Aviation Safety Investigation Report 198800257

Aerospatiale AS 350B

20 August 1988

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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: 198800257 **Occurrence Type:** Incident
Location: Perth WA
Date: 20 August 1988 **Time:** 830
Highest Injury Level: Nil
Injuries:

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

Aircraft Details: Aerospatiale AS 350B
Registration: VH-LEW
Serial Number: 1834
Operation Type: Charter
Damage Level: Minor
Departure Point: Perth Tuart Hill Helipad WA
Departure Time: 830
Destination: Garden Island Helipad WA

Approved for Release: 15 February 1989

Circumstances:

The pilot's custom was to connect an earthing lead to the aircraft whilst it was parked on the pad. The earthing lead consisted of about five metres of flexible wire with a jack type connector fitted to one end and an alligator type clip on the other. The jack mated with a socket fitted in the aircraft just behind the rear cabin door about half way up the fuselage on the left hand side. The pilot's preflight inspection was interrupted by the arrival of his passengers. After seeing them aboard and stowing their gear he failed to disconnect the earthing lead entered the helicopter started up and lifted off. As the tension came on the earthing cable it could not pull the jack out of the socket because of the sideways load on the socket and so pulled the alligator clip off the ground earthing point. The cable and clip trailed back along the side of the aircraft as it went forwards through translation and in so doing the clip and cable entered the tail rotor arc and were severed. Only minor damage in the form of a gouge in the end of one tail rotor blade occurred. The pilot heard the noise of the cable being cut but thought it to be the passengers moving gear around in the back of the helicopter. He continued with the flight and noticed the tail rotor damage at the next stop (Garden Island 35 mins) saw the severed cable still hanging from the fuselage jack and then flew the aircraft to Jandakot (another 8 mins) for inspection. At Jandakot the tail rotor gearbox was found to be making a large quantity of metal and the gearbox and rotor system were removed for overhaul.

Significant Factors:

The following factors were considered relevant to the development of the accident

1. Inadequate preflight inspection. Earthing cable not removed.

2. Distraction. Preflight inspection interrupted.

3. Tail rotor blade damaged by trailing cable.

4. Poor design a) Type and location of earthing jack did not permit plug to pull free from the socket as helicopter lifted off. b) Location of socket aligned trailing cable with the tail rotor system.

Reccomendations:

It is recommended that the Civil Aviation Authority publishes information reminding pilots of the dangers of operating helicopters with what may appear to be only superficial damage. It is also recommended that the Civil Aviation Authority considers a requirement to relocate the earthing cable jack to the underside of the fuselage or alternatively suggests to operators that the cable should be made more conspicuous by means of flags etc.