AAIB Bulletin No: 11/93 **Ref: EW/G93/09/10** **Category: 1.4**

Aircraft Type and Registration:	Quad City Challenger II UK, G-MVZK
No & Type of Engines:	1 Rotax 503 piston engine
Year of Manufacture:	1989
Date & Time (UTC):	11 September 1993 at 1600 hrs
Location:	Northcoates Airfield, Grimsby
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Damage to fuselage, landing gear and right wing
Commander's Licence:	Private Pilot's Licence
Commander's Age:	68 years
Commander's Flying Experience:	123 hours (of which one was on type) Last 90 days - 19 hours Last 28 days - 6 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and telephone enquiries

After an apparently normal take off, the aircraft had climbed to a height of approximately 150 feet agl when the pilot, and several witnesses on the ground, heard the engine noise increase, which suggested to one witness that the engine was running at about twice its normal speed. The pilot at this time was aware that the controls had become unresponsive but presumed that the engine was still producing power. The aircraft began to descend and after re-aligning it with the runway the pilot reported that it side-slipped to the ground from a height of approximately 50 feet, coming to rest on the grass to the left of the runway. The landing was relatively heavy and caused some damage to the aircraft, but the pilot was unhurt and able to exit the aircraft without difficulty. The engine ran at high speed for a short period of time before it could be shut down. The wind at the time was reported as 250°/05 kt.

The engine on this microlight is located behind the cockpit and drives a pusher propeller through a toothed belt reduction drive. Examination of this drive after the accident revealed that the toothed drive belt was stripped of all its teeth and the propeller was effectively disengaged from the engine. It was reported that the belt had been in use for some 45 hours and that the belt manufacturer recommended replacement at 50 hours. The Popular Flying Association (PFA) are conducting an investigation into

this failure and will consider whether a recommendation needs to be made reducing the service life of the belt. The Challenger II microlight is the only type on the PFA register to use a belt reduction drive, other Rotax engined aircraft being fitted with an encased gear reduction system.

G-MVZK was built in 1989 and had flown a total time of 139 hours. It posessed a valid Permit to Fly and last underwent an annual check on 15 August 1993. The pilot's total flying experience was 123 hours of which 1 hour 25 minutes had been on type, 25 minutes in command on type, the pilot having just become the aircraft's owner.