

AAIB Bulletin No: 3/93

Ref: EW/G92/10/11

Category: 1c

Aircraft Type and Registration: Cessna 172B Skyhawk, G-ARLV

No & Type of Engines: 1 Continental O-300-C piston engine

Year of Manufacture: 1961

Date & Time (UTC): 23 October 1992 at 1600 hrs

Location: Newbury Racecourse, Berkshire

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - 2

Injuries: Crew - Serious Passengers - 1 Serious
1 Minor

Nature of Damage: Severe damage to left wing, forward fuselage and landing gear

Commander's Licence: Private Pilot's Licence

Commander's Age: 52 years

Commander's Flying Experience: 100 hours (all on type)
Last 90 days - 20 hours
Last 28 days - 12 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and examination of wreckage by the AAIB

The grass runway 11/29 at Newbury racecourse is only available for landings in the 29 direction and take-offs in the 11 direction. The wind at the time of the accident was 260°/20 kt and the pilot was, in the event, given the option to use 29 for take-off but he elected to accept the tailwind component and take-off on 11 to avoid flying over a densely built-up area to the west of the strip. After rotation at 60 kt the pilot sensed a loss of power and was unable to maintain a climb rate. He turned the aircraft to the left towards a clear area, the aircraft stalled and descended onto the ground. The pilot was knocked unconscious. Later the pilot recalled seeing the regulator warning light flashing and the RPM gauge indicating 1,100 RPM.

A field investigation was not initially carried out by the AAIB and the aircraft was released and recovered from the site for the insurers but it was later decided to carry out a technical investigation and the aircraft was examined for causes of a power loss.

The propeller was badly damaged with strong evidence of rotation at impact but it was not possible to say what level of power this might indicate. The aircraft fuel piping was found to have been intact with no evidence of leaks or blockage. The glass bowl of the fuel strainer had been broken and it had been possible for fuel to drain from the aircraft's tanks after the accident because of the steep nose-down attitude in which it came to rest. Nevertheless, the salvors drained a large amount of fuel from the aircraft and this was seen to be clear and clean. The strainer bowl drain was found to be closed and the strainer itself showed no signs of significant pre-existing contamination. The aircraft magneto wiring and switch were checked for insulation and function and no fault was found.

The engine was removed from the airframe and taken to an engine overhaul agency where it was stripped and examined under AAIB supervision. It was not possible to run the engine because of damage to the crankshaft extension but it was found to be free to rotate and the magneto timing was checked and found to be correct. No evidence was found of mechanical failure or distressed running. The magnetos, sparking plugs and ignition harness were tested and, although there was some damage evident and some irregularity in the functioning of the impulse mechanism, this was attributed to the impact. The carburettor was stripped and the float height was found to be set low but the fuel level checked satisfactorily. The bowl screws were found not to be tight, though still tab locked, but this was considered to be the result of impact damage. None of the valves showed any tendency to stick when the valve gear was dismantled and none of the valves or pushrods was damaged but there was an excessive build-up of carbon on some of the valve stems and within some guides. It was also found that the measured tensions of the majority of the outer valve springs and the inner No 1 springs were below the specified minimum values. The flight to Newbury had been the first flight following the fitting of two new cylinder assemblies and the engine was being run on 'straight' SAE 80 mineral oil. The engine had operated for 1439 hours since overhaul and 830 hours since last top overhaul. Throughout the examination of the aircraft nothing was found which could have caused a power loss.