Aviation Safety Investigation Report 198900259

Gemini Thruster

24 November 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: 198900259 **Occurrence Type:** Accident
Location: Beebyn Station WA
Date: 24 November 1989 **Time:** 1630
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: Gemini Thruster
Registration: Not a registered aircraft
Serial Number: Not Known
Operation Type: Civil Aviation Order 95.25
Damage Level: Substantial
Departure Point: Beebyn Station WA
Departure Time: 1600
Destination: Beebyn Station WA

Approved for Release: 26th April 1990

Circumstances:

The pilot had planned to carry out a bore-hole inspection on his property. During the start-up sequence the pilot noted that more choke than normal was required, however, after start-up the engine ran smoothly. Approximately 30 minutes after take off the pilot observed air bubbles flowing through the transparent fuel line. The engine began to run roughly and stopped. The pilot commenced forced landing procedures and attempted to restart the engine by hand priming the fuel system using the rubber manual priming bulb. The bulb, once compressed, did not return to its original size. The pilot was forced to carry out a forced landing on unsuitable terrain and the aircraft was damaged. The engine fuel pump non-return valve was found jammed in the open position by black rubber particles. These particles had come from the inside wall of the manual priming bulb. An open non-return valve will cause a loss of pressure within the fuel system and engine failure. The fuel tank is mounted well below the engine. Once the particles were removed from the fuel system the engine ran normally. The aircraft's history indicated that it had been left standing in hot and dry conditions for some time allowing the rubber priming bulb to dry out. Manual operation of the dry bulb probably caused internal cracking and allowed rubber particles to contaminate the fuel system.

Significant Factors:

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

1. Deterioration of the rubber manual priming bulb when it was used after having been allowed to dry out over an extended period of time.

2. Contamination of the fuel system by rubber particles from the priming bulb.

3. Interruption to fuel flow and engine stoppage caused by fuel system contamination.

4. Forced landing in unsuitable terrain.

Reccomendations:

It is recommended that the Australian Ultralight Federation draw the attention of its members to the possibility that rubber seals and components used in fuel systems, can deteriorate if they are left to dry out. These components, if left for an extended period of time, should be checked for serviceability before they are placed back into use.