LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/3/2/10554								
Classification	Serious Incident		**Date**	25 February 2025		**Time**	0900Z		
Type of Operation	Private (Part 91)								
Location									
Place of Departure	New Castle Aerodrome, (FANC), KwaZulu-Natal Province		Place of Intended Landing			Swiss Valley Private Airstrip, Harrismith, Free State Province			
Place of Occurr..ence	Runway 18 at Swiss Valley Private Airstrip, Harrismith, Free State Province								
GPS Co-ordinates	Latitude	28°16'58" S	Longitude	029°04'43" E		Elevation	5 350ft		
Aircraft Information									
Registration	ZS-MNW								
Make; Model; S/N	Maule M-7-235 (Serial Number: 4093C)								
Damage to Aircraft	Substantial			Total Aircraft Hours	4 876.4				
Pilot-in-command									
Licence Type	Private Pilot Licence (PPL)			Gender	Male		Age	33	
Licence Valid	Yes	Total Hours	1 042		Total Hours on Type		762		
Total Hours 30 Days	4.6		Total Flying on Type Past 90 Days		9.4				
People On-board	1+0	**Injuries**	0	**Fatalities**	0	**Other (on the ground)**	0		

What Happened

On Tuesday, 25 February 2025, a pilot on-board a Maule M-7-235 aircraft with registration ZS-MNW took off on a private flight from New Castle Aerodrome (FANC) in KwaZulu-Natal province to Swiss Valley private airstrip, east of Harrismith, in Free State province. Visual meteorological conditions (VMC) by day prevailed at the time of the flight which was conducted under the provisions of Part 91 of the Civil Aviation Regulations (CAR) 2011 as amended.

Upon arriving at Swiss Valley private airstrip, the pilot joined overhead to assess the prevailing wind conditions using the windsock before he decided to land on Runway 18. During final approach, the aircraft descended at a rate of between 400 and 700 feet (ft) per minute at 70 knots (kts). As the aircraft was 15 ft above ground level (AGL), the pilot noticed the tall grass on the edges of the runway. He then applied full power and retracted the flaps to initiate a go-around. However, the aircraft drifted to the right and the right wing contacted the tall grass. The pilot lost control, and the aircraft landed hard with its right main landing gear. The impact caused the right main wheel assembly to separate from the strut which led to the propeller strike on the ground.

Subsequently, the aircraft rotated 180 degrees before it stopped. The aircraft sustained substantial damage to the right main gear strut and propeller blades; the pilot was not injured.

The serious incident occurred during daylight at Global Positioning System (GPS) co-ordinates determined to be 28°16'58" South 029°04'43" East, at an elevation of 5 350 ft.

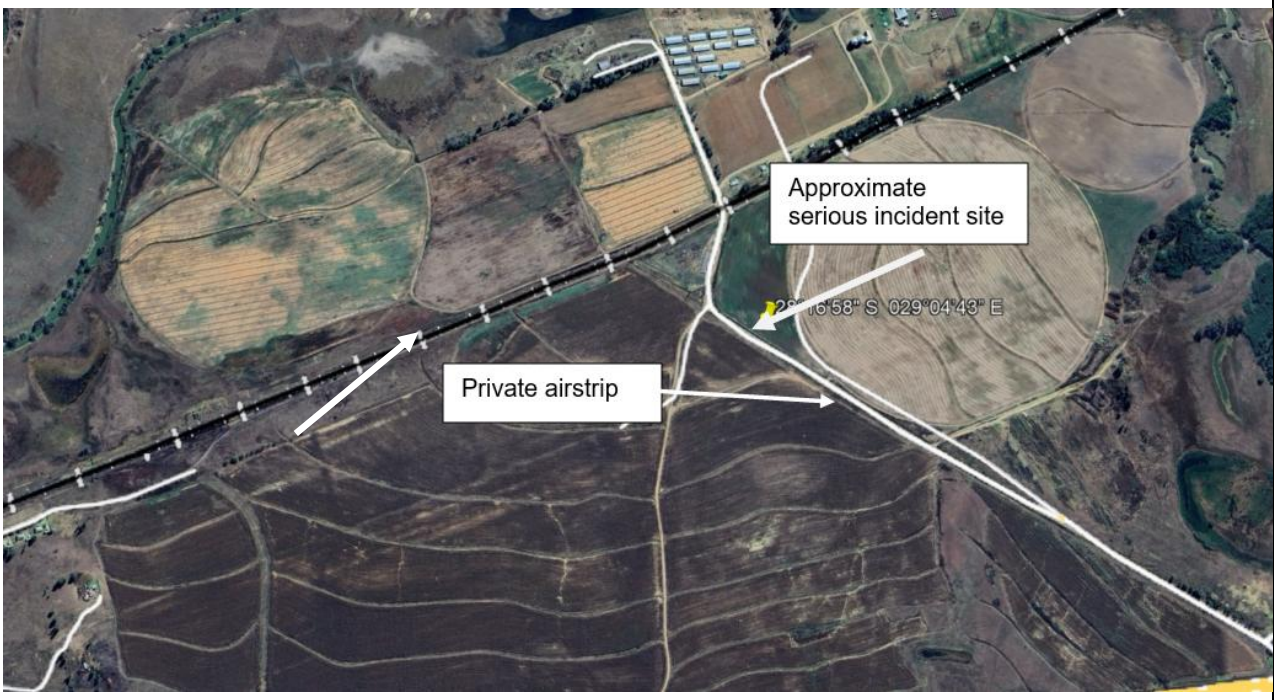

Figure 1: Aerial view of the Swiss Valley private airstrip and the serious incident site.
(Source: Google Earth)

Figure 2: The aircraft at the accident site. (Source: Pilot)

The right main landing gear wheel assembly detached from the strut and (the strut) dug into the ground.

Figure 3: The failed right main gear strut. (Pilot)

Figure 4: The bent propeller blade. (Pilot)

Runway Information

The runway used was Runway 18, which is unpaved (gravel); it is 1 000 metres (m) long and 13m wide. The airstrip is equipped with a windsock.

A 4m high grass grew along the edges of the runway. The overall runway surface was flat and even, which provided a suitable runway surface that would not pose challenges to the aircraft during landing or take-off under normal circumstances.

Figure 5: The runway surface. (Source: Pilot)

Figure 6: The overgrown grass on the sides of the runway. (Source: Pilot)

Meteorological Information

The weather information below was obtained from the pilot's questionnaire. The information was based on the meteorological aerodrome report (METAR) that was available online.

Wind Direction	180º	Wind Speed	05 kt	Visibility	9999 m
Temperature	25ºC	Cloud Cover	SCT	Cloud Base	8000ft
Dew Point	5ºC	QNH	1017hPa		

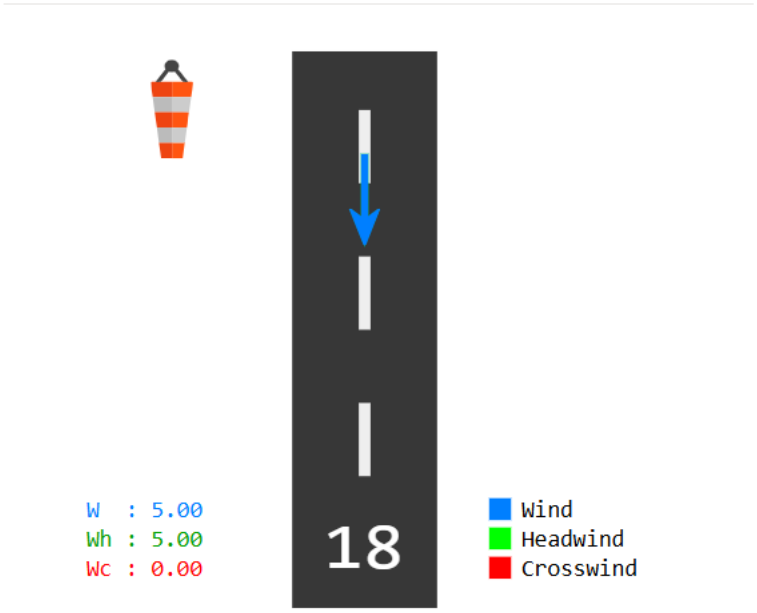

Figure 7: The wind component during landing. (Source: https://e6bx.com/wind-components/)

The wind analysis (above) illustrates the wind conditions on Runway 18, oriented 180°, at the time of the serious incident. The windsock indicates that the wind was blowing down the runway (the blue arrow indicates the wind direction). The wind analysis shows a wind speed (W) of 5.00 with a headwind component (Wh) of 5.00, and with no crosswind component (Wc = 0.00).

Go-around (Rejected Landings) (Sourced: Airplane Flying Handbook (3C) Chapter 9)

A go-around is a standard maneuver used when approach and landing parameters deviate from expectations or when it is hazardous to continue. Situations such as air traffic control (ATC) requirements, unexpected hazards on the runway, overtaking another airplane, wind shear, wake turbulence, mechanical failure, or an unstable approach are all valid reasons to abort a landing. Like any other standard maneuver, the go-around should be practiced and refined. The assertion that a go-around is invariably the result of a poor approach—stemming from insufficient experience or skill—is a misconception. Although the need to discontinue a landing may arise at any point during the landing process, the most critical go-around occurs when very close to the ground. The

go-around maneuver is not inherently dangerous; it only becomes dangerous when delayed excessively or executed improperly. Delays in initiating the go-around typically stem from two sources:

1. Landing expectancy or set refers to the anticipatory belief that conditions are not as threatening as they may seem and that the approach will reliably result in a safe landing.

2. Pride is the mistaken belief that choosing to go around signifies an admission of failure—specifically, a failure to execute the approach correctly. Properly executing a go-around maneuver consists of three cardinal principles:

1. Power

2. Attitude

3. Configuration

Airplane Flight Manual Maule MT-7-235

The aircraft had a wingspan of 33ft (10 metres).

Before Landing:

1Seat Belts & Shoulder Harnesses.....fastened

2. Fuel Selector Valve.

3. Mixture Control.

4. Propeller Control.

5. Flaps....

6. Alternate Air Control. On fullest tank or both full rich full increase rpm in and locked

Findings

Pilot

1. The pilot had a Private Pilot Licence (PPL) that was issued on 22 May 2022. The PPL was revalidated on 26 June 2023 with an expiry date of 31 June 2025. The aircraft type was endorsed on the pilot's licence. The pilot had a Class II aviation medical certificate that was issued on 30 July 2023 with an expiry date of 30 July 2028. The pilot was medically fit, qualified and authorised to operate the flight.

Aircraft

2. The aircraft's Certificate of Registration (C of R) was issued to the current owner on 17 April 2014. The Certificate of Airworthiness (C of A) was initially issued on 15 May 2014; it was reissued on 16 May 2024 with an expiry date of 31 May 2025. The aircraft was airworthy when it was dispatched for the flight.

3. The last annual inspection of the aircraft was conducted and certified on 15 May 2024 at 4 769.1 total airframe hours. At the time of the serious incident, the aircraft had a total of 4 876.4 airframe hours. The aircraft had accrued 107.3 hours since the last inspection.

4. The aircraft was issued a Certificate of Release to Service (CRS) on 15 May 2024 at 4 769.1 airframe hours with an expiry date of 15 May 2025 or at 4 869.1 airframe hours, whichever occurs first.

   The aircraft's wingspan is 33 ft (10.06 metres) whilst the runway width is 13m (42.65 feet). This meant that the runway was slightly wider than the aircraft's wingspan by approximately 9.65 ft (2.94 m) on each side. The runway width provided limited lateral clearance, which required precise handling of the aircraft during landing and rollout, especially in crosswind conditions or if the aircraft tends to drift. The pilot would need to maintain accurate alignment with the runway centreline to avoid the aircraft from going over the edges of the runway.

5. At the time of the serious incident, the wind aligned with the runway, providing ideal conditions for landing and take-offs; therefore, the weather was not a factor in this serious incident.

6. The aircraft was on the correct glide path with an appropriate descent rate. However, during the go-around, the aircraft slightly drifted to the right of the runway. As a result, the right wing contacted the tall grass on the edges of the runway. This caused the pilot to lose control of the aircraft and, thus, a hard landing. The aircraft eventually came to a stop facing the opposite direction of approach.

Probable Cause

The pilot lost control of the aircraft due to the right wing contacting the tall grass on the edges of the runway during an attempted go-around.

Contributing Factors

- Runway characteristics – the tall grass on the sides may have influenced the pilot's decision-making and increased the risk of wing contact during the go-around.
- Situational awareness – the pilot may not have fully anticipated the risks associated with the tall vegetation, which led to a late decision to go-around.
- Environmental hazards – the presence of tall grass created an obstruction (hazard), which interfered with the aircraft's wing during an attempt to execute a go-around.

- Aircraft handling during go-around – the go-around was initiated at low altitude, and likely, with insufficient margin to clear obstacles, thus, increasing the likelihood of an unintended wing strike.
- Loss of control – the right wing's contact with the grass caused the aircraft to become uncontrollable which led to a hard landing.

Safety Actions

- The operator should ensure that vegetation near the runway is regularly trimmed to prevent an obstruction hazard.
- The operator should conduct periodic inspections to assess and mitigate risks posed by overgrown vegetation. This applies especially to airstrips with limited infrastructure.

Safety Message and/or Safety Recommendation/s

None.

About this Report

The decision to conduct a limited investigation is based on factors including whether the cause is known and the evidence supporting the cause is clear, the level of safety benefit likely to be obtained from an investigation and that will determine the scope of an investigation. For this occurrence, a limited 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 limited report. The report has been compiled using information supplied in the initial notification, as well as from follow-up desk top enquiries 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 occurrence.

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.

Purpose

In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011 and ICAO Annex 13, 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.

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