Aviation Safety Investigation Report 198400054

Hughes 369-HS/500C

15 December 1984

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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: 198400054 **Occurrence Type:** Accident
Location: Trinity Inlet, Cairns Harbour, QLD.
Date: 15 December 1984 **Time:** 1118
Highest Injury Level: Nil
Injuries:

	Fatal	Serious	Minor	None
Crew	0	0	1	1
Ground	0	0	0	-
Passenger	0	0	0	2
Total	**0**	**0**	**0**	**3**

Aircraft Details: Hughes 369-HS/500C
Registration: N9215F
Serial Number:
Operation Type: Private (Sightseeing)
Damage Level: Substantial
Departure Point: M.V. "Carol Linda" berthed Cairns Harbour, QLD.
Departure Time: 1118
Destination: Green Island, 27 km NE Cairns, QLD.

Approved for Release: June 4th 1986

Circumstances:

The helicopter, on a sightseeing flight, had completed a circuit of Cairns Harbour before climbing-out towards Green Island. A noise was heard from the rear of the helicopter, accompanied by a rotation to the right. An autorotation was initiated and the helicopter landed on the nearby mudflats. The right skid-legs collapsed on touchdown, which resulted in the helicopter rolling onto its right side. The occupants evacuated and were rescued by a fishing boat. The tail rotor and part of its associated gearbox had separated from the helicopter. The pilot regained directional control when an autorotation was commenced. However,as the helicopter was over water he attempted to carry out a zero forward speed landing, rather than a "run on" type which is the procedure recommended by the manufacturer when loss of tail rotor effectiveness occurs. Thus, when collective pitch was applied to reduce the rate of descent prior to landing, the helicopter again commenced to rotate and touchdown occurred whilst turning to the right. The components which had become detached in flight were not recovered, thus the reason for the failure of the assembly could not be positively determined. However, specialist examinations indicated that the fracture was due to a limited number of high stress cycles, this is not consistent with normal in service loads.