

AAIB Bulletin No: 2/93

Ref: EW/G92/12/07

Category: 1c

Aircraft Type and Registration: Piper J3C-65 Cub, G-BDJP

No & Type of Engines: 1 Continental C90-12F piston engine

Year of Manufacture: 1947

Date & Time (UTC): 13 December 1992 at 1052 hrs

Location: Shoreham Airport, West Sussex

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Damage to propeller, cowling and lower part of engine

Commander's Licence: Private Pilot's Licence

Commander's Age: 19 years

Commander's Flying Experience: 119 hours (of which 38 were on type)
Last 90 days - 17 hours
Last 28 days - 4 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and telephone enquires by the AAIB

The pilot of the aircraft reported that, prior to flight, satisfactory full power and magneto checks had been carried out against chocks, following which carburettor heat was used as the aircraft was taxied to the holding point of runway 21. After a short delay before lining up for take-off he released the brakes and applied full throttle. He recalled seeing an engine speed indication of 2,200 RPM, which was normal. However, at about 30 to 35 kt the engine began to run roughly before it then stopped, with the propeller horizontal. The aircraft then started to swing to the left but as the pilot attempted to correct this, the aircraft tipped forward onto its nose. The pilot later stated that he may have inadvertently depressed the right heel operated brake as he applied right rudder pedal. A ground witness observed that during the short take-off run the tail of the aircraft was raised, but did not return back to the ground before the 'nose over' occurred.

The weather at the time of the accident was: wind 200°/03 kt, temperature +5°C, humidity 90% and visibility greater than 10 km, but with occasional drizzle. These conditions were highly conducive to the formation of carburettor icing, at any power setting. This aircraft was reported by the operators to have been readily susceptible to such icing.

Following the accident, the aircraft was examined by maintenance personnel who found no technical fault which might have caused the engine to fail. They did, however, notice that the exhaust collector was cracked. The most recent maintenance on the aircraft was a 50 hour check, conducted three days before the accident, at which time the exhaust system was declared to have been serviceable.

The arrangement of the air intake system on this aircraft is typical of most light aircraft in that any leaking exhaust gases would be unlikely to be ingested by the engine whilst carburettor cold air was selected. However, when hot air was being used it would have been possible for exhaust gases to have been induced into the engine, with the consequent likelihood of rough running and loss of power.