



Ref: 7933

SOUTH AFRICAN CIVIL AVIATION AUTHORITY**ACCIDENT REPORT – EXECUTIVE SUMMARY**

Aircraft Registration	ZU-DCI	Date of Accident	23 March 2005	Time of Accident	1318Z
Type of Aircraft	EXECUTIVE 162 F		Type of Operation	Private	
Pilot-in-command Licence Type	PRIVATE	Age	42	Licence Valid	Yes
Pilot-in-command Flying Experience	Total Flying Hours	944	Hours on Type	67	
Last point of departure	Stellenbosch Aerodrome				
Next point of intended landing	Stellenbosch Aerodrome				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)					
1 nm outside the boundary fence of Stellenbosch Aerodrome					
Meteorological Information	The weather was fine; Temp 32°C; Wind 180°/10-15 and the visibility good				
Number of people on board	1+1	No. of people injured	0	No. of people killed	0

Synopsis

The pilot stated that on 23 March 2005 at approximately 1300Z, he was accompanied by a passenger on a local private flight to the Stellenbosch general flying area (GFA). After hovering for approximately one minute, he flew to the south of Runway 01/19 at Stellenbosch Aerodrome and then climbed to a height of 1200ft AGL before starting the crosswind and downwind leg. All the engine parameters were reading normally at the time. On base leg, he noted a reduction in the engine RPM followed by a slight vibration. Shortly thereafter, the engine failed.

The pilot then had to turn downwind over pine trees in order to execute an auto rotational landing onto an open field just outside the Stellenbosch Aerodrome boundary fence. He then flared the helicopter at approximately 40ft AGL at an IAS of 10mph and raised the collective in order to cushion the landing. Due to a tail wind component, the helicopter touched down at an IAS of approximately 25mph. The helicopter then skidded for a distance of approximately 10m whereupon the front skids dug into the soft soil causing the helicopter to pitch forward. As a result, the main rotor blades severed the tail boom assembly.

The main rotor blades including the tail boom and tail rotor were extensively damaged during the accident.

The pilot and passenger escaped without any injuries.

A 75 hour Inspection was certified on the aircraft on 3 January 2005. Subsequent to the 75 hour inspection, a further 12.4 hours were flown. The total time on the aircraft at the time of the accident was thus 87.4 hours.

The pilot was in possession of a valid license and was type rated on the helicopter.

Probable Cause

The earth strap leading from the ignition modules was found incorrectly bolted onto the circumference of the left-hand seat frame with a smaller diameter bolt causing insufficient earth contact.

The earth strap should have been bolted onto engine mount bolt as specified by the manufacturer. In addition, the smaller diameter bolt used has a much lower torque value as the engine mount bolt. It is concluded that a momentary loss of the earth contact caused a loss of the operation of the ignition system and subsequent engine failure.