Aviation Safety Investigation Report 199301585

Hughes Helicopters
Hughes 300

02 June 1993

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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.

Aviation Safety Investigation Report

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Occurrence Number: 199301585 **Occurrence Type:** Accident
Location: 45km E Derby
State: WA **Inv Category:** 3
Date: Wednesday 02 June 1993
Time: 0730 hours **Time Zone** WST
Highest Injury Level: Serious
Injuries:

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

Aircraft Manufacturer: Hughes Helicopters
Aircraft Model: 269C
Aircraft Registration: VH-THY **Serial Number:** 860525
Type of Operation: Commercial Aerial Mustering
Damage to Aircraft: Substantial
Departure Point: Meda Station WA
Departure Time: 0630 WST
Destination: Meda Station WA

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Commercial	1900.0	2100

Approved for Release: Tuesday, February 20, 1996

The aircraft was engaged in aerial mustering operations. Whilst landing to disembark the passenger the pilot experienced intermittent cyclic control problems. He then took off again and during the next 5 to 10 minutes of cattle mustering he tested the cyclic control but response was normal. A short time later, as the helicopter approached touchdown to re-embark the passenger, all cyclic control was lost. To avoid hitting the waiting passenger the pilot applied power to go around but was unable to control the helicopter's flight path and it impacted the ground nose first.

Inspection of the wreckage revealed that the cyclic control column had fractured at the location of the electrical wiring access hole near the base of the column. The fracture was caused by fatigue crack growth. The access hole had been elongated by mechanical filing and the fatigue origins were located at these abrasion damage sites.

Safety Action:

The following interim recommendation was sent to the Civil Aviation Authority on 22 June 1993:

IR930094
That the Civil Aviation Authority advise all operators of this failure and mandate an inspection of the cyclic control column electrical loom access hole to ensure control column integrity.

The CAA in response issued AD/HU-269/102 on 2 August 1993.

Subsequently, results of finite element stress analysis of the failed cyclic pitch control column indicated that material yielding, at the lower electrical loom access hole, occurs below the design limit load. Evaluation of this cyclic control column design is being considered by the Civil Aviation Authority in consultation with the Federal Aviation Administration and the aircraft manufacturer.