

**Aviation Safety Investigation Report
199701016**

**Robinson Helicopter Co
R22**

02 April 1997

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NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number:	199701016	Occurrence Type:	Accident
Location:	Mount Coolon, (ALA)		
State:	QLD	Inv Category:	4
Date:	Wednesday 02 April 1997		
Time:	0630 hours	Time Zone	EST
Highest Injury Level:	None		

Aircraft Manufacturer:	Robinson Helicopter Co		
Aircraft Model:	R22 BETA		
Aircraft Registration:	VH-DBQ	Serial Number:	977
Type of Operation:	Miscellaneous Ferry		
Damage to Aircraft:	Substantial		
Departure Point:	Bungobine Station		
Departure Time:	0625 EST		
Destination:	Havilah Station		

Approved for Release: Friday, August 8, 1997

Circumstances

The helicopter was in a steady cruise at 80 kts at 1,500 ft above ground level when the pilot heard a loud bang. He immediately initiated auto-rotation and believed that there had been a failure of the tail rotor drive. The pilot attempted a landing in the nearest clear area but the nature and slope of the terrain coupled with some rotation of the helicopter resulted in it rolling over and sustaining severe damage during the landing.

Examination of the helicopter revealed that the intermediate flex plate failed. This flex plate consists of the front and rear yokes plus the flex plate itself, all joined by four bolts. The examination found that one of the two front lugs was missing. The adjoining flex plate lug was present and bent forward. The bolt joining the missing front yoke lug to the adjoining flex plate lug was also not present. Neither the bolt nor the front yoke lug were found at the accident site.

The hole in the flex plate lug, opposite the missing front yoke lug, was worn and enlarged suggesting that, after the bolt was liberated, the shaft's axis of rotation changed. Such an event would have led to failure of the tail rotor drive and given the symptoms described by the pilot.