

**LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL**

<b>Reference Number</b>	CA18/2/3/10290						
<b>Classification</b>	Accident	<b>Date</b>	23 April 2023			<b>Time</b>	1247Z
<b>Type of Operation</b>	Training (Part 141)						
<b>Location</b>							
<b>Place of Departure</b>	Lanseria International Airport (FALA), Gauteng province		<b>Place of Intended Landing</b>	Lanseria International Airport (FALA), Gauteng province			
<b>Place of Occurrence</b>	Lanseria International Airport (FALA), Gauteng province						
<b>GPS Co-ordinates</b>	<b>Latitude</b>	25° 56' 19" S	<b>Longitude</b>	27° 55' 34" E	<b>Elevation</b>	4 455ft	
<b>Aircraft Information</b>							
<b>Registration</b>	ZS-KVW						
<b>Make; Model; S/N</b>	Cessna; 172P Skyhawk (Serial Number: 172-74779)						
<b>Damage to Aircraft</b>	Substantial			<b>Total Aircraft Hours</b>	12 433.3		
<b>Pilot-in-command</b>							
<b>Licence Type</b>	Commercial Pilot Licence (CPL) Aeroplane		<b>Gender</b>	Male	<b>Age</b>	37	
<b>Licence Valid</b>	Yes	<b>Total Hours</b>	266.6	<b>Total Hours on Type</b>	253.7		
<b>Total Hours 30 Days</b>	32		<b>Total Flying on Type Past 90 Days</b>	36.5			
<b>People On-board</b>	2 + 0	<b>Injuries</b>	2	<b>Fatalities</b>	0	<b>Other (on ground)</b>	0
<b>What Happened</b>							
<p>On Sunday afternoon, 23 April 2023, a flight instructor and a student pilot on-board a Cessna 172P Skyhawk aircraft with registration ZS-KVW took off on a training flight from Lanseria International Airport (FALA) in Gauteng province to the general flying area (GFA) to conduct Exercises 6-9 which comprises straight and level, climbing, descending and turning, with the intention to land back at FALA. Visual meteorological conditions (VMC) by day prevailed at the time of the flight. The flight was conducted under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The flight instructor reported that on their return flight to FALA, the student pilot was the pilot flying. The approach for landing on Runway 25 was stable with the wind speed at 240°/08 knots (kts). The air speed indicator (ASI) indicated 70 kts. Thereafter, the flight instructor took control of the aircraft for landing to make a demonstration for the student pilot. When the aircraft was about to touch down approximately 10 feet (ft) above ground level (AGL) and at a speed of 60 kts with flaps selected to 2<sup>nd</sup> stage (25°), the aircraft experienced a sudden sharp drift to the left. The flight instructor applied full right rudder to align the aircraft to the runway centreline for a go-around, but he was unsuccessful (<i>the aircraft had already veered past the edge of the active runway and touched down; therefore, a</i></p>							

*go-around would not have been a safe undertaking*). The flight instructor stated that he applied full back pressure on the control column to ease pressure off the nose wheel. The aircraft veered off to the left of the runway and, as Runway 25 had a down slope (lower lying ground) next to it, the aircraft nosed over and came to rest in an inverted position.

The crash alarm was activated by FALA tower, and the Aircraft Rescue and Firefighting (ARFF) team and the Emergency Medical Services (EMS) personnel responded swiftly to the scene. The aircraft had damage to the engine fire wall, engine mountings, nose gear assembly (which broke off), propeller, right- and left-wing leading edges, vertical stabiliser and rudder. The crew sustained minor injuries during the accident sequence.



**Figure 1:** The view of the accident site at FALA. (Source: Google Earth)



**Figure 2:** The aircraft's resting position after the accident. (Source: Pilot)

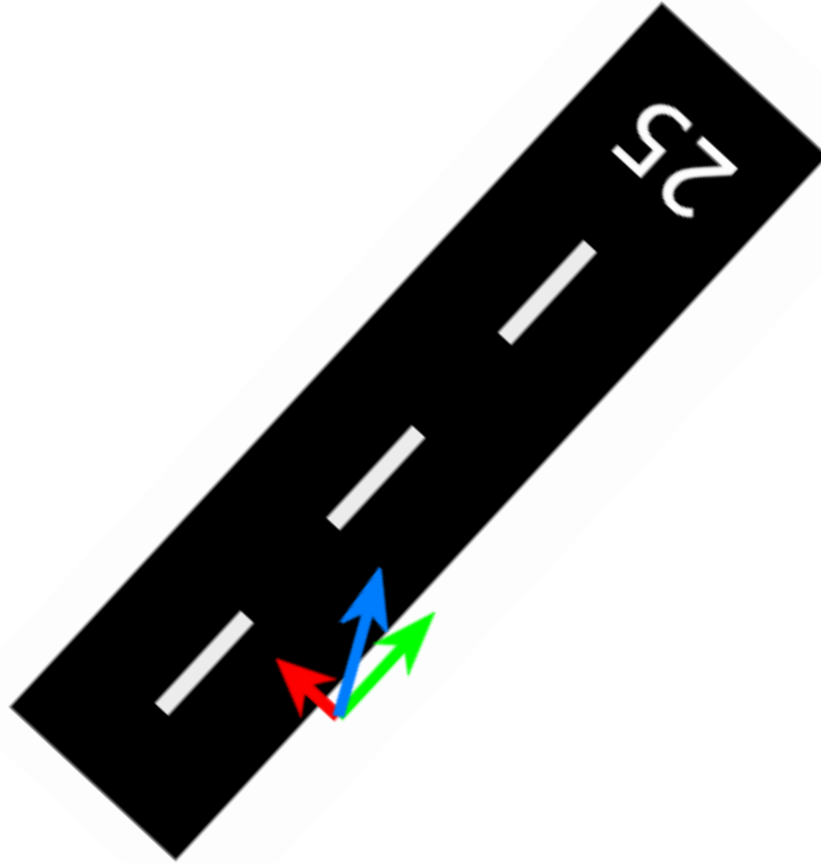
The flight instructor, through the pilot questionnaire, reported the weather conditions as follows; wind direction: 240° at 08 knots, and temperature: 27°. According to the South African Weather Service (SAWS), the official weather was as follows:

ClimNo	StasName	Date	WndSpd	WndDir	Gust	Temp	Hum	Pres	BatVlt	Rain
0512746 4	LANSERIA WO	2023/04/23 14:00	3.5	250.4	5.9	27.3	18	863.4	13	0
0512746 4	LANSERIA WO	2023/04/23 14:05	3.5	242	5.9	26.8	15	863.5	13	0
0512746 4	LANSERIA WO	2023/04/23 14:10	5.3	258.7	7.3	27.1	16	863.4	13	0
0512746 4	LANSERIA WO	2023/04/23 14:15	4.2	250.4	7.3	27.3	18	863.4	13	0
0512746 4	LANSERIA WO	2023/04/23 14:20	2.6	248.4	7.3	27	18	863.3	13	0
0512746 4	LANSERIA WO	2023/04/23 14:25	3.7	235.2	7.3	27	20	863.3	13	0
0512746 4	LANSERIA WO	2023/04/23 14:30	3.3	252	6.6	27.5	19	863.3	13	0
0512746 4	LANSERIA WO	2023/04/23 14:35	3.9	228.7	6.6	27.5	20	863.3	13	0
0512746 4	LANSERIA WO	2023/04/23 14:40	5.1	215.9	6.7	27	20	863.4	13	0
0512746 4	LANSERIA WO	2023/04/23 14:45	3.5	220.5	6.7	27.1	19	863.4	13	0
0512746 4	LANSERIA WO	2023/04/23 14:50	4.7	234.9	6.7	27.7	19	863.3	13	0
0512746 4	LANSERIA WO	2023/04/23 14:55	3.4	246.3	6.5	26.9	17	863.4	13	0
0512746 4	LANSERIA WO	2023/04/23 15:00	3.7	221.1	6.5	27.3	19	863.4	13	0

Table 1: 5 minute AWS data for FALA valid for 23 April 2023 between 1400 and 1500 SAST (1200 and 1300Z).

W : 3.50      ■ Wind  
Wh : 5.83      ■ Headwind  
Wc : 3.30      ■ Crosswind

Runway 25 was used for landing.



### SPEEDS FOR NORMAL OPERATION

Unless otherwise noted, the following speeds are based on a maximum weight of 2400 pounds and may be used for any lesser weight. However, to achieve the performance specified in Section 5 for takeoff distance, the speed appropriate to the particular weight must be used.

Takeoff, Flaps Up:	
Normal Climb Out	70-80 KIAS
Short Field Takeoff, Flaps 10°, Speed at 50 Feet	56 KIAS
Enroute Climb, Flaps Up:	
Normal, Sea Level	75-85 KIAS
Normal, 10,000 Feet	70-80 KIAS
Best Rate of Climb, Sea Level	76 KIAS
Best Rate of Climb, 10,000 Feet	71 KIAS
Best Angle of Climb, Sea Level	60 KIAS
Best Angle of Climb, 10,000 Feet	65 KIAS
Landing Approach:	
Normal Approach, Flaps Up	65-75 KIAS
Normal Approach, Flaps 30°	60-70 KIAS
Short Field Approach, Flaps 30°	61 KIAS
Balked Landing:	
Maximum Power, Flaps 20°	55 KIAS
Maximum Recommended Turbulent Air Penetration Speed:	
2400 Lbs	99 KIAS
2000 Lbs	92 KIAS
1600 Lbs	82 KIAS
Maximum Demonstrated Crosswind Velocity:	
Takeoff or Landing	15 KNOTS

**Figure 3:** Speed for normal operation. (Source: Cessna 172P Pilot's Operating Handbook, Section 4, Page 4-3)

<b>Findings</b>
<ol style="list-style-type: none"> <li>1. The flight instructor was initially issued a Commercial Pilot Licence (CPL) on 16 October 2019. The flight instructor conducted his last skills test on 16 March 2023 and his licence was reissued on 27 March 2023 with an expiry date of 31 January 2024. The flight instructor had flown a total of 266.6 hours of which 253.7 hours were on the aircraft type. The flight instructor was properly licensed and medically fit to conduct the flight.</li> <li>2. The flight instructor had a Class 1 aviation medical certificate that was issued on 13 January 2023 with an expiry date of 31 January 2024, and had a restriction to wear suitable corrective lenses.</li> <li>3. The student pilot had a total of approximately 6 hours of flight time; the flight instructor was the one in control during landing.</li> <li>4. The last Mandatory Periodic Inspection (MPI) on the aircraft was completed on 4 April 2023 at 12 371.8 hours. The aircraft was issued a Certificate of Release to Service (CRS) on 5 April 2023 with an expiry date of 4 April 2024 or at 12 471.8 airframe hours, whichever occurs first. The aircraft was flown a further 61.5 hours since the last MPI.</li> <li>5. The aircraft had a valid Certificate of Airworthiness (C of A) which was issued on 22 June 2022 with an expiry date of 21 June 2023. The aircraft's Certificate of Registration (C of R) was issued to the current owner on 8 January 2019.</li> <li>6. The aircraft was unstable on approach and did not line up with the runway centreline after touchdown. Therefore, the flight instructor lost control of the aircraft before it veered off to the left.</li> <li>7. There was no evidence of a strong gust of wind which could have caused the aircraft to drift as the flight instructor had reported. Also, the aircraft is certified to perform well at 15 kts maximum crosswind.</li> <li>8. The aircraft touched down at a speed of 60 kts which is the aircraft's approach speed.</li> </ol>
<b>Probable Cause(s)</b>
The flight instructor lost directional control of the aircraft during landing, and it veered off to the left of the runway.
<b>Contributing Factor(s)</b>
None.
<b>Safety Action(s)</b>
None.
<b>Safety Message</b>
Pilots are advised to always be vigilant in critical phases of flight such as landing and approach to prevent injuries and damage to property.
<b>About this Report</b>
<i>The decisions 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</i>

*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.*

*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.*

**Purpose**

*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.*

**Disclaimer**

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

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