

## ACCIDENT

<b>Aircraft Type and Registration:</b>	Piper PA-28-181 Cherokee Archer II, G-BSIM	
<b>No &amp; Type of Engines:</b>	1 Lycoming O-360-A4M piston engine	
<b>Year of Manufacture:</b>	1986 (Serial no: 28-8690017)	
<b>Date &amp; Time (UTC):</b>	28 October 2014 at 1545 hrs	
<b>Location:</b>	Near RAF Henlow, Bedfordshire	
<b>Type of Flight:</b>	Private	
<b>Persons on Board:</b>	Crew - 1	Passengers - None
<b>Injuries:</b>	Crew - None	Passengers - N/A
<b>Nature of Damage:</b>	Damage to left landing gear, left wing and fuselage	
<b>Commander's Licence:</b>	Private Pilot's Licence	
<b>Commander's Age:</b>	50 years	
<b>Commander's Flying Experience:</b>	188 hours (of which 71 were on type) Last 90 days - 4 hours Last 28 days - 1 hour	
<b>Information Source:</b>	Aircraft Accident Report Form submitted by the pilot and recorded weather information	

## Synopsis

The aircraft experienced a loss of engine power whilst in the visual circuit. Unable to restore power, the pilot carried out a forced landing in a nearby field, during which the aircraft struck an obstacle and was damaged. The pilot, who was uninjured, reported that the loss of power had been due to induction system icing; conditions at the time were conducive to such icing.

## History of the flight

The pilot was conducting a local general handling flight from the airfield at RAF Henlow. The weather was fine and clear, with a temperature of about 15°C. A weather front was approaching the area from the north-west and cloud associated with it was visible to the pilot at the time, albeit some distance away. Pre-flight preparations and engine checks were normal, and the aircraft took off at 1515 hrs from the grass Runway 20.

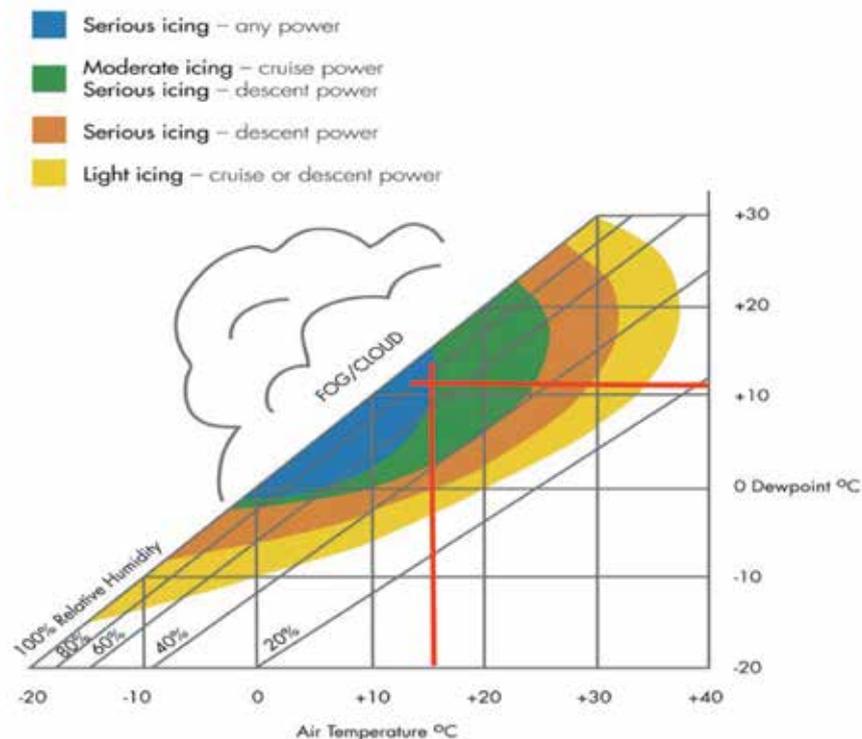
The pilot flew three takeoffs and landings, during which time engine performance appeared normal. On the fourth circuit, as the aircraft turned onto the base leg and the pilot applied carburettor heat prior to reducing power, there was an immediate drop in engine rpm and an increase in engine noise.

The pilot throttled back but the engine continued to run abnormally. It did not stop but power delivery was erratic. The pilot declared an emergency and carried out cockpit actions in

an attempt to recover engine power. This was not effective and, with insufficient power available to reach the runway, the pilot identified a field for a forced landing.

Touchdown was made on the mainwheels and the landing roll was normal at first. However, the aircraft encountered a small land drain, that deformed the left main landing gear which led, in turn, to some damage to the left wing. The aircraft continued to decelerate for about 30 or 40 m while yawing to the left. It came to rest having deviated 90° from the direction of landing.

The pilot, who was uninjured, reported that the loss of engine power was due to carburettor icing. The meteorological report for Luton Airport (8.5 nm south) at 1520 hrs gave a temperature of 16°C and a dew point of 11°C. Over the next two hours, these values changed to 14°C and 13° C respectively. Figure 1 shows a graph widely used to predict the likelihood of induction system icing. Using the conditions reported at Luton Airport, the aircraft can be seen to have been at risk of moderate icing at cruise power and serious icing at descent power. A more refined version of the graph (not shown here) identifies a risk of serious icing at both cruise and descent power settings for carburettor equipped engines, such as that fitted to G-BSIM.



**Figure 1**

Graph predicting risk of induction system icing; actual values of temperature and dewpoint shown by red lines