Aviation Safety Investigation Report 198803423

Piper PA-24

12 January 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: 198803423 **Occurrence Type:** Accident
Location: St George QLD
Date: 12 January 1988 **Time:** 1540
Highest Injury Level: Nil
Injuries:

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

Aircraft Details: Piper PA-24
Registration: VH-COM
Serial Number: 24-97
Operation Type: Private (Business)
Damage Level: Substantial
Departure Point: "Lea Wah" (Near Bollon) QLD
Departure Time: 1516
Destination: Toowoomba QLD

Approved for Release: March 16th 1989

Circumstances:

The aircraft was cruising normally at 7000 feet when the engine failed without warning. The pilot carried out checks and attempted to restart the engine without success. During the ensuing forced landing the pilot prematurely turned off the master switch, therefore, the wheels did not extend when he selected gear down. The engine failure was caused by the separation of crankshaft idler gear teeth due to high cycle low stress fatigue which had initiated from pre-existing overload cracks at the base of the teeth.

Significant Factors:

It was considered that the following factors were relevant to the development of the accident:

1. The idler gear failure was considered to be as a result of the previous unusually high load causing cracking at the base of the teeth. The cause of the overload is not known.

2. The pilot had assessed the field that he had chosen as probably suitable for a normal landing. He delayed gear selection until he was sure of making a satisfactory approach and to better assess the surface.

3. The gear did not extend when selected down on final because the pilot had completed his final checks on downwind which included turning off the electrical services master switch.

4. The pilot had insufficient time whilst on final approach to assess why the gear had failed to extend and chose to concentrate on carrying out a successful wheels up landing.