

LIMITED ACCIDENT INVESTIGATION

Reference Number	CA18/2/3/9995						
Classification	Accident	Date	4 May 2021	Time	0825Z		
Type of Operation	Training (Part 141)						
Location							
Place of Departure	Hoedspruit Civil Airfield (FAHT)			Place of Intended Landing	(FAHT)		
Place Accident	Jejane Private Nature Reserve, Hoedspruit, Limpopo Province						
GPS Co-ordinates	Latitude	24°17'27.5" S	Longitude	30°59'38.1" E	Elevation	1610 ft	
Aircraft Information							
Registration	ZU-LEF						
Model/Make	Jabiru 170						
Damage to Aircraft	Substantial		Total Aircraft Hours	154.3			
Pilot-in-command							
Licence Valid	Yes	Gender	Male	Age	30		
Licence Type	National Pilot Licence (Aeroplane)						
Total Hours on Type	±369.8		Total Flying Hours	1818.9			
People On-board	1+1	Injuries	0	Fatalities	0	Other (On Ground)	0
What Happened	<p>On Tuesday morning, 4 May 2021, an instructor and a student pilot on-board a Jabiru aircraft with registration marking ZU-LEF took off on a training flight from Runway 15 at Hoedspruit Civil Airfield in Limpopo province. The training flight, which was intended to be conducted in the Hoedspruit area, involved effects of controls, and straight and level flight exercises. The flight was conducted under Visual Flight Rules (VFR) by day and under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended. Clear weather conditions prevailed at the time leading to the accident.</p> <p>The instructor stated that approximately 54 minutes into the flight and at a height of approximately 3000 feet (ft) above mean sea level, the aircraft suddenly lost power. The engine revolutions per minute (rpm) dropped from 2800rpm to 800rpm, but the propeller did not stop turning. The instructor then switched on the fuel pump, increasing and decreasing power, but there was no change to the engine power or rpm and, as a result, the aircraft could not maintain height. The pilot</p>						

decided to look for a suitable landing spot to execute a forced landing. He elected a gravel road in Jejane Private Nature Reserve to carry out the forced landing. The aircraft touched down hard in a right-wing low attitude, causing damage to the right-side wing (which broke off at the root attachment point), right undercarriage (which cracked/fractured), the right elevator, the nose landing gear and the cone (which broke). The instructor and the student pilot were not injured during the accident sequence.

The instructor further stated that the student pilot was not in possession of a Student Pilot Licence (SPL) and a medical certificate as required by the Regulator (South African Civil Aviation Authority); however, he was not required to have a medical certificate as he was not a registered student yet. This was in contravention of the Civil Aviation Regulation (CAR) 2011 Part 61 and Part 62.01.2 as amended, which states the following:

61.01.2 Pilot licences

(1) No person may act as a pilot of a South African registered aircraft, except in the case of dual instruction with an appropriately rated flight instructor, unless such person holds a valid pilot licence with applicable ratings issued, reissued, validated or revalidated by the Director or by an appropriate authority in terms of this Part or Part 62: Provided that a SPL may have been issued without a class rating or type rating.

(2) The following pilot licences may be issued in terms of this Part—

(a) SPL;

62.01.2 Authority to act as pilot

(1) No person shall act as the pilot of an aircraft whilst in or over any part of the Republic or the territorial waters thereof unless such person—

(a) holds a valid appropriate pilot licence and rating issued in terms of this part or part 61;

The instructor also stated that the student pilot was contemplating to acquire a Light Sport Aircraft (LSA) licence with the training school and, perhaps, pursue a Private Pilot Licence (PPL) training, at the time of the accident.

Following the accident, the engine was bench-tested by the manufacturer and no anomalies were identified.

The weather information was sourced from the Hoedspruit Airport (FAHS) tower on 2 February 2020 at 0900Z.

Wind direction	306°	Wind speed	10 kts	Visibility	9999m
Temperature	22°C	Cloud cover	SCT	Cloud base	3000 feet
Dew point	11°C	QNH	1021		

According to the carburettor icing-probability chart below (Figure 1), the relative humidity in the area around FAHS was at approximately 49% with the temperature of 22°C and dew point depreciation of 11°C. When flying in these conditions, the result would be a moderate icing condition at cruise power with serious icing on descent. There would have been a moderate icing probability at cruise power, which is where the aircraft was when the engine lost power.

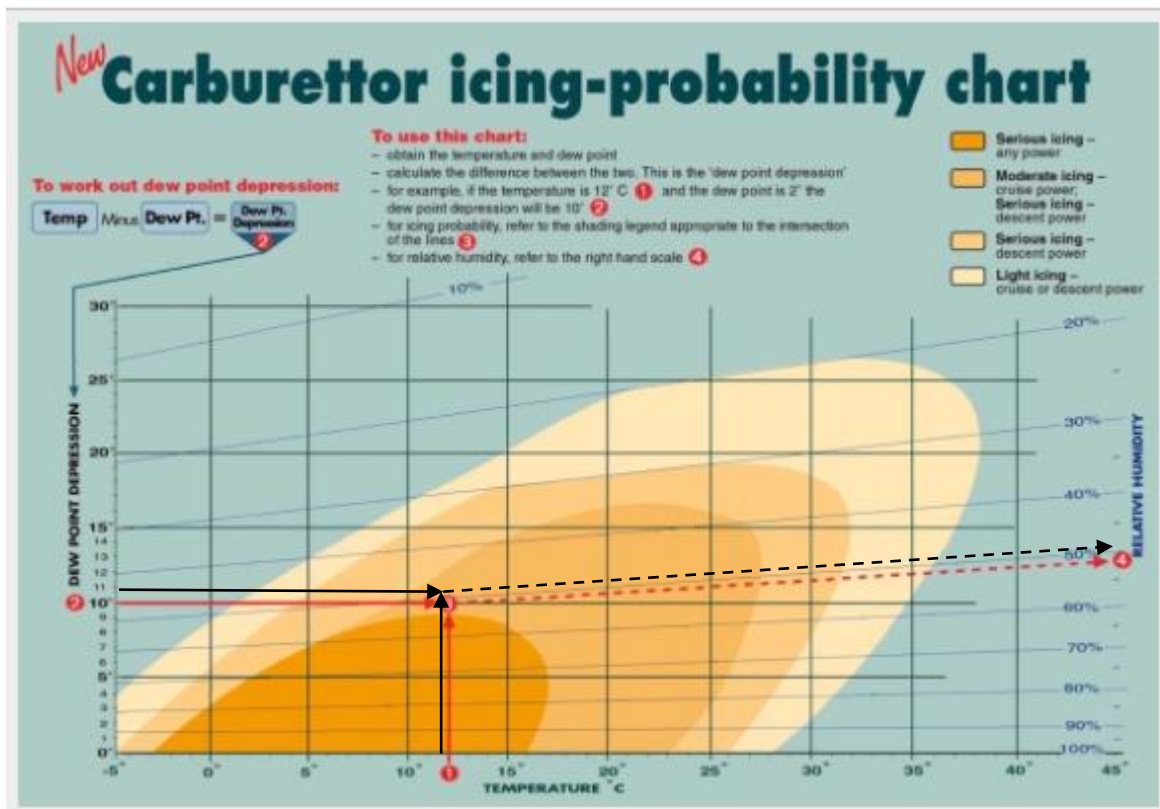


Figure 1: Carb icing chart.

Probable Cause:

It is likely that the cause of the engine power loss was due to carburettor icing during cruise power.



Figure 2: Jabiru 170 ZU-LEF after the accident. (Source: Pilot)



Figure 3: Final resting position of the aircraft.

Safety Action/s

None.

Safety Message

Safety message: Pilots are advised to carry out proper flight planning prior to initiating any flight, with emphasis on the weather and calculation of the carburetor icing probability, which could prevent engine power loss or failure, as well as prevent loss of life and damage to property.

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	
<p><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></p> <p><i>This report provides an opportunity to share safety message/s in the absence of an investigation.</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>	
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**