

ACCIDENT

Aircraft Type and Registration:	X'Air V2(2) microlight, G-CBBH	
No & Type of Engines:	1 Simonini Racing Victor II piston engine	
Year of Manufacture:	2002	
Date & Time (UTC):	7 April 2007 at 1130 hrs	
Location:	Sutton Meadows, near Ely, Cambridgeshire	
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, forward fuselage and windscreen, propeller blade broken	
Commander's Licence:	National Private Pilot's Licence	
Commander's Age:	32 years	
Commander's Flying Experience:	121 hours (of which 119 were on type) Last 90 days - 8 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Shortly after takeoff, the engine began to lose power and the pilot was forced to land in a field. In attempting to avoid a ditch, the left main landing gear collapsed. It was established that the rear cylinder big-end bearing of the two cylinder 2 two-stroke engine had failed.

Sequence of events

Following a pre-flight inspection, in which no problems were found, the aircraft took off from Chatteris at 1115 hrs. On arriving at Sutton Meadows a short time later, the pilot lined the aircraft up on Runway 01 for a touch-and-go. The touchdown and subsequent takeoff were normal but at a height of approximately 150 ft, over the end of the runway, the engine began to lose

power. The pilot had no choice but to land in a field immediately beyond the airfield boundary, which contained recently planted crops. On approaching the field, a large ditch became apparent, which the aircraft would enter if it continued straight ahead. In order to avoid this, the pilot turned the aircraft to the left, with the result that it touched down initially on the left landing gear, causing it to collapse. After a ground run of approximately 25 m, the nose wheel dug into the soft earth and the aircraft pitched forwards onto its nose, damaging the front of the fuselage 'pod' and breaking a blade of the now stationary propeller. The aircraft then settled back, coming to rest in a left wing low attitude.

The pilot turned off the master and ignition switches and both occupants, who were uninjured, left the aircraft without difficulty.

Examination of the aircraft

After the accident, it was observed that the engine could be turned by hand, but the pilot reported that it seemed “stiffer than usual”, giving the impression that a partial seizure had occurred. A subsequent examination of the engine revealed that a failure of the rear cylinder big end bearing had occurred, with metallic debris distributed around the crankcase; no reason for the failure was apparent.

The Simonini is a two-stroke, water-cooled engine, of which, according to the British Microlight Aircraft Association, there are only eight examples operating in the UK. It relies upon the oil in the fuel/oil mixture for lubrication. The manufacturer specifies a two-stroke

oil concentration of 2.5% by volume for leaded fuel and 3% for unleaded. The owners of G-CBBH ran the aircraft on motor gasoline, to which they added the requisite amount of oil.

Two fuel samples were taken from the aircraft several weeks after the accident: one was from the fuel line immediately upstream of the engine; the other was from the top of the fuel tank. Both samples were analysed and were found respectively to contain 3.2% and 2.3% of oil by volume. Only a small amount of fuel was collected from the fuel line and it may have been affected by a degree of evaporation, which could explain the difference in the two figures. Another factor may have been uneven mixing or, in the case of the tank sample, some settling of the oil. It is considered that the oil concentration would have to be significantly lower than these values to cause lubrication failure.