SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/10065				
Classification	Accident	**Date**	2 November 2021	**Time**	1112Z
Type of Operation	Private (Part 91)				
Location					
Place of Departure	Nelspruit Aerodrome (FANS), Mpumalanga Province	Place of Intended Landing	Douglas Backhouse Aerodrome, Northern Cape Province		
Place of Occurrence	Runway 34, Douglas Backhouse Aerodrome, Northern Cape Province				
GPS Co-ordinates	Latitude	29º 04' 39.00" S	Longitude	023º 48' 01.40" E	Elevation	3 382 ft
Aircraft Information					
Registration	ZS-FRO				
Model/Make	Mooney M20G				
Damage to Aircraft	Substantial	Total Aircraft Hours	4 858.0		
Pilot-in-command					
Licence Valid	Yes	Gender	Male	Age	51
Licence Type	Private Pilot Licence (PPL)				
Total Hours on Type	63.0	Total Flying Hours	136.8		

People On-board	1 + 0	Injuries	0	Fatalities	0	Other (on ground)	0

What Happened

On Tuesday morning, 2 November 2021, a pilot on-board a Mooney M20G aircraft with registration ZS-FRO took off from Nelspruit Airport (FANS), Mpumalanga Province, on a private flight to Douglas Backhouse Aerodrome, Northern Cape Province. Visual Meteorological Conditions (VMC) by day prevailed, and no flight plan was filed.

According to the pilot, as he was on final approach for Runway (RWY) 34 at Douglas Backhouse Aerodrome, the approach, speed, and height of the aircraft were satisfactory to continue with landing. The pilot reported that after he had rounded-out above the threshold of RWY 34, he felt that the aircraft was too high above the runway and took longer than usual to touch down. The aircraft then contacted the runway surface hard with the main gears first and bounced.

The pilot then opened the throttle with the intention to add more engine power to reject landing (go-around); however, the aircraft bounced back onto the runway. Subsequently, the pilot lost control of the aircraft and it veered off to the left of the runway and collided with the aerodrome's parameter fence pole with its left wing. The aircraft stopped parallel to the fence after pivoting 90° to the right.

The aircraft had substantial damage to the left wing, the nose gear and the propeller. The pilot was not injured during the accident; he disembarked the aircraft unassisted.

Figure 1: ZS-FRO's damaged left wing. (Source: Pilot)

What was found:

- The pilot had total flying hours of 136.8 on all aircraft types endorsed on his licence, with 63.0 of those flying hours on the accident aircraft type.
- The investigation did not find records of technical defects with the airframe, engine or components of the aircraft in the logbooks or defect reports.
- It was determined that there were no mechanical anomalies with the aircraft that could have led to the accident, and that the weather was not a factor to this accident.

Ballooning (Source: www.bolmethod.com):

Ballooning occurs when a pilot misjudges the aircraft's sink rate during landing and thinks the aircraft is descending too fast, a natural reaction is to sharply increase pitch attitude. By doing this not only will the aircraft's descent be stopped, but this will initiate a climb during the round out (flare).

Ballooning is hazardous because the height above the ground increases as the aircraft approaches a stalled condition (increasing AOA and depleting speed). The severity of a balloon depends on the airspeed and how quickly pitch attitude is increased.

How to Recover from Ballooning:

In many cases, a slight balloon can be recovered by gently relaxing back pressure on the yoke/stick while still maintaining a nose-high pitch attitude, descending into a second flare, and touching down. Pilots may have to use a slight amount of power to cushion the landing. This prevents the airplane from decelerating too rapidly and touching down hard.

Remember, though, that the throttle needs to be closed right after touchdown. There is another consideration when power is applied to recover from a balloon, power will create torque. Pilots might need a little more right-rudder pressure to keep the airplane aligned with the centre line for touchdown, this is because flight controls are less effective at slower speeds.

Probable cause:

The aircraft was flared too high, causing it (aircraft) to land hard and balloon. This led to the pilot losing control of the aircraft, which resulted in the aircraft veering off to the left of the runway before colliding with the parameter fence pole.

Safety Action

None.

Safety Message

Pilots should execute a go-around immediately if they recognise that their approach is unstable. This is a proven risk mitigation when it comes to avoiding a hard touchdown which may result in damage to the aircraft and/or injury to persons.

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