Aviation Safety Investigation Report 198802399

Grumman G-164B Ag Cat

18 October 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: 198802399 **Occurrence Type:** Accident
Location: "Glenanbra"(18 km NNW of Deniliquin) NSW
Date: 18 October 1988 **Time:** 1115
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: Grumman G-164B Ag Cat
Registration: VH-HIT
Serial Number: 640B
Operation Type: Aerial work
Damage Level: Substantial
Departure Point: "Glenanbra" NSW
Departure Time: 1110
Destination: Glenanbra NSW

Approved for Release: 6th March 1990

Circumstances:

While aerial spraying rice crops the pilot detected a change in the engine note accompanied by a vibration. He thought it sounded like a failure of one cylinder and decided to return to the airstrip from which he was conducting the operation. Some 15 seconds later the engine lost power and it was obvious that the aircraft would be unable to reach the airstrip. The pilot then dumped the load and continued straight ahead for a landing into a cultivated paddock. Ten seconds later the engine failed completely. With the aircraft now being unable to reach the selected paddock the pilot made a heavy landing just short of it in an attempt to bounce the aircraft over an irrigation channel into the adjoining paddock. The aircraft struck the far bank of the channel resulting in substantial damage. The engine had completed approximately 170 hours since overhaul and examination revealed that it had suffered a broken crankshaft. The reason for the failure was not positively determined but overseas reports indicate that other low time engines which are fitted to the same type of aircraft have experienced similar failures. This type of aircraft is fitted with a larger diameter propeller than others using the same engine. The larger propeller may result in a harmonic vibration being set up at a particular engine manifold pressure and rpm setting which ultimately leeds to crankshaft failure. An experienced USA engine overhaul company suggests that to prevent this vibration from developing the operating engine speed for Ag Cat aircraft should be increased from 2000 rpm to 2100 rpm. This suggestion has been bought to the attention of the Civil Aviation Authority. This accident was not the subject of an on-scene investigation.

Significant Factors:

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

1. The engine failed due to a broken crankshaft.

2. The reason for the crankshaft failure could not be positively determined.