

ACCIDENT

Aircraft Type and Registration:	Thruster T600N 450, G-KYLE
No & Type of Engines:	1 Jabiru Aircraft PTY 2200A piston engine
Year of Manufacture:	2005 (Serial no: 0053-T600N-113)
Date & Time (UTC):	15 February 2013 at 1625 hrs
Location:	Near Killinchy, Co Down
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Minor) Passengers - None
Nature of Damage:	Damage to fuselage and right wing
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	59 years
Commander's Flying Experience:	75 hours (of which 45 were on type) Last 90 days - 2 hours Last 28 days - 1 hour
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional inquiries by the AAIB

Synopsis

After about 1¼ hours of flight and whilst the aircraft was climbing, the propeller suddenly detached. The aircraft was damaged as it overran the field selected for the forced landing. The propeller flange mounting screws had failed in fatigue in a manner apparently similar to three previous events investigated by the AAIB and had achieved only about half their operating life of 500 hours.

History of the flight

The aircraft was returning to its base at Newtownards after a local flight of about 1¼ hours. As the pilot climbed through 1,600 ft towards 2,000 ft the propeller detached. He initiated an engine failure drill and circled as he

selected a field for a forced landing. The touchdown was gentle but the aircraft "ran out of field" and struck a hedge at the far end, bringing down a power cable before coming to a halt in the next field. The pilot, who had sustained a cut knee, and his passenger evacuated the aircraft quickly because of the threat of fire. They called the airfield from a nearby cottage to alert them to the situation.

History of propeller failures on Thruster aircraft

There have been several cases of propeller detachment on Thruster aircraft fitted with the same engine and propeller combination. The AAIB has reported on four, including G-KYLE: G-EVEY (Bulletin 4/2010),

G-CBJWJ (Bulletin 3/2011), G-CCUZ (Bulletin 8/2011). All appeared to be very similar failures, in that the flange mounting screws had mostly failed in High Cycle fatigue (HCF). A loss of clamping torque in-service was initially suspected after earlier failures and the engine manufacturer had issued Service Bulletin (SB) JSB 022-1 in July 2008, emphasising the use of the correct installation procedures, including use of a locking agent.

In April 2011, following the three occurrences mentioned above, the airframe manufacturer issued an SB (TAS/SB 014) which required replacement of the

screws before 500 operating hours. This was further mandated by the issue, in May 2011, of a CAA Mandatory Permit Directive 2011-004E.

G-KYLE was in compliance with SB 014, having had the screws replaced in November 2009 and having flown 253 hours since then. Photographs of the failed screws suggest that the failure mechanism also involves fatigue and is very similar, if not identical to the previous events. The British Microlight Aircraft Association and the aircraft manufacturer have been made aware of the circumstances of this accident.