Aviation Safety Investigation Report 198801418

Ligeti Stratos

10 July 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.

This accident was not the subject of an on-site investigation.

Occurrence Number: 198801418 **Occurrence Type:** Accident
Location: Mangalore VIC
Date: 10 July 1988 **Time:** 1500
Highest Injury Level: Serious
Injuries:

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

Aircraft Details: Ligeti Stratos
Registration: Not Registered
Serial Number: N/A
Operation Type: Sport Aviation (Test Flight)
Damage Level: Destroyed
Departure Point: Mangalore VIC
Departure Time: 1459
Destination: Mangalore VIC

Approved for Release: 21 February 1989

Circumstances:

After taxiing trials and several low level hops 5 to 10 feet above the ground, the pilot commenced the takeoff for the aircraft's first test flight. He subsequently advised that the aircraft was slow to accelerate after lifting off at 45 knots. He maintained 10 to 15 feet above the runway and waited for the airspeed to build up before attempting to climb. During this period, the aircraft was buffetted by a gust of wind which caused loss of airspeed. The pilot lowered the nose of the aircraft, descended slightly, and managed to stabilize the aircraft at 47 knots with full throttle selected. Engine RPM appeared normal. The airspeed slowly increased to 57 knots and the pilot managed to climb the aircraft over the end of the runway. Video coverage of the flight suggests a maximum height of about 75 feet was attained. The pilot considered that either the engine was not delivering full power or that there was extraordinary drag associated with lateral gusts of wind. He turned towards the only suitable forced landing area, but the engine progressively lost power. The pilot manipulated the throttle, but power was not regained. Control of the aircraft was lost at a height of about 20 feet and it struck the ground with about 40 degrees of right bank and in a steep nose down attitude. The pilot later advised that as the engine failed, the aircraft's pitch stability decreased to almost neutral. He recalled a lack of elevator response seconds before ground impact. This is consistent with an occurrence during the low level hops when the pilot had been flying 5 to 10 feet above the runway with full power and had closed the throttle. The nose dropped despite the pilot's counteracting elevator input. Examination of the engine revealed that there was some binding in the Bowden cable to the enrichment valve resulting in a strong possibility that the valve was off its seat. This would have prevented the engine from achieving full power. In addition, a brass vacuum pipe insert to the crankcase was found to be loose. This pipe has a flexible hose attached which delivers low pulsation pressures from the crankcase to one side of the diaphragm within the mechanical fuel pump. With the

crankcase pressures being able to escape past the threads of the loose pipe there was the potential for the engine to fail because of fuel starvation as the pump became inefficient, especially after the pilot closed the throttle.

Significant Factors:

It was considered that the following factors were relevant to the development of the accident

1. Binding in a Bowden cable probably prevented the enrichment valve from de-activating prior to take-off.

2. Full power was not available to the pilot for the take-off and climb probably because of the enrichment valve being off its seat.

3. A loose vacuum pipe probably resulted in engine fuel starvation followed by complete loss in engine power.

4. The engine failed as the pilot was turning downwind.

5. There was a lack of elevator response as the pilot attempted a landing after the engine lost power.