

**Aviation Safety Investigation Report
198600147**

Robinson R22 HP

13 September 1986

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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.

Occurrence Number: 198600147
Location: 37km NNE of Kalannie WA
Date: 13 September 1986
Highest Injury Level: Nil
Injuries:

Occurrence Type: Accident
Time: 1605

	Fatal	Serious	Minor	None
Crew	0	0	1	1
Ground	0	0	0	-
Passenger	0	0	0	0
Total	0	0	0	1

Aircraft Details: Robinson R22 HP
Registration:
Serial Number: 299
Operation Type: Private (Ferry)
Damage Level: Substantial
Departure Point: Paynes Find WA
Departure Time: 1605
Destination: Wongan Hills WA

Approved for Release: November 18th 1987

Circumstances:

As the aircraft was cruising at 2500 feet above mean sea level the pilot noticed a vibration in the airframe. He reduced the manifold air pressure setting slightly and the vibration stopped. A short time later the aircraft lost directional control and began to spiral to the right. The pilot was unable to stop the rotation and when the helicopter landed it rolled over. Investigation showed that the lower vertical fin attachment brackets had failed, which caused the fin to separate in flight and strike the tail rotor. The tail rotor assembly and gearbox then completely detached from the tail boom. The fatigue failure of the fin was caused by vibrations emanating from worn components and bearings in the tail rotor and its gearbox. These parts were recently taken from another helicopter and fitted to the subject machine, their previous condition could not be determined. A recent service inspection failed to detect the worn components or the weakened lower fin. The wear in these components was also not noticed during the pre-flight inspections that were carried out between that service and the accident flight.