SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/10039										
Classification	Accident			**Date**	17 September 2021			**Time**	1350Z		
Type of Operation	Training (Part 141)										
Location											
Place of Departure	Lanseria International Aerodrome (FALA)			Place of Intended Landing				Lanseria International Aerodrome (FALA)			
Place of Accident	Runway 07, Lanseria International Aerodrome (FALA), Gauteng Province										
GPS Co-ordinates	Latitude	25º 56' 45.37" S		Longitude	027º 55' 03.33" E			Elevation	4 521ft		
Aircraft Information											
Registration	ZS-FTS										
Model/Make	Piper PA-28-140 Cherokee										
Damage to Aircraft	Substantial			Total Aircraft Hours	6658.7						
Pilot-in-command											
Licence Valid	Yes			Gender	Female			Age	20		
Licence Type	Student Pilot Licence (SPL)										
Total Hours on Type	32.4			Total Flying Hours	32.4						
People On-board	1 + 0	Injuries	1	Fatalities	0	Other (on ground)	0				

What Happened

On Friday afternoon, 17 September 2021, a flight instructor and a student pilot on-board a Piper PA-28-140 Cherokee aircraft with registration ZS-FTS were cleared by air traffic control (ATC) for take-off on Runway (RWY) 07 to conduct circuit training at Lanseria International Aerodrome (FALA). Fine weather conditions prevailed with the surface wind being light and variable at 3 knots and the temperature at 24°C.

The flight crew completed three circuits; thereafter, the instructor disembarked the aircraft to allow the student pilot to conduct a solo consolidation flight. After receiving clearance from ATC, the student pilot commenced with take-off from RWY 07. The take-off and circuit leading to and including the final approach phase of the flight were uneventful.

The student pilot reported that during the flare for landing, she thought that the landing gears had already contacted the runway surface, but that was not the case. As a result, the aircraft touched down hard and bounced. The student pilot attempted to perform a go-around; however, at that time the aircraft had lost significant airspeed and it stalled and bounced a second time. This resulted in the aircraft impacting the ground hard with its nose gear first. The nose gear broke off and the propeller blades struck the ground before the aircraft came to a stop on RWY 07 in a nose-down position (due to the broken nose gear).

The student pilot informed ATC that she was unable to open the doors. The ATC activated the crash alarm and the Aircraft Rescue and Fire-fighting (ARFF) personnel who responded to the accident scene assisted the student pilot out of the aircraft. After disembarking the aircraft, the student pilot received medical attention as she had sustained minor injuries during the accident.

Figure 1: The aircraft post-accident showing the damaged propeller and broken nose gear. The photo was taken after the aircraft was moved from the runway. (Source: Pilot)

According to the *FAA-H-8083-3B – Airplane Flying Handbook, Chapter 8 – Approaches and Landings*:

One of the most difficult tasks that a pilot must routinely execute occurs during the brief transition between the final approach and first contact with the landing surface. This transition is known as the landing flare. The flare process requires that the pilot adjust the aircraft attitude and power settings from those maintained during final approach to values which are appropriate for landing. To be successful, these adjustments must occur at a height above the landing surface that will vary based on the size, weight and performance criteria of the aircraft and the prevailing environmental conditions. In many aircraft, pilots are required to make all height assessments based solely on external visual clues.

If executed correctly, the flare will result in the aircraft achieving the appropriate landing attitude with power at or near idle, a reduced rate of descent and a decaying airspeed, all at a height varying from several inches to several feet above the landing surface (dependent upon aircraft type). If not executed correctly, the flare could result in a hard landing.

Following the accident, the aviation training organisation (ATO) implemented remedial training for the student pilot with a senior Grade II instructor. The student pilot has undergone multiple simulator sessions where all possible emergency scenarios were completed; in addition, the student pilot has attended simulator sessions as an observer for increased exposure to flying. The student pilot is also undergoing decision making as well as effecting corrective actions during both normal and abnormal

situations. The remedial training carried out because of this accident has been adopted by the ATO and will be implemented for all new and existing student pilots going forward.

There were no mechanical defects or anomalies with the aircraft that could have contributed to or have caused the accident. The weather was not a factor in this accident.

Probable cause:
The student pilot flared the aircraft too high, resulting in a hard landing and two bounces before impacting the ground hard with the nose gear first. This resulted in the nose gear breaking off and the propeller striking the ground.

Safety Actions

The flight school has adopted and implemented the following training for new students:

(1) Completion of simulator sessions where all possible emergency scenarios are to be completed successfully.

(2) Undergoing decision-making and effecting corrective actions training.

(3) Attending simulator sessions as an observer for increased exposure to flying.

Safety Message

Training schools should ensure that students are ready to be advanced for solo flights.

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 issued by:

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