



<b>LIMITED ACCIDENT INVESTIGATION REPORT</b>
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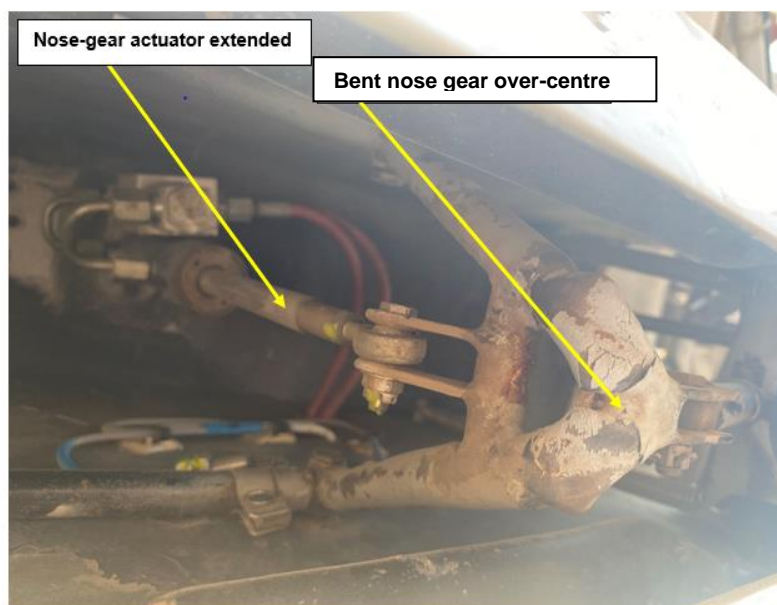
<b>Reference Number</b>		CA18/2/3/10018									
<b>Classification</b>		Accident	<b>Date</b>		27 June 2021	<b>Time</b>		1032Z			
<b>Type of Operation</b>		Private (Part 94)									
<b>Location</b>											
<b>Place of Departure</b>		Nelspruit Aerodrome (FANS), Mpumalanga Province		<b>Place of Intended Landing</b>			Geelbos farm, Standerton, Mpumalanga Province				
<b>Place of Accident</b>		Geelbos farm airstrip on a gravel runway in Standerton, Mpumalanga Province									
<b>GPS Co-ordinates</b>		<b>Latitude</b>		S27°03'.094	<b>Longitude</b>		E029°16'.957	<b>Elevation</b>		5 052 feet	
<b>Aircraft Information</b>											
<b>Registration</b>		ZU-NKC									
<b>Make / Model</b>		Flamingo VL 3A1									
<b>Damage to Aircraft</b>		Substantial		<b>Total Aircraft Hours</b>			603				
<b>Pilot-in-command</b>											
<b>Licence Valid</b>		Yes		<b>Gender</b>		Male		<b>Age: 59</b>			
<b>Licence Type</b>		National Pilot Licence (NPL)									
<b>Total Hours on Type</b>		31		<b>Total Flying Hours</b>			1 189				
<b>People On-board</b>		1 + 0		<b>Injuries</b>		0		<b>Fatalities</b>		0	
<b>Other (On Ground)</b>		0									
<b>What Happened</b>											
<p>On Sunday, 27 June 2021, the pilot being the sole occupant on-board a two-seat Flamingo VL 3A1 aircraft with registration ZU-NKC was on a private flight from Nelspruit Aerodrome (FANS) destined for Geelbos farm airstrip situated in Standerton, Mpumalanga province, when the accident occurred. The flight was conducted under Visual Meteorological Conditions (VMC) by day and no flight plan was filed. The pilot reported that the combined aircraft fuel tanks had a total of 100 litres of Avgas LL100 fuel. The aircraft took off uneventfully from FANS and climbed to 6500 feet at 135 knots indicated air speed (IAS). After one hour of flight time, the pilot approached the farm's airstrip for a full stop landing; and all was normal. He then extended the landing gear and executed an uneventful landing on the gravel runway at 60 knots IAS. However, during the landing roll as the aircraft's speed decreased, the nose gear collapsed, and the propeller blades struck the ground.</p>											



**Figure 1:** The aircraft on the gravel runway post-accident. (Source: Pilot)

The aircraft was substantially damaged during the accident sequence; however, the pilot was not injured. The pilot switched off the master before disembarking the aircraft. Post-accident examination of the nose gear indicated that the strut had broken off (the fork and the top section separated). Examination of the landing gear indicated that it was in a down and locked position and the nose gear over-centre had bent and folded rearward after collapsing, causing the engine bottom cowling to skid on the runway surface. All available Service Bulletins (SBs) and applicable maintenance procedures were reviewed and none of them mandated a non-destructive testing (NDT) on the nose gear strut.

The investigation concluded that the nose gear strut broke off because of the presence of an existing fatigue crack (rusted area observed) most probably caused by previous hard landings. The fatigue crack gradually grew in service undetected until the nose gear broke off due to overload.



**Figure 2:** The nose-gear actuator and the bent gear over-centre.



**Figure 3:** The area on the front-side of the nose gear strut where the crack initiated.



**Figure 4:** The file picture of the aircraft. (Source: <http://defenceweb.co.za>)

**Safety Action/s:**

None.

**Safety Message and/or Safety Recommendation/s:**

Safety Recommendation:

1. The Flamingo VL 3A1 aircraft nose gear strut had shown a susceptibility to fatigue cracking on the nose gear strut during operation. None on the Service Bulletins (SBs) issued by the aircraft manufacturer, AVEKO S.R.O, mandates or addresses a non-destructive testing (NDT) on the nose gear strut. It is recommended to the Director of Civil Aviation that he/she informs the manufacturer of the identified failure and to request that a study be conducted which would then give birth to the NDT inspection procedure, and that would be communicated through a mandatory Service Bulletin (SB).

2. It is recommended to the Director of Civil Aviation to mandate operators/owners of a Flamingo VL 3A1 aircraft type to conduct a non-destructive testing (NDT) inspection on nose gear struts during their next scheduled inspections and each time a hard landing is reported. Should cracks be detected, then the nose gear strut should be replaced.

Safety message:

None.

#### **Purpose of the Investigation**

*In terms of Part 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 AIID, which are reserved.*

**This report is issued by:  
Accident and Incident Investigations Division  
South African Civil Aviation Authority  
Republic of South Africa**