No: 7/92 **Ref: EW/G92/05/03** **Category: 1c**

Aircraft Type and Registration:	Zlin Z326 Trener Master, G-BKOB
No & Type of Engines:	1 Walter Minor 6-III piston engine
Year of Manufacture:	1962
Date & Time (UTC):	3 May 1992 at 1135 hrs
Location:	Urchfont private strip, Wiltshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - None Passengers - None
Nature of Damage:	Propeller and aileron balance tab damaged, minor damage to fuselage undersurface
Commander's Licence:	Private Pilot's Licence
Commander's Age:	52 years
Commander's Flying Experience:	483 hours (of which 205 were on type) Last 90 days - 6 hours Last 28 days - 5 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and AAIB telephone inquiries.

The aircraft took off from Urchfont Private Strip, an approximately 600 m long grass strip, in a westerly direction. The wind was estimated at less than 5 kt from the west. The take-off was normal until a sudden complete loss of engine power was experienced at a height of around 40 ft agl. The pilot carried out a straight ahead forced landing back on to the strip, with the landing gear retracted, and the aircraft came to rest on its undersurface at the extreme end of the strip. Both occupants were wearing full harnesses and were uninjured, and were able to evacuate the aircraft rapidly.

Strip examination of the engine for the owner by an overhaul agency showed that it had experienced a partial seizure. No. 2 and 6 big-end bearings showed evidence of overheat and seizure and No. 6 connecting rod had cracked. The engine is a six cylinder air-cooled piston engine of Czeckoslovakian manufacture. The crankshaft main and big-end bearings are pressure lubricated by outlets from an oilway in the crankshaft. The oilway is formed by a number of intersecting drillings, and steel blanking plugs are pressed into the ends of the intermediate drillings to seal them off and thus form a continuous gallery through the crankshaft. All of the blanking plugs were reportedly found to have

suffered very heavy intergranular corrosion and two had cracked open. The evidence indicated that this would have caused loss of oil feed to the No. 2 and 6 big-end bearings.

The aircraft had been operated in France for some years before being imported onto the UK Register by the owner/pilot involved in the accident approximately 10 years before the accident. The last complete engine overhaul had been carried out in 1975, ie over 16 years before the accident, and the engine had since flown approximately 560 hours. The basic engine overhaul life is reportedly 750 hours, extendible to 900 - 950 hours. Some engine problems had been experienced before the accident, mainly flat spots when opening the throttle in flight. Since importation, the aircraft generally had been hangared, but recently had been kept outside during the summer.

It is reported that access to the crankshaft for conducting an inspection could be gained fairly readily by taking off the cowls and removing a crankcase cover on top of the engine. The available evidence indicated that the crankshaft of the four cylinder version of the Walter Minor engine is similar.

Safety Recommendation No 92-48

It has been recommended that the CAA require additional inspection of the crankshaft of engines similar to the Walter Minor 6-III, particularly related to calendar time in service, or modification action to prevent recurrence of this problem.