

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Rebel, G-CCPK	
<b>No &amp; Type of Engines:</b>	1 Lycoming O-235-C2C piston engine	
<b>Year of Manufacture:</b>	1995	
<b>Date &amp; Time (UTC):</b>	9 August 2009 at 1315 hrs	
<b>Location:</b>	Field near Kidderminster, Worcestershire	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - 1
<b>Injuries:</b>	Crew - None	Passengers - None
<b>Nature of Damage:</b>	Landing gear, carburettor, lower fuselage, wingtips	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	71 years	
<b>Commander's Flying Experience:</b>	953 hours (of which 784 were on type) Last 90 days - 4 hours Last 28 days - 2 hours	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot	

## Synopsis

Shortly after taking off, the engine stopped. After turning back, the pilot selected a field in which to make a forced landing. However, the field sloped downwards, and the pilot was unable to land before being forced to make a turn to avoid a railway embankment. During the turn, the aircraft's wingtip and landing gear contacted the ground and the aircraft was damaged. No positive reason for the engine failure was established by the pilot, although vapour locking or carburettor icing were possible factors.

## History of the flight

Earlier in the day the aircraft had departed with full fuel tanks from Shobdon on a flight to Sleaf, before continuing

to Droppingwells Farm strip near Kidderminster. It landed at approximately 1400 hrs and the two occupants left the aircraft briefly before embarking once more for the return flight to Shobdon. The pilot reported the wind as being light and variable; it was a sunny day with a temperature of 25°C and a dew point of 17-18°C.

The aircraft taxied to the eastern end of the airfield and took off towards the west. However, at a height of around 1,100 ft the engine stopped. The pilot checked the fuel and attempted to restart the engine, but to no avail. He considered his options for a forced landing and decided to turn back, aiming for a cornfield to the west of the airstrip. The flaps were deployed for the landing but the downward slope of the field caused the

aircraft to remain airborne. By this stage the aircraft was approaching a railway embankment, forcing the pilot to initiate a turn to the right. There was insufficient space in which to return the aircraft to a wings level attitude prior to touchdown, and contact with the ground was made by the right wingtip, followed by the landing gear. The aircraft then rocked onto its left wingtip before coming to rest. The occupants were uninjured and exited the aircraft via the doors.

### Discussion

The underside of the aircraft of the aircraft had been damaged in the forced landing to the extent that the carburettor had become detached from the engine, which was otherwise intact. However, the pilot could find no cause for the engine failure. In excess of 20 litres of fuel were recovered from the aircraft, suggesting that some leakage had occurred following the accident, as approximately 40 litres had been on board at takeoff.

The pilot subsequently considered that 'vapour lock' was a potential cause for the power loss. As noted earlier, the temperature was 25°C and there would have been a tendency for the fuel in the wings to warm up

in the sunshine during the period the aircraft was on the ground. In the event, the aircraft was parked for only a few minutes. The engine would not have cooled down significantly during this time, so it is possible that heat-soak affected the fuel lines within the engine compartment. Additional heat may have been generated whilst the aircraft was taxiing prior to takeoff.

'Vapour lock' is more frequently associated with aircraft in which the fuel tank is level with, or below, the height of the carburettor. Wing-mounted fuel tanks in high-wing aircraft, such as the Rebel, provide a positive pressure to the fuel system, which can suppress the tendency of vapour to form when the fuel lines become warmed.

When the temperature and dew point are plotted on the Carburettor Icing Probability chart (see CAA Safety Information Leaflet No. 14 - Piston Engine Icing), it is on the boundary between the occurrence of serious icing at descent power and moderate icing at cruise power. Despite the fact that the engine had been at high power for takeoff, it is nevertheless considered possible that carburettor icing may have been a factor in the loss of power.