



<b>LIMITED ACCIDENT INVESTIGATION REPORT</b>
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<b>Reference Number</b>		CA18/2/3/10025					
<b>Classification</b>	Accident	<b>Date</b>	28 July 2021		<b>Time</b>	0900Z	
<b>Type of Operation</b>		Private (Part 94)					
<b>Location</b>							
Place of Departure	Eva's Airfield in Hilton, KwaZulu-Natal Province			Place of Intended Landing	Eva's Airfield, KwaZulu-Natal		
Place of Accident		Mondi Plantation near Craigie Burn Dam in KwaZulu-Natal Province					
GPS Co-ordinates	Latitude	29°08'27.3" S	Longitude	030°23'27.7" E	Elevation	4368ft	
<b>Aircraft Information</b>							
Registration		ZU-IMX					
Model/Make		Zlin Savage Cub (X279)					
Damage to Aircraft		Destroyed	Total Aircraft Hours		368.0		
Registration		ZU-IPZ					
Model/Make		Zlin Savage Cub (X279)					
Damage to Aircraft		Substantial	Total Aircraft Hours		144		
<b>Pilot-in-command ZU-IMX</b>							
Licence Valid		Yes	Gender	Male		Age	49
Licence Type		Commercial Pilot Licence (Aeroplane)					
Total Hours on Type		500		Total Flying Hours		1688.2	
<b>Pilot-in-command ZU-IPZ</b>							
Licence Valid		Yes	Gender	Male		Age	20
Licence Type		National Pilot Licence					
Total Hours on Type		136.6		Total Flying Hours		243.3	
<b>People On-board ZU-IMX</b>	1+0	Injuries	0	Fatalities	1	Other (On ground)	0
<b>People On-board ZU-IPZ</b>	1+0	Injuries	0	Fatalities	0	Other (On ground)	0
<b>What Happened</b>							
<p>On Wednesday morning, 28 July 2021, a pilot on-board a Savage Cub light sport single engine aircraft with registration marking ZU-IMX took off on a private flight from Eva's Airfield situated in Hilton, Pietermaritzburg, in KwaZulu-Natal Province to Rietvlei, also in KwaZulu-Natal, with the</p>							

intention to land back at Eva's Airfield. The flight was conducted under Visual Flight Rules (VFR) by day and no flight plan was filed. According to the information gathered during the investigation, the pilot got airborne and was followed by his 20-year-old son on-board another Savage Cub aircraft with registration ZU-IPZ. According to the son, he and his father continued to keep sight of each another in the sky and were communicating by means of aircraft-equipped radios. After the two aircraft had reached Rietvlei, the pilot on-board ZU-IPZ aircraft had the ZU-IMX aircraft in sight, which was to his left-side and approximately 250 metres away, flying low above the Mondi plantation in a north-easterly heading.

Moments later, the ZU-IMX aircraft collided with Eskom powerlines secured by wooden poles that were 11 metres in height which spanned along its flight path; thereafter, the aircraft continued on its flight path for approximately 110 metres before crashing onto a rocky terrain in the valley near Craigie Burn Dam. Post-impact fire ensued afterwards. The pilot sustained burn injuries, however, he was able to free himself from the wreckage. The aircraft was destroyed by post-impact fire. The ZU-IMX aircraft flight lasted approximately 0.4 hours. Post-accident examination of the ZU-IMX aircraft indicated that the powerline cable got entangled around the propeller flange.



Powerline cable entangled around the propeller flange.

**Figure 1:** Powerline cable entangled around the propeller flange.

Meanwhile, the pilot of the ZU-IPZ aircraft had observed the accident happening, where upon he located a suitable landing area where he landed safely, he subsequently hurried on foot to the accident site of the ZU-IMX aircraft to assist the pilot who was, at that time, standing some distance away from the burning wreckage. The farm workers close to the accident site assisted the pilot of the ZU-IPZ aircraft in transporting the injured pilot on a tractor to the location of his aircraft (ZU-IPZ). The pilot of the ZU-IPZ then helped the injured pilot to board the aircraft (ZU-IPZ) with the intention to fly back to Eva's Airfield and then drive to a nearby hospital for immediate medical attention.

After making sure that the injured pilot was appropriately harnessed on the back seat (tandem configuration), the pilot of the ZU-IPZ started the engine without struggle. Because of the emergency situation, the ZU-IPZ pilot did not consider the aircraft's allowable take-off weight; he also continued to take-off on a short open area. However, during the take-off roll, the aircraft was not able to reach rotation speed as the right main gear strut impacted a rock and broke off; the aircraft's nose pitched down and the propeller blades struck the ground. Thereafter, the engine stopped. The pilot (ZU-IPZ) switched off the master switch before he and the injured pilot disembarked the aircraft. The ZU-IPZ aircraft sustained substantial damages, however, the pilot did not sustain any injuries and the passenger (father and pilot of ZU-IMX did not sustain additional injuries.

The ZU-IPZ pilot then called the chief engineer at their Aircraft Maintenance Organisation (AMO) based at Eva's Airfield on his mobile phone to relate their situation. The AMO arranged for a helicopter to collect them from the accident site. The injured pilot (ZU-IMX) was safely flown to St Anne's (Netcare) Hospital in Pietermaritzburg where he succumbed to his injuries a day after the accident. Post-accident interview with the pilot of ZU-IPZ aircraft indicated that the aircraft was airworthy with no mechanical defects noted in the flight folio. During on-site investigation, the investigation team found that all aircraft systems were working well prior to collision with the powerlines.

The ZU-IPZ aircraft calculated total take-off weight was 522 kilograms (kg) at the time of the accident. According to the Pilot's Operating Handbook (POH), page 14, the aircraft had the maximum take-off weight (MTOW) of 472kg, meaning that on take-off following the accident, the ZU-IPZ aircraft had exceeded its allowable weight limit by 50kg. It is stated in the aircraft POH, page 25, that the aircraft needed 328 feet (100 metres) when it is within its take-off limits. The pilot had 170m take-off run before the aircraft impacted a rock.



**Figures 2 and 3:** The ZU-IMX aircraft at the accident site (left picture). A picture of ZU-IMX (right picture), a Savage Cub aircraft, taken a while before the accident. (Source: (<http://defenceweb.co.za>))





**Figure 4:** Aerial view of ZU-IMX flight path in yellow; as well as the severed powerline cable the aircraft collided with, and view of the accident site.

**Probable cause ZU-IMX:**

The ZU-IMX aircraft was flying low, where after, it collided with the powerlines that spanned along its flight path, and as a result, the pilot lost control before the aircraft crashed.

**Probable cause ZU-IPZ:**

To rescue the pilot of ZU-IMX aircraft, the pilot of ZU-IPZ aircraft who, under stressful conditions, omitted to calculate the aircraft's weight and balance and to review the safety aspects on take-off area, which resulted in the aircraft colliding with a rock before it crashed.

<p><b>Contributory factor ZU-IPZ:</b></p> <p>1. In a haste to rescue the injured pilot of ZU-IMX aircraft (father), the pilot of the ZU-IPZ aircraft (son) neglected to consider safe operating procedures.</p>	
<p><b>Safety Action/s</b></p>	
<p>None.</p>	
<p><b>Safety Message</b></p>	
<p>Pilots are advised to always consider safe operating procedures as stipulated in the manufactures' prescripts and the Civil Aviation Regulations prior to engaging in any operation.</p>	
<p><b>Purpose of the Investigation</b></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 <b>not to apportion blame or liability.</b></i></p>	
<p><b>About this Report</b></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><b>Disclaimer</b></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**