Aviation Safety Investigation Report 198903768

Aero Commander 100

25 April 1989

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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: 198903768 **Occurrence Type:** Accident
Location: Mackay QLD
Date: 25 April 1989 **Time:** 1252
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: Aero Commander 100
Registration: VH-EXL
Serial Number: 114
Operation Type: Private
Damage Level: Substantial
Departure Point: Bowen QLD
Departure Time: 1200
Destination: Mackay QLD

Approved for Release: 28th September 1989

Circumstances:

During a visual approach to Runway 32 the engine began to run roughly, to the extent that no useful power was available. The pilot made a "Mayday" call and elected to attempt a forced landing on Runway 05. In the latter stages of the approach it became obvious to the pilot that the aircraft would not reach the runway. It flew into a tall sugar cane crop and overturned at low speed. The cane cushioned the final impact. Investigation revealed that both magnetos contained leaking, obsolete coils. They had overheated, causing the ignition to fail. The coils were clear case coils which should have been withdrawn from service in the early 1970's in accordance with a specific Airworthiness Directive (AD). The AD had been withdrawn when it was considered that Licenced Aircraft Maintenance Engineers (LAMEs) in the aviation industry were sufficiently aware of the hazards posed by these coils and that all in-service clear case coils had been replaced. At engine runup, both magnetos had checked serviceable because the coils were cold. During the flight, they had heated sufficiently to cause an internal breakdown of their function, resulting in a significant power loss. The pilot misjudged the subsequent forced landing and the aircraft undershot the runway threshold.

Significant Factors:

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

1. The engine ignition system failed due to overheating magneto coils.

2. Breakdown of the coil insulation was due to age deterioration.

3. The pilot misjudged the forced landing approach.

Reccomendations:

The documentation in regard to the relevant Airworthiness Directive (AD) is no longer available because it was withdrawn more than a decade ago. The AD was withdrawn after the aviation industry had been exposed to the directive for several years. Since this accident, several clear case coils have been found in aircraft involved in accidents. It has become apparent that . Clear case coils are still in service in some Australian aircraft; and . LAME's who qualified in the last decade may not be aware that these coils are obsolete. The recommendation is that the Civil Aviation Authority consider issuing an Airworthiness Directive to check all piston-engined aircraft for obselete, clear case coils at the next Periodic Inspection.