

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10227						
Classification	Accident	Date	4 October 2022		Time	1040Z	
Type of Operation	Training (Part 141)						
Location							
Place of Departure	Cape Winelands Aerodrome, (FAWN) Western Cape Province		Place of Intended Landing		Cape Winelands Aerodrome (FAWN), Western Cape Province		
Place of Occurrence	Cape Winelands Aerodrome (FAWN)						
GPS Co-ordinates	Latitude	S 33°46'17.4"	Longitude	E 018°44'24"	Elevation	400ft	
Aircraft Information							
Registration	ZS-FYY						
Make; Model; S/N	Piper 28R-200 Cherokee Arrow (Serial Number: 28R-35203)						
Damage to Aircraft	Substantial			Total Aircraft Hours	4907.7		
Pilot-in-command							
Licence Type	Airline Transport Pilot Licence (ATPL) Aeroplane		Gender	Male		Age	47
Licence Valid	Yes	Total Hours	3230.5		Total Hours on Type	93.6	
Total Hours 30 Days	2.0		Total Flying on Type Past 90 Days	25.7			
People On-board	2+0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Tuesday, 4 October 2022, a flight instructor (FI) and a student pilot (SP) on-board a Piper Cherokee 28R-200 Arrow aircraft with registration ZS-FYY were on an instrument flight rules (IFR) check flight from the Cape Winelands in the Western Cape province, with the intention to land back at the same aerodrome. Visual meteorological conditions (VMC) by day prevailed at the time of the flight and no flight plan was filed. The aircraft was operated under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The FI and the SP took off from FAWN to carry out the SP's last IFR check flight before he could proceed with his commercial licence and instrument flight (IF) tests; the SP had a Private Pilot Licence (PPL). The SP successfully completed the IF check. Thereafter, they both took off to the general flying area (GFA) for the SP to practise stalls and simulated forced landings.</p> <p>After completing the exercises at the GFA, the duo returned to FAWN where they carried out a few circuit emergencies, as well as flapless approaches, glide approaches and short field landings on Runway 23. During the first short field landing, the aircraft was unstable on approach and, as a result, the FI initiated a go-around, which was successfully executed. During the climb phase, the SP took</p>							

over the control of the aircraft and carried out the “after-take-off” checks correctly. When he levelled off, the SP forgot to set the required circuit engine power. At the time, the aircraft’s speed was above 150 miles per hour (MPH).

During the downwind leg, the SP failed to extend the flaps and the landing gear as required. The FI stated that the SP did not complete the outstanding downwind checks, and he (FI) did not confirm that the downwind checks were completed as he was looking out for other traffic in the circuit whilst the SP turned base leg for final approach. During the final approach, the FI was focused on the student’s performance because he did not want to repeat the unstable approach scenario, however, they missed the final approach checks which led to a landing with the gear retracted. The aircraft sustained substantial damage to the propeller and the underbelly, however, the FI and the SP were unharmed.



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

Findings

- The FI was initially issued a Commercial Pilot Licence on 11 October 2013. The FI completed his proficiency test for the Airline Transport Pilot Licence (ATPL) on 19 January 2022 and was issued a licence on the same day with an expiry date of 31 January 2023. The FI did his proficiency check for Grade 2 instructor on 19 November 2022, with the licence set to expire on 30 November 2023. The FI had a Class 1 aviation medical certificate which was issued on 29 June 2022 with an expiry date of 30 June 2023, and with a restriction to wear corrective lenses.

- The SP was initially issued a Private Pilot Licence on 22 September 2017. The SP completed his proficiency test on 30 September 2021 and was issued a licence on the same day with an expiry date of 30 September 2022. The SP was in possession of a Class 2 aviation medical certificate which was issued on 2 July 2020 with an expiry date of 2 July 2025 and with no restrictions.
- The flight was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended. The flight school was issued an Approved Training Organisation (ATO) certificate on 25 May 2021 with an expiry date of 30 June 2026. According to the reviewed records, the aircraft was listed on the ATO certificate.
- The last 100-hour mandatory periodic inspection (MPI) prior to the accident flight was carried out on 15 September 2022 at 4901.8 hours. The aircraft was issued a Certificate of Release to Service (CRS) on 15 September 2022 with an expiry date of 14 September 2023 or at 5001.8 hours, whichever occurs first. The aircraft had 94.1 hours remaining before the next inspection. The aircraft maintenance engineer (AME) who certified the last MPI was appropriately licensed to maintain the aircraft type.
- The aircraft was issued a Certificate of Airworthiness (C of A) on 23 January 2008. The latest C of A had an expiry date of 31 January 2023. The aircraft's Certificate of Registration (C of R) was issued to the current owner on 23 September 2021.
- The Piper Arrow Pilot Operating Handbook approach and landing checks:

ARROW II

APPROACH AND LANDING

Before landing check list:

1. Seat backs - erect
2. Fasten belts/harness
3. Fuel - on proper tank
4. Fuel pump - ON
5. Mixture - set
6. Propeller - set
7. Emergency Gear Extension Lever - UP POSITION

NOTE

For aircraft equipped with the backup gear extender, the Emergency Gear Extension Lever should be in the normal/disengaged position.

8. Gear - DOWN (150 MPH MAX)
9. Flaps - set (125 MPH)
10. Air conditioner - OFF

<ul style="list-style-type: none"> The SP omitted to lower the landing gear during the downwind checks and during the final approach checks, and the FI forgot to check if the gear was lowered. This resulted in the aircraft landing with the undercarriage retracted. The aircraft skidded on its belly, which got damaged together with the propellers.
<p>Probable Cause</p> <p>The FI and the SP omitted to lower the landing gear during the downwind checks and, again, during the final approach checks, which resulted in the aircraft landing with the undercarriage retracted. The aircraft skidded on its belly, which got damaged together with the propellers.</p>
<p>Contributing Factor(s)</p> <ul style="list-style-type: none"> Failure to complete the landing checklist. FI did not monitor the SP during the critical phase of flight (landing).
<p>Safety Action(s)</p> <p>None.</p>
<p>Safety Message and/or Safety Recommendation/s</p> <p>To prevent these types of accidents, pilots are reminded to always be vigilant during the critical stages of flight such as take-offs and landings, and also to opt for a go-around when unsure. The FIs are reminded to check their students during these critical phases of flight.</p>
<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**