

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10321						
Classification	Accident	Date	3 June 2023		Time	0640Z	
Type of Operation	Operation of Non-type Certificated Aircraft (Part 94)						
Location							
Place of Departure	Potchefstroom Aerodrome (FAPS), North West Province			Place of Intended Landing	Parys Aerodrome (FAPY), Free State Province		
Place of Occurrence	On the grass, left of Runway 06 at FAPY, Free State Province						
GPS Co-ordinates	Latitude	26°53'29.26" S	Longitude	27°30'2.29" E	Elevation	4 678 feet	
Aircraft Information							
Registration	ZU-BMD						
Make; Model; S/N	Cessna Aircraft Company: 185A Skywagon (Serial Number: 185-1359)						
Damage to Aircraft	Substantial			Total Aircraft Hours	8 789.21		
Pilot-in-command							
Licence Type	Private Pilot Licence (PPL)		Gender	Male		Age	30
Licence Valid	Yes	Total Hours	1 288		Total Hours on Type	38.8	
Total Hours 90 Days	38.8		Total Flying on Type Past 30 Days		38.8		
People On-board	1 + 4	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Saturday morning, 3 June 2023, a pilot and four passengers on-board a Cessna 185A Skywagon aircraft with registration ZU-BMD took off on a private flight from Potchefstroom Aerodrome (FAPS) in the North West province to Parys Aerodrome (FAPY) in the Free State province. Visual meteorological conditions (VMC) by day prevailed at the time of the flight which was conducted under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The pilot stated that he conducted a pre-flight inspection on the aircraft, and no anomalies were found. The aircraft contained a total of 147 litres (l) (39 US gallons) of Avgas LL100 fuel in the tanks. The pilot obtained the weather forecast update from the Windy Application, which presented the weather as favourable for the flight. The pilot performed a safety briefing after the passengers had boarded the aircraft and, thereafter, started the engine. After the engine had warmed up and all the engine indications were within the green arch in accordance with (IAW) the Pilot's Operating Handbook (POH), he taxied the aircraft to the threshold of Runway 03 to perform the pre-take-off run-up checks. Later the pilot opened the throttle to 2 600 revolutions per minutes (RPM) and commenced with the take-off run. The aircraft rotated and climbed to 6 500 feet (ft), cruising at 135 knots (kts).</p>							

According to the pilot, the flight segment was uneventful, and lasted approximately 10 minutes. Upon arrival at FAPY, he performed the pre-landing checks IAW the POH and set the flaps at 40° (full flaps). The pilot stated that he performed the final approach at a heading of 060° magnetic and at a speed of approximately 70 kts.

The eyewitness (another pilot who was on-board the RV-8 aircraft at FAPY and who saw ZU-BMD land) informed the investigator-in-charge (IIC) that there was gusting wind exceeding 15 kts from the left side of Runway 06 at the time of landing. The eyewitness further stated that during the landing roll with the tail still airborne, he observed the aircraft veering off to the left of the runway and onto the grass area. The aircraft nosed over and came to rest on its spinner and right-wing tip. It was stuck in a near vertical position (See Figure 1).

After the aircraft had stopped, the pilot turned off the fuel selector and master, and all the occupants disembarked from the aircraft unassisted and unharmed. The aircraft sustained substantial damage.

The accident occurred during daylight at Global Positioning System (GPS) co-ordinates determined to be 26°53'29.26" South 27°30'2.29" East, at approximately 4 678 ft above mean sea level (AMSL).



Figure 1: The aircraft post-accident with the tail lifted, indicated by the yellow arch. (Source: Pilot)



Figure 2: The aircraft with damaged propeller blades and spinner. (Source: Pilot)

Aircraft information (Source: POH)

The Cessna 185A Skywagon is a six-seat high-wing all metal aircraft of monocoque construction. It comprises a fixed main landing gear and a tail wheel. It is powered by a six-cylinder, horizontally opposed, air-cooled, fuel-injected Continental IO-470-F engine bearing serial number CS135695-7-F rated at 260 horsepower (hp), at 2 700RPM, driving a two-blade McCauley propeller, model D2A 36C-33E, bearing serial number 73073. The aircraft comprises mechanical flying controls and a trim system with manually operated five position flaps. Fuel is contained within two bladder tanks in the inboard of each wing. The fuel tanks capacity is 65 US gallons, and the fuel burn or consumption is 14 US gallons per hour. The aircraft has a maximum take-off weight (MTOW) of 1 454 kilograms (kg) and the maximum demonstrated crosswind of 15 knots.

Weather Information for FAPY:

The weather information entered below was obtained from the South African Weather Service (SAWS):

Wind Direction	330°	Wind Speed	10 knots	Visibility	> 10km
Temperature	15°C	Cloud Cover	63%	Cloud Base	Nil
Dew Point	3°C	QNH	N/a		

Findings
<ol style="list-style-type: none"> 1. The pilot was initially issued a Private Pilot Licence (PPL) by the South African Civil Aviation Authority (SACAA) on 25 January 2017 with an expiry date of 30 June 2023. The pilot had flown a total of 1 288 hours of which 38.8 hours were on the glider type. 2. The pilot had a Class 2 aviation medical certificate that was issued on 30 June 2022 with an expiry date of 30 June 2024. The pilot was properly licensed and medically fit to conduct the flight IAW the existing regulations. 3. None of the occupants sustained injuries. 4. The last 100-hour annual inspection that was carried out on the aircraft prior to the accident flight was certified on 14 October 2022 at 8 768.65 airframe hours by an approved person. The aircraft had logged 8 789.21 total hours at the time of the accident, meaning that it had been flown a further 20.56 hours since the last inspection. 5. The aircraft was issued a Certificate of Release to Service (CRS) on 7 August 2022 with an expiry date of 7 August 2023 or at 8.868 airframe hours, whichever occurs first. 6. The aircraft maintenance organisation (AMO) that performed the last 100-hour annual inspection had a valid approval certificate that was issued on 1 July 2022 by the SACAA IAW Part 145 of the CAR 2011 as amended, with an expiry date of 30 June 2023. 7. The aircraft had a valid Authority to Fly (ATF) that was issued on 14 October 2022 with an expiry date of 31 July 2023. The aircraft was airworthy when it dispatched for the flight. 8. The aircraft's Certificate of Registration (C of R) was issued on 9 May 2023. 9. Post-accident examination of the aircraft by the approved person (AP) revealed nothing abnormal. The rudder pedals/brakes were tested/modulated, and they responded as expected. The adjustable stabiliser was correctly trimmed for landing, and the trim wheel was easy to move with no perceptible free play or backlash in the system.
Probable Cause
Failure to compensate sufficiently for the gusting wind from the left resulted in the aircraft veering off to the left of Runway 06 centreline; the subsequent use of excessive braking led to the aircraft nosing over.
Contributing Factors
None.
Safety Action
None.

Safety Recommendation/Message
None.
<p>About this Report</p> <p><i>The decision to conduct a limited investigation is based on factors including whether the cause is known and the evidence supporting the cause is clear, the level of safety benefit likely to be obtained from an investigation and that will determine the scope of an investigation. For this occurrence, a limited investigation has been conducted, and the Accident and Incident Investigations Division (AIID) has relied on the information submitted by the affected person/s and organisation/s to compile this limited report. The report has been compiled using information supplied in the initial notification, as well as from follow-up desk top enquiries to bring awareness of potential safety issues to the industry in respect of this occurrence, as well as possible safety action/s that the industry might want to consider in preventing a recurrence of a similar occurrence.</i></p> <p><i>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.</i></p>
<p>Purpose</p> <p><i>In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011 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 apportion blame or liability.</i></p>
<p>Disclaimer</p> <p><i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i></p>

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