

**Aviation Safety Investigation Report
199603367**

**Amateur Built Aircraft
Starlet**

19 October 1996

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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: 199603367 **Occurrence Type:** Accident
Location: 65km WSW Millmerran, (ALA)
State: QLD **Inv Category:** 3
Date: Saturday 19 October 1996
Time: 0920 hours **Time Zone** EST
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None	Total
Crew	1	0	0	0	1
Ground	0	0	0	0	0
Passenger	0	0	0	0	0
Total	1	0	0	0	1

Aircraft Manufacturer: Amateur Built Aircraft
Aircraft Model: CJ-1
Aircraft Registration: VH-NMG **Serial Number:** Q42
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Forrest Hill QLD
Departure Time: 0800 EST
Destination: St George QLD

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	Private	125.0	640

Approved for Release: Tuesday, April 1, 1997

FACTUAL INFORMATION

The aircraft was flying behind, and in company with, another aircraft. Both aircraft were flying at an altitude of about 8,500 ft, some 500 ft above stratocumulus cloud. The pilot of VH-NMG transmitted on the chatter frequency, 123.45 MHz, that his aircraft was experiencing severe engine vibrations. He said that he intended to descend through a hole in the cloud cover for a forced landing on a dirt road which he could see through the hole. The pilot of the other aircraft replied, advising him to complete a precautionary search before committing himself to the landing. The pilot of NMG did not respond to this advice, nor did he respond to subsequent transmissions.

The pilot of the other aircraft had difficulty in finding a hole in the cloud cover but was eventually able to descend. Once below the 1,000-1,500 ft cloud base, he commenced a search, expecting to find the other aircraft on a forestry road. After a fruitless search lasting about 45 minutes, he reported the aircraft as missing to the Brisbane Sector 2R controller who then initiated a distress phase. The wreckage of the aircraft was found at the end of the third day of an extensive aerial search involving fixed-winged aircraft and helicopters. The aircraft did not carry or have an emergency locator transmitter (ELT) unit fitted.

An inspection of the wreckage site revealed that the aircraft had struck the ground among trees and at high speed in a 70-degree dive. An examination of the engine found that the accessory casing to which the engine mounts were attached was fractured due to severe, pre-impact vibration. Only two-thirds of the wooden propeller was recovered from the site. The remainder and most of the fibreglass spinner could not be found. The engine cowling, sliding canopy, windscreen structure, and left wing, except for the aileron, were also not located. Some of the propeller fragments from the surviving blade indicated contact with fibreglass material. Research revealed that, since January 1991, several propeller failures were considered to have been caused by the fibreglass spinner failing and fouling the propeller. One of these failures involved another Corby Starlet aircraft.

A friend of the pilot later said that he had seen the aircraft about 2 weeks earlier with the fibreglass spinner removed. The pilot was repainting it. The aircraft was subsequently not flown until the accident flight. Examination of the aircraft logbooks revealed that no maintenance work had been recorded since the last periodic inspection on 28 August 1996.

The aircraft was limited to 4.5 g and was semi-aerobatic. The ultimate load limit of the wooden wing spar was 6.75 g.

The aircraft was not fitted with instruments necessary for flight under instrument flying conditions (IMC). The pilot was not qualified for flight in IMC. The pilot's last aeroplane flight review which was undertaken on 20 January 1994 was no longer current as more than the statutory 2 year period had elapsed.

ANALYSIS

The physical evidence indicated that the fibreglass spinner and part of the propeller separated during flight. It could not be determined whether the spinner or the propeller failed first. However, the resulting imbalance caused vibrations sufficient to break the engine accessory casing. The pilot's immediate actions to stop the severe vibrations should have been to shut the engine down. The aircraft would then have been forced to descend through the cloud cover.

The left wing failed due to overload. That it and the sliding canopy were not located at or near the main wreckage, indicated that the airframe was overstressed during flight, probably as the pilot attempted to descend through the hole in the cloud.

SIGNIFICANT FACTORS

1. The wooden propeller and the spinner failed.

2. The aircraft was being operated above an almost unbroken cloud cover.
3. The aircraft was overstressed and broke up during flight.