

ACCIDENT

Aircraft Type and Registration:	Quad City Ultralights Challenger II, G-MYRJ	
No & Type of Engines:	1 Rotax 582 piston engine	
Year of Manufacture:	1995	
Date & Time (UTC):	29 October 2006 at 0950 hrs	
Location:	Clench Common, Wiltshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - None
Nature of Damage:	Damage to left main and nose landing gears	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	39 years	
Commander's Flying Experience:	130 hours (of which 4 were on type) Last 90 days - 15 hours Last 28 days - 7 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional AAIB enquiries	

Synopsis

A failure of the poorly maintained engine shortly after takeoff resulted in damage to the aircraft during the subsequent forced landing. The cause of the failure was not identified.

soft from recent rain, causing the wheels to sink into the ground; this resulted in the left main and nose landing gears collapsing as the aircraft came to rest.

Engine examination

History of the flight

The owner/pilot had recently acquired the aircraft and the accident occurred on what the pilot recalls was probably his third flight. The aircraft took off from Clench Common and made a right turn onto the cross-wind leg of the circuit when, at a height of approximately 300 ft, the engine suddenly stopped. The pilot put the aircraft into a turn to the left and landed in the nearest available field. However, the surface was

The pilot subsequently removed the engine from the aircraft, which had achieved a total flight time of approximately 40 hours, and took it to an overhaul agent, who discovered that it had seized. In his view, both pistons had seized as a result of expansion, as opposed to a lack of oil. The reason for the seizure was not apparent, but could have been the result of, for example, high temperatures due to an abnormally weak mixture.

Further examination of the engine revealed evidence of poor maintenance in a number of areas.

- The heads of two of the cylinder bolts were worn as a result of an incorrect size of socket having been used;
- The bolt that mounted the disc valve, the component that controls the admission of the fuel/air mixture into the lower crankcase, had been stripped and a replacement bolt of incorrect length had been used in its place;
- One of the small-end bearings had previously been assembled with one of the rollers missing.

In addition, it was found that the connections between the cross-shaft gear chamber and its associated oil reservoir, had been reversed.¹ The effect of this was to prevent normal charging/bleeding of the cross-shaft gear chamber. However, there was sufficient oil in the chamber to have prevented any distress to the gear components.

Whilst the foregoing represents an unacceptable standard of maintenance, of which the pilot was unaware, none of these defects appeared to have any relevance to the engine failure.

The engine and aircraft were subsequently repaired, since when no further problems have been reported.

Footnote

¹ The cross-shaft is positioned transversely across the crank case, with one end driving the coolant pump and the other driving the disc valve. The shaft is driven via a worm gear in the centre of the crankshaft, in a sealed chamber between the two cylinders.