SOUTH AFRICAN CIVIL AVIATION AUTHORITY

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

LIMITED ACCIDENT INVESTIGATION REPORT

Reference Number	CA18/2/3/10031						
Classification	Accident	**Date**	15 July 2021		**Time**	1430Z	
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Wonderboom Aerodrome (FAWB), Gauteng Province		Place of Intended Landing		Wonderboom Aerodrome (FAWB), Gauteng Province		
Place of Incident	Runway 29, Wonderboom Aerodrome (FAWB), Gauteng Province						
GPS Co-ordinates	Latitude	S 25°39'13.20"	Longitude	E 28°13'36.73"	Elevation	4090ft	
Aircraft Information							
Registration	ZU-TRV						
Model/Make	Lancair IV-P (Serial number: 035)						
Damage to Aircraft	Substantial		Total Aircraft Hours		546.4		
Pilot-in-command							
Licence Valid	Yes	Gender		Male	Age	75	
Licence Type	Private Pilot Licence (Aeroplane)						
Total Hours on Type	5.5		Total Flying Hours		1557		
People On-board	1+1	Injuries	0	Fatalities	0	Other (On Ground)	0

What Happened

On 15 July 2021, a pilot accompanied by a passenger on-board a Lancair 4P aircraft with registration ZU-TRV took off on a private flight from Wonderboom Aerodrome (FAWB) in Gauteng province to FAWB general flying area. The pilot intended to land back at FAWB. Later, when the pilot returned from the general flying area, he was cleared to land on Runway 29 by air traffic control (ATC). The pilot landed the aircraft with the main landing gear first and, as the nose wheel touched the runway's surface, the pilot felt the aircraft veer off to the left of the runway and the nose wheel skidded at a 90º angle to its normal (centred) position for approximately 50 metres before the aircraft came to a stop on the runway. The flight was conducted under visual meteorological conditions (VMC) by day and under the provisions of Part 94 of the Civil Aviation Regulations (2011) as amended.

Post-accident, the aircraft was inspected by the aircraft maintenance organisation (AMO) and it was found that upon landing at FAWB, the nose wheel extended normally but, without the pilot's knowledge, the nose wheel tyre had deflated and had folded sideways. This prevented the free caste ring nose wheel from turning left or right, causing the wheel to grind down the runway and the fork to fold sideways.

After inspection, the AMO also found two punctures in the inside tube of the tyre, which were in alignment with the defects on the surface of the tyre. During inspection, it could be seen that an object went in and then out of the tyre.

The nose wheel trunnion was slightly bent during the incident; the trunnion is not repairable, it can only be replaced. The upper attachment point on the left-side of the trunnion attachment had also bent; the engine cradle had cracked open on the trunnion attachment point. No other damage was noted on the aircraft.

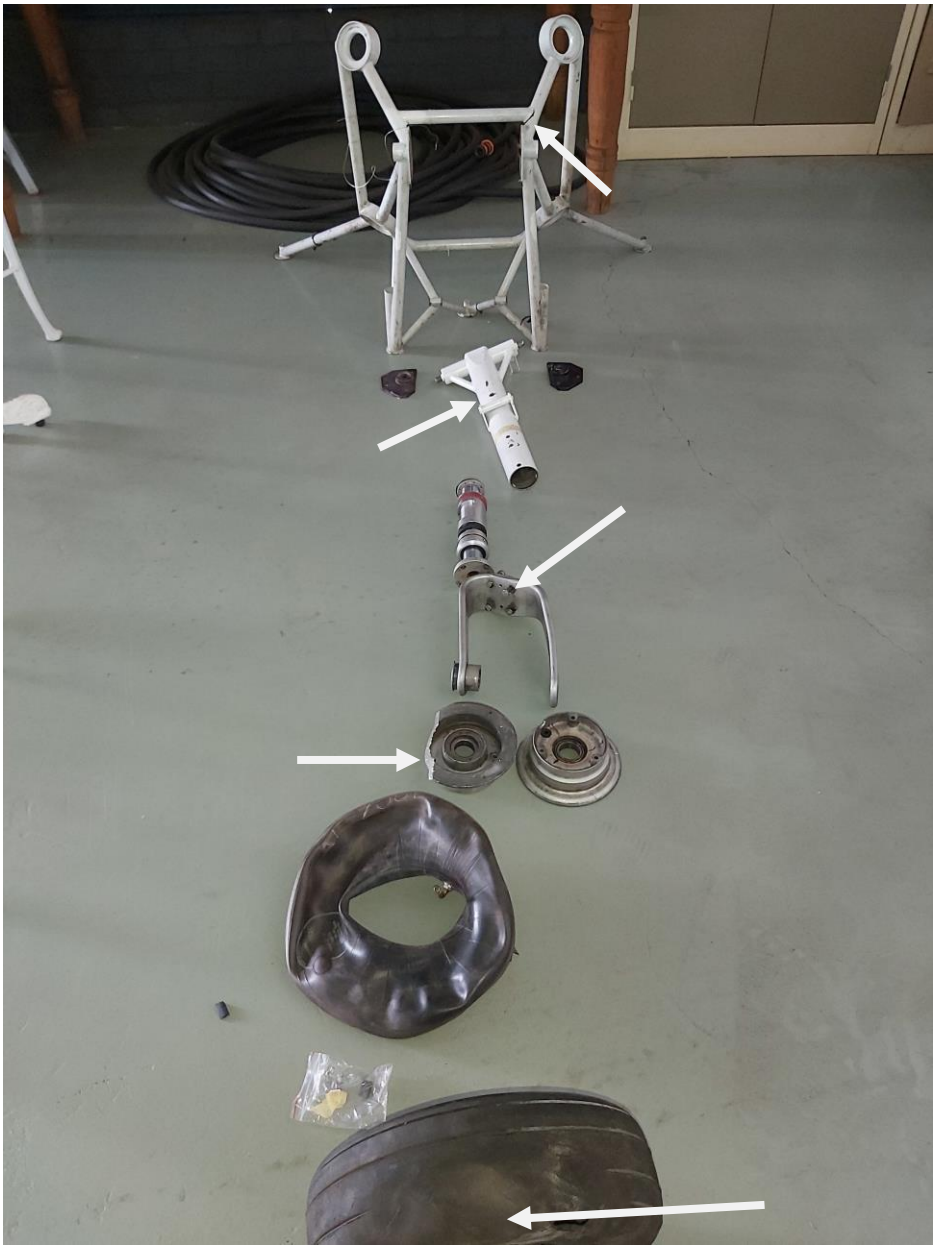

Figure 1: Damaged nose gear assembly parts.

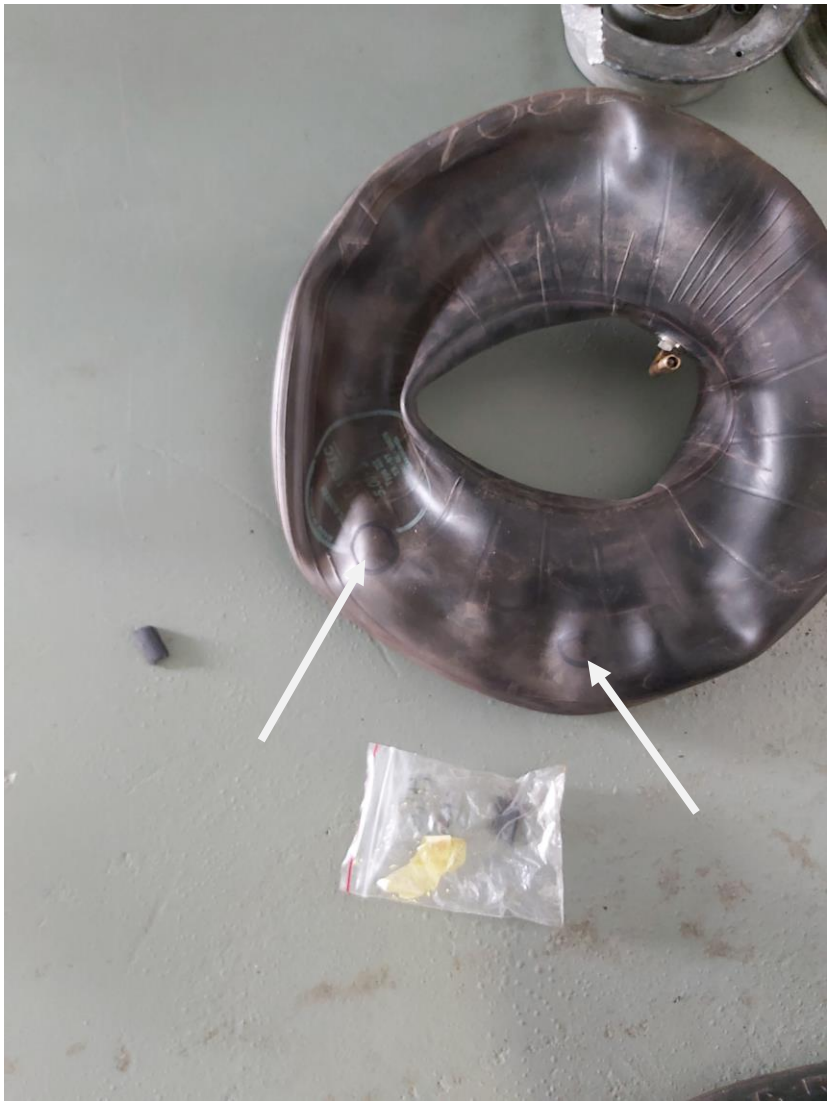

Figure 2: The tyre tube with white arrows showing the two punctures.

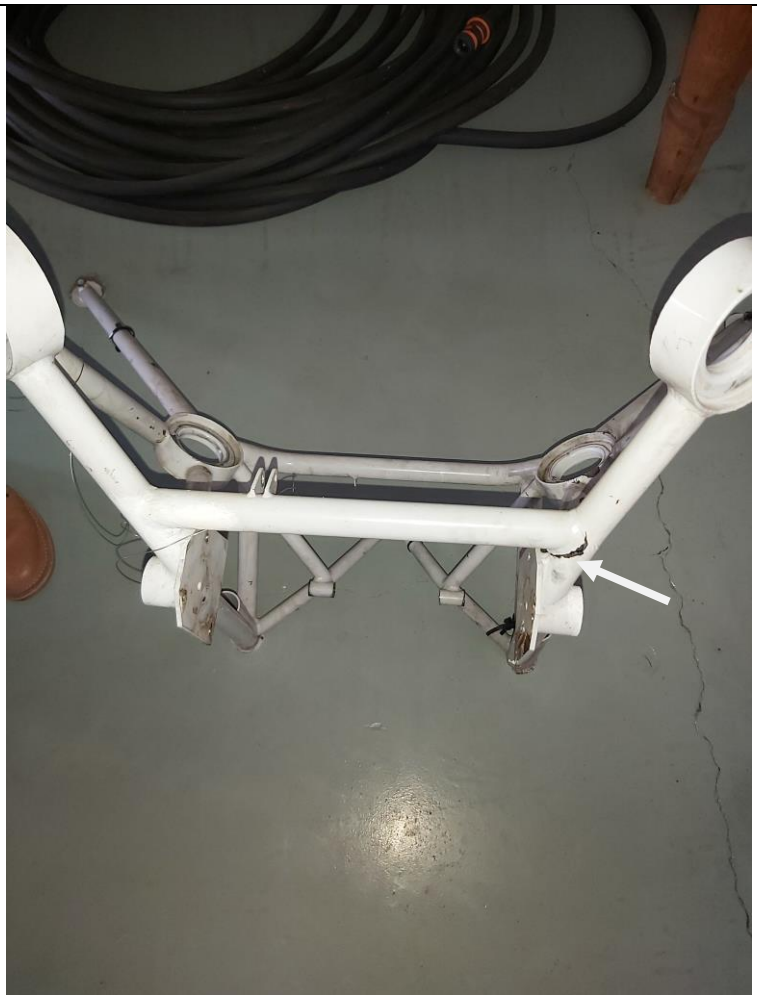

Figure 3: Damaged engine mount of the aircraft.

The engine cradle was replaced with a new cradle, sourced from the aircraft manufacturer Lancair. A non-destructive testing (NDT) was carried out on the new cradled before installation. The nose wheel trunnion (with wheel fork and tyre) was replaced with a new unit from Lancair.

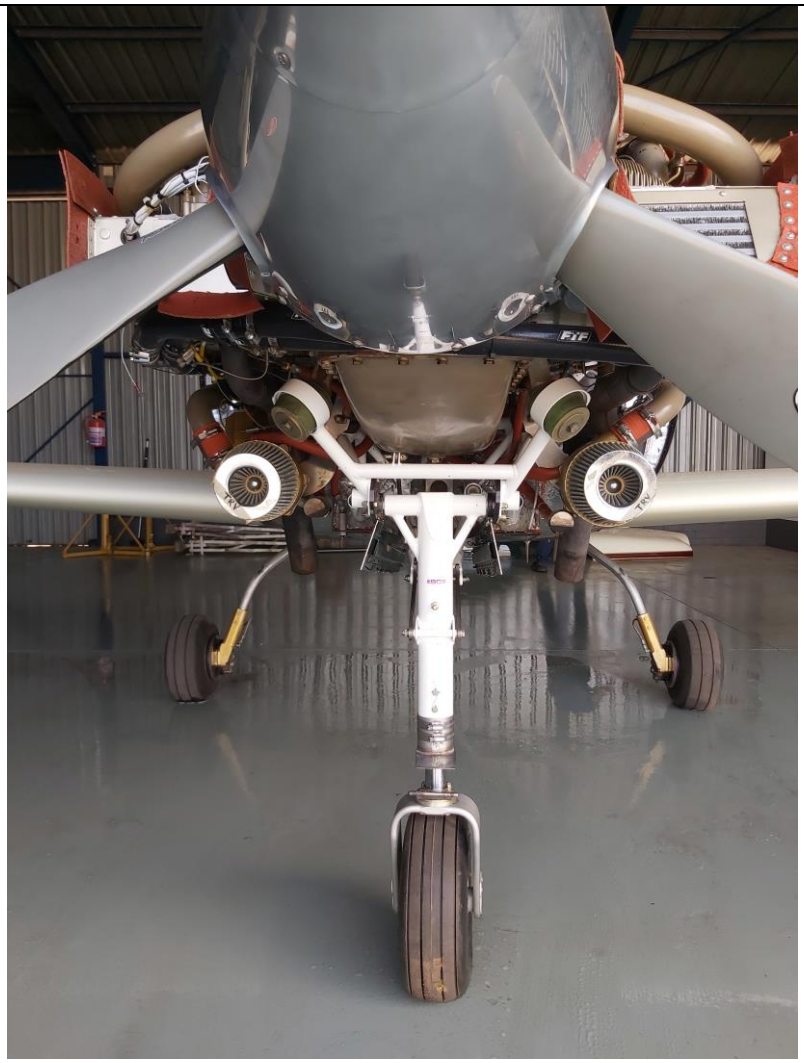

Figure 4: Repaired nose wheel assembly.

Probable cause:

During the landing roll, the pilot lost directional control of the aircraft due to a deflated nose wheel.

Contributory factor:

There were two punctures in the inside tube of the tyre which were in alignment with the defects on the surface of the tyre where an object went in and then pulled out of the tyre, causing the tyre to gradually deflate.

Safety Action/s

None.

Safety Message and/or Safety Recommendation/s

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.*
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This report is issued by:

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