

Piper PA-28-161 Warrior II, G-BPAU

AAIB Bulletin No: 5/2003	Ref: EW/G2002/05/14	Category: 1.3
Aircraft Type and Registration:	Piper PA-28-161 Warrior II, G-BPAU	
No & Type of Engines:	1 Lycoming O-320-D3G piston engine	
Year of Manufacture:	1978	
Date & Time (UTC):	25 May 2002 at 1145 hrs	
Location:	Near Denham Airfield, Middlesex	
Type of Flight:	Training	
Persons on Board:	Crew - 2	Passengers - None
Injuries:	Crew - 2 (Minor)	Passengers - N/A
Nature of Damage:	Aircraft damaged beyond economic repair	
Commander's Licence:	Basic Commercial Pilot's Licence with Instructor Rating	
Commander's Age:	60 years	
Commander's Flying Experience:	2,625 hours (of which 562 were on type) Last 90 days - 22 hours Last 28 days - 2 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot and additional enquiries by the AAIB.	

The aircraft was engaged on a circuit check detail with an instructor and Private Pilot's Licence holder. The aircraft had been refuelled to full tanks prior to departure. The engine had been reluctant to start but, after several attempts, it started and ran normally. Pre-flight power checks, including carburettor heat function, were normal and the aircraft took off from Runway 24 for its first circuit.

On base leg, with carburettor heat and two stages of flap selected, the power was initially reduced, then increased again to adjust height. However, the increased power demand seemed to cause the engine to stop. Operating the throttle had no effect. The instructor took control and maintained the gliding speed. He estimated that there was insufficient height available to land on the aerodrome, so he turned away to the right in order to avoid obstacles. Having selected an alternative landing area, the instructor attempted to get the aircraft into the corner of a small field, but the left wingtip clipped a tree and the aircraft landed 'rather abruptly'. The two occupants suffered minor cuts and bruises but were able to evacuate the aircraft normally. Although there was some fuel leakage, there was no fire.

In his report, the instructor stated that the fuel supply was checked by the airfield owner and was found to be satisfactory. The instructor felt that the circumstances surrounding the engine failure would point towards carburettor icing as the cause, but he was puzzled as to why carburettor icing should occur within such a short period of time, between the ground power check and the base leg of the subsequent circuit, with the carburettor heat already selected.

An aftercast from the Met Office indicated that, at the time of the accident, the surface temperature was +14.1°C and the dew point was +6.7°C. By reference to the carburettor icing probability chart published in the CAA General Aviation Safety Sense leaflet, number 14A, entitled *Piston Engine Icing*, these ambient conditions would have produced a risk of moderate icing at cruise power and serious icing at descent power.

The flying club at Denham had reported several instances of carburettor icing earlier in the day and, it is understood, for a number of days prior to this accident. A visual inspection of the engine did not reveal any major mechanical problems but no in-depth examination of it was undertaken.

The AAIB are conducting a review of accidents involving suspected carburettor icing such as this and will be collating them with a view to making Safety Recommendations as appropriate.