



LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number		CA18/3/2/1488					
Classification	Serious Incident	Date	09 July 2025			Time	1040Z
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Brakpan Airfield (FABB), Gauteng Province		Place of Intended Landing		Brakpan Airfield (FABB), Gauteng Province		
Place of Occurrence	Brakpan Airfield (FABB), Gauteng Province						
GPS Co-ordinates	Latitude	26° 14' 34" S	Longitude	028° 18' 02" E	Elevation	5 356 ft	
Aircraft Information							
Registration	ZU-DLH						
Make; Model; S/N	Cubby; PI X285 (Serial Number: AK 0404)						
Damage to Aircraft	Substantial			Total Aircraft Hours	373.9		
Pilot-in-command							
Licence Type	Airline Transport Pilot Licence (ATPL) (Aeroplane)		Gender	Male		Age	68
Licence Valid	Yes	Total Hours	21000		Total Hours on Type	371.5	
Total Hours 30 Days	2.0		Total Flying on Type Past 90 Days		2.0		
People On-board	1 + 1	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
<p>On Wednesday, 9 July 2025, a pilot and a passenger on-board a Cubby PI X285 aircraft with registration ZU-DLH took off on a private flight from Brakpan Airfield (FABB) to Suikerbosrand, both in Gauteng province, with the intention to return to FABB. Visual meteorological conditions (VMC) prevailed at the time of the flight which was conducted under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The pilot returned to Brakpan Airfield (FABB) after approximately 1 hour to perform a full-stop landing. Whilst joining the circuit, he assessed the wind direction which was 300° and blowing at a speed of 5 knots (kts). He then decided to land on the grass-covered Runway 21. The pilot stated that the approach was stable and the speed at touchdown was 60 miles per hour (mph) (52 knots). After touchdown, the aircraft rolled approximately 50 metres (m) whereafter the right main landing gear collapsed outwards. This caused the strut to impact the ground and, subsequently, the aircraft yawed to the right before it ground-looped (turning into 180°) and faced the opposite direction of approach. The aircraft came to a stop on the right-side edge of the runway in use.</p> <p>The pilot and the passenger were not injured. The aircraft sustained substantial damage to the right main undercarriage and rear fuselage.</p>							



Figure 1: Aerial view of FABB with indications of the grass-covered Runway 21/03. (Source: Google Earth)

The above picture shows an asphalt Runway 18/36. The rectangular green line with the markings indicates the grass-covered Runway 21/03. According to one of the operators at the airfield, Runway 21/03 is an old runway that was not in use until it was revived; after its revival, only 800m of the original length is used.



Figure 2: The aircraft after the serious incident with an outward bent right main landing gear strut. (Source: Pilot)



Figure 3: The damage on the landing gear was found to be consistent with the effects of hard landings. (Source: Pilot)

Post-accident Damage Assessment

The right main landing gear was deformed (with signatures of being bent). The wheel collapsed outward which caused the strut to impact the ground pivoting; thus, the aircraft ground-looped to the right. The damage on the right-side landing gear may be associated with hard landings that could have occurred over a period during operation (Figure 3).

The following extract provides performance data relevant to this occurrence, specifically addressing the recommended approach and landing speeds for the experimental-build Cubby aircraft.

Aircraft Performance: Approach and Landing (Source: Pilot's Operating Handbook)

For normal performance landing, approach with a speed of 52 knots. Cubby has no landing flaps, but still, it maintains a very pleasant attitude with a lot of forward visibility during the approach. Level off at approximately 2 metres above the surface and let the remaining speed bleed by the gentle rising of the nose of the airplane. In this way, the "Cubby" will touch the ground in a three-wheel position at approximately 40 knots. With the stick in a "full back" position, there will be an immediate full directional control from the tail wheel with the rudder pedals. The "Cubby" will decelerate nice and easy; maintain the landing direction.

Findings

1. Pilot

1.1. The pilot had an Airline Transport Pilot Licence (ATPL) that was initially issued by the Regulator (SACAA) on 2 September 2016. The licence was renewed on 28 November 2024 with an expiry date of 30 November 2025. The pilot had a valid Class 1 aviation medical certificate that was issued on 19 September 2024 with an expiry date of 30 September 2025. The aircraft type was endorsed on the pilot's licence with night and instrument ratings.

1.2. The pilot had a total of 21000 hours of which 371.5 hours were acquired on the aircraft type.

2. Aircraft

2.1. The aircraft was issued an Authority-to-fly (ATF) Certificate by the Regulator on 19 December 2023 with an expiry date of 22 January 2026. The Certificate of Registration (C of R) was issued to the current owner on 21 January 2022.

2.2. The aircraft's annual inspection was conducted and certified by an approved person (AP) after which the Certificate of Release to Service (CRS) was issued on 28 January 2025 at 371.2 airframe hours with an expiry date of 27 January 2026 or at 471.2 airframe hours, whichever comes first. The aircraft had 373.9 hours at the time of the flight which meant that the aircraft had accrued 2.7 hours after the last annual inspection.

<p>3 <u>Environment</u></p> <p>3.1 Clear weather conditions prevailed at the time of the flight; the weather did not contribute to the cause of the accident.</p> <p>4 <u>Mission</u></p> <p>4.1 The aircraft approached and touched down on the grass-covered Runway 21 at an indicated airspeed of approximately 52 kts, exceeding the recommended 40 kts for a three-point landing configuration as per the aircraft Pilot's Operating Handbook (POH). The POH further prescribes maintaining full aft control stick during touchdown to minimise landing loads on the main gear.</p> <p>4.2 The aircraft touched down firmly on uneven grass terrain, subjecting the landing gear and airframe to increased impact forces.</p> <p>4.3 The damage pattern indicated that the component likely experienced progressive weakening over time due to repeated hard landings in previous operations; this stress was induced during landing in this serious incident flight.</p>
<p>Probable Cause(s)</p> <p>The right main landing gear collapsed outwardly during the landing roll, causing the pilot to lose directional control of the aircraft.</p>
<p>Contributing Factor(s)</p> <p>Uneven or soft grass surface.</p> <p>Pre-existing damage on the right main landing gear.</p>
<p>Safety Action(s)</p> <p>None.</p>
<p>Safety Message and/or Safety Recommendation/s</p> <p>None.</p>
<p>About this Report</p> <p><i>The decision to conduct a limited investigation is based on factors including whether the cause is known and the evidence supporting the cause is clear, the level of safety benefit likely to be obtained from an investigation and that will determine the scope of an investigation. For this occurrence, a limited 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 limited report. The report has been compiled using information supplied in the initial notification, as well as from follow-up desktop enquiries 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 occurrence.</i></p> <p><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></p>
<p>Purpose</p> <p><i>In terms of Regulation 12.03.1 of the Civil Aviation Regulations (CAR) 2011 and ICAO Annex 13, 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></p>

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This report is issued by:

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