Aviation Safety Investigation Report 198800125

Cessna 182E

18 June 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.

This accident was not the subject of an on site investigation.

Occurrence Number: 198800125 **Occurrence Type:** Accident
Location: Kambalda West WA
Date: 18 June 1988 **Time:** 1520
Highest Injury Level: Nil
Injuries:

	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: Cessna 182E
Registration: VH-TSH
Serial Number: 18254356
Operation Type: Private
Damage Level: Substantial
Departure Point: Kambalda West WA
Departure Time: 1520
Destination: Kambalda West WA

Approved for Release: February 21st 1989

Circumstances:

Shortly after the pilot applied full power and commenced the take-off roll there was a loud bang and the aircraft yawed violently. The pilot closed the throttle and stopped the aircraft. An inspection disclosed that one complete propeller blade was missing. A detailed inspection of the propeller blade indicated that the blade had failed in the area of the threads at the root of the blade. The fracture surfaces indicated that a fatigue crack had started approximately 500 hours prior to the final flight and that the blade had failed because the remaining unaffected metal could no longer carry the loads involved. The inspection was unable to find any reason for the origin of the fatigue crack. The cracking occurred in an area of the blade which is not visible when the blade is fitted to an aircraft, consequently the cracking could not be disclosed during either preflight or periodic maintenance inspections carried out in accordance with the maintenance system in force at the time of the failure. The blades are normally inspected for cracks at each overhaul. An overhaul is carried out after the blades have been in service for 1500 hours. The blade that failed had been in service for 1052 hours.

Significant Factors:

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

1. Inspections carried out under the current maintenance system could not disclose cracking that occured in the area of the propeller root thread.

2. Fatigue and overload failure of the propeller blade for reasons which could not be determined.

Reccomendations:

1. It is recommended that the CAA airworthiness authorities review the inspection requirements for McCauley propeller blades with a view to detecting cracks before they reach a critical size.