ACCIDENT

Aircraft Type and Registration:	Piper PA-28-140 Cherokee, G-BXPL
No & Type of Engines:	1 Lycoming O-320-E2A piston engine
Year of Manufacture:	1968
Date & Time (UTC):	10 December 2010 at 1520 hrs
Location:	1.5 miles south-east of Wellesbourne Mountford Airfield, Warwickshire
Type of Flight:	Training
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Extensive
Commander's Licence:	Student Pilot
Commander's Age:	50 years
Commander's Flying Experience:	12 hours (of which 12 were on type) Last 90 days - 7 hours Last 28 days - 1 hour
Information Source:	Aircraft Accident Report Form submitted by the pilot

Synopsis

Whilst practising solo circuits, a student pilot experienced a loss in engine power. He attempted a forced landing, but the aircraft touched down at the far end of the field and collided with a boundary hedge, before coming to rest on a road.

History of the flight

The student pilot had flown a number of practice solo circuits without incident. The weather was fine, with a 10 kt breeze from the west, an air temperature of 7°C and a cloud base of 2,500 ft. During climb-out on the final circuit, the pilot noted that the engine noise changed subtly as the aircraft passed through 500 ft agl. The pilot continued the circuit, climbing to 1,000 ft agl and turning onto the crosswind leg, before levelling the aircraft and throttling back the engine. Immediately the engine lost power and the rpm dropped to 1,200. The pilot applied carburettor heat and switched fuel tanks. Although the engine responded to throttle position, the changes were small and no significant increase in power was evident. The pilot selected a field to the north-east of his position (Figure 1) and attempted a forced landing. However, the aircraft touched down at the far end of the field, hitting the boundary hedge at over 20 kt and came to rest on the road behind. The landing caused extensive damage to the aircraft and the hedge, but the pilot was uninjured and exited the aircraft without assistance through the door. Traffic using the road was brought safely to a halt without collision.

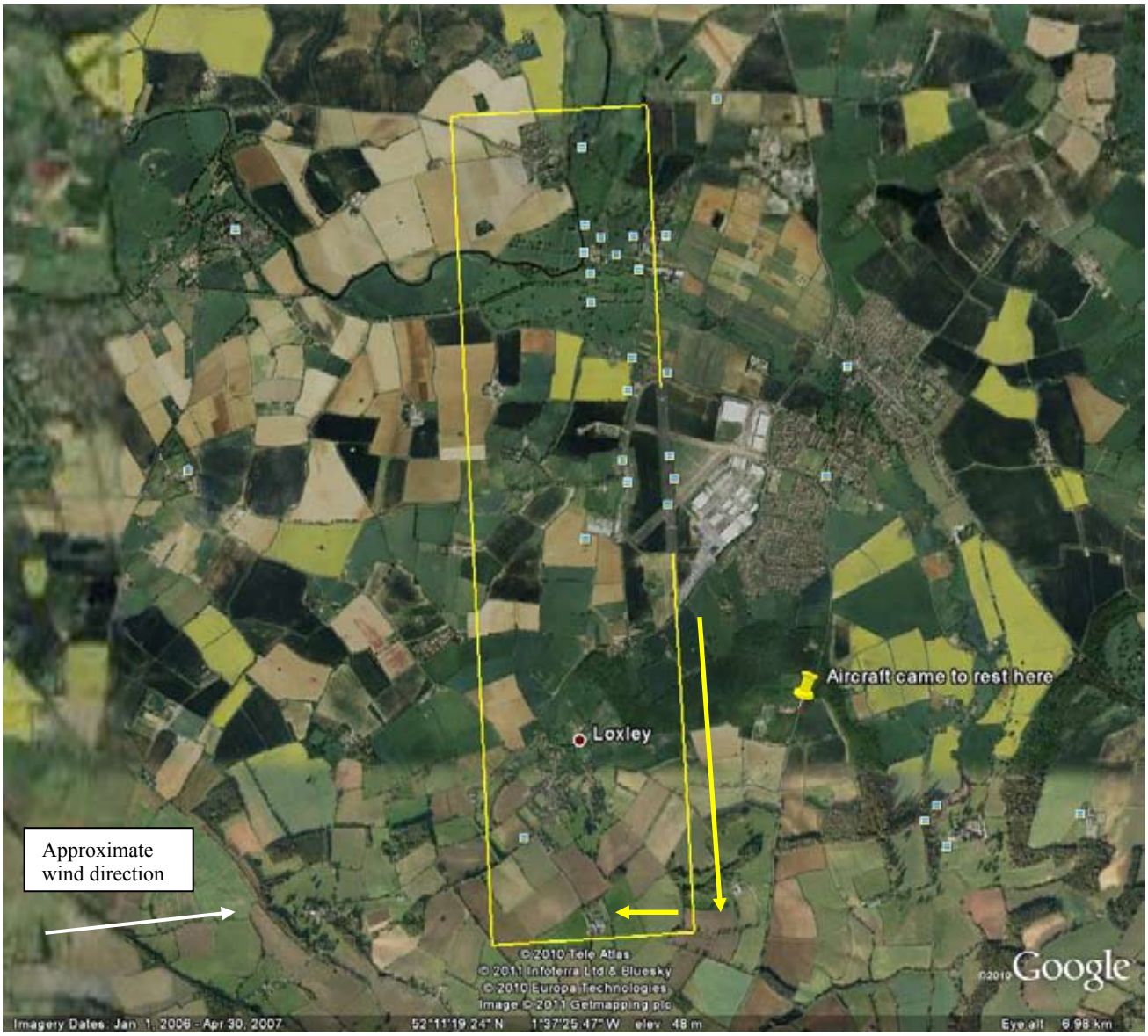

Figure 1

Circuit plan and accident site

Evidence

The flying school's maintenance provider briefly inspected the aircraft following recovery. They confirmed that the engine controls were still connected and that there was no obvious pre-impact damage to the engine. However, no further investigation work was completed on the aircraft prior to its disposal. The pilot submitted a receipt for fuel purchased immediately prior to the flight, the quantity of which should have been sufficient for the length of the flight undertaken. He also confirmed switching the tank in use following the drop in rpm. The rescue services reported significant fuel leaks following the accident indicating that fuel was still present.

Analysis

The source of the engine problem could not be confirmed given the limited examination of the aircraft.

However, the pilot reported that the engine was still running at low power and had some limited response to throttle movement. A partial restriction in either the air intake, fuel system or the carburettor could result in these symptoms. The air temperature was conducive to serious carburettor icing at any engine power. The length of the flight with normal engine response and the possible early indications during the climb-out, also support carburettor icing as a possible cause.

The UK CAA provides guidance in the form of General Aviation Safety Information Leaflets (GASIL) and Safety Sense Leaflets on the subjects of piston engine icing and forced landings. A recent AAIB investigation report (AAIB Bulletin 2/2011, G-ARHN EW/C2010/09/02) also highlights information issued by the New Zealand CAA on the subject of planning for and conducting forced landings.