



## SOUTH AFRICAN CIVIL AVIATION AUTHORITY

### ACCIDENT REPORT – EXECUTIVE SUMMARY

<b>Aircraft Registration</b>	<b>ZS-RTM</b>	<b>Date of Accident</b>	25 November 2004	<b>Time of Accident</b>	1400Z
<b>Type of Aircraft</b>	ROBINSON R22 BETA II	<b>Type of Operation</b>	Private		
<b>Pilot-in-command License Type</b>	Airline Transport	<b>Age</b>	47	<b>License Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>	Total Flying Hrs	8 000.0		Hours on Type	2 500.0
<b>Last point of departure</b>	Nelspruit Aerodrome (FANS)				
<b>Next point of intended landing</b>	Farm in the Dullstroom area				

**Location of the accident site with reference to easily defined geographical points (GPS readings if possible)**

Farm in the Dullstroom area

<b>Meteorological Information</b>	Fine: Wind; southwesterly at 12knots, Temperature 23°C, CAVOK				
<b>Number of people on board</b>	1 + 0	<b>No. of people injured</b>	0	<b>No. of people killed</b>	0

#### Synopsis

The pilot, who was the sole occupant of the aircraft attempted to position the aircraft for landing on top of a ridge, at an elevation of approximately 6 000 feet AMSL (above mean sea level). During his approach, the pilot executed a downwind turn, resulting in a loss of power. According to the pilot, he applied corrective action to recover from the reduced power condition by utilizing the assistance of ground effect, but was unable to maintain his main rotor RPM within the green arc.

During landing the left skid touched down on a rock, which was concealed by the grass. The pilot was unable to lift-off immediately, following the landing, due to a decay in main rotor RPM. The left skid subsequently skidded off the rock resulting in the main rotor blades severing the tailboom and the aircraft rolled-over onto its right-hand side. The pilot was not injured in the accident.

The density altitude at the landing site was calculated to be approximately 8 300 feet. The IGE (in ground effect) and OGE (out of ground effect) performance hover charts were consulted and at a calculated landing weight of 1138 pounds (MTOW – 1370lbs), the aircraft would have been capable of hovering in both these conditions safely.

The last Mandatory Periodic Inspection (MPI) prior to the accident was certified on 28 October 2004, at 200.0 airframe hours. Since the last MPI was certified a further 25.0 hours was flown.

The aircraft was subjected to a performance test flight on 8 April 2004 as part of its Certificate of Airworthiness approval as required by the CAA and was found to perform within the aircrafts performance envelope as specified during certification requirements.

#### Probable Cause

During a downwind landing, at a density altitude of approximately 8 300 feet the pilot allowed the main rotor RPM to decay below 97% (red line). During the landing the left skid touched down on a rock that was concealed by the grass, the aircraft skidded forward off the rock and the main rotor blades severed the tailboom before the pilot could take any corrective action, which was restricted by a limited power (decay in main rotor RPM) condition on touchdown.

Failure by the pilot to assess the wind properly prior to landing should be regarded as a significant contributory factor to this accident.