

Luscombe 8A, G-AKUG

AAIB Bulletin No: 10/2004	Ref: EW/G2004/07/14	Category: 1.3
Aircraft Type and Registration:	Luscombe 8A, G-AKUG	
No & Type of Engines:	1 Continental A65-8 piston engine	
Year of Manufacture:	1947	
Date & Time (UTC):	17 July 2004 at 1600 hrs	
Location:	Stockton Airstrip, Wiltshire	
Type of Flight:	Private	
Persons on Board:	Crew - 1	Passengers - None
Injuries:	Crew - None	Passengers - N/A
Nature of Damage:	Significant damage	
Commander's Licence:	Private Pilot's Licence	
Commander's Age:	32 years	
Commander's Flying Experience:	689 hours (of which 55 were on type)	
	Last 90 days - 37 hours	
	Last 28 days - 6 hours	
Information Source:	Aircraft Accident Report Form submitted by the pilot, and follow-up telephone inquiries by the AAIB	

G-AKUG was purchased by the pilot in January 2004, who operated it over a period of some five months, accumulating around 43 hours flying time, without encountering any technical problems. Approximately one month before the accident, the pilot reported that he noted a larger than normal magneto drop when the left magneto was switched off. He contacted the vendor of the aircraft, who removed the right magneto for repair and subsequently reinstalled it on the aircraft, after which it was found to perform satisfactorily. Approximately five hours was flown subsequently over the following three-week period without incident.

On 9 July 2004, approximately eight minutes after taking off from his private strip at Hungerford, the pilot noticed the engine speed was gradually dropping. He applied carburettor heat, and the engine immediately returned to normal; after about a couple of seconds, however, when the carburettor heat was returned to the cold position, it started to run roughly again. Carburettor heat was reapplied, and the engine immediately ran smoothly. After about 30 seconds, it was selected to the cold position and again the engine immediately started to run roughly, to the extent that it almost stopped. Carburettor heat was applied once again, in an attempt to maintain smooth running and, as a precaution, the pilot diverted into Popham where the maintenance company which had serviced the pilot's previous aircraft was located. The landing at Popham proceeded without incident but on taxing off the runway the pilot noted that the engine still ran roughly unless full carburettor heat was applied.

The pilot reported that considerable time was spent by the maintenance engineers attempting to locate the cause of the problem, during the course of which the mixture was adjusted, the air filter was removed and checked, the air intake hoses were adjusted, and the carburettor and spark plugs checked. At each stage, when the engine was started it ran roughly and at the end of the process no specific cause of the problem had been identified. In order to allow more time for investigation, the pilot resolved to leave the aircraft at Popham for further investigation and correction of the rough running defect and, additionally, an oil change and 50 hour check, which was imminently due.

An engine ground run carried out by the maintenance company preparatory to starting the 50 hour check, showed a 75 RPM drop when carburettor heat was applied at 1,700 RPM, and 'mag' drops of 100 RPM and 50 RPM for the left and right magnetos respectively. The engine idled satisfactorily at 500 RPM. The following work was carried out in conjunction with the 50 hour inspection: the spark plugs were checked and cleaned; the rocker covers were removed and the valves and rockers inspected; the induction seals were checked; the carburettor was removed, drained, cleaned, and the filters checked; the magnetos were removed and the points checked and cleaned, and the HT leads were inspected. However, initial inspection of the engine by the maintenance company revealed that the induction pipe rubbers were not properly 'at home' on their connection to the inlet elbows on two of the cylinders. It was considered that this, and the possibility of a fuel problem could have been responsible for the rough running. Fuel water checks were carried out on both tanks. Also, the maintenance company noted that the owner was operating the aircraft on Mogas on single tank operation and reportedly advised the owner to use both tanks.

All the identified defects were rectified and engine runs carried out upon completion of the 50 hour check were satisfactory. On completion of this work, pilot reported that he was told that the rough running had been traced to a "mag problem", which had been rectified. Subsequently, the pilot collected the aircraft and made an uneventful flight back to his home strip. No further flights were carried out until the day of the accident, when the pilot flew to a private strip located approximately 10 miles west of Salisbury, where the aircraft was parked whilst the pilot met with some acquaintances. After about an hour, he prepared to depart for a planned flight to Compton Abbas in loose formation with another Luscombe. After having carried out his usual cockpit and pre-start checks, which included priming three times, the pilot pulled the engine through approximately "four turns" before switching on the left magneto and attempting to start the engine. After "six swings", the engine had failed to start and the pilot returned to the cockpit where he switched the magnetos OFF, checked that the fuel selector was set to the left tank, and primed the engine again twice before resetting the throttle and switching on the left magneto. The next attempt to start the engine was successful on the second swing. The pilot entered the aircraft and, after selecting both magnetos ON, taxied to the threshold where he performed his pre-take-off and power checks. Application of carburettor heat produced a normal drop at 1,700 RPM, selection of each magneto in turn produced a small (normal) RPM drop, and the idle RPM was satisfactory. Having reconfirmed that the fuel was ON, he advanced the throttle to begin his takeoff. Because of a slight up slope, the take-off roll was longer than normal but the aircraft became airborne without difficulty and he initiated a gentle climbing right hand turn, as requested by the airfield owner for noise abatement reasons.

At approximately 150 feet during climb out, the engine stopped suddenly and without warning. The gentle turn to the right was continued to avoid a row of tall trees directly ahead, as the pilot instinctively made towards an adjacent valley in an effort to afford himself more time and to allow the airspeed to build up. However, the airspeed did not increase as he had hoped. At a height of about 50 feet, he levelled the wings and attempted to arrest the rate of descent by raising the nose. This resulted in the aircraft impacting the ground at low forward speed with a high rate of descent, in a slightly nose up, stalled, condition. After sliding a distance of approximately 15 metres down the slope, it came to rest and the pilot, who was uninjured, was able to vacate the aircraft.

The pilot has reported that the aircraft has been classified as a total loss by the Insurance assessor, and as it will not be repaired, the cause of the engine failure is unlikely to be determined in the near future.