

**Aviation Safety Investigation Report
199302884**

**Unknown
Gyroplane**

19 September 1993

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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: 199302884 **Occurrence Type:** Accident
Location: 1km SW Nangunyah
State: NSW **Inv Category:** 4
Date: Sunday 19 September 1993
Time: 1030 hours **Time Zone** EST
Highest Injury Level: Fatal
Injuries:

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

Aircraft Manufacturer: Unknown
Aircraft Model: Gyroplane
Aircraft Registration: REG_1993028841 **Serial Number:**
Type of Operation: Non-commercial Aerial Mustering
Damage to Aircraft: Destroyed
Departure Point: Nangunyah NSW
Departure Time: 0730 EST
Destination: Nangunyah NSW

Crew Details:

Role	Class of Licence	Hours on	
		Type	Hours Total
Pilot-In-Command	None	70.0	1200

Approved for Release: Tuesday, April 23, 1996

The pilot was returning from a local sheep mustering flight on his property. When the gyroplane failed to return to the airstrip, and the pilot could not be contacted by CB radio, a search was commenced. The wreckage of the gyroplane was found about 230 metres west of the airstrip, having struck the ground in a steep descent with little forward speed, fatally injuring the pilot. The weather conditions at the time of the accident were reported to have been affected by strong gusting north- westerly winds, associated with blowing dust and reduced visibility.

An inspection of the wreckage revealed no evidence of any pre existing mechanical fault or defect. However, whilst the gyroplane was in flight, the rotors had struck the tailplane and fractured the tail boom to the rear of the engine mounting. This damage was consistent with excessive flapping of the rotor blades associated with air flow reversal through the rotor disc. Air flow through the rotor disc normally enters from beneath the plane of the disc, and exits above. Other effects of reversal of airflow are the irreversible deceleration of the rotor blades, and a nose down pitch change. In this accident the gyroplane appeared to have tumbled end over end, as well as rotating about the vertical axis.

The reason for the onset of airflow reversal on this occasion could not be positively established. However, in conditions of strong gusty winds, large changes in the vertical wind component could lead to airflow reversal. The likelihood of such an occurrence would have been increased if the gyroplane was being flown at relatively high speed.

The pilot suffered from epilepsy and was taking prescribed medication at the time of the accident. It could not be determined if the pilot's medical condition was a factor in this accident.
