

LIMITED OCCURRENCE INVESTIGATION REPORT – FINAL

Reference Number	CA18/2/3/10645						
Classification	Accident		Date	25 March 2026		Time	1350Z
Type of Operation	Private (Part 94)						
Location							
Place of Departure	Kitty Hawk Aerodrome (FAKT), Gauteng Province			Place of Intended Landing	Rhino Park Aerodrome, Gauteng Province		
Place of Occurrence	On a field 50m from the threshold of Runway 19 at Kitty Hawk Aerodrome (FAKT)						
GPS Co-ordinates	Latitude	25°51'22.65" S	Longitude	028°26'57.82" E	Elevation	4 562 feet	
Aircraft Information							
Registration	ZU-CKU						
Make; Model; S/N	Jabiru SP (Serial Number: 421)						
Damage to Aircraft	Substantial			Total Aircraft Hours	948.6		
Pilot-in-command							
Licence Type	Private Pilot Licence (PPL)		Gender	Male		Age	21
Licence Valid	Yes	Total Hours	100.8	Total Hours on Type	5.5		
Total Hours 30 Days	Nil		Total Flying on Type Past 90 Days	Nil			
People On-board	1 + 0	Injuries	0	Fatalities	0	Other (on ground)	0
What Happened							
On Wednesday afternoon, 25 March 2026, a pilot on-board a Jabiru SP aircraft registered ZU-CKU was engaged in a private flight from Kitty Hawk Aerodrome (FAKT) to Rhino Park Aerodrome, both situated in Gauteng province. The flight was conducted under visual meteorological conditions (VMC) and under the provisions of Part 94 of the Civil Aviation Regulations (CAR) 2011, as amended. The aircraft was due for its annual inspection and renewal of its Authority-to-Fly (ATF) Certificate which had expired on 27 March 2026. The pilot intended to ferry the aircraft to the aircraft maintenance organisation (AMO) at Rhino Park Aerodrome. Fine weather prevailed on the day with 4 knots (kts) wind, 28°C air temperature and clear visibility. Before the flight, the pilot had difficulty starting the engine and he contacted an approved person (AP) responsible for maintaining the aircraft, who helped troubleshoot the problem via the telephone. A new battery was subsequently purchased and installed. <i>The aircraft had not been flown since 23 June 2025 (approximately nine months before the accident flight).</i> The pilot drained fuel from the purge valve four times to ensure that it was free of water and contaminants. With the assistance of his father, he started the engine and maintained an engine speed of between 2 300 and 2 500 revolutions per minute (rpm) before reducing it to idle; the engine continued to run for approximately 20 to 25 minutes.							

Thereafter, the pilot taxied the aircraft to the fuel bay where the fuel attendant uplifted 35 litres of Aviation Gasoline 100 Low Lead (AVGAS 100LL), bringing the total on-board to approximately 80 litres (full capacity). At the pilot's request, the fuel attendant inflated the aircraft's tyres, which had partially deflated as the aircraft was parked for an extended period. Later, the pilot taxied the aircraft to the threshold of Runway 01, completed the pre-take-off checks, including the engine power and magneto checks, and commenced the take-off roll. After rotation, the aircraft climbed to approximately 500 feet (ft) above ground level (AGL) during which the engine stopped. The pilot attempted to restart the engine but was unsuccessful. He then transmitted a MAYDAY on FAKT frequency 120.65-Megahertz (MHz) and conducted a forced landing. The aircraft, which was in a nose-low attitude, touched down beyond the threshold of Runway 19 and scraped along the asphalt surface. It broke through the aerodrome perimeter fence and came to rest at the bottom of an embankment.

An eyewitness who was seated outside the clubhouse at FAKT stated that he saw the aircraft as it became airborne from Runway 01, climbing to approximately 200ft before the engine stopped. He stated that the aircraft's nose lowered before it impacted the ground beyond the threshold of Runway 19, penetrated the perimeter fence, and came to a stop approximately 50m beyond the runway threshold facing west. The eyewitness was the first person at the accident site. The pilot was conscious; he reported severe back pain and a laceration to his lower left leg. Other people from the aerodrome who came to assist administered first aid to the pilot to control the bleeding whilst awaiting the emergency medical personnel to arrive at the scene. The pilot was later transported to the hospital, where it was confirmed that he sustained a lower back injury which required surgery.

The aircraft was substantially damaged during the impact sequence, including the collapse of the landing gear.



Figure 1: The yellow pin indicates the position where the aircraft came to rest. (Source: Google Earth)



Figure 2: Impact marks on the runway with the aircraft in the background.



Figure 3: The aircraft after it had stopped. (Source: Manager at FAKT)



Figure 4: A side view of the aircraft post-accident. (Source: Manager at FAKT)



Figure 5: The fuel carburettor bowl.

The fuel carburettor bowl was removed by maintenance personnel in the presence of the investigating team. The fuel was found clean and free of contaminants. (The two brown pieces visible in the bowl in Figure 5 are fragments of the gasket sealant used around the bowl's circumference.) These fragments fell into the bowl during disassembly.



Figure 6: The fuel shut-off valve was found in open (ON) position.

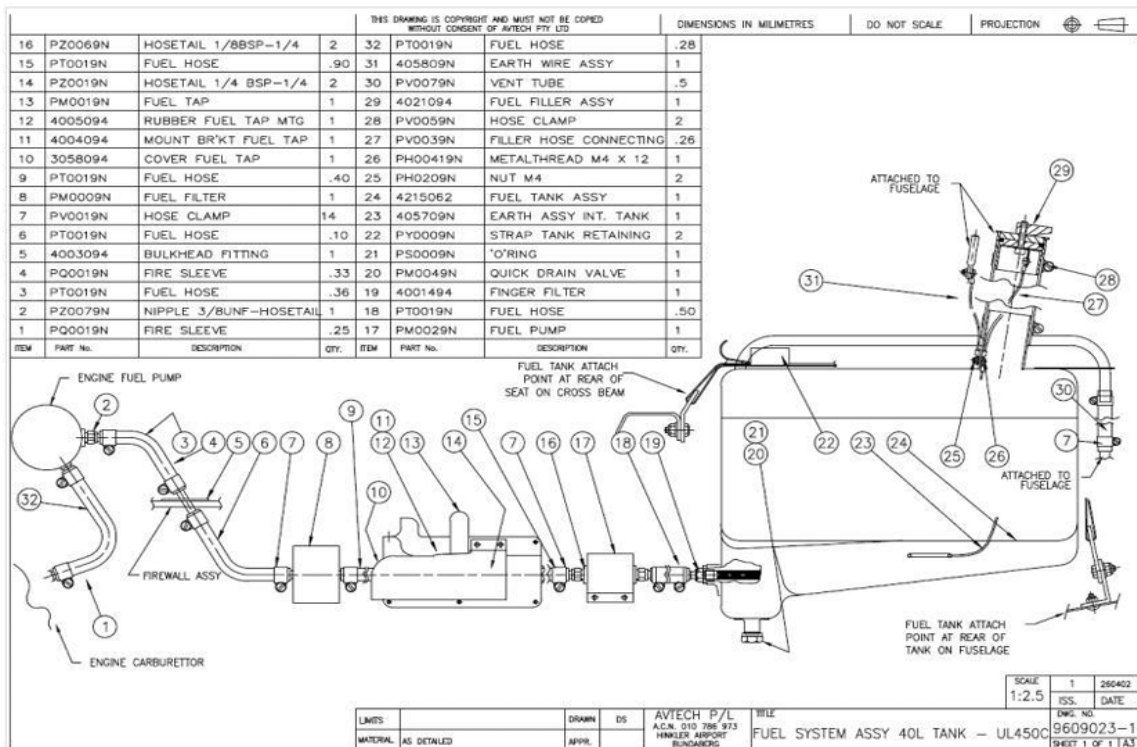


Figure 7: The aircraft fuel system. (Source: Jabiru Aircraft Technical Manual)

Fuel System (Source: Jabiru Aircraft Technical Manual)

The system fitted to this aircraft has the fuel tank located behind the seats inside the cabin.

The filler for the tank is located on the pilot's side (left) of the fuselage

The tank is vented via a fitting on the belly of the aircraft.

The primary mechanical fuel pump is fitted to the engine.

The secondary electric fuel pump and the fuel filter are fitted to the belly of the aircraft under the tank itself.

The main fuel tank is non-structural and is held in place with straps.

A single ON-OFF fuel selector valve is fitted to the centre console between the seats.

Post-Recovery Engine Ground Run

The aircraft was recovered to an aircraft maintenance facility the next day to determine whether the engine, a Jabiru 2200A with serial number A22787, had sustained damage that might prevent a test run. The engine was found undamaged, but the originally installed propeller was damaged (Figure 4). Therefore, a loaner propeller was installed, and an external battery pack was used as the power source during the engine test run.

The spark plugs were removed, inspected, cleaned and reinstalled. The distributor caps were also removed and inspected, and no internal moisture was found. A fuel flow test using the electric fuel pump delivered 1 litre of fuel in 42 seconds, exceeding the minimum requirement of 1 litre per minute. It was initially difficult to start the engine; therefore, the left ignition coil (Figure 8) was temporarily replaced with a loaner unit after which the engine started normally. The loaner coil was then removed, and the original coil reinstalled; the engine was started again, and it started normally. Magnetos were checked with an engine rpm drop of less than 100 in both systems, which was well within the maximum allowable limit of 150 rpm.

Accident History

The aircraft was involved in an accident at FAKT on 31 July 2024 with the same pilot. The accident was investigated by the South African Civil Aviation Authority (SACAA) Accident and Incident Investigations Division (AIID) under reference CA18/2/3/10480.

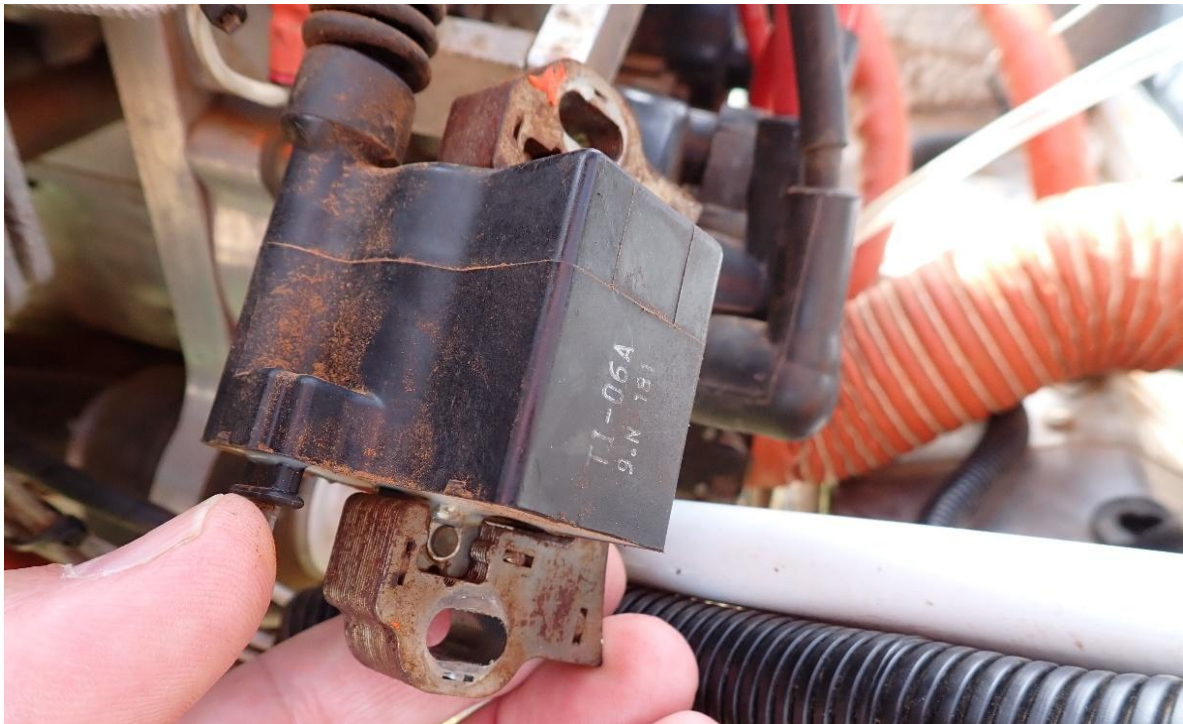


Figure 8: The left coil that was removed and replaced with a loaner unit.

Maintenance records showed that the aircraft was repaired and returned to service on 28 March 2025 with a Hobbs meter reading of 945.5 hours. At the time of the accident, the Hobbs meter read 948.6 hours which indicated that the aircraft had accumulated 3.1 hours since being returned to service.

Engine Preservation for Active and inactive Aircraft (Source: *Jabiru Maintenance Manual (JEM0002-12)*)

The Jabiru Maintenance Manual (JEM0002-12) requires engine preservation when the engine is expected to remain out of service for 60 days or longer. The aircraft should be stored undercover, protected from direct sunlight, and all openings identified in the manual should be covered. Failure to apply the prescribed preservation measures during extended non-operational storage may affect claims under Jabiru's Limited Express Warranty.

For temporary storage up to 60 days, the fuel tank should be filled with AVGAS to reduce moisture accumulation. For storage beyond 60 days, the engine must be preserved in accordance with the manual, including draining the fuel tank, emptying the carburettor bowl by running the engine with the fuel valve closed until it stops or by draining the bowl, and avoiding MOGAS or alcohol-containing fuel for more than 14 days.

The manual further recommends that unused batteries be charged every 30 days and that SHELL Aero Fluid 2UN (MIL-C-629C Type 1), or an equivalent corrosion inhibitor, be applied to the specified components as required.

The manual cautions that the master switch and ignition switches must be OFF before the engine is turned by hand or by the starter.

During storage, the engine should be generally inspected and cleaned as necessary. At least once per month, the interior of one cylinder should be inspected through the spark plug hole for signs of corrosion. If the engine remains out of service after 60 days, the preservation procedure should be repeated.

Before returning the engine to service after temporary or indefinite storage, the battery, carburettor and air filter should be checked and serviced as necessary. The starter motor should then be used to rotate the engine for several revolutions to clear excess preservative oil from the cylinders before operation.

The aircraft was last flown on 23 June 2025; it remained parked in a hangar for approximately nine months until the accident flight on 25 March 2026. No evidence was found in the aircraft logbooks which indicated that the engine was preserved in accordance with the original equipment manufacturer's (OEM's) requirements.

Weight and Balance

The aircraft's weight and balance calculation were as follows:

Item	Weight (kg)
Aircraft empty weight	264
Pilot	100
Fuel (80L)	57
Take-off weight	421

According to the Pilot's Operating Handbook (POH), the maximum take-off weight for this aircraft is 500 kilograms (kg). The aircraft was last weighed on 2 June 2023.

Findings

1. Personnel

- 1.1 The pilot had a Private Pilot Licence (PPL) that was initially issued on 3 July 2024 with an expiry date of 31 July 2027. The pilot had flown a total of 100.8 hours of which 5.5 hours were on the aircraft type. The pilot completed the conversion to the aircraft type on 16 July 2024.
- 1.2 The pilot was issued a Class 2 aviation medical certificate on 13 December 2022 with an expiry date of 31 December 2027.
- 1.3 The pilot sustained a serious lower back injury during the accident.
- 1.4 The pilot was involved in an accident with the same aircraft on 31 July 2024 at the same aerodrome (Reference No. CA18/2/3/10480).

2. Aircraft

- 2.1 The last annual inspection of the aircraft was certified on 28 March 2025 at 945.5 airframe hours. The accident occurred at 948.6 airframe hours. The aircraft had accrued 3.1 hours since the last maintenance inspection.
- 2.2 The aircraft had a valid Authority-to-Fly (ATF) Certificate that was initially issued by the Regulator (SACAA) on 27 June 2019. The latest ATF Certificate was issued on 28 March 2025 with an expiry date of 27 March 2026.
- 2.3 The aircraft's Certificate of Registration (C of R) was issued to the present owner on 23 August 2023.

2.4	The aircraft was issued a Certificate of Release to Service (CRS) on 28 March 2025 with an expiry date of 27 March 2026 or at 1 045.4 airframe hours, whichever occurs first.
2.5	The aircraft maintenance organisation (AMO) which maintained the aircraft had a valid AMO Certificate that was issued by the Regulator. The approved person (AP) had a valid AP Certificate.
2.6	The aircraft remained inactive in a hangar for approximately nine months. There was no evidence that the engine had been preserved as required by the manufacturer's maintenance instructions for engines out of service for more than 60 days, increasing the risk of internal corrosion and deterioration that might adversely affect engine reliability.
2.7	The pilot had difficulty starting the engine before the accident flight and, hence, the battery replacement after troubleshooting. This indicated a prolonged storage without proper preservation.
2.8	The aircraft had sufficient fuel which was free of contaminants.
2.9	The engine lost power shortly after take-off whilst at an insufficient height for safe recovery.
2.10	Although the engine passed the pre-flight run-up checks and post-accident ground testing, the engine could not be started in-flight after the stoppage, indicating that the failure was intermittent or occurred under conditions not replicated during ground testing.
3.	<u>Aerodrome</u>
3.1.	Kitty Hawk Aerodrome (FAKT) is a licensed facility with a single asphalt runway oriented 01/19. The runway is 810m long and 18m wide. Runway 01 has an upslope.
3.2.	The runway overrun area when taking off from Runway 01 has an embankment that is approximately 1.5 metres below the runway surface.
4.	<u>Meteorological Information</u>
4.1.	Calm weather conditions prevailed at the time of the flight; the weather conditions could not be attributed to the cause of this accident.
Probable Cause	
Unsuccessful forced landing after the engine stopped shortly after take-off; however, the exact cause could not be determined as post-accident testing revealed no operational anomalies.	
Contributing Factors	
1.	Extended aircraft inactivity of approximately nine months, increasing the likelihood of system degradation.

2. Lack of evidence of engine preservation procedures conducted during the storage period in accordance with the manufacturer's requirements. 3. Pre-flight indications of degraded readiness, including engine start difficulty and the need to replace the battery. 4. The engine stoppage occurred at a low altitude, limiting the pilot's options to recover the aircraft or select a suitable landing area.
Safety Action(s)
None.
Safety Message
Extended aircraft storage requires total compliance with the manufacturer's preservation procedures to maintain engine reliability. Normal ground runs may not reveal latent defects caused by inactivity. Owners and operators should ensure that storage limits, battery care, fuel system preservation and periodic inspections are properly followed and documented. Return-to-service decisions should be based on both satisfactory ground performance and verified maintenance compliance.
About this Report
<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> <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>
Purpose
<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>
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**