Aviation Safety Investigation Report 198801414

Tyro Ultralight

28 March 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: 198801414 **Occurrence Type:** Accident
Location: Lindsay Point (28 km ENE of Renmark) VIC
Date: 28 March 1988 **Time:** 700
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: Tyro Ultralight
Registration: N/A
Serial Number: N/A
Operation Type: Private (Sport Aviation)
Damage Level: Substantial
Departure Point: Lindsay Point VIC
Departure Time: N/A
Destination: Lindsay Point VIC

Approved for Release: 21 October 1988

Circumstances:

During the take-off run the pilot sensed a loss of power being transmitted to the propeller. He assessed that he could not stop in the strip length remaining and reduced the throttle setting in the hope that the reduction drive would transmit the reduced power to the propeller. The aircraft cleared the fence at the end of the strip, but the pilot was forced to turn through about 90 degrees to avoid a power line and to line up with the contours of the ploughed field he had selected for a forced landing. During this turn the airspeed reduced to the point where a high sink rate developed, and the pilot had insufficient height or power to effect a recovery before the aircraft mushed into the ground. On impact, the left mainwheel was torn off and the aircraft overturned some five metres beyond the initial touchdown point. Specialist investigation showed that disc springs had been incorrectly replaced during a modification to the reduction gearbox. This allowed the dog gear to ride up and out of the dog hub, under the reduced stiffness of the axial spring assembly, and reduce the transmission of power to the propeller. Investigation also revealed that there was some ambiguity in the assembly instructions for the gearbox modification.

Significant Factors:

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

1. Maintenance error - incorrect assembly of reduction gearbox

2. Ambiguous modification instructions

3. Partial loss of propeller thrust

4. Loss of airspeed during obstacle avoidance

5. Pilot unable to maintain flying speed.

Reccomendations:

1. That the manufacturer and the Australian Ultralight Federation be advised of the ambiguity in the modification instructions.

2. That the AUF review their policy for the supervision of modifications carried out by their members.