LIMITED SERIOUS INCIDENT INVESTIGATION REPORT

Reference Number	CA18/3/2/1390				
Classification	Serious Incident	**Date**	5 February 2022	**Time**	0615Z
Type of Operation	Private (Part 94)				
Location					
Place of Departure	Potchefstroom Aerodrome (FAPS), North West Province	Place of Intended Landing	Potchefstroom Aerodrome (FAPS), North West Province		
Place of Occurrence	Runway 03, Potchefstroom Aerodrome (FAPS), North West Province				
GPS Co-ordinates	Latitude	26º 40' 38.37" S	Longitude	027º 04' 50.24" E	Elevation	4 511ft
Aircraft Information					
Registration	ZS-GYK				
Make/Model	Scheibe Flugzeugbau GmbH SF-25C Falke (Serial Number: 44154)				
Damage to Aircraft	Substantial	Total Aircraft Hours	1 600 hours		
Pilot-in-command					
Licence Valid	Yes	Gender	Male	Age	25
Licence Type	Glider Pilot Licence (GPL)				
Total Hours on Type	66.9 hours	Total Flying Hours	111.7 hours		
People On-board	1 + 0	Injuries	0	Fatalities	0	Other (on ground)	0

What Happened

On Saturday morning, 5 February 2022 at about 0515Z, a pilot on-board a Scheibe SF-25C Falke motorised glider with registration ZS-GYK took off on a local flight from Runway (RWY) 03 at Potchefstroom Aerodrome (FAPS), North West province, with the intention to land back at FAPS. Fine weather conditions prevailed at the time of the flight. No flight plan was filed for the flight. The flight was conducted under the provisions of Part 94 of the Civil Aviation Regulations 2011 as amended.

According to the pilot, prior to touchdown, the propeller struck the runway's threshold edge, but the pilot was able to maintain control of the glider during the landing roll. The glider sustained substantial damage to the wooden propeller blades, and its tail wheel broke off. The pilot was not injured during the incident.

Figure 1: Damage to the propeller blades. (Source: Google Earth)

According to the SF 25 C Flight Manual, landing procedures are as follows:

Before starting the approach, complete the following prop adjustments: turn speed control knob to 24.
Engine cowl flap: Open
Electric fuel pump: On.

The SF 25 C can be landed with the engine running or stopped. Approach speed: approx. 49 knots. Control the approach angle with the spoilers. The approach can also be corrected by side slipping, though this is rarely necessary as the spoilers are effective. With spoilers fully extended the rate of sink is about 3.7 m/sec at 49 knots.

When landing at minimum speed (about 38 knots) the Falke will touch down tailwheel first. The ground run can be reduced by careful use of the main wheel brakes. The wheel brake is operated by the last part of the travel of the spoiler lever. Caution: Never land with the spoilers fully extended at touchdown.

Crosswind Round Out (Flare) (According to the Airplane Flying Handbook – Chapter 8):

Generally, the round out is made like a normal landing approach, but the application of a crosswind correction is continued as necessary to prevent drifting.

Since the airspeed decreases as the round out progresses, the flight controls gradually become less effective. As a result, the crosswind correction being held becomes inadequate. When using the wing-low method, it is necessary to gradually increase the deflection of the rudder and ailerons to maintain the proper amount of drift correction.

Do not level the wings and keep the upwind wing down throughout the round out. If the wings are levelled, the airplane begins drifting and the touchdown occurs while drifting. Remember, the primary objective is to land the airplane without subjecting it to any side loads that result from touching down while drifting.

The closer the airplane gets to the runway, the larger and more frequent the required corrections become, resulting in an unstable approach. Common errors in the performance of normal approaches and landings are:

- *Inadequate compensation for wind drift on the turn from base leg to final approach, resulting in undershooting or overshooting.*
- *Focusing too far from the airplane resulting in a too low round out.*
- *Touching down prior to attaining proper landing attitude.*

What was found:

- The pilot stated that he approached the runway and flared the glider; the glider's approach speed was in accordance with the manufacturer's recommended airspeed of 90 kilometres per hour (km/h) (49 knots (kt)). However, due to the slight crosswind prevalent during approach and landing at the time, he did not increase his approach speed to between 100km/h (54kt) and 110km/h (59kt) to accommodate for the possibility of the surface wind being less than the upper winds.
- According to the pilot, the glider stalled due to speed being 10 to 20km/h slower than required for landing in a crosswind condition. This caused the glider to stall just above the ground before hitting the runway with the propeller.
- The pilot was reissued a Glider Pilot Licence (GPL) Aeroplane on 12 March 2021 with an expiry date of 28 February 2022. The touring motor glider type was endorsed on the pilot's licence.
- The pilot's Class 2 medical certificate was issued on 6 July 2020 with an expiry date of 31 July 2025 with no restrictions. The pilot had accumulated a total of 111.7 flying hours of which 66.9 hours were on the glider type.
- The meteorological routine aerodrome report (METAR) obtained for FAPS was as follows: *METAR FAPS 050600Z AUTO 11007KT //// // ////// 18/16 Q1023=*

  Based on the prevalent weather conditions, landing on RWY 03 would have resulted in the aircraft landing in a crosswind component. Crosswind components experienced during landing affect the aircraft more because the airspeed is reduced, which increases the sink rate of the aircraft. Additionally, low airspeed results in flight controls being less effective.

Probable cause:
The glider was unstable on approach (being low) and it undershot the runway, resulting in the propeller striking the runway's threshold edge.

Contributing factors:
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 issued by:

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