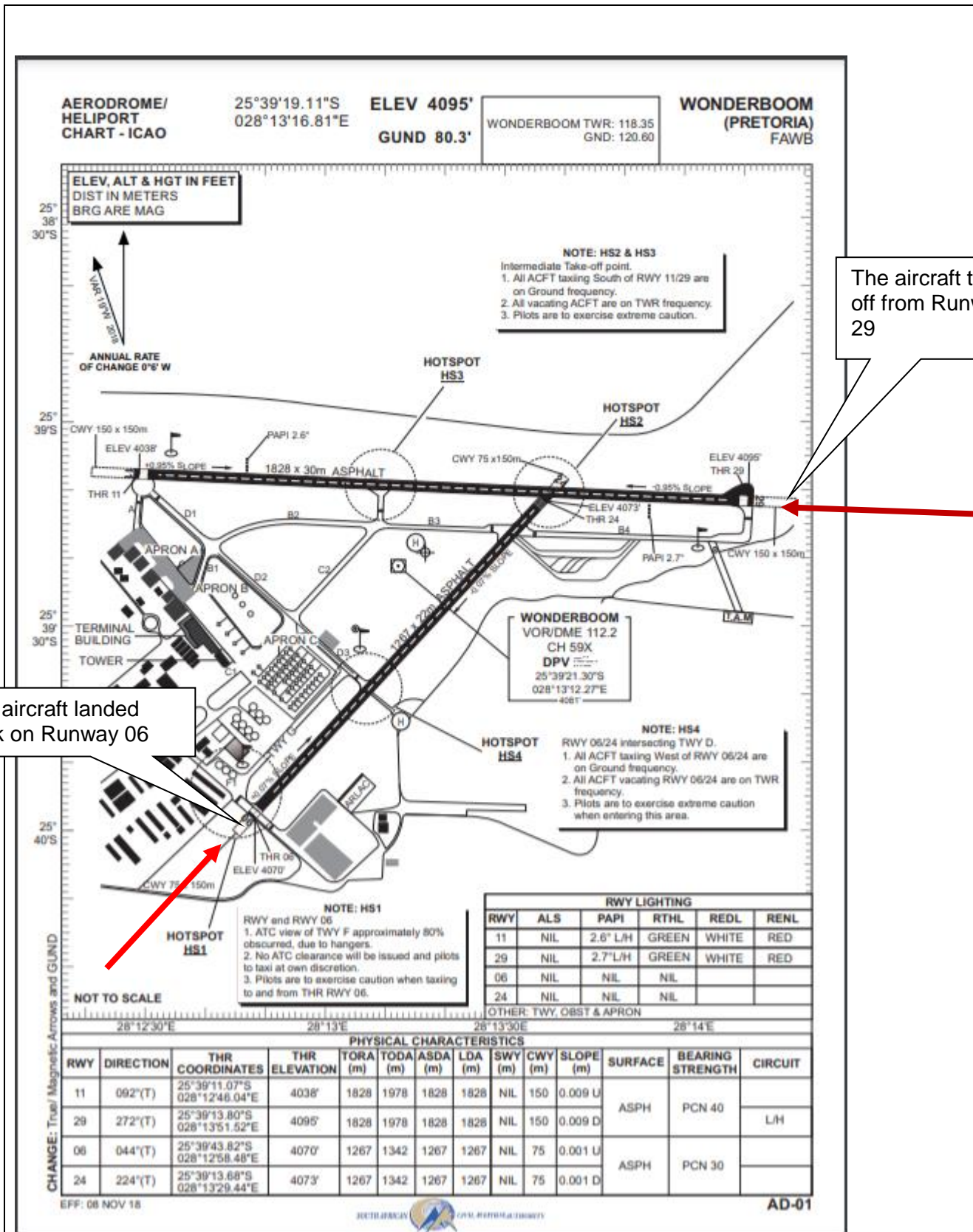


**LIMITED INCIDENT INVESTIGATION REPORT**

<b>Reference Number</b>	CA18/3/2/1366						
<b>Classification</b>	Incident	<b>Date</b>	25 August 2021	<b>Time</b>	0628Z		
<b>Type of Operation</b>	Private (Part 94)						
<b>Location</b>							
<b>Place of Departure</b>	Wonderboom Aerodrome (FAWB), Gauteng Province		<b>Place of Intended Landing</b>	Rhino Park Airfield, Gauteng Province			
<b>Place of Incident</b>	In-flight after departing Wonderboom Aerodrome (FAWB) Runway 29						
<b>GPS Co-ordinates</b>	<b>Longitude</b>	S 25°39'19"	<b>Latitude</b>	E 28°13'16"	<b>Elevation</b>	4780 feet	
<b>Aircraft Information</b>							
<b>Registration</b>	ZU-DFR						
<b>Model/Make</b>	Jabiru J450 (Serial no. 107)						
<b>Damage to Aircraft</b>	None		<b>Total Aircraft Hours</b>	890.3			
<b>Pilot-in-command</b>							
<b>Licence Type</b>	Commercial Pilot Licence (CPL)	<b>Gender</b>	Male		<b>Age:</b> 25		
<b>Licence Valid</b>	Yes						
<b>Total Hours on Type</b>	263.8		<b>Total Flying Hours</b>	1276.1			
<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 Wednesday morning, 25 August 2021, a pilot on-board a Jabiru J450 aircraft with registration mark ZU-DFR was on a ferry flight from Wonderboom Aerodrome (FAWB) to Rhino Park Airfield. The flight was undertaken after an annual inspection that was carried out on the aircraft on 19 August 2021 at 890.3 airframe hours. The flight was conducted under visual meteorological conditions (VMC) by day and no flight plan was filed. The pilot reported that after take-off from Runway 29 at approximately 5800 feet (ft) above sea level and on a heading of 290 degrees, the aircraft experienced a partial engine power loss. The engine's revolutions per minute (rpm) dropped from 2800 to approximately 2100 rpm. The pilot declared a Mayday call to the tower and was cleared to land back at FAWB on Runway 06.</p> <p>The pilot turned left to reposition for landing on Runway 06 and successfully landed without any further incident. The aircraft was taxied to the approved person's (AP) hangar whereafter the engine was inspected.</p>							



The aircraft landed back on Runway 06

The aircraft took off from Runway 29

Figure 1: Wonderboom Aerodrome chart.

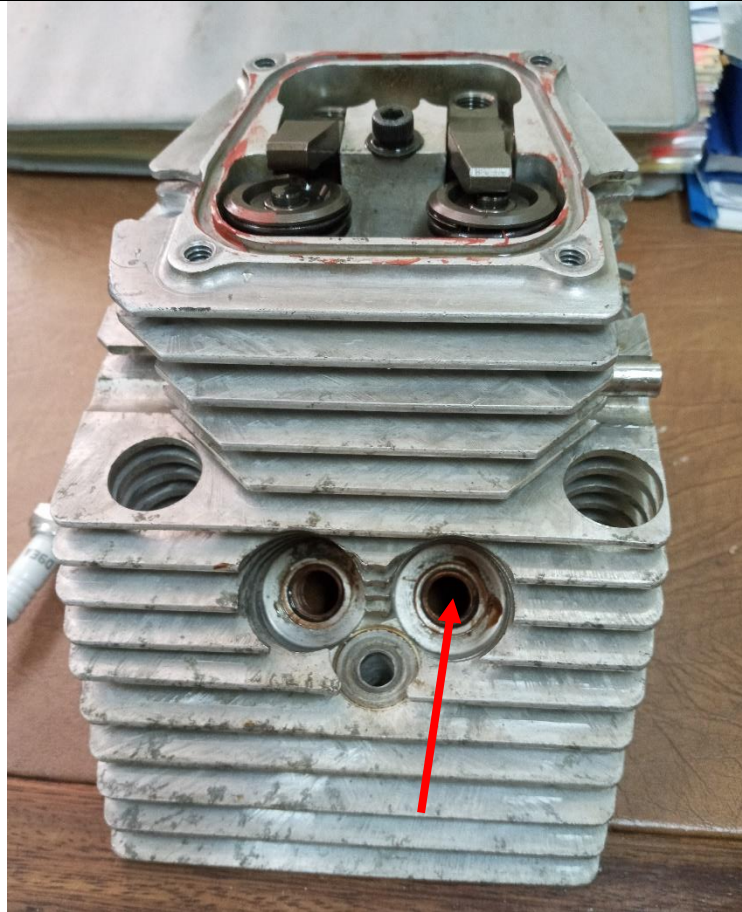
After removing the engine cowlings during the investigation, the AP found out that the rear spark plug on the number 6 cylinder had ejected from its position due to damaged threads. Thorough inspection of the spark plug suggested that the damage might have been caused by the spark plug cross-threading and over-torquing during installation. The number 6 cylinder was removed from

the engine and taken to an engineering shop for maintenance. A new thread shell was inserted into the cylinder head spark plug hole and the new spark plug was installed and torqued in accordance with (IAW) the engine manufacturer's specifications. The torque wrench used was correctly calibrated. The engine run was carried out after maintenance and it met all the parameters.



**Figure 2:** The number 6 cylinder out for repairs.





**Figure 3:** The repaired cylinder with new threads.

**Probable cause:**

The rear spark plug on the number 6 cylinder ejected from its position (hole) due to damaged threads. The threads were most probably damaged by cross-threading during installation.

**Safety Action/s**

None.

**Safety Message**

Aircraft maintenance organisations (AMO) and aircraft maintenance engineers (AME) are advised to always follow the recommended maintenance instructions and to use specified tools to carry out maintenance work as that will prevent injuries 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**