

SHORT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/3/2/1168	
Aircraft registration	ZS-STW	Date of incident	13 November 2017		Time of incident	1700Z
Type of aircraft	Piper PA-32R		Type of operation		Private (Part 91)	
Pilot-in-command licence type		Private Pilot License (PPL)	Age	23	Licence valid	No
Pilot-in-command flying experience		Total flying hours	316.3		Hours on type	74.2
Last point of departure		Wonderboom Aerodrome (FAWB) Gauteng Province				
Next point of intended landing		Louis Trichardt Aerodrome (FALO) Limpopo Province				
Location of the incident site with reference to easily defined geographical points (GPS readings if possible)						
Louis Trichardt Aerodrome (FALO) GPS:23°03' 42.91"S 29°51' 51.38"E, Elevation: 3014ft AMSL						
Meteorological information		Surface wind: 45-54°/5kts Temperature: 29.8°C, CAVOK				
Number of people on board	1+1	No. of people injured	0	No. of people killed	0	
Synopsis						
<p>The pilot, accompanied by a passenger took off from Wonderboom Aerodrome (FAWB) at approximately 1500Z for a flight to Louis Trichardt Aerodrome (FALO). It was the second flight of the day as the aircraft was flown to FAWB from FALO earlier that morning. While on downwind for runway 28 the pilot reported that there was an indication in the cockpit that the nose landing gear was not in the extended position when the landing gear was lowered. The passenger then phoned a family member on the ground near the aerodrome to ask them to confirm the nose wheel was down as they performed a low level fly-by. The family member confirmed that the nose wheel appeared to be down and the pilot continued with the approach. During the landing roll on runway 28 the nose landing gear collapsed when brakes were applied and the aircraft veered off the runway to left and came to rest on the grass in a nose down attitude. The propeller, lower engine cowling and nose gear actuator mounts were damaged. The incident occurred at night (after sunset). The pilot and passenger were not injured in the incident.</p> <p>The investigation revealed that the nose gear failed to lock in the extended position due to the failure of the attachment mountings as a result of a hard landing leading to the nose gear collapse. It was also determined that the pilot did not use the emergency landing system following the gear unsafe warning.</p>						
Probable cause						
Nose gear collapsed due to the failure of the nose gear attachment mountings as a result a hard landing.						
Contributory factor:						
Failure to operate an emergency landing gear system.						
SRP date	24 May 2018		Release date	21 June 2018		

AIRCRAFT SERIOUS INCIDENT REPORT

Name of Owner : Rio Ridge 1027 cc
Name of Operator : Private (Part 91)
Manufacturer : Piper Aircraft Corporation
Model : PA-32R-301T
Nationality : South African
Registration markings : ZS-STW
Place : Louis Trichardt Aerodrome (FALO), Limpopo Province
Date : 13 November 2017
Time : 1700Z

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 of the Investigation:

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (2011) the purpose of investigation of an aircraft accident or incident is to determine, in terms of the provisions of this Part, the facts of an accident or incident in the interest of the promotion of aviation safety and the reduction of the risk of aviation accidents or incidents, and **not to establish blame or liability**.*

Disclaimer:

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1. FACTUAL INFORMATION

1.1 History of flight

1.1.1 On 13 November 2017 the pilot and passenger, who is also the owner of the aircraft, had flown the aircraft from Louis Trichardt Aerodrome (FALO) to Wonderboom Aerodrome (FAWB) that morning. They refueled the aircraft and then departed FALO at 0500Z and the flight was uneventful. Later that same day, at 1500Z the pilot and passenger took off from FAWB to return to FALO.

- 1.1.2 The pilot reported that he positioned the aircraft on downwind for runway 28 at FALO and lowered the landing gear. An audible warning and “Warning Gear Unsafe” light illuminated on the instrument panel. The indication was that the nose landing gear was not in the down and locked position. The pilot stated that he cycled the landing gear four times but was unable to obtain a green light for the nose landing gear. The pilot did not use the Emergency Landing gear system in an attempt to extend the landing gear.
- 1.1.5 The passenger stated that he phoned a family member near the aerodrome and asked them to observe the position of the nose landing gear as they did a low level flypast. The passenger reported that the person on the ground indicated that the nose landing gear appeared to be down.
- 1.1.6 The pilot opted to proceed with the approach for runway 28. During the landing roll when brakes were applied the nose landing gear collapsed. Directional control was lost and the aircraft veered off of the runway to the left and came to rest on the grass next to the runway.
- 1.1.8 The aircraft came to rest with the two main gears in the extended position and the nose collapsed. The propeller was damaged as well as a lower engine cowling.
- 1.1.9 The pilot and passenger were not injured in the incident.
- 1.1.10 The incident occurred at FALO and the aircraft came to rest at GPS position 23°03’ 42.91” South 29°51’ 51.38” East.



Figure 1: The aircraft as it came to rest beside the runway



Figure 2: Damage to the propeller

1.2 Investigation revealed the following:

- 1.2.1 The pilot was not the holder of a valid Private Pilot's License and the aircraft type was not endorsed on his licence. The pilot had flown 91.5 hours without a valid license or rating. This is in contravention of which regulations prescribed in Part 61.
- 1.2.2 The pilot was the holder of a valid Aviation Medical Certificate.
- 1.2.3 The owner of the aircraft stated that he was unaware that the pilot was not in possession of a valid license. He further stated that he had hired the pilot under the assumption that he held a valid Commercial License.
- 1.2.4 The pilot stated that he was unaware that his license had expired. The pilot however contradicted himself and gave a statement to the owner saying that he was aware his license had expired and was hoping to rectify the situation as soon as possible.
- 1.2.5 The Certificate of Airworthiness and Certificate of Registration were found to be valid.
- 1.2.6 The aircraft was refueled at FALO the morning before departure to FAWB. The fuel uplifts from 19 August 2017 till the incident flight were not recorded in the Flight Folio and this is in contravention of the Civil Aviation Regulations (CAR) Part 91.

Fuel records: Part 91.03.6 (1) -(2)

(1) The owner or operator shall maintain fuel records to enable the Director to ascertain that, for each flight under his or her control, the requirements of regulation 91.07.12 are complied with.

(2) The PIC of the aircraft shall enter the fuel and oil records referred to in sub regulation (1) in the flight folio.

- 1.2.7 No defects were reported or recorded in the Flight Folio prior to the flight.
- 1.2.8 A 100-hour Mandatory Periodic Inspection (MPI) was carried out by an approved AMO on the 31 August 2017 at 2653.7 and the airframe hours at the time of the accident were 2727.4. The aircraft had flown a further 73.7 hours since the last MPI was certified.
- 1.2.9 The Pilot Operating Handbook(POH) requires the pilot to use the Emergency Extension system in the event that there is an indication that the landing gear is not down and locked. The aircraft is equipped with the cable release system.

EMERGENCY LANDING GEAR EXTENSION

Prior to emergency extension procedure:

- Master switchcheck ON
- Circuit breakers.....check
- Radio lights.....off (in daytime)
- Gear indicator bulbs.....check

If landing gear does not check down and locked:

- Airspeedbelow 92 KIAS
- Landing gear selector.....DOWN
- Emergency gear lever (aircraft equipped with backup gear extender)**OVERRIDE ENGAGED**
(while fish tailing airplane)

If landing gear still does not check down and locked:

- Emergency gear lever (aircraft equipped with lever release)*Hold* emergency gear lever in the **EMERGENCY DOWN** position, while fish tailing airplane, until gear is down and locked (under normal conditions will take approx. 10 seconds to be down and locked)
- Emergency gear knob (aircraft equipped with cable release).....**PULL**, while fish tailing airplane (under normal conditions will take approx. 10 seconds to be down and locked)

If all electrical power has been lost, the landing gear must be extended using the above procedures. The gear position indicator lights will not illuminate.

- 1.2.10 The pilot stated that he cycled the landing gear four times before the approach to land. During the recovery of the aircraft it was noted that the emergency landing gear extension knob was not activated. The pilot therefore did not follow the emergency gear extension procedure when he could not obtain a nose gear safe indication.
- 1.2.11 According to a technical report that was obtained following the recovery of the aircraft it was observed that the nose gear actuator mounts were forced out of the airframe. The observation was that the aircraft had had a hard landing on either the day of the incident or on a previous landing. The damage to the actuator could have been the reason as to why the nose wheel did not extend and lock down correctly.
- 1.2.12 According to information obtained from Air Traffic Control (ATC) at FAWB, the aircraft take-off time was 1534Z and not 1500Z as reported by the pilot. The duration of the flight was approximately 1hour 20minutes and the arrival time overhead FALO would be approximately 1654Z by which time it would have been dark.
- 1.2.13 It is unlikely that anyone on the ground in the area of FALO was able to see the landing gear of the aircraft. Sunset in the area was 1619Z and Local Twilight is

30minutes, therefore at 1649Z it would already have been dark. It is estimated that the aircraft landed at 1700Z.

- 1.2.5 The aircraft sustained damage to the propeller, lower cowling and to the nose gear actuator mounts.
- 1.2.6 The Surface wind at the time of the accident was 5kts from 045° to 054°. The temperature was 29.8°C.
- 1.2.7 The runway is equipped with runway lights that are activated by the pilot on approach.
- 1.2.8 The pilot and passenger were not injured in the occurrence.

2. CONCLUSION

2.1 Probable cause

- 2.1.1 Nose gear collapsed due to the failure of the nose gear attachment mountings as a result a hard landing.

2.2 Contributory factor

- 2.2.1 Failure to operate an emergency landing gear system.

3. SAFETY MESSAGE

- 3.1 None

4. APPENDICES

- 4.1 None.