SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/10134										
Classification	Accident		**Date**	11 March 2022		**Time**	0630Z				
Type of Operation	Private (Part 91)										
Location											
Place of Departure	East London Airport (FAEL), Eastern Cape Province			Place of Intended Landing			Swellendam Airfield (FASX), Western Cape Province				
Place of Occurrence	Darlington Dam Lodge Airstrip (FADP), Eastern Cape Province										
GPS Co-ordinates	Latitude	S 33° 5’ 49”		Longitude	E 25° 15’ 25”		Elevation	950 ft			
Aircraft Information											
Registration	ZS-PJD										
Make/Model	Cessna 170A (Serial Number: 18743)										
Damage to Aircraft	Substantial			Total Aircraft Hours			4380.5				
Pilot-in-command											
Licence Valid	Yes		Gender		Male		Age	47			
Licence Type	Airline Transport Pilot Licence (ATPL) Aeroplane										
Total Hours on Type	37.0			Total Flying Hours			3670.0				
People On-board	1 + 2	Injuries	0	Fatalities	0		Other (On Ground)	0			
What Happened											

On 11 March 2022 at 0510Z, a pilot accompanied by two passengers on-board a Cessna 170A aircraft with registration mark ZS-PJD took off on a private flight from East London Airport (FAEL) in the Eastern Cape province to Swellendam Airfield (FASX) in the Western Cape province. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

The pilot stated that en route to their destination at approximately 130 nautical miles (nm) from FAEL, the weather conditions deteriorated. There was a morning coastal low cloud to the south of their route, therefore, the pilot decided to divert to Darlington Dam Lodge Airstrip (FADP) which had fine weather conditions at that time. Upon landing, the aircraft touched down on Runway 20, bounced and veered off to the left side. The pilot overcorrected the aircraft by applying too much right rudder. This resulted in the nose turning to the right and the aircraft veering off the runway to

the right and colliding with a parked aircraft with registration mark ZU-JGM. Both aircraft sustained substantial damage to the wings, fuselage and propellers. The pilot and the passengers were not injured.

Figure 1: The ZS-PJD and the ZU-JGM aircraft post-impact. (Source: Pilot)

Figure 2: Proximity of the parked aircraft to the runway. (Source: Pilot)

What was found:

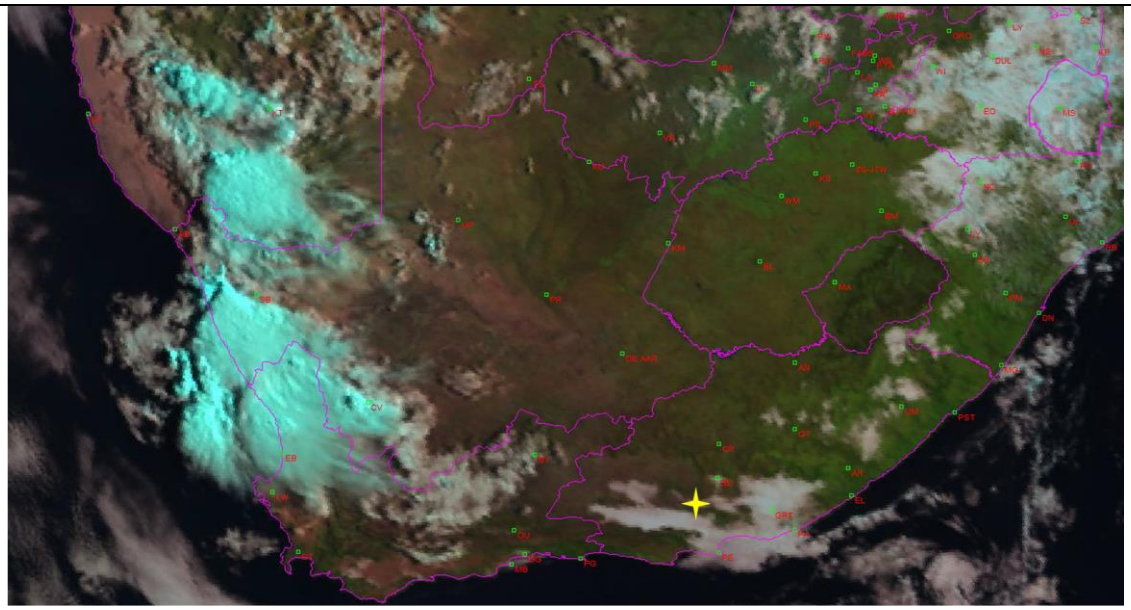
- The pilot was issued an Airline Transport Pilot Licence (ATPL) Aeroplane on 2 March 2021 with an expiry date of 30 March 2022. The aircraft type was endorsed on his licence. A Class 1 medical certificate was issued on 19 November 2021 with an expiry date of 30 November 2022 with no restrictions.

- The mandatory periodic inspection (MPI) carried out on the aircraft prior to the accident was on 1 October 2021 and was certified at 4354.6 airframe hours. The aircraft was issued a Certificate of Release to Service (CRS) on 1 October 2021 with an expiry date of 30 September 2022 or at 4454.6 hours of flight time, whichever occurs first unless the aircraft is involved in an accident or becomes unserviceable.

- The aircraft was initially issued a Certificate of Airworthiness (C of A) on 5 December 2014 with an expiry date of 31 December 2022.

- The aircraft was on a coastal route and the nearest airport to where the weather started to deteriorate was Port Elizabeth Airport (FAPE). The meteorological aerodrome report (METAR) at the time and date of the accident was as follows:
  FAPE 110630Z 04007KT 9999 OVC020 21/19 Q1017 NOSIG=
  Wind: 40° at 7 knots, Visibility: 9999m, Cloud Cover: 7-8 oktas at 2000 ft AGL,
  Temperature: 21°C, Dew Point: 19°C and QNH: 1017hPa.

  Satellite Imagery (Source: South African Weather Services/MeteoSat)
  The Day Natural Colours (Figure below) satellite image of the MeteoSat Second Generation (MSG) represents image taken at 06h30Z. On the satellite image, low clouds are seen as indicated by the white/light pink area of clouds between Port Alfred and Gqeberha (FAPE), extending into the interior from approximately Fort Beaufort to Willowmore. The yellow star indicates the approximate area of Darlington Dam Lodge Airport (FADP), where patches of low cloud can also be seen.



- Bouncing During Touchdown (Source: Airplane Flying Handbook, Chapter 8)

  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. [Figure 8-36]
  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. Since a bounce occurs when the airplane makes contact with the ground before the proper touchdown attitude is attained, it is almost invariably accompanied by the application of excessive back-elevator pressure. This is usually the result of the pilot realizing too late that the airplane is not in the proper attitude and attempting to establish it just as the second touchdown occurs.

  The corrective action for a bounce is the same as for ballooning and similarly depends on its severity. When it is very slight and there is no extreme change in the airplane's pitch attitude, a follow-up landing may be executed by applying sufficient power to cushion the subsequent touchdown and smoothly adjusting the pitch to the proper touchdown attitude. In the event a very slight bounce is encountered while landing with a crosswind, crosswind correction must be maintained while the next touchdown is made. Remember that since the subsequent touchdown is made at a slower airspeed, the upwind wing has to be lowered even further to compensate for drift. Extreme caution and alertness must be exercised any time a bounce occurs.

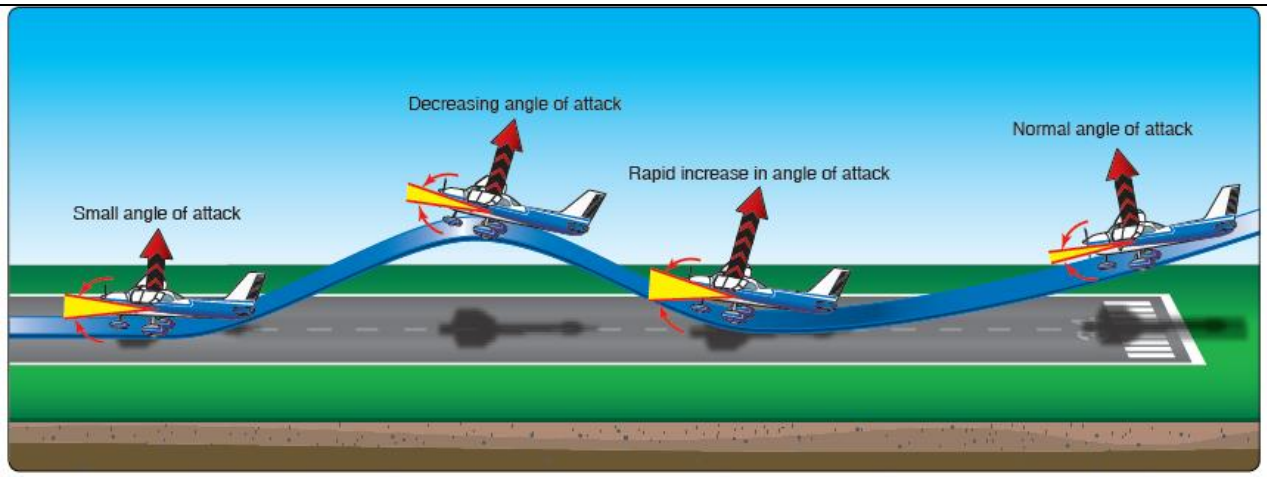


Figure 8-36. *Bouncing during touchdown.*

- Darlington Dam Lodge Airstrip

DARLINGTON DAM	
ID	FADP
Category	B - Verified
Country	FA South Africa
Type	Airfield
Frequency	124.80
Latitude	S 33° 05' 52"
Longitude	E 025° 15' 22"
Elevation	954ft
Magnetic Variation	27° W

Runway Surface: Tar
Runway Length: 990m

Probable cause:

It is likely that the aircraft's approach for landing was unstable, resulting in the aircraft bouncing and losing directional control before colliding with a parked aircraft on the right-side of the runway.

Contributory Factor:

None.

Safety Action
None.
Safety Message
None.
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