Aviation Safety Investigation Report 198900025

Pterodactyl

24 December 1989

Readers are advised that the Australian Transport Safety Bureau investigates for the sole purpose of enhancing transport safety. Consequently, Bureau reports are confined to matters of safety significance and may be misleading if used for any other purposes.

Investigations commenced on or before 30 June 2003, including the publication of reports as a result of those investigations, are authorised by the CEO of the Bureau in accordance with Part 2A of the Air Navigation Act 1920.

Investigations commenced after 1 July 2003, including the publication of reports as a result of those investigations, are authorised by the CEO of the Bureau in accordance with the Transport Safety Investigation Act 2003 (TSI Act). Reports released under the TSI Act are not admissible as evidence in any civil or criminal proceedings.

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: 198900025 **Occurrence Type:** Accident
Location: Fairlight Authorised Landing Area, 24 km south-west of Canberra ACT
Date: 24 December 1989 **Time:** 1030
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: Pterodactyl
Registration: 10-390
Serial Number: Unknown
Operation Type: Private
Damage Level: Substantial
Departure Point: Fairlight ACT
Departure Time: 1030
Destination: Fairlight ACT

Approved for Release: 17th August 1990

Circumstances:

The pilot was to conduct solo training flights in a flying wing type ultralight aircraft. Directional control in this type of aircraft is achieved by yaw through the use of wing tip rudders. These rudders are spring loaded to the left and balanced by air loads in flight. During pre-flight assembly on the day of the accident, the control cable attachment to the left rudder was inadvertently positioned on the wrong side of a clamp near the wing tip rib. This allowed the cable, under some conditions to foul on the clamp. After assembling the aircraft the pilot conducted some flights, until a heavy landing bent the main landing gear axle. The pilot used a steel pipe as a hammer to straighten the axle, but the shock loads from this operation dislodged the left hand wing tip rib and rear spar. Although an inspection was conducted, it did not discover the damage to the wing tip which would only have been apparent by removing the wing sail. On the subsequent flight at about 30 feet after take-off, the damaged left wing tip distorted due to aerodynamic loads, initiating an uncontrolled right roll. Attempts by the pilot to level the aircraft resulted in the incorrectly installed control cable attachment inducing further adverse distortion. The aircraft rolled to about 60 degrees, entered a rapid descent and clipped a parked aircraft before coming to rest in a nose down attitude. The engine which appeared to be operating normally was shut down by the pilot after the aircraft came to rest.

Significant Factors:

In summary the following factors were considered relevant to the development of the accident

1. Incorrect assembly of the left hand rudder cable.

2. Shock load damage to the left hand wing tip structure during straightening of the landing gear axle.

3. Inadequate inspection of the aircraft for damage.

4. The damaged left hand wing tip distorted with increased aerodynamic loads. This accident was not the subject of an on-scene investigation.