SOUTH AFRICAN CIVIL AVIATION AUTHORITY

Section/division **Accident and Incident Investigations Division** Form Number: CA 12-57

LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/1082						
Classification	Accident	**Date**	19 November 2021	**Time**	1040Z		
Type of Operation	Private (Part 91)						
Location							
Place of Departure	Lanseria Airport (FALA), Gauteng Province	Place of Intended Landing		Lanseria Airport (FALA), Gauteng Province			
Place of Accident	Lanseria Airport Runway 07						
GPS Co-ordinates	Longitude	S 25°56'23"	Latitude	E 027°55'28.8"	Elevation	4517 feet	
Aircraft Information							
Registration	ZS-IRA						
Model/Make	Cessna C172 H (Serial Number: 172-55840)						
Damage to Aircraft	Minor	Total Aircraft Hours	4358.5				
Pilot-in-command							
Licence Type	Private Pilot Licence (PPL) (Aeroplane)	Gender	Male	Age	23		
Licence Valid	Yes						
Total Hours on Type	74.6	Total Flying Hours	79.9				
People On-board	1 + 1	Injuries	0	Fatalities	0	Other (on ground)	0

What Happened

On 19 November 2021 at 1040Z, a pilot and a passenger on-board a Cessna 172H aircraft with registration ZS-IRA were engaged in circuit training exercises at Lanseria Airport on Runway (RWY) 07. The flight was conducted under visual flight rules (VFR) by day and under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

The pilot completed one uneventful touch-and-go circuit on RWY 07. During the second circuit whilst on downwind, the air traffic control (ATC) advised that the wind velocity has picked up from 13 to 16 knots at 350 degrees.

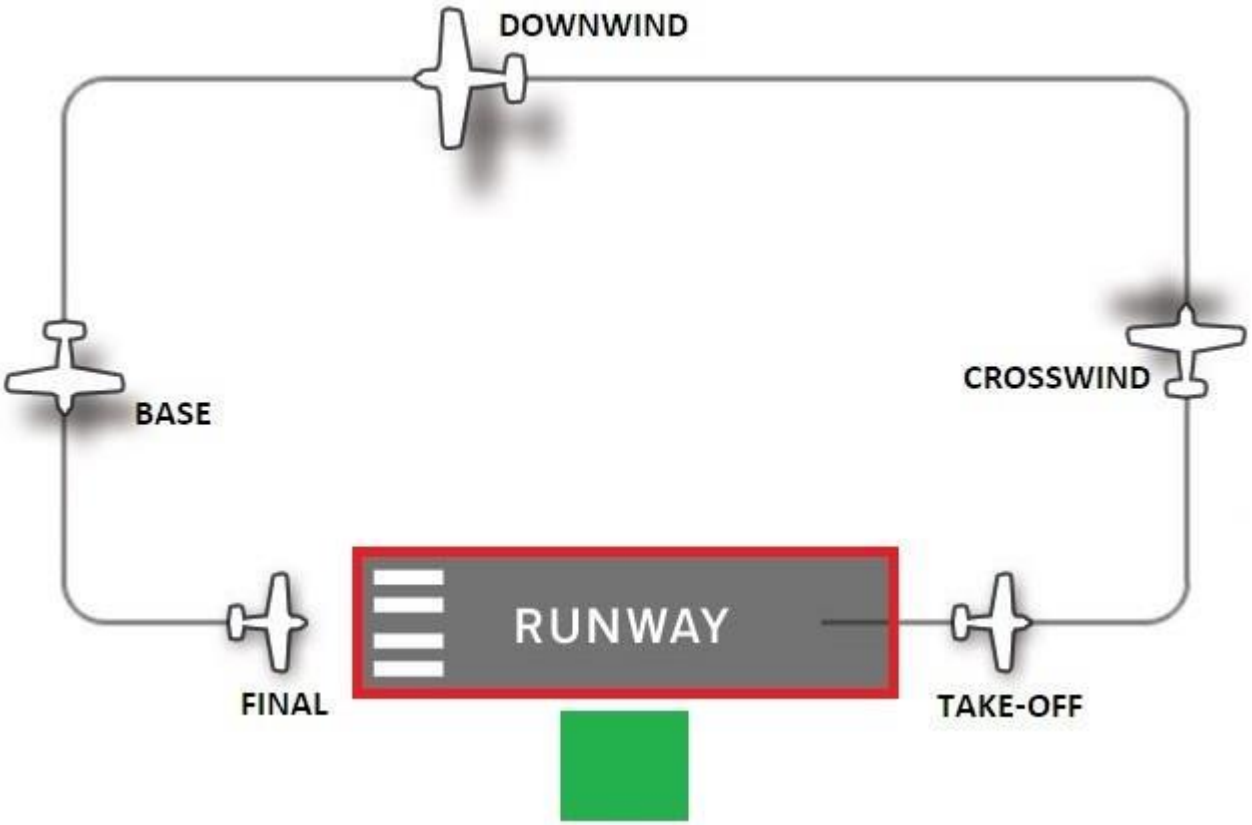

Figure 1: The runway circuit. (Source: ResearchGate)

The pilot then decided to make a full stop landing. He advised the ATC of his intention. On final approach, the pilot reported that the aircraft's speed was 65 knots and the aircraft was unstable as the crosswind component was approximately 15 knots. The aircraft landed hard on the main wheels, resulting in a bounce. The pilot lost directional control and the aircraft veered off to the right-side of the runway centreline; the propeller struck the runway surface. The pilot later regained directional control and taxied the aircraft back to the parking bay without further incidents.

There were no reported injuries during the landing sequence; the aircraft sustained damage to the propeller tips.

According to the SA Weather Service for FALA on 19 November 2021 at 1000Z, the weather was as follows:
FALA 191000Z 34010KT 250V020 9999 SCT030 24/14 Q1018 NOSIG=
Wind velocity: 340 degrees at 10 knots; Visibility: greater than 10km ; Cloud: Scattered at 3000 feet; Temperature: 24 degrees Celsius; Dew point: 14 degrees Celsius; Barometric pressure: 1018 hPA.

The following information is an extract from https://www.boldmethod.com/learn-to-fly/maneuvers/how-to-safely-and-smoothly-recover-from-a-bounced-landing-smoothly-safely/

What Causes A Bounce?

Bad landings usually start in the pattern. If you cannot stabilise your approach to the runway early on, it is going to be much harder to grease a landing.

There are two primary causes of bounced landings: landing hard and landing too fast

If you have a high sink rate, your natural tendency is to pull back on the yoke as you quickly approach the ground. The result? Your angle-of-attack rapidly increases, creating enough lift to

propel your plane back into the air. The faster you are, the more this is a problem, because you can create more lift.

In addition to that, if you touch down hard, your main gear hit the pavement and rebound you back into the air.

The harder you land, the higher you will bounce.

Recovery Options

If you bounce, the first thing you should do is hold back pressure to keep the aircraft in a nose-high landing attitude. You might need to release some back pressure on the yoke or stick if your nose is too high, but do not push the nose down. If you force the nose down, you could land even harder than the first time, or worse, land on your nose gear.
As you start descending back to the runway, you might also need to add some power to reduce your descent rate. But do not over-correct with power. Adding small amounts of power is all it takes to safely reduce your descent rate for a soft touchdown.

Figure 2: A file photo of ZS-IRA. (Source: jetphotos.com)

Probable cause:

The aircraft landed hard on both main gears in a crosswind condition following an unstable approach which caused the pilot to lose control; the aircraft veered off to the right-side of the runway centreline. Later, the pilot recovered control of the aircraft and successfully taxied the aircraft to the parking bay.

Safety Action/s

None.

Safety Message and/or Safety Recommendation/s
Safety message: Pilots are advised to execute a go-around immediately should they recognise that the approach is unstable. This will mitigation a risk of injury or damage to property.
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
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