



## SHORT ACCIDENT REPORT AND EXECUTIVE SUMMARY

				Reference:	CA18/2/3/9531	
<b>Aircraft Registration</b>	ZS-HXS	<b>Date of Accident</b>	23 March 2016		<b>Time of Accident</b>	0600Z
<b>Type of Aircraft</b>	Robinson R22 Beta		<b>Type of Operation</b>	Private (Part 91)		
<b>Pilot-in-command Licence Type</b>	Private Pilot		<b>Age</b>	25	<b>Licence Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>	<b>Total Flying Hours</b>		154.7		<b>Hours on Type</b>	153.8
<b>Last point of departure</b>	Rand Airport (FAGM): Gauteng Province					
<b>Next point of intended landing</b>	New Castle Aerodrome (FANC): KwaZulu Natal					
<b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>						
In front of the control tower at Rand airport (GPS position: 26°14'23.3" S 028°09'06.0" E, elevation 5482ft)						
<b>Meteorological Information</b>	Wind direction: 010°; Wind speed: 9kts; Temperature: 14°C; Visibility: 9000m; Dew point: 12°C; Cloud base: OVC at 800ft.					
<b>Number of people on board</b>	1+1	<b>No. of people injured</b>	0	<b>No. of people killed</b>	0	
<b>Synopsis</b>	<p>The pilot and a passenger took-off on a ferry flight from the front of Rand airport (FAGM) tower, intending to land at Newcastle airport (FANC). During take-off, the pilot observed the "Low RPM" warning light illuminating on the annunciator panel followed by an audio warning. The pilot lost control; the helicopter skids impacted the ground and the main rotor blades severed the tail boom into pieces. The helicopter came to rest on its right hand side approximately 73 metres (m) from the helipad. The airport's rescue and fire fighting (ARFF) vehicles dispatched to the accident site. Neither occupant sustained injuries during the accident sequence. The helicopter was substantially damaged.</p> <p>The investigation revealed that the pilot climbed too early and the helicopter lost RPM. The pilot used an incorrect corrective action to restore the main rotor RPM.</p>					
<b>Probable Cause</b>						
The helicopter experienced low main rotor RPM after lift-off. The pilot took an incorrect action to restore the rpm.						
<b>SRP Date</b>	12 September 2017		<b>Release Date</b>	20 September 2017		

<b>AIRCRAFT ACCIDENT REPORT</b>
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**Name of Owner/Operator** : International Trade and Commodites CC  
**Manufacturer** : Robinson Helicopter Company  
**Model** : R22 Beta  
**Nationality** : South African  
**Registration Marks** : ZS-HXS  
**Place** : Opposite hangar 6 at Rand Airport (FAGM)  
**Date** : 23 March 2016  
**Time** : 0600Z

*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.*

**Purpose of the Investigation:**

*In terms of Regulation 12.03.1 of the Civil Aviation Regulations (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 establish blame or liability.***

**Disclaimer:**

*This report is produced without prejudice to the rights of the CAA, which are reserved.*

## 1. FACTUAL INFORMATION

### 1.1 History of Flight

1.1.1 On 23 March 2016, the pilot accompanied by a passenger on-board a Robinson R22 Beta helicopter, registration ZS-HXS, took-off from a helipad in front of the air traffic control tower and fire fighting department buildings at Rand airport (FAGM). The purpose of the flight was to ferry the helicopter to Newcastle aerodrome (FANC). The pilot stated that before take-off, he contacted the Air Traffic Control (ATC), requesting clearance for take-off with 90 litres of fuel on-board and about 2 hours flight duration to FANC. The pilot was given surface data by FAGM ATC and cleared to cross all runways to the south and climb to 6000ft above mean sea level (AMSL).

- 1.1.2 During take-off, the pilot observed the “Low RPM” warning light illuminating on the annunciator panel. He stated that he instantly rolled the throttle to increase power to the engine, pulled back slightly on the cyclic to gain height and then moved the cyclic forward to increase airspeed, but helicopter kept losing height. The helicopter impacted the ground very hard on its skids before rolling over to the right. During the process, the main rotor blades severed the tail boom into pieces. The pilot and the passenger were not injured. The helicopter sustained substantial damage.
- 1.1.3 The aerodrome aircraft rescue and firefighting (ARFF) vehicles dispatched to the accident site. The helicopter wreckage and debris were found on the vicinity of runway 35 grassy areas.
- 1.1.4 The accident occurred during daylight conditions at a geographical position determined to be 26°14' 23.3" South 028° 09' 06.0" East, at 0600Z, elevation 5482 ft.



**Figure 1:** Google map showing position of accident site in relation to the tower.

**\*Note: Information below was extracted from R22 Pilot’s Operating Handbook, Page 3-6**

## **LOW RPM HORN & CAUTION LIGHT**

A horn and an illuminated caution light indicate that rotor RPM may be below safe limits. To restore RPM; the pilot should immediately roll throttle on, lower collective and, in forward flight, apply aft cyclic. Horn and caution light are disabled when collective is full down.

### **1.2 Investigation Revealed The Following:**

- 1.2.1 The pilot was properly licensed and rated to perform the flight. The aircraft had a total of 5113.2 hours. The last Mandatory Periodic Inspection (MPI) on the aircraft was carried out on 14 March 2016 at 5109.8 hours, and the aircraft had flown 3.4 hours since the last inspection.
- 1.2.2 The pilot climbed out too early and did not continually monitor the rotor RPM and a few seconds later it decayed. The pilot used an incorrect procedure to restore RPM. Horn and caution light are disabled when collective is fully down. The pilot should have immediately rolled throttle on, lowered collective and then applied aft cyclic.

## 1.3 Damage to the helicopter



**Figure 3:** The helicopter wreckage at accident site.

## 2. CONCLUSION

### 2.1 Probable Cause/s

- The helicopter experienced low main rotor RPM after lift-off. The pilot took an incorrect action to restore the rpm.

## 3. SAFETY RECOMMENDATIONS

3.1 None.

## 4. APPENDICES

4.1 None.