

**LIMITED ACCIDENT INVESTIGATION REPORT**

<b>Reference Number</b>	CA18/2/3/10110						
<b>Classification</b>	Accident	<b>Date</b>	31 January 2021	<b>Time</b>	1400Z		
<b>Type of Operation</b>	Training (Part 141)						
<b>Location</b>							
<b>Place of Departure</b>	Port Alfred (FAPA), Eastern Cape Province		<b>Place of Intended Landing</b>		Port Alfred (FAPA), Eastern Cape Province		
<b>Place of Accident</b>	A grass field 44 Nautical Miles north-east of FAPA						
<b>GPS Co-ordinates</b>	<b>Longitude</b>	S 33°11'46.0"	<b>Latitude</b>	E 027°35'35.6"	<b>Elevation</b>	450 feet	
<b>Aircraft Information</b>							
<b>Registration</b>	ZS-SYJ						
<b>Model/Make</b>	Piper Archer PA 28 R (S/N:28-43208)						
<b>Damage to Aircraft</b>	Substantial		<b>Total Aircraft Hours</b>		19157		
<b>Pilot-in-command</b>							
<b>Licence Type</b>	Student Pilot Licence (Aeroplane)		<b>Gender</b>	Male	<b>Age</b>	29	
<b>Licence Valid</b>	Yes						
<b>Total Hours on Type</b>	16.6		<b>Total Flying Hours</b>		101.3		
<b>People On-board</b>	1 + 0	<b>Injuries</b>	0	<b>Fatalities</b>	0	<b>Other (on ground)</b>	0
<b>What Happened</b>							
<p>On Tuesday, 31 January 2022, a student pilot on-board a Piper Archer with registration ZS-SYJ was conducting a solo navigation training flight from Port Alfred Airport (FAPA) to Mazeppa Bay, and then back to FAPA. The flight was conducted under visual meteorological conditions by day (VMC) and under the provisions of Part 141 of the Civil Aviation Regulations (CAR) 2011 as amended.</p> <p>The aircraft took off at 1205Z from FAPA routing to Mazeppa Bay. The student pilot reported that the aircraft experienced a loss of electrical power after an hour and half into the flight. He identified a grass field and decided to initiate a precautionary landing. The student pilot landed about 44 nautical miles (nm) north-east of FAPA (this was on his return flight to FAPA). During the landing roll, the aircraft's left wing leading edge collided with a fence pole before the aircraft came to a stop. The pilot did not sustain any injuries during the landing phase, however, the aircraft sustained damage to the left wing.</p>							

**What was found:**

1. The pilot was initially issued a Student Pilot Licence (SPL) on 22 December 2020; he had undergone a competency reevaluation on 4 January 2022 and was reissued the licence on the same day with an expiry date of 3 January 2023. The pilot had a Class II medical certificate issued on 16 November 2021 with an expiry date of 16 November 2025 and with no restrictions.
2. The aircraft was issued a Certificate of Registration on 15 December 2017, and the Certificate of Airworthiness on 6 May 2015 with an expiry date of 31 March 2023. The aircraft was maintained by an aircraft maintenance organisation (AMO) with a certificate issued on 28 October 2021 and expiring on 31 October 2022. The last mandatory periodic inspection (MPI) on the aircraft was carried out on 28 January 2022 at 19151 airframe hours. The aircraft was issued a Certificate of Release to Service on 28 January 2022 at 19151 hours. The accident occurred six hours after the last MPI. There were no reported anomalies with the aircraft prior to the flight. The alternator inspection was signed out during the last 14400-hour check.
3. The pilot reported that he experienced electrical power failure approximately an hour and half into the flight. The aircraft progressively lost electrical instrument indication and radios. The alternator indicator displayed a positive charge indication. The pilot stated that he initially intended to follow the 'lost radio communications procedure' and fly back to FAPA, however, he heard an unfamiliar rattling sound coming from the aircraft's engine and elected to execute a precautionary landing at a suitable field instead.
4. During the landing roll, the aircraft's left wing leading edge collided with a fence pole before the aircraft came to a stop. The pilot did not sustain any injuries; the aircraft sustained damage to the left wing.
5. Post-flight inspection revealed that the alternator had failed due to a broken cooling fan, which led to the instrumentation switching off in-flight.



**Figure 1:** Picture of ZS-SYJ aircraft. (Source: 43 Air school)

**Probable cause:**

Electrical failure in-flight due to alternator failure, followed by an unsuccessful precautionary landing.

**Safety Action/s**

None.

**Safety Message and/or Safety Recommendation/s**

None.

**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**