

LIMITED ACCIDENT INVESTIGATION

Reference Number	CA18/2/3/9986						
Classification	Accident	Date	15 April 2021	Time	0718Z		
Type of Operation	Agricultural (Part 137)						
Location							
Place of Departure	AJ Landing private airstrip	Place of Intended Landing			AJ Landing private airstrip		
Place of Accident	Kirkwood private farm in the Eastern Cape province						
GPS Co-ordinates	Latitude	33° 26' 31.79" S	Longitude	25° 23' 10.22 " E	Elevation	663 ft	
Aircraft Information							
Registration	ZS-LCI						
Model/Make	PA-36-375(93/074E)						
Damage to Aircraft	Substantial			Total Aircraft Hours	7830.11		
Pilot-in-command							
Licence Type	Commercial Pilot Licence		Gender	Male	Age	59	
Licence Valid	Yes						
Total Hours on Type	244.39			Total Flying Hours	4274.98		
People On-board	1+0	Injuries	0	Fatalities	0	Other (On Ground)	0
What Happened	<p>On the morning of 15 April 2021 at approximately 0650Z, a pilot on-board a Piper PA-36-375, registered ZS-LCI, took off from AJ Landing private airstrip on a commercial crop-spraying operation on a private farm. The flight was conducted under Visual Flight Rules (VFR) by day. The aircraft was loaded with 433 litres of pest solution and had a full capacity fuel tank during take-off. The pilot stated that at approximately 0721Z and during a turn for a third spray, the engine started running rough, and the engine's revolutions per minute (RPM) and pressure manifold suddenly started fluctuating. This caused the airspeed to decrease. The pilot lowered the aircraft's nose to gain speed, but this resulted in loss of height and the aircraft impacted the ground. The aircraft crashed onto the crops on the same farm. The pilot disembarked the aircraft unassisted and contacted the aircraft owner to report the accident. The ground crew ran to the accident scene to assist the pilot to disconnect the aircraft's battery.</p>						

The pilot was not injured during the accident sequence and the aircraft sustained substantial damage. The left-side wing tip had hit one of the trees during the accident sequence and was damaged by impact force.



Figure 1: Damage on left-side wing tip.

The engine cowling was damaged on impact. The propeller indicated that the engine was producing less power during impact.



Figure 2: A damaged cowling and bent propeller blades.

The left-side wheel assembly had separated from the axle during the accident sequence.



Figure 3: The wheel which had separated from the axle.

According to the weather information obtained from the South African Weather Service (SAWS), wind was 45°/03 knots; temperature: 15.5°C; dew point: 14.3°C; cloud: CAVOK; visibility: >10 km. With both temperature and dew point information available, dew point depression was determined to be 1.2°C. According to the carburettor icing-probability chart below, the probability of icing was serious in any power setting and the relative humidity in the area around Port Elizabeth International Airport (FAPE) was approximately 90%.

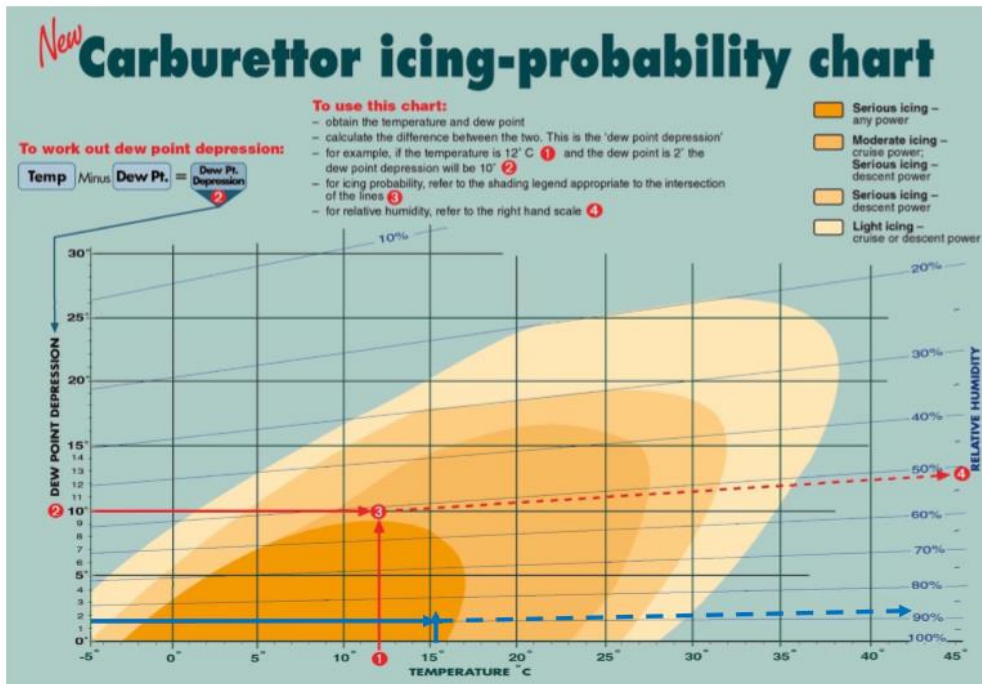


Figure 4: The blue lines indicate the severity of icing.

<p>Probable Cause:</p> <p>Partial loss of engine power during a turn for the third spray because of carburettor icing.</p>	
<p>Safety Action/s</p>	
<p>None.</p>	
<p>Safety Message and/or Safety Recommendation/s</p>	
<p>Safety message: Pilots are advised to carry out a proper flight planning prior to initiating any flight, with emphasis to the weather, especially the proximity of the temperature and dew point, which would indicate the icing probability. This would also prevent engine power loss or failure, thus, preventing loss of life and damage to property.</p>	
<p>Purpose of the Investigation</p>	
<p><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></p>	
<p>About this Report</p>	
<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>	
<p>Disclaimer</p>	
<p><i>This report is produced without prejudice to the rights of the AIID, which are reserved.</i></p>	

This report is issued by:

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