Aviation Safety Investigation Report 199400876

Hughes Helicopters
Hughes 500

11 April 1994

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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

199400876

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: 199400876 **Occurrence Type:** Accident
Location: Port Augusta Power Station
State: SA **Inv Category:** 4
Date: Monday 11 April 1994
Time: 0755 hours **Time Zone** CST
Highest Injury Level: None

Aircraft Manufacturer: Hughes Helicopters
Aircraft Model: 369D
Aircraft Registration: VH-MHE **Serial Number:** 1160031D
Type of Operation: Commercial Powerline/Pipeline Patrol
Damage to Aircraft: Substantial
Departure Point: 7km E Port Augusta SA
Departure Time: 0754 CST
Destination: 7km E Port Augusta SA

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Commercial	1230.0	4632

Approved for Release: Thursday, September 1, 1994

Circumstances

The helicopter had just lifted off and was about 30 feet above the ground when the pilot noticed that main rotor RPM was beginning to decay. He reduced collective pitch but the helicopter lost height as the engine power slowly decreased towards flight idle.

Height could not be maintained with the power available so the pilot had no option but to perform a downwind run-on landing onto rough terrain. The tail rotor struck the ground and the tail boom was damaged by the main rotor blades. The engine was still running at reduced RPM when the helicopter came to rest.

Investigation revealed significant contamination in the airframe and engine fuel filters. The filters were not completely clogged and the material was mainly of a sandy nature. Some of the material found in the filter bowls was probably displaced from the filter surface during the rough landing.

Engine components, including the fuel control unit, power turbine governor, fuel nozzle, PC air filter and all pipes and hoses were inspected by an approved overhaul facility.

Some of these components showed signs of wear sufficient to require overhaul before being returned to service but no fault could be found that would have definitely caused the power loss.

During the investigation it was found that the fuel supply hose became discoloured after being in contact with jet fuel for only a short period of time. Samples of the hose (both new and used) were sent for laboratory testing which revealed that the rubber compound used was not fuel proof, although it was rated for use with jet fuel.

Neither the partial filter clogging, the effects of wear in the engine fuel supply components nor the dissolved material from the faulty hose, individually, could explain the power loss. A combination of these factors at a time of high power demand may have been sufficient to cause the loss of power.

Safety action

The Civil Aviation Safety Authority is aware of the information relating to the degradation of the interior of the fuel hose assembly and has taken it up with the hose manufacturer.