

**Aviation Safety Investigation Report
199001179**

Homebuilt Gyroplane

3 November 1990

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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: 199001179
Location: Bridgewater VIC
Date: 3 November 1990
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: Homebuilt Gyroplane
Registration: Not Registered
Serial Number: Nil
Operation Type: Private
Damage Level: Destroyed
Departure Point: Bridgewater VIC
Departure Time: 0844
Destination: Bridgewater VIC

Approved for Release: 12th June 1991

Circumstances:

The pilot took off to the west and climbed straight ahead for approximately one kilometre. At about 150 feet above the ground the complete main rotor assembly suddenly separated from the gyroplane. The gyroplane then plummetted to the ground. The main rotor assembly struck the ground about 15 metres short of the main impact site. Wreckage examination disclosed that the lower teeter stop plate was bent on both ends, probably prior to the accident. The bent teeter stops allowed the main rotor blades to flap down beyond normal limits. All teeter stops had pronounced marks indicating repetitive contact. While the main rotor was spinning, one of the blade grips and one of its blade attachment bolts contacted the prerotator horn causing overload failure of the torque tube at the hole for the main rotor assembly attachment bolt. An imprint on one side of the torque tube indicated that full aft control stick had been applied at the time the torque tube began to fail. None of the witnesses saw the gyroplane porpoising or performing unusual manoeuvres before rotor separation.

Significant Factors:

The following factors were considered relevant to the development of the accident

1. The spinning main rotor contacted the prerotator horn because bent teeter stops allowed flapping of the main rotor blades beyond safe limits.
2. The torque tube suffered overload failure.