Aviation Safety Investigation Report 198801417

Labahn Hitch Hiker XC

24 June 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: 198801417 **Occurrence Type:** Accident
Location: 3.5 km SSE of Officer VIC
Date: 24 June 1988 **Time:** 1605
Highest Injury Level: Fatal
Injuries:

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

Aircraft Details: Labahn Hitch Hiker XC
Registration: Not Registered
Serial Number: N/A
Operation Type: Sport Aviation (Test Flight)
Damage Level: Destroyed
Departure Point: Beaconsfield VIC
Departure Time: Unknown
Destination: Beaconsfield VIC

Approved for Release: 20 February 1989

Circumstances:

While flying at about 500 feet above ground level the aircraft evidently experienced severe vibration, and the inboard half of the right aileron was torn from the wing. The pilot attempted to deploy the parachute system, but the rigging lines wrapped around the propeller shaft. As a result, the parachute canopy did not open, but trailed between the propeller and the tail plane. The aircraft subsequently stalled and spiralled to the ground. When impact occurred, the complete left aileron was seen still falling. It was found 60 metres short of the aircraft impact site and the right aileron was found 148 metres short of the impact site. There is no known technical data available for this prototype aircraft, on which the control surfaces were not mass balanced. The pilot had experienced probable in-flight flutter on an earlier, different ultralight which he had designed and built. He had eliminated the problem by mass balancing the ailerons. An airspeed of about 80 knots could be considered critical for the initiation of flutter of unbalanced control surfaces on ultralight aircraft. From measurements and numbers recorded by the pilot on his map, it was concluded that the aircraft had probably been travelling in excess of this speed. Control surface flutter may have also been induced if some element of the control system had failed or had not been assembled or maintained to minimize flexibility and mechanical tolerances. A detailed inspection of the wreckage has determined that the control rod support lugs on the right aileron control horn may have failed along the weld line. There may also have been torsional flexibility of the aileron and the wing, which could have led to flutter at high speed.

Significant Factors:

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

1. The aircraft design had not been subjected to professional engineering support, or further qualified by structural tests.

2. The aircraft experienced flutter which led to an in-flight structural failure. The precise reason for the onset of flutter was not determined, but was probably related to design or construction defects, or to the speed at which the aircraft was being flown.