
ACCIDENT

Aircraft Type and Registration:	Zenair CH 601UL Zodiac, G-CCVT	
No & Type of Engines:	1 Rotax 912-S piston engine	
Year of Manufacture:	2004	
Date & Time (UTC):	2 September 2011 at 1730 hrs	
Location:	Private airstrip, Glenmavis, Lanarkshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Extensively damaged	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	61 years	
Commander's Flying Experience:	922 hours (of which 496 were on type) Last 90 days - 16 hours Last 28 days - 3 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot	

Synopsis

Shortly after becoming airborne, the engine stopped and in the pilot's attempt to avoid a road and overhead electrical cables the aircraft landed heavily and was extensively damaged. The pilot was uninjured.

History of the flight

The pilot reported that on the morning of the accident, he replenished the aircraft with MOGAS and successfully carried out his normal pre-flight checks, which included a water sediment check of a sample of fuel taken from the drain at the bottom of the aircraft fuel tank.

Shortly after a light shower had passed over the airfield, the pilot started the engine and after approximately

10 minutes taxied to the end of the grass runway where he carried out his power checks during which the engine reached the expected maximum rpm. On completing the power checks the pilot immediately released the aircraft brakes and the aircraft quickly accelerated and became airborne at the expected distance along the runway. At approximately 30 ft the engine tone changed, the engine coughed, the rpm rapidly decreased and the engine stopped. In an attempt to avoid a set of electrical cables, and a road that ran across the end of the runway, the pilot banked relatively steeply to the right. The right wing and landing gear struck the ground and the aircraft bounced before landing heavily. While the pilot was uninjured, the aircraft was extensively damaged.

At the time of the accident, Glasgow Airport, which is 16 miles to the west of the airfield, reported that the temperature was 14°C, the dewpoint was 12°C and the humidity was 88%. Given the weather conditions and the fact that the aircraft was started and the power checks were carried out with the aircraft parked on wet grass, the pilot considered the possibility that the engine failure might have occurred as a result of carburettor icing.

Carburettor icing

CAA Safety Sense Leaflet 14 describes the causes of carburettor icing and notes that ‘Carb icing is more likely when MOGAS is used’. The graph from the Safety Sense Leaflet showing the likelihood of carburettor icing is reproduced at Figure 1. From the graph it can be seen that the conditions at the time of the accident would have given a serious risk of carburettor icing at any power setting. However, the pilot’s report that there was a sudden reduction in engine rpm shortly after the aircraft

became airborne is not characteristic of carburettor icing, which in this type of engine installation normally manifests itself as a gradual reduction in power.

The Rotax 912-S engine is equipped with two magnetos and two carburettors, each of which feeds two cylinders, and are positioned just above the engine exhaust, which keeps the carburettor bodies relatively warm. Consideration was given to the possibility that ice might have accumulated in the induction system while the engine was running prior to the power runs, without affecting the engine performance, and then released in flight causing the engine to suddenly stop. However, it was thought that this scenario was unlikely.

Discussion

While carburettor icing can not be ruled out, the reported symptoms were also consistent with fuel starvation.

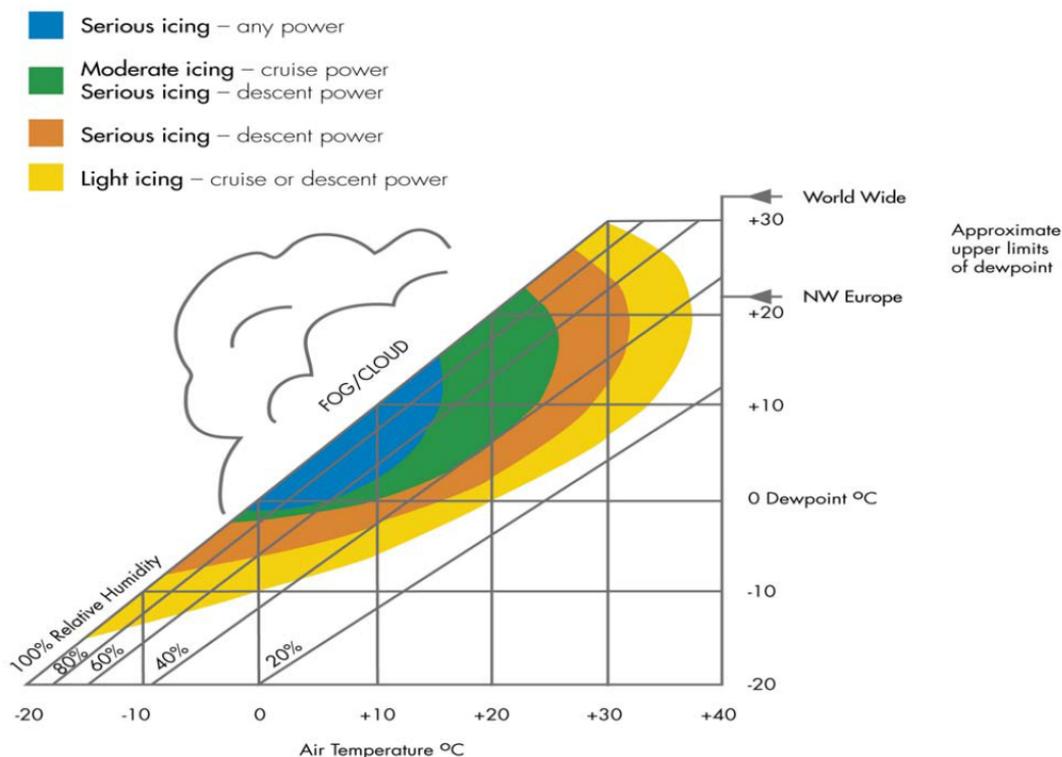


Figure 1
Carburettor icing chart