LIMITED ACCIDENT INVESTIGATION

Reference Number	CA18/2/3/9995										
Classification	ACCID	**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											

On Tuesday morning, 4 May 2021, a pilot and a passenger on-board a Jabiru aircraft with registration marking ZU-LEF took off on a familiarisation flight from Runway 15 at Hoedspruit Civil Airfield in Limpopo province. The flight, which was intended to be conducted in the Hoedspruit area. 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.

The pilot 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 pilot 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 decided to

look for a suitable landing spot to execute a forced landing. He elected a runway in Jejane Private Nature Reserve to carry out the forced landing.

During the approach the pilot had to go under power lines and on final approach for the runway the pilot notice that there were poles planted on the threshold of the runway. After going under the power lines on the approach the aircraft did not have enough height to get over the poles. The tail plane was then ripped off, and the right-hand strut was bent by the poles causing damage to the right-side wing (which bent at the root attachment point), right undercarriage (which cracked/fractured), the right elevator, the nose landing gear and the cone (which broke). The pilot and passenger were not injured during the accident sequence.

Post-accident interview with the Jejane Lodge manager revealed that there is an old piece of airstrip which is not used. There were also metal poles (see red line on figure 1) to separate the old landing strip (yellow marking) and the new one marked in green). The metal poles were there to prevent cars from driving on the landing strip.

The lodge manager stated that the aircraft approached the Jejane airstrip from the North, heading South, it crash landed on the old piece (marked in yellow) and crashed through the metal barrier poles (Red line) and came to a stop about 50 to 70m on the new airstrip. It was clear that the pilot intended to land on the new airstrip but could not make it. After the accident, Jejane management removed the metal barrier poles and replaced them with a “No Entry” sign for vehicles.

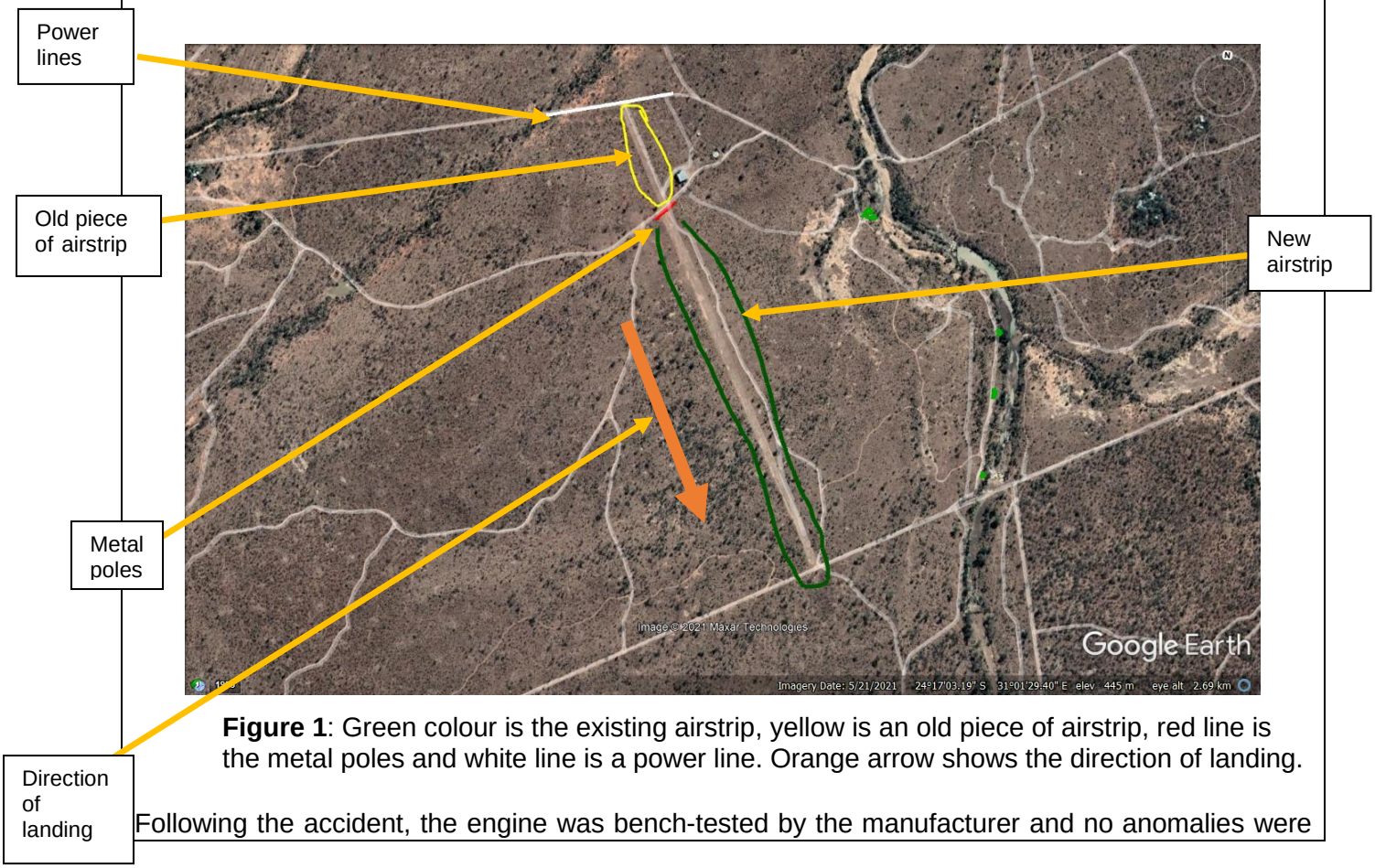

Figure 1: Green colour is the existing airstrip, yellow is an old piece of airstrip, red line is the metal poles and white line is a power line. Orange arrow shows the direction of landing.

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 51% 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.

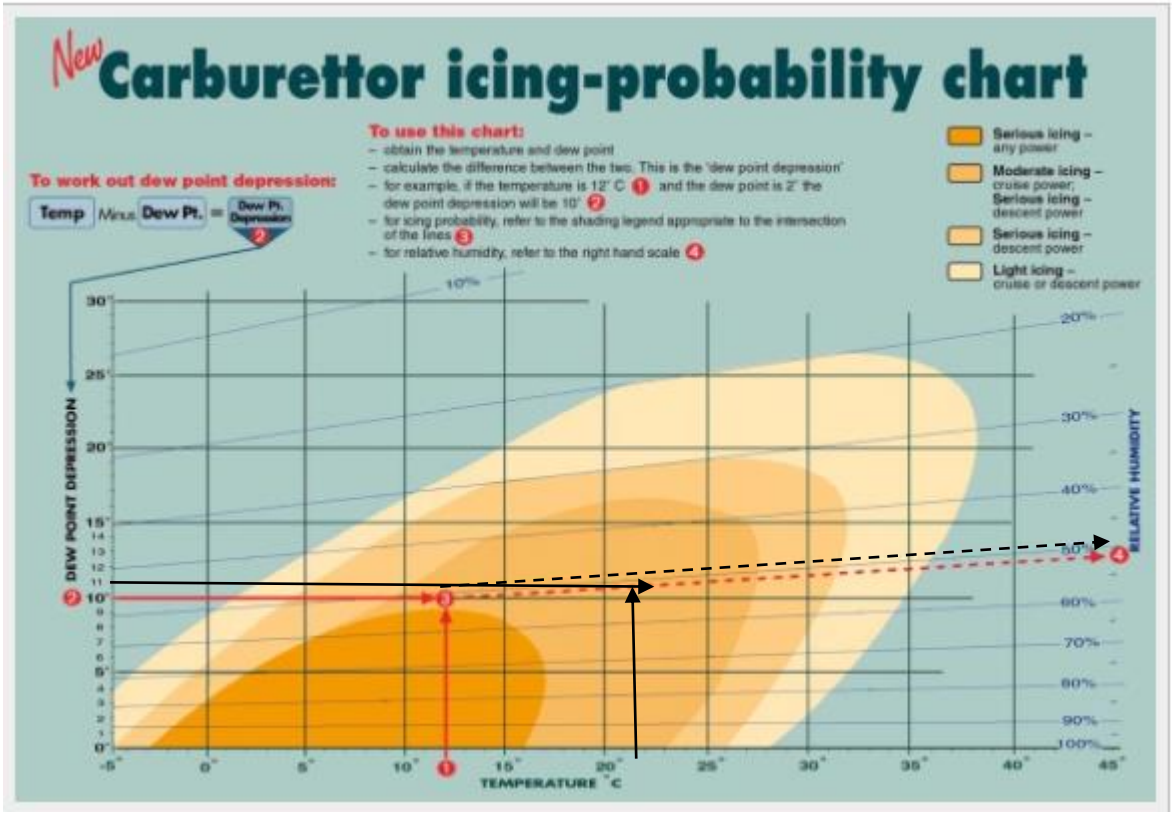

Figure 1: Carb icing chart.

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
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****.*
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 the AIID, which are reserved.

This report is issued by:

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