Type	Commercial Pilot Licence (CPL)				
Licence Valid	Yes	Type Endorsed	Yes		
Ratings	Night				
Medical Expiry Date	30 September 2023 (Class 1)				
Restrictions	Must wear corrective lenses during flight Hypertension protocol				
Previous Accidents	None				

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

### Flying Experience:

Total Hours	415.0
Total Past 90 Days	1.0
Total on Type Past 90 Days	1.0
Total on Type	1.0

Note: The pilot's flying logbook was in the aircraft during the flight and was destroyed by the post-impact fire.

- 1.5.1 The pilot had a Commercial Pilot Licence (CPL). The pilot was initially issued a pilot licence on 24 May 2010 by the Regulator (SACAA). His licence renewal was issued by the Regulator on 1 May 2023. The aircraft type was endorsed on his licence. The pilot was issued a Class 1 aviation medical certificate on 16 March 2023 with an expiry date of 30 September 2023.
- 1.5.2 The pilot had conducted his conversion to the aircraft type on 20 May 2023, whereafter the aircraft type was endorsed on his licence. This was the first tandem seat aircraft type that was endorsed on the pilot's licence. The aircraft is flown from the aft seat. The total flying hours entered in the table above were obtained from the pilot's application form, which he had submitted to the Regulator for his CPL in May 2023. His flying hours at the time of the accident could not be determined with certainty as the pilot's logbook was in the aircraft at the time of the flight and was destroyed by the post-impact fire. According to available information, the pilot flew for 1 hour on 20 May 2023 when he conducted his conversion to the aircraft type.

## 1.6 Aircraft Information

### Airframe:

Manufacturer/Model	Micro Wings Cubby, Tri Cubby	
Serial Number	AK 0510 K	
Year of Manufacture	2006	
Total Airframe Hours (at time of accident)	Unknown	
Last Inspection (Hours & Date)	270.2	23 May 2023
Hours Since Last Inspection	Unknown	
CRS Issue Date	23 May 2023	
ATF (Issue Date & Expiry Date)	8 September 2017	31 August 2024
C of R (Issue Date) (Present Owner)	23 June 2023	
MTOW	450kg (992 lbs)	
Type of Fuel Used	Mogas	
Operating Category	Production Built	
Previous Accidents	None	

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

A new flight folio was opened following the last annual inspection that was conducted on the aircraft on 23 May 2023; however, the flight folio was not in the aircraft as it was still at the aircraft's maintenance facility. This was confirmed by the AP who replaced the two rudder cables as he had requested the flight folio from the pilot/owner to sign off the work done on the aircraft, but was informed that the flight folio was still at the maintenance facility. It was, therefore, not possible to obtain the actual number of flight hours post the last annual inspection as the Hobbs meter was also destroyed in the post-impact fire.

### Engine:

Manufacturer/Model	Volkswagen 2.1L
Serial Number	905
Hours Since New	Unknown
Hours Since Overhaul	TBO not yet reached

### Propeller:

Manufacturer/Model	Powerfin E 70 FP
Serial Number	90RW8
Hours Since New	Unknown
Hours Since Overhaul	TBO not yet reached



## 1.7 Meteorological Information

1.7.1 The weather information below was obtained from the Meteorological Aerodrome Report (METAR) that was issued by the South African Weather Service (SAWS) for Cape Town International Aerodrome (FACT) on 29 August 2023 at 1200Z. FACT was the closest official weather station, located 60nm south-west of the accident site.

FACT 291200Z 02013KT CAVOK 31/10 Q1016 NOSIG=

Wind Direction	020°	Wind Speed	13kt	Visibility	9999m
Temperature	31°C	Cloud Cover	None	Cloud Base	None
Dew Point	10°C	QNH	1016hPa		

The METAR for FACT indicated that the wind direction was north-easterly with moderate average surface wind speed of 13 knots. The notable (big) difference between current temperature and dew point temperature indicates dry conditions, which coincides with clear conditions presented on the satellite imagery (see Figure 3).

### 1.7.2 Satellite Image

The Day Natural Colours satellite imagery of the MeteoSat Second Generation (MSG) taken at 1200Z on 29 August 2023 indicate that there were no significant clouds (shows clear skies) over the area of the accident.

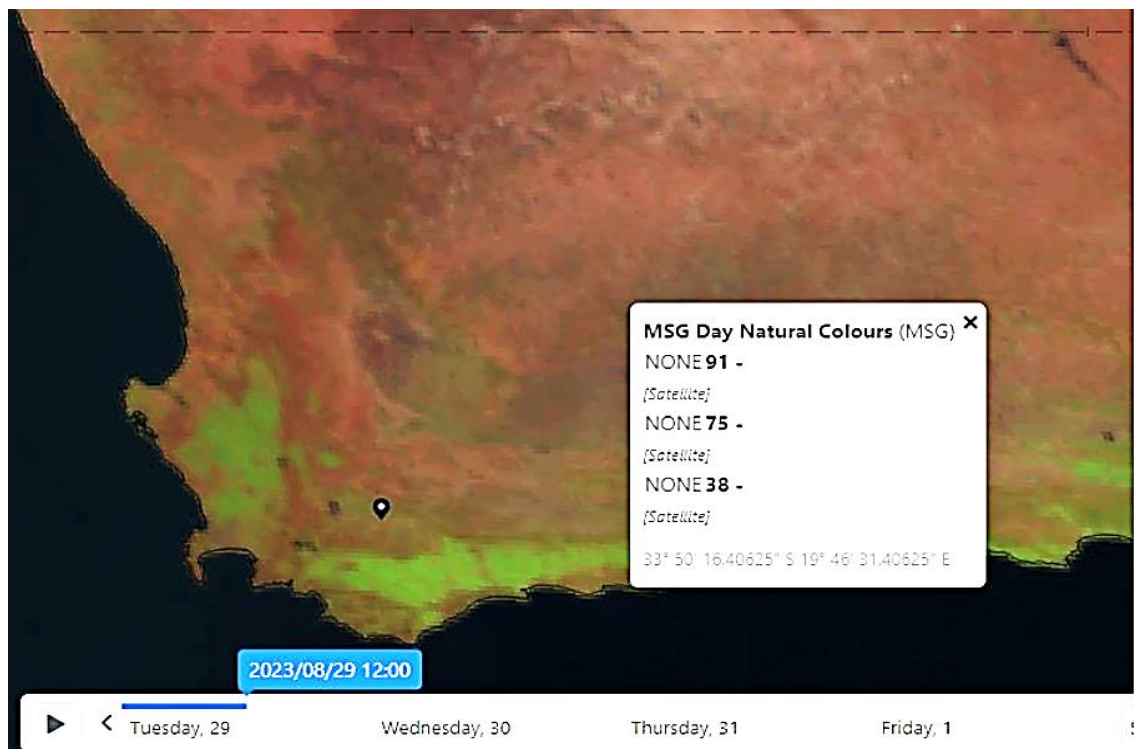


Figure 3: Day Natural Colours satellite imagery at 1200Z on 29 August 2023.

### 1.7.3 Upper Air Ascent

The 1200Z Cape Town (FACT-68816) upper air ascent (see Figure 4) valid for 29 August 2023 show dry conditions which indicate the absence of significant clouds at low level. This coincides with the clear conditions on the satellite imagery and the METAR (above). The profile also shows an increase of 15kt in wind speed between 1000 hPa and 950 hPa, with wind direction backing with height. This is an indication of severe low-level turbulence. The presence of low-level inversion in the ascent supports the presence of severe turbulence. In addition, the 15kt north-easterly winds at 153m indicate that there could have been mountain waves turbulence over the mountains with the north-westerly to south-easterly orientation in the vicinity of the accident.

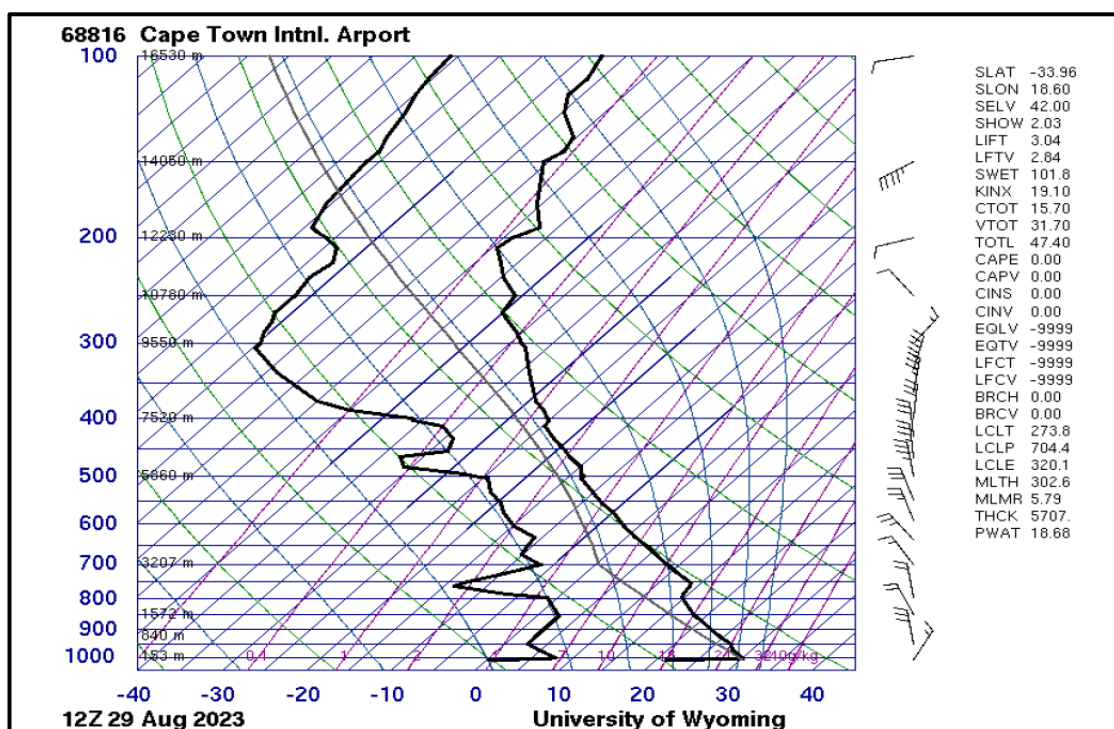


Figure 4: Upper air ascent for FACT on 29 August 2023.

## 1.8 Aids to Navigation

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

## 1.9 Communication

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

## **1.10 Aerodrome Information**

1.10.1 The accident did not occur at or near an aerodrome.

## **1.11 Flight Recorders**

1.11.1 The aircraft was not 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.

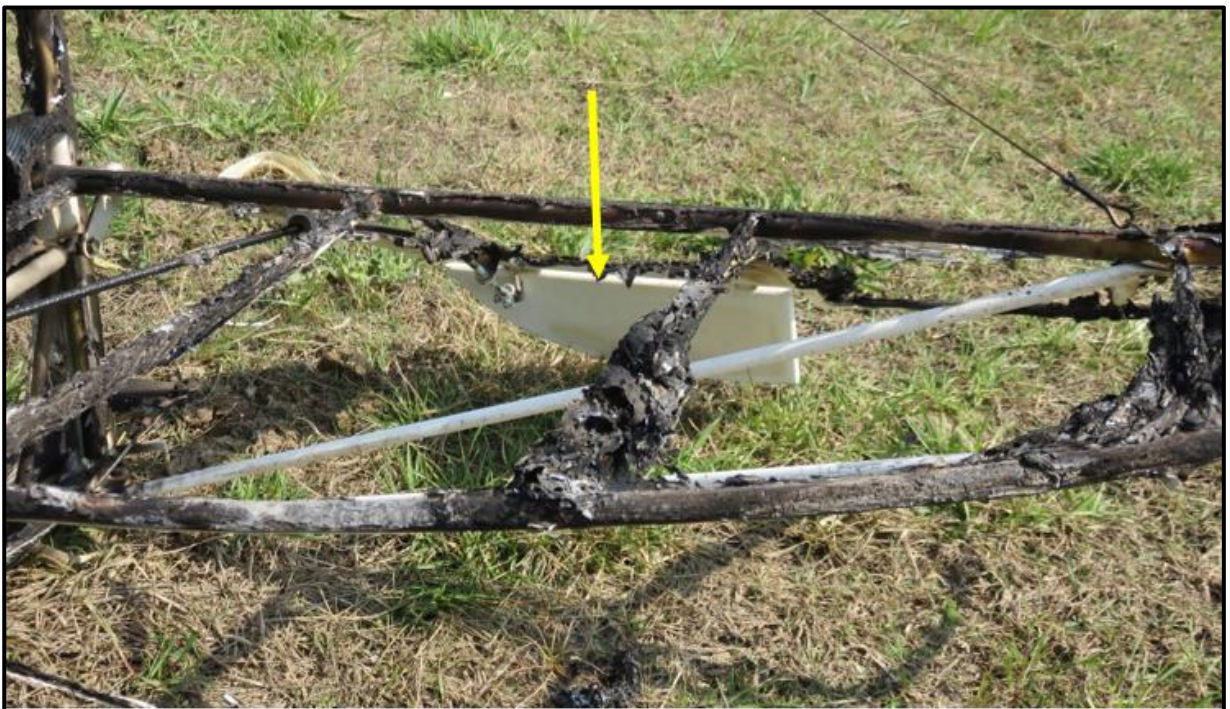
## **1.12 Wreckage and Impact Information**

1.12.1 The aircraft impacted the ground in a high-speed nose-down attitude in a south-easterly direction, which was the opposite direction to which the aircraft was flying. There were no skid marks or any other damage apart from the aircraft being consumed by the post-impact fuel-fed fire. The aircraft wreckage remained in a nose-down attitude (tail in the air). Emergency personnel had to cut several structural beams to retrieve the deceased. During the on-site investigation by the AIID team, the EMS team availed themselves to point out the areas and parts they had to cut.

1.12.2 No evidence could be found that the structural integrity of the aircraft was compromised, and all the flight controls were accounted for. The elevator trim was found in the full nose-up position (see Figure 6). The two rudder cables that were replaced prior to the accident flight were found intact and securely connected (see Figure 7). The right rudder cable was, however, cut by the EMS personnel and this was pointed out to the investigation team.



**Figure 5:** The aircraft as it came to rest.



**Figure 6:** The elevator trim tab in the full nose-up position.



**Figure 7:** The two rudder cables were secured on both sides of the rudder attachments.



**Figure 8:** The left wing.



**Figure 9:** The right wing.

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

1.13.1 To be included in the final report.

### **1.14 Fire**

1.14.1 The aircraft was consumed by the post-impact fuel-fed fire that erupted.

1.14.2 The farm personnel where the accident occurred responded to the scene with a water tanker to attempt to extinguish the fire. They had only water at their disposal, which had little effect on the fuel-fed fire.

1.14.3 The fire service from the nearest town, which was approximately 14 kilometres (km) from the farm, also responded to the accident scene but by the time they arrived, the fire was already contained.

### **1.15 Survival Aspects**

1.15.1 The accident was not considered survivable due to the destruction of the cockpit/cabin area and the post-impact fuel-fed fire.

## **1.16 Tests and Research**

1.16.1 To be discussed in the final report.

## **1.17 Organisational and Management Information**

1.17.1 This was a private flight which was conducted in accordance with the provisions of Part 94 of the CAR 2011. The pilot was also the aircraft owner.

1.17.2 The last annual inspection that was conducted on the aircraft prior to the accident flight was certified on 23 May 2023 by an approved person (AP).

## **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 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

### The pilot

- 2.2.1 The pilot had a Commercial Pilot Licence (CPL). The pilot was initially issued a licence on 24 May 2010 by the Regulator. His renewed licence was issued on 1 May 2023. The pilot had the aircraft type endorsed on his licence.
- 2.2.2 The pilot was issued a Class 1 aviation medical certificate on 16 March 2023 with an expiry date of 30 September 2023.
- 2.2.3 The pilot had conducted his conversion to the aircraft type on 20 May 2023, whereafter the aircraft type was endorsed on his licence. This was the first tandem seat aircraft type that was endorsed on the pilot's licence. The aircraft is flown from the aft seat. The conversion flight was a single flight with a duration of 1 hour.

### The aircraft

- 2.2.4 The last annual inspection that was conducted on the aircraft prior to the accident flight was certified on 23 May 2023 at 270.2 airframe hours by an AP.
- 2.2.5 The aircraft was re-issued an Authority to Fly (ATF) on 21 August 2023 with an expiry date of 31 August 2024.
- 2.2.6 The aircraft was issued a Certificate of Registration (C of R) under the present owner on 23 June 2023.
- 2.2.7 The aircraft was issued a Certificate of Release to Service (CRS) on 23 May 2023, which was valid until 22 May 2024 or at 370.2 airframe hours, whichever comes first.
- 2.2.8 It could not be determined with certainty how many hours were flown on the aircraft post the last maintenance inspection as the pilot did not have the flight folio during this flight. The flight folio was not in the aircraft as it was still with the AMO that conducted the last maintenance.

### Environment

- 2.2.9 Weather conditions indicated good visibility with no clouds below 5 000ft in the area of the accident site. The wind was moderate from the north-easterly direction. The possibility of moderate to severe mountain wave turbulence, which could have been hazardous to aviation, was present in the area.



### **3. On-going Investigation**

- 3.1 The AIID investigation is on-going and the investigators will investigate other aspects of this accident which may or may not have safety implications.

### **4. Safety Recommendation**

- 4.1 None.

### **5. Appendices**

- 5.1 None.

**This report is issued by:  
Accident and Incident Investigations Division  
South African Civil Aviation Authority  
Republic of South Africa**