Aviation Safety Investigation Report 198800144

Grumman-Frakes G73T Turbo Mallard

25 August 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: 198800144 **Occurrence Type:** Accident
Location: Lowendal Island WA
Date: 25 August 1988 **Time:** 1515
Highest Injury Level: Nil
Injuries:

	Fatal	Serious	Minor	None
Crew	0	0	1	1
Ground	0	0	0	-
Passenger	0	0	0	7
Total	**0**	**0**	**0**	**8**

Aircraft Details: Grumman-Frakes G73T Turbo Mallard
Registration: VH-JAW
Serial Number: J26
Operation Type: Charter
Damage Level: Substantial
Departure Point: Lowendal Island WA
Departure Time: 1515
Destination: Karratha WA

Approved for Release: March 17th 1989

Circumstances:

During the take off run, on the open sea and just prior to lift off, the right engine suffered a total failure. The pilot was unable to maintain directional control, due to the prevailing conditions, and the aircraft finally stopped on a sandbar. The left hand float, float pylon and outboard three metres of the left wing were torn off during the deceleration. A strip examination of the failed engine revealed that there had been a failure of the compressor turbine section following a sulphidation attack which initiated a fatigue failure of the compressor blades. The compressor turbine was inspected 279 hours prior to the failure and sulphidation was detected at that time, however, the damage was recorded as being within acceptable limits. The engine manufacturers recommend that the engine be washed daily and that 200 hourly borescope inspections be carried out for signs of sulphidation on the blades. The operator washed the engine daily, however, a borescope inspection was not carried out during the period between the compressor turbine inspection and the engine failure. A borescope inspection 79 hours prior to the engine failure would probably have disclosed the advanced state of blade corrosion.

Significant Factors:

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

1. The aircraft was being operated in a harsh environment.

2. Corrosion of the compressor turbine blades which led to blade failure.

3. Insufficient monitoring of reported corrosion.

4. Engine failure at a critical phase of flight.

5. Loss of directional control in adverse conditions.

Reccomendations:

It is recommended that the Civil Aviation Authority introduce compulsory 200 hourly borescope inspections of turbine engines being operated in a marine environment.