



LIMITED ACCIDENT INVESTIGATION REPORT
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Reference Number		CA18/2/3/10042					
Classification	Accident	Date	18 September 2021	Time	1430Z		
Type of Operation	Private (Part 91)						
Location							
Place of Departure		Vereeniging Aerodrome (FAVV)	Place of Intended Landing		Vereeniging Aerodrome (FAVV)		
Place of Accident		Runway 03 FAVV, Gauteng Province					
GPS Co-ordinates	Latitude	26°34'15.42" S	Longitude	027°57'36.41" E	Elevation	4862ft	
Aircraft Information							
Registration		ZS-LLS					
Model/Make		Cessna C 177 RG					
Damage to Aircraft		Substantial	Total Aircraft Hours		6768.33		
Pilot-in-command							
Licence Valid		Yes	Gender	Male	Age	38	
Licence Type		Private Pilot Licence (PPL) Aeroplane					
Total Hours on Type		±170	Total Flying Hours		239		
People On-board	1+0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Saturday afternoon, 18 September 2021 at approximately 1430Z, the pilot on-board a Cessna 177 RG aircraft with registration ZS-LLS took off on a local flight from Vereeniging Aerodrome (FAVV) in Gauteng province with the intention to fly to Heidelberg very high frequency (VHF) omni range (HGV) and return to FAVV. After initiating the take-off roll, the pilot accidentally moved the gear lever from the down and lock position to half-way up and locked position.</p> <p>As soon as the aircraft had gathered speed with the nose starting to point up, the squat switch deactivated. This activated the gear pump and caused the light on the cockpit panel to come on. This is when the pilot realised that the gear lever was not in the down and locked position. He tried to move the gear lever to the fully down and locked position, but at this stage it was too late. The nose landing gear (NLG) unlocked and retracted half-way down and the nose section touched the ground, causing the propeller to strike the runway surface. The aircraft skidded on its exhaust and nose gear for approximately 10 metres (m).</p> <p>Thereafter, the pilot pulled back the throttle lever, switched off the fuel selector and the electrics as the aircraft came to a stop near the threshold of Runway 03. (See Figures 1 and 2)</p>							

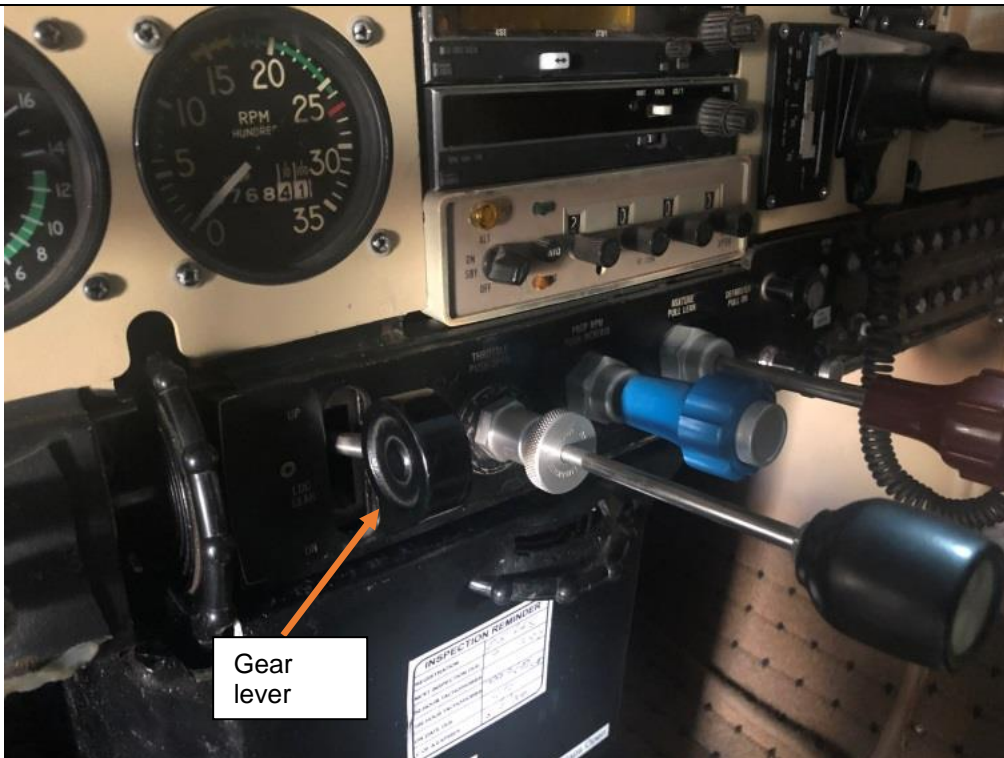


Figure 1: An approximate position of the gear lever during the accident. (Source: Pilot)



Figure 2: The gear lever when it is in the down and locked position. (Source: Pilot)

The aircraft sustained damages to the propeller, nose gear and exhaust (see Figures 3 to 6). No injuries were reported during the accident.



Figures 3 and 4: Damage to the nose gear (left) and skid marks on the runway surface (right).



Figures 5 and 6: Damage on the exhaust (left) and propeller blade tips (right).

What was found:

- The last maintenance inspection (MPI) was carried out on 15 January 2021 at 6752.9 airframe hours. The aircraft had accumulated an additional 15.43 airframe hours in operation since its last inspection. There were no reported or recorded defects prior to the accident as all damages were related to the accident.

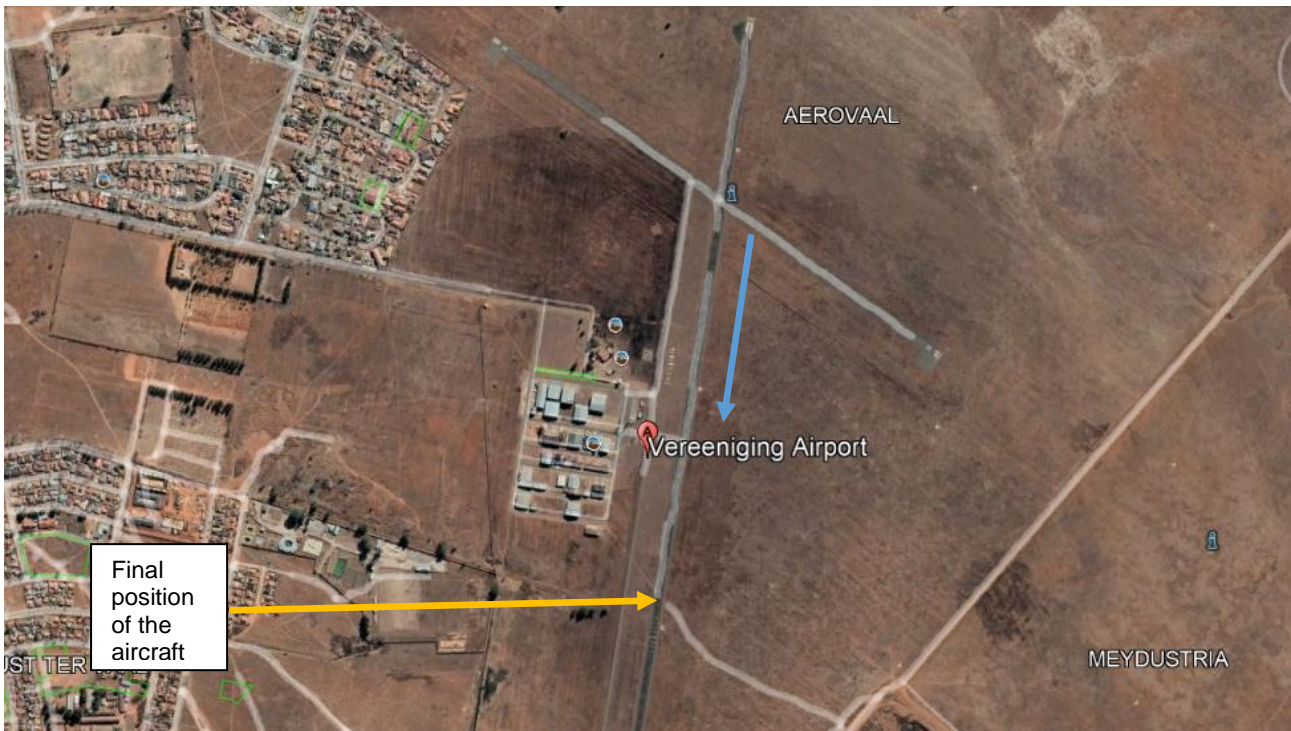


Figure 7: Aerial view of Vereeniging Aerodrome. The blue arrow shows the direction of landing. (Source: Google Earth)

- According to the Pilot’s Operating Handbook (POH), the gear lever needs to be pulled out slightly to clear a detent before it can be repositioned. The pilot retracted the nose gear half-way and only realised his mistake when the aircraft had gathered speed during the take-off run.

Extract from the Cessna 177 Cardinal RG Owner’s Manual
Landing gear position handle:

The gear position handle, mounted to the left of the engine controls, has two positions (above center for gear up, and below center for gear down) which give a mechanical indication of landing gear position. From either position the handle must be pulled out slightly to clear a detent before it can be repositioned; operation of the landing gear system will not begin until the handle has been repositioned. After the handle has been repositioned, hydraulic pressure is directed within the system to actuate the gear to the selected position. The gear handle will remain in whichever position has been selected.

Probable cause:

The undercarriage collapsed because the pilot accidentally moved the gear lever to the retracted position during the take-off roll.

Safety Action/s

None.

Safety Message	
Pilots need to be careful when conducting pre-take-off checks to prevent accidents such as retracting/moving the landing gear lever while conducting other pre-take-off checks.	
Purpose of the Investigation	
<i>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.</i>	
About this Report	
<i>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.</i>	
<i>This report provides an opportunity to share safety message/s in the absence of an investigation.</i>	
<i>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.</i>	
Disclaimer	
<i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i>	

This report is issued by:

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