ACCIDENT

Aircraft Type and Registration:	Luton LA4A Minor, G-ASEB
No & Type of Engines:	1 Lycoming O-145-A2 piston engine
Year of Manufacture:	1963
Date & Time (UTC):	17 September 2009 at 1740 hrs
Location:	1 mile north-east of Thatcham, near Newbury, Berkshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - None
Injuries:	Crew - None Passengers - N/A
Nature of Damage:	Damage to fuselage, landing gear and propeller
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	62 years
Commander's Flying Experience:	376 hours (of which 150 were on type) Last 90 days 12 hours Last 28 days - 4 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

Synopsis

Shortly after takeoff, at a height of approximately 100 feet, the engine stopped. The pilot carried out a forced landing and, in an attempt to avoid a high hedge, he landed with a high descent rate and low forward speed. The aircraft sustained damage but the pilot was uninjured. The pilot's post-accident examination of the engine and fuel system did not reveal any faults, so the pilot concluded that the engine may have suffered from carburettor icing.

History of the flight

The Luton LA4A Minor is a homebuilt high-wing single-seat aircraft with a tailwheel landing gear configuration (see Figure 1). G-ASEB was powered by a 4-cylinder 55 hp air-cooled Lycoming O-145-A2 piston engine. The aircraft was operated on a Permit to Fly and maintained by the pilot/owner.

After completing his pre-takeoff checks, the pilot departed from Seige Cross Farm airstrip. The takeoff and initial climb were normal, but after about 15 seconds he noticed that the aircraft's climb rate was lower than usual. The airspeed was indicating about 10 kt lower than normal and the engine speed was about 100 rpm below normal and fluctuating slightly. The oil pressure indication was in the normal range. The pilot lowered the nose of the aircraft and, as he was about to select the carburettor heat on, the engine stopped. He estimated

Figure 1

Luton LA4A Minor, G-ASEB
(photo courtesy CAA database G-INFO)

that this occurred at a height of about 100 feet above the ground. He committed to make a forced landing and banked to the left to avoid a barn that was straight ahead. He then saw a hedge ahead that was about 15 to 20 feet high which he did not think he could clear, so he pulled the stick back in order to slow the aircraft down towards the stall, and hit the ground with a high vertical speed and low forward speed, just short of the hedge. The aircraft came to rest in a very short distance and the pilot was able to vacate the aircraft uninjured.

Pilot's assessment of the cause

The pilot carried out an examination of the engine and fuel system after the accident. He reported that there was sufficient fuel onboard and a check for water was negative. He carried out a fuel flow test, which was normal. He removed the carburettor and an internal inspection revealed no evidence of water or foreign debris, and the main carburettor jet was clear. Both magnetos had been refurbished with new coils, condensers and points in the previous six months. The spark plugs were slightly sooted but otherwise in satisfactory condition. The engine had not suffered from any mechanical failure, so the pilot concluded that the engine may have suffered from carburettor icing. The temperature and humidity at the time were 14°C and 54%, which placed the risk of carburettor icing on the borderline between '*Serious icing – any power*' and '*Moderate icing – cruise power*' based on the CAA's carburettor icing probability chart (see Figure 2).

The pilot said that most of the time he taxied his aircraft with the carburettor heat on. On this particular occasion he had not taxied with the carburettor heat on, because the air had felt dry and the grass was dry. He did, however, operate the carburettor heat for 5 to 10 seconds during the engine run-up checks. The only previous occurrence of possible carburettor icing he had experienced on this aircraft occurred at 1,500 ft while cruising below a layer of cloud, when the engine "hiccupped". He had immediately applied carburettor heat and the engine had returned to normal operation.

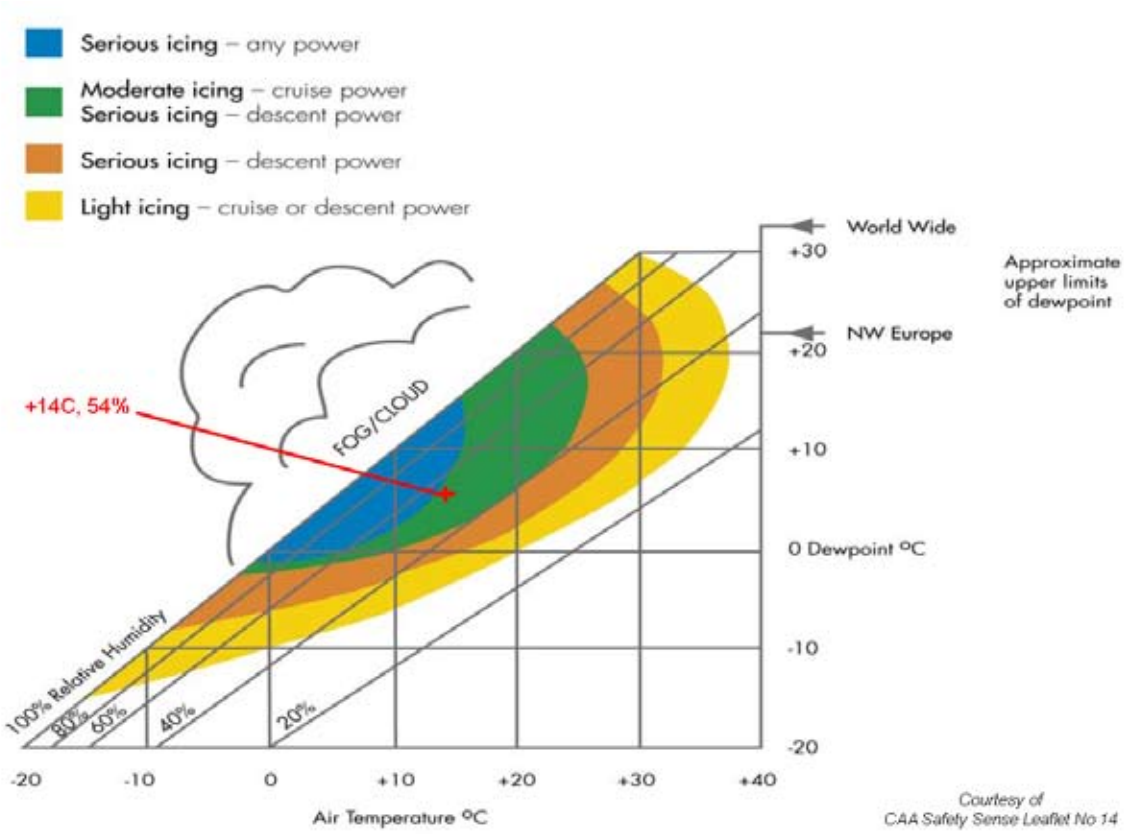

Figure 2

Carburettor icing probability chart from CAA Safety Sense Leaflet 14