SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED SERIOUS INCIDENT INVESTIGATION REPORT

Reference Number	CA18/3/2/1362						
Classification	Serious Incident	**Date**	23 July 2021	**Time**	1413Z		
Type of Operation	Training (Part 141)						
Location							
Place of Departure	Beaufort West (FABW) Aerodrome	Place of Intended Landing	Beaufort West (FABW) Aerodrome				
Place of Incident	Runway 08 at Beaufort West Aerodrome, Western Cape Province						
GPS Co-ordinates	Latitude	32°18´1.3" S	Longitude	022°40´14.7" E	Elevation	2949ft	
Aircraft Information							
Registration	ZS-TBJ						
Model/Make	Cessna 172S						
Damage to Aircraft	None	Total Aircraft Hours	4927.0				
Pilot-in-command							
Licence Valid	Yes	Gender	Male	Age	21		
Licence Type	Student Pilot Licence (Aeroplane)						
Total Hours on Type	±21.3	Total Flying Hours	+21.3				
People On-board	1+0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							

On 23 July 2021 at approximately 1350Z, a student pilot on-board a C172S aircraft with registration ZS-TBJ took off on a solo consolidation flight from Beaufort West (FABW) in the Western Cape. The student pilot completed one circuit (of touch-and-go exercise) on Runway 08 without incident. However, during the second touch-and-go exercise, there was a gust of wind from the right and the aircraft touched down hard. The aircraft's nose turned to the left while the speed was still high, thus, he decided to apply full power and rotate immediately. The student pilot stated that he does not remember if he raised the flaps after he applied full power. The aircraft lifted off and, whilst ascending past 300 feet (ft), he noted that the speed was 70 knots (kts) and the nose of the aircraft (attitude) was below the horizon. He then tried to lower the nose to increase speed, but the speed decreased to approximately 57kts. The student pilot then levelled off the aircraft and checked the revolutions per minute (rpm) and oil temperature gauges and found that both were within their limits. Thereafter, he decided to perform a forced landing. He communicated to the Aerodrome Flight Information Service (AFIS) officer that he was having an engine failure. The crash alarm was activated to alert the fire and rescue services. There were two other aircraft in the circuit which were given instructions to make way to accommodate the ZS-TBJ aircraft. The

student pilot executed a tear drop manoeuvre to land on Runway 26 but realised he was too high; he then executed another tear drop manoeuvre and landed safely on Runway 08 at 1413Z.

The student pilot was not injured during the serious incident, and the aircraft was not damaged.

How an Aircraft Behaves with Flaps Lowered During a Go-around: (Extract from Airplane Flying Handbook (FAA-H-8083-3B)

- *Full flaps during go-around adds a lot of drag, which is desirable when you want to be slow for landing.*
- *But a go-around necessitates gaining height quickly, which will not work with flaps selected. The usual procedure, at least in light aircraft, is to wait until the vertical speed is neutral or positive before retracting flap. Should be done in stages*
- *Go arounds can be a stressful situation, flaps do give additional lift and margin against a stall and retracting them does result in a pitch change for which the pilot must compensate.*
- *A go-around is all about transitioning from the low-speed approach to the generally higher speed climb out. Thus, the aircraft will be accelerated, typically to the best rate of climb speed (Vy). Typical go-around procedure will call for retracting the flaps once the aircraft is stabilized with sufficient speed, thus reducing.*

Go-around procedure: Extract from C172N POH: Balked landing

1. Throttle—FULL OPEN
2. Carburettor Heat—COLD
3. Wing Flaps-- 20°(immediately)
4. Climb Speed—55 KIAS
5. Wing Flaps--10°(until obstacles are cleared).
   RETRACT(after reaching a safe altitude and 60 KIAS).

What was found:

It is likely that the aircraft was on high speed upon landing and it bounced before a go-around was executed. As the aircraft climbed, the airspeed had not increased past 70kts whilst passing through 300ft above ground level (AGL) probably due to the position of the flaps. The student pilot attempted to increase speed by lowering the nose (pushing the stick forward), which resulted in the speed reduction, probably due to the position of the flaps which were inducing drag.

Probable cause:

It is likely that the student pilot bounced before executing a go-around and forgot to retract the flaps that caused the airspeed not to increase past 70kts during climb; when the student pilot attempted to increase speed by lowering the nose of the aircraft, this led to speed reduction.

Safety Action/s

The school has briefed all its student pilots on how to identify an engine failure, as well as procedures to follow thereafter.

Safety Message and/or Safety Recommendation/s

It is crucial for pilots to land ahead when having an engine failure as making turns during descent could prove dangerous.

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