No: 4/91 **Ref: EW/G91/02/01** **Category: 1c**

Aircraft Type and Registration:	Piper PA-18-150, G-AVPT	
No & Type of Engines:	1 Lycoming O-320-A2B piston engine	
Year of Manufacture:	1967	
Date and Time (UTC):	10 February 1991 at 1145 hrs	
Location:	Headcorn Aerodrome, Kent	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - 1
Injuries:	Crew - None	Passengers - Minor
Nature of Damage:	Substantial	
Commander's Licence:	Private Pilot's Licence with IMC, Night and Assistant Instructor ratings	
Commander's Age:	48 years	
Commander's Total Flying Experience:	949 hours (of which 208 were on type)	
Information Source:	Aircraft Accident Report Form submitted by the pilot and telephone inquiries by AAIB Inspector	

The accident occurred shortly after take-off from runway 29 at Headcorn Aerodrome.

At about 300 ft in the climb, after a normal take-off, the pilot re-trimmed and reduced power. Almost immediately, and without warning, the engine lost power completely and the pilot began a glide towards a field situated to the north west of the airfield. This field had overhead power wires on the approach and was smaller than the pilot would otherwise have chosen, but was the only field which he considered viable. The pilot checked the engine switches, in case he had disturbed them whilst re-trimming, and changed fuel tanks but the engine did not respond. When about 100 m short of the field, the aircraft began to 'sink' and the pilot elected to fly under the wires and through a hedge, rather than attempting to clear the wires. The aircraft touched-down and stopped within its own length, incurring considerable structural disruption. With fuel spilling into the cockpit, the occupants found that the door could not be opened but were able to vacate the aircraft successfully through the roof and cabin window.

Before the flight, both fuel tanks had been filled and a contamination check carried out. The pilot reported that the air temperature was -3°C. Meteorological data from Crawley, for 1200 hrs UTC on the

day of the accident, indicated that the relative humidity was 89% from ground level to 500 ft. Although snow was present on the ground at the time of the accident, no snow was falling when the aircraft took-off.

The aircraft and engine were examined after the accident by engineering personnel, who found that the spark-plugs did not show any signs of prolonged over-rich running. There was an ample fuel flow rate from each tank but because of disruption of the wing attachments a full check of the fuel system was not possible. The fuel strainer bowl was full of fuel and the filter element clean, but fuel was not abundantly evident in the carburettor. At the present time, no material explanation for the engine failure has been found.

At a temperature of -3°C and with 89% humidity, carburettor icing will almost certainly occur at both glide and cruise power settings, with a possibility of serious icing even at cruise power. However, the pilot stated that he made considerable use of carburettor heat during engine warm-up and whilst taxiing, and did not notice any symptoms of carburettor icing.