



Ref: 7532

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

Aircraft Registration	ZS-RGI	Date of Accident	26 July 2002	Time of Accident	1300Z
Type of Aircraft	ROBINSON R-22 BETA		Type of Operation	Private	
Pilot-in-command Licence Type	Private	Age	42	Licence Valid	Yes
Pilot-in-command Flying Experience	Total Flying Hours	1066.9		Hours on Type	490.0
Last point of departure	Wonderboom Aerodrome				
Next point of intended landing	Gravelotte (165nm NE of Wonderboom)				
Location of the accident site with reference to easily defined geographical points (GPS readings if possible)					
On a farm Rietfontein approximately 27 nm North East of Wonderboom Aerodrome.					
Meteorological Information	Fine weather conditions prevailed at the time of the accident with zero cloud cover and no wind.				
Number of people on board	1 + 0	No. of people injured	1	No. of people killed	Nil
Synopsis	<p>The private pilot collected the aircraft from a maintenance facility where it had undergone a mandatory periodic inspection and a subsequent test-flight by a test pilot with no defects reported. Following a pre-flight inspection the pilot started the helicopter and air taxied to the refuelling bays where both the main and auxiliary fuel tanks were filled to capacity with 76 litres of fuel.</p> <p>The pilot obtained lift-off clearance to proceed to the main wind-sock where he took off and routed towards a farm in the Gravelotte area situated 165nm NE of Wonderboom Aerodrome.</p> <p>After approximately 30 min of flight while cruising at an altitude of approximately 4000 ft (\pm500ft AGL) at an indicated airspeed of 85 Knots, the helicopter suddenly yawed violently to the right. The pilot was only able to regain partial directional control and the helicopter continued to yaw alternately to the left and right accompanied by severe vibration felt on the anti-torque pedals.</p> <p>The pilot then lowered the collective lever and entered an autorotational landing where upon the helicopter became more controllable with less vibration although it continued to “fish-tail.”</p> <p>On flaring for landing the helicopter yawed violently to the right and landed hard with a forward speed of between 20 to 30 Knots. The right-hand skid gear collapsed and the helicopter came to rest on it's right-hand side approximately 35m further.</p> <p>The helicopter was extensively damaged and the pilot sustained injuries to his right shoulder and a cut to his face.</p>				
Probable Cause					
As far as could be determined, one of the tail rotor pitch link bolts came adrift during flight which resulted in a loss of tail rotor control and subsequent autorotational landing during which the helicopter was extensively damaged. The remaining three bolts were metallurgically analysed for any signs of impending failure but all three bolts were found serviceable with no signs of impending failure.					