



Ref: 7692

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

<b>Aircraft Registration</b>	<b>ZU-RAL</b>	<b>Date of Accident</b>	25/8/2003	<b>Time of Accident</b>	1032Z
<b>Type of Aircraft</b>	ALOUETTE II (AS 318)	<b>Type of Operation</b>	Private		
<b>Pilot-in-command Licence Type</b>	Private	<b>Age</b>	37	<b>Licence Valid</b>	Yes
<b>Pilot-in-command Flying Experience</b>	Total Flying Hours	135.8	<b>Hours on Type</b>	80.3	
<b>Last point of departure</b>	Farm: Saamwerk – Pongola Area				
<b>Next point of intended landing</b>	Arizona Game Ranch – Pongola Area				
<b>Location of the accident site with reference to easily defined geographical points (GPS readings if possible)</b>					
Arizona Game Ranch – Pongola Area					
<b>Meteorological Information</b>	Fine: Wind - Variable / $\pm 5$ knots, Visibility - Good, Temperature +25°C				
<b>Number of people on board</b>	1 + 1	<b>No. of people injured</b>	None	<b>No. of people killed</b>	None
<b>Synopsis</b>	<p>On the morning of 25 August 2003 the pilot flew from his farm in the Pongola area and landed at the Arizona Game Ranch. Accompanied by the owner of the ranch, they departed a few minutes later, with the intention to inspect the farm from the air with special emphasis on the condition of the roads, erosion gullies and grazing.</p> <p>During the flight they flew up a valley, <math>\pm 1000</math>ft higher than the point of take-off at a relatively low altitude, once they reached the summit the pilot pulled back on the cyclic control to reduce the airspeed to enter hover flight. At a height of approximately 50 feet above the mountain in a nearly hovering flight, he realised that they were descending at a substantial rate.</p> <p>The pilot had no other option but to identify what looked like a suitable area and proceeded to carry out a forced landing as he was running out of power. During the attempted landing the main rotor blades struck a tree, in close proximity to the ground, and the aircraft was landed on top of the ridge. On shutting down the main rotor blades drooped striking the tree, resulting in extensive damage to all three main rotor blades and the main rotor head. The pilot mentioned that he experienced difficulty in maintaining aircraft heading into wind, as the wind direction was constantly changing, and he had no visual cues to the prevailing wind conditions at the time.</p> <p>The aircraft was operated in the Special Experimental Category, with the last inspection prior to the accident certified on 13 August 2003, at 8 520.0 airframe hours. Since the inspection a further 6.4 hours were flown. The aircraft was in possession of a valid Authority to Fly at the time of the occurrence.</p> <p>The pilot completed his type conversion training onto the AS 318 on 13 June 2003, which amounted to a total of 9.0 hours dual flying training.</p>				

**Probable Cause**

The pilot did not anticipate the effect of mountain waves (downdraught, tail wind component) and ended up running out of power (control difficulty) once he had cleared the ridge, with the aircraft descending into terrain. The effect of vortex ring could also be considered a contributory factor to this accident.