Aviation Safety Investigation Report 199700219

Piper Aircraft Corp
Arrow

27 January 1997

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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.

Aviation Safety Investigation Report

199700219

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number: 199700219 **Occurrence Type:** Accident
Location: 2km NW Wynyard, Aerodrome
State: TAS **Inv Category:** 4
Date: Monday 27 January 1997
Time: 1500 hours **Time Zone** ESuT
Highest Injury Level: Minor
Injuries:

	Fatal	Serious	Minor	None	Total
Crew	0	0	1	0	1
Ground	0	0	0	0	0
Passenger	0	0	2	0	2
Total	**0**	**0**	**3**	**0**	**3**

Aircraft Manufacturer: Piper Aircraft Corp
Aircraft Model: PA-28R-180
Aircraft Registration: VH-BOP **Serial Number:** 28R-31268
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Substantial
Departure Point: Wynyard Tas
Departure Time: 1447 ESuT
Destination: Moorabbin Vic

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Private	6.1	148

Approved for Release: Thursday, March 20, 1997

During initial climb after takeoff from Wynyard the engine suffered a power loss. The pilot observed the manifold pressure decreasing so he selected alternate air, checked the mixture control was set to rich and checked the fuel pump was switched on. He changed the fuel selection from the left tank to the right tank, but the engine did not respond.

By this time the aircraft was low over the water so the pilot transmitted a PAN call advising of the emergency and his intention to try to land on a beach. When the aircraft had descended to about three metres above the water and its speed had decayed to 60 knots, the pilot broadcast a MAYDAY call. Shortly afterwards the aircraft was stalled into the water at the mouth of the Inglis River. The impact forces broached the fuselage which rapidly filled with water. The pilot and his two passengers evacuated the aircraft before it sank and were rescued by the crew of a nearby fishing boat.

The investigation into the cause of the engine power loss was hindered because the aircraft was badly damaged during the accident and the subsequent recovery exercise. It was established that sufficient fuel was on board for the proposed flight and fuel was available to the fuel distributor, but the contents of the fuel filter assembly could not be determined.

The engine was inspected and disassembled and relevant components were tested. It was found that the air duct hose fitted between the air filter and the fuel control unit was collapsed due to disbonding of the internal supporting wire. It could not be determined if this had occurred prior to the ditching and was the cause of the power loss, or had occurred due to the forces/pressure of the water in the engine bay during the ditching. No other anomalies were found that could have caused the power loss.

The air duct hose was one that is commonly called a 'SCAT' hose and was made up of a single layer of neoprene impregnated fabric material supported internally by a spring steel helix wire bonded to the fabric. This SCAT hose is not appproved by the manufacturer for this installation. The correct hose carries the manufacturer's part number and is constructed of a 2 ply silicone resin impregnated with woven fibreglass which is bonded and cured along with an inner liner and tabbed ends to facilitate retention. It is also wire reinforced with galvanised hard temper spring steel.

The manufacturer of the SCAT hose has recently changed the specification for these hoses to say that they are 'not recommended for negative pressure applications'. Many aircraft have SCAT or similar hoses fitted to negative pressure engine intake systems, as was the case with this aircraft.

Significant factors.

1. It is suspected that the SCAT hose collapsed reducing the inlet air supply to a level that precluded the engine from delivering full power.

2. The SCAT hose was not the hose that was designated by the manufacturer to be installed in the air inlet system.

3. The pilot was forced to ditch the aircraft into water.

Safety action.

1. Information on engine intake hose installations is available in an article 'SCAT/SCEET hoses linked to engine failure' published in the CASA Flight Safety Australia Summer 1997 issue.

2. CASA advise that a program is being developed to examine the ramifications of the widespread use of SCAT hoses in engine negative pressure air inlet systems.

[redacted]