

**Aviation Safety Investigation Report
199701420**

**Howard Hughes Engineering Pty Ltd
Lightwing**

02 May 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.

Occurrence Number: 199701420 **Occurrence Type:** Accident
Location: Tartrus, (ALA)
State: QLD **Inv Category:** 4
Date: Friday 02 May 1997
Time: 1125 hours **Time Zone** EST
Highest Injury Level: Serious
Injuries:

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

Aircraft Manufacturer: Howard Hughes Engineering Pty Ltd
Aircraft Model: GA-55 LIGHTWING I
Aircraft Registration: 25-0434 **Serial Number:** 076
Type of Operation: Non-commercial Pleasure/Travel
Damage to Aircraft: Destroyed
Departure Point: Tartrus Station, QLD
Departure Time: 1125 EST
Destination: Tartrus Station, QLD

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	Commercial	50.0	2989

Approved for Release: Tuesday, September 30, 1997

HISTORY OF THE FLIGHT

The pilot and the passenger, who was also the owner of the aircraft, performed a pre-flight check of the aircraft. Seated at the right control position, the pilot then taxied the aircraft for departure with the intention of conducting cross wind circuits. The airstrip was aligned approximately 020 degrees magnetic.

Shortly after take-off, when the aircraft was about tree top height, the passenger became aware that the aircraft did not appear to be performing normally. At about the same time the pilot assessed that the nose attitude was too steep. He lowered the nose and felt the aircraft descend. He confirmed that the throttle was set at full power and, assuming that the aircraft was stalling, lowered the nose further. When the aircraft continued to descend, the pilot attempted to land in an area about 100 m beyond the end of the airstrip.

The aircraft collided with a stack of several large posts and concrete pipes, and came to rest inverted 120 m from the northern end of the airstrip, but displaced about 50 m to the west of the airstrip alignment.

Both the pilot and the passenger sustained serious injuries.

At the time of the takeoff the pilot had estimated that there was an easterly crosswind of about five knots, with a headwind component of about three knots. The windsock was located to the north west of, and close to the hangar and farm buildings. A worker employed on Tartrus reported that the wind had been a light south-easterly.

The pilot normally flew and instructed in Cessna C172 or Piper PA28 type aircraft. He held an Australian Ultralight Federation pilot's certificate, but had limited experience flying ultralight aircraft. He had previously flown the aircraft at Tartrus Station four or five times.

Both the pilot and the passenger indicated that although the engine seemed to operate normally the aircraft had lacked performance. The passenger noticed that when the nose of the aircraft was aligned approximately with the horizon, the aircraft was descending. She was aware that there was a large performance degradation with two people on board and would normally fly the aircraft alone. When flying with a passenger she preferred the cooler hours of the day and would make as much use of ground effect as possible after lift-off.

AIRCRAFT EXAMINATION

The Hughes Lightwing GA-55 was manufactured in Ballina, NSW, and was powered by an Aeropower (modified Volkswagon) four cylinder, four stroke, air cooled engine driving a two bladed wooden propeller. The airframe was of high wing monoplane design. An Artex E03 emergency locator beacon was mounted behind the pilot's seat and was activated by the impact.

The aircraft forward fuselage area below and in front of the rudder pedals had sustained substantial damage.

No pre-existing defect which may have affected the controllability of the aircraft was found.

Examination of the fuel tanks found that the tanks were empty but the soil beneath the right fuel tank filler cap was found to be soaked with fuel to a depth of about eight centimetres.

The engine was fitted with a standard aircraft magneto and dual electronic modules. The electronic modules were found to be impact damaged and could not be tested. Specialist examination of the engine indicated that the magneto external timing was advanced 10 degrees beyond the recommended setting but was serviceable. No evidence was found that the magneto timing adjustment was altered during the impact sequence. No other pre-existing defect was found.

ANALYSIS

It is likely that the position of the windsock resulted in a shielding effect when the wind was south-easterly. This may have caused the pilot to incorrectly assess both the wind direction and the strength. Consequently, it is possible that the marginal performance of the aircraft was further degraded when, shortly after takeoff, the aircraft encountered a crosswind with a tailwind component.

The pilot's limited experience flying this aircraft type, and ultralight aircraft generally, may have led him to apply an inappropriate handling technique in response to the low performance.

SIGNIFICANT FACTORS

1. The aircraft had marginal performance characteristics when carrying a passenger.
2. The pilot was inexperienced on the aircraft type.
3. The pilot did not maintain adequate flying speed after takeoff.

