



LIMITED ACCIDENT INVESTIGATION REPORT
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Reference Number	CA18/2/3/10029						
Classification	Accident	Date	20 August 2021	Time	0805Z		
Type of Operation	Training Flight (Part 141)						
Location							
Place of Departure	Wonderboom Aerodrome (FAWB)		Place of Intended Landing	Wonderboom Aerodrome (FAWB)			
Place of Accident	Runway 29 at FAWB						
GPS Co-ordinates	Latitude	25°39'12.05"S	Longitude	28°13'20.76"E	Elevation	4078ft	
Aircraft Information							
Registration	ZS-STP						
Model/Make	Cessna 172M						
Damage to Aircraft	Substantial		Total Aircraft Hours	10290.6			
Pilot-in-command							
Licence Type	Student Pilot Licence (SPL)	Gender	Female		Age	20	
Licence Valid	Yes						
Total Hours on Type	8.7 hours		Total Flying Hours	46.7			
People On-board	1+0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On 20 August 2021 at about 0740Z, a student pilot on-board a Cessna 172M aircraft with registration ZS-STP took off from Wonderboom Aerodrome (FAWB) with the intention to conduct solo circuit training. Two circuits were conducted on Runway 29 without incident. According to the student pilot, wind direction was 090° at 5 knots (kts). The student pilot was cleared to land on Runway 29; she landed with a tailwind. However, during landing, the aircraft bounced once and landed back on the runway with the nose landing gear first. The student pilot applied brakes but she could not maintain the runway direction and the aircraft veered off to the left-side of the runway before coming to a stop.</p> <p>The aircraft sustained damage to the fire wall. The student pilot was not injured during the accident sequence.</p>							



Figure 1: Aircraft damage to the fire wall. (Source: AMO)

According to the South African Weather Service, the weather at FAWB on 20 August 2021 around 0800Z was as follows:

Wind: 090° at 04 kts; Temperature: 21°C; Due Point: M02°C; Queries Nautical Height (QNH): 1021

Air traffic control (ATC) recordings were requested by the investigator. The table below shows part of the transcript:

ZS-STP Transcript

Time	From	To	Message
08:00:22	ATC	ZS-STP	Sierra Tango Papa runway 29 cleared touch-and-go the wind is light and variable.
08:00:24	ZS-STP	ATC	Touch-and-go runway 29 Sierra Tango Papa
08:00:46	ATC	JBO	Juliet Bravo Oscar go-around I say again go-around

Zulu time was used on the transcript above.

Source: Airplane Flying Handbook (FAA-H-8083-3C, 2021)

Chapter 9: Approaches and Landings, Page 9-33

Bouncing during touchdown

When the airplane contacts the ground with a sharp impact as the result of an improper attitude or an excessive rate of sink, it tends to bounce back into the air. Though the airplane's tires and shock struts provide some springing action, the airplane does not bounce like a rubber ball. Instead, it rebounds into the air because the wing's angle of attack (AOA) was abruptly increased, producing a sudden addition of lift. The abrupt change in AOA is the result of inertia instantly forcing the airplane's tail downward when the main wheels contact the ground sharply. The

severity of the bounce depends on the airspeed at the moment of contact and the degree to which the AOA or pitch attitude was increased.

Probable Cause:

It is possible that the aircraft was too high on final approach and landed hard before it bounced; thereafter, the pilot lost directional control as a result of a damaged nose gear.

Safety Action/s

None.

Safety Message and/or Safety Recommendation/s

Safety message: Pilots are advised to be alert when landing and taking off, as well as follow manufacturer's stipulated procedures.

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.***

About this Report

Decisions regarding whether to investigate, and the scope of an investigation are based on many factors, including the level of safety benefit likely to be obtained from an investigation. For this occurrence, no 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 brief report. The report has been compiled using information supplied in the initial notification, as well as follow-up information 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 accident.

This report provides an opportunity to share safety message/s in the absence of an investigation.

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.

Disclaimer

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This report is issued by:

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