GOVERNMENT OF AUSTRALIA DEPARTMENT OF TRANSPORT

AIRCRAFT ACCIDENT INVESTIGATION SUMMARY REPORT

Publication of this report is authorised by the Secretary under the provisions of Air Navigation Regulations 283 (1)

Reference No. AS/743/1051

1. LOCATION OF OCCURRENCE

	Height a.m.s.l.	Date	Time (Local)	Zone
Approximately 7 kilometres south-east of Longford, Victoria	160 feet	3.10.74	0731 hours	EST

2. THE AIRCRAFT

Make and Model	Registration	Certificate of Airworthiness	
Bell 205 A/1 Helicopter	VH-UHP	Valid from 2.2.71 to 1.2.80	
Certificate of Registration issued to	**Operator**	**Degree of damage to aircraft**	
Airfast Helicopters Pty. Ltd., P O Box 347, Mascot, New South Wales.	Airfast Helicopters Pty. Ltd., Longford, Victoria.	Substantial	
		Other property damaged	
		Nil	

Defects discovered

The cage of the No. 1 bearing (front compressor support) of the engine was broken in several places and there was extensive spalling of the inner and outer tracks and balls of the bearing.

3. THE FLIGHT

Last or intended departure point	Time of departure	Next point of intended landing	Purpose of flight	Class of operation
Longford Helipad	0730 hours	Kingfish "A" Oil Rig Helipad	Carriage of passengers	Charter

4. THE CREW

Name	Status	Age	Class of licence	Hours on type	Total hours	Degree of injury
Donald Miles HUTTON	Pilot	53	Commercial (Helicopter)	574	21712	Not established but initially reported as nil

5. OTHER PERSONS (All passengers and persons injured on ground)

Name	Status	Degree of injury	Name	Status	Degree of injury
See attached list					

6. RELEVANT EVENTS

There was no significant wind and the visibility was approximately 3.5 kilometres. After start-up the aircraft was hovered and then take-off was made to the east, with the climb-out path taking it over a thin layer of fog which was about 100 feet above ground level. Shortly after take-off, when at a height of about 150-200 feet and at a speed approaching 60 knots, the engine power warning light came on accompanied by the sound of the audio warning signal. A few seconds later there was a complete loss of engine power and the pilot placed the aircraft into an auto-rotation descent. The aircraft sank through the layer of fog, which left moisture on the windscreen, and emerged from the base at a high rate of descent. In the limited time available, the pilot flared the aircraft, applied full collective pitch and attempted to level the aircraft for a run-on landing, but it struck the ground heavily and the main rotor blades severed the tail boom. The aircraft then slid along the wet grass surface for about 76 metres and came to rest in a normal attitude, facing 90 degrees to the left of the landing direction.

Subsequent inspection of the scavenge oil filter revealed it to be contaminated with metal particles and removal of the engine chip detector plug showed a similar concentration of metal particles. Upon strip down of the engine it was found that the No. 1 bearing had failed but the reason for the failure could not be determined. The bearing failure permitted tip rub of the axial compressor stage blades and interference between the compressor and power turbine shafts, with the power turbine shaft eventually seizing inside the compressor shaft.

Prior to commencing the flight the aircraft was due for a 50 hourly inspection. This inspection requires a check to be made of the engine chip detector plug and oil filter elements and, had it been carried out, it seems likely that metallic particles would have indicated the abnormal condition of the engine.

7. OPINION AS TO CAUSE

The cause of the accident was a complete loss of engine power in circumstances which made a successful forced landing unlikely.

Approved for publication

(I.M. Leslie)
Delegate of the Secretary

Date 10.9.1975