

No: 7/88

Ref: EW/G88/02/09

Category: 1c

Aircraft Type and Registration: Piper PA 28-140, G-AXTH

No & Type of Engines: 1 Lycoming O-320-E2A piston engine

Year of Manufacture: 1969

Date and Time (UTC): 28 February 1988 at 1100 hrs

Location: Compton Abbas Airfield, Wiltshire

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - None Passengers - N/A

Nature of Damage: Left and right main landing gears separated from the aircraft; nose landing gear buckled; propeller tip bent; damage to the lower fuselage and rupture of the upper surface of the right wing.

Commander's Licence: Private Pilot's Licence

Commander's Age: 55 years

Commander's Total Flying Experience: 623 hours (of which 113 were on type)

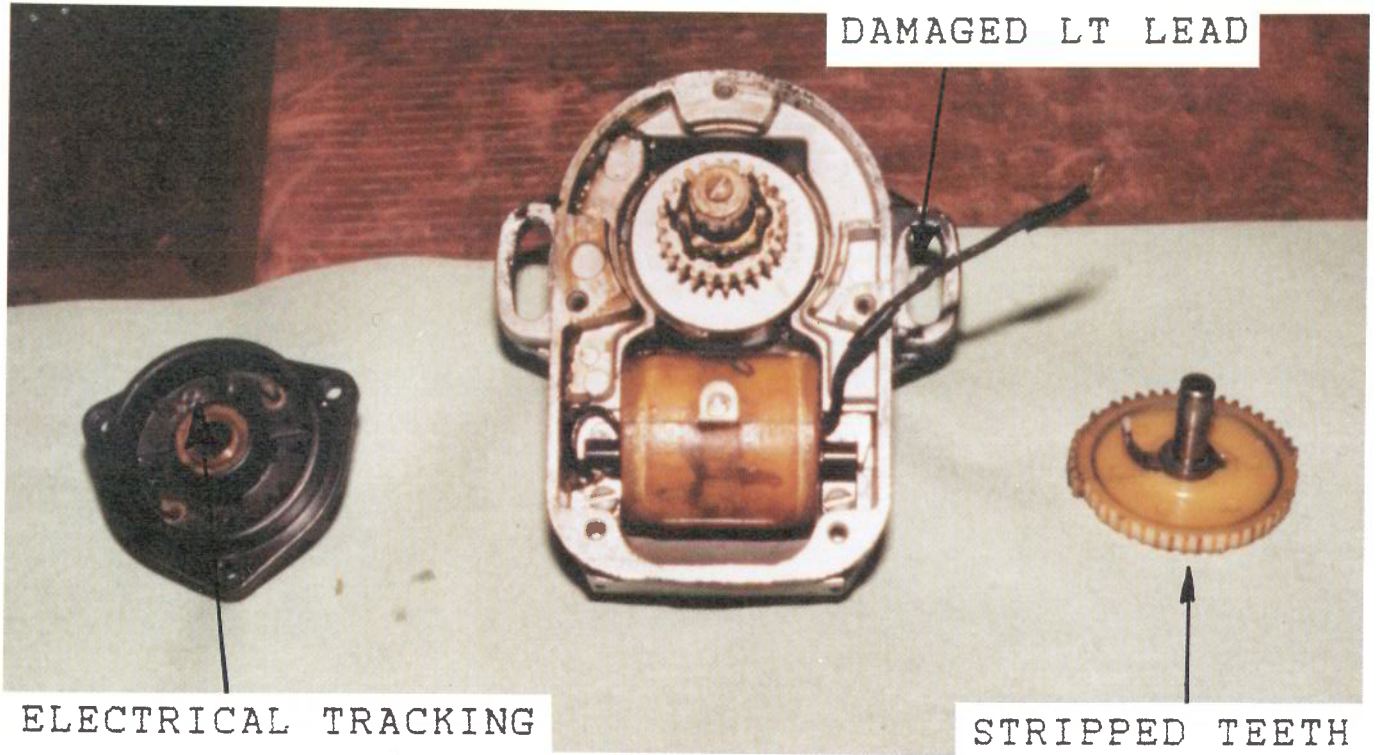
Information Source: Aircraft Accident Report Form submitted by the pilot and AAIB examination of the aircraft engine and its systems.

Prior to taking-off from White Waltham Airfield, the pilot carried out an engine check which included checking the magnetos. The engine performed within the specified limits and ran smoothly. Shortly after leaving the White Waltham exit lane at Woodley, the pilot noticed that the engine was running extremely roughly with possible back-firing. He applied full carburettor heat and ensured that the mixture was selected fully rich. The engine ran smoothly, but the rpm would not exceed 2100. The pilot elected to continue to Compton Abbas rather than return to White Waltham. During the flight the pilot tried reducing the carburettor heat, but immediately experienced rough running. He also tried switching the fuel pump "on" and "off", but it had no effect on the engine's performance. Upon arriving at Compton Abbas the pilot made an approach to runway 26. He kept his circuit "tight", in case the engine stopped. On final approach the pilot realised that with the 2,300 rpm set, he could not land from his approach. He had full flap, full power and full carburettor heat selected. At approximately 100 feet agl the pilot initiated a go-around and alerted the airfield that he had a rough-running engine. During the circuit following the go-around, the aircraft would not climb above 200 feet and the engine was backfiring. After turning onto base leg, for the second attempt to land on

runway 26, the engine stopped. The pilot carried out a forced landing in a ploughed field which was approximately 150 metres short of the runway.

During the recovery of the aircraft, sufficient fuel was found in both fuel tanks.

The aircraft was dismantled and transported to the AAIB engineering facility at Farnborough for further examination. The engine, whilst still mounted in the airframe, was test-run. It was found to run very roughly and would not achieve full power. When the magnetos were checked during the engine run, it was noted that the right-hand magneto produced an excessive rpm-drop and that the engine backfired. Strip examination at an authorised overhaul agency found that the teeth of the nylon distributor gear had been "stripped" over half of the gear circumference, and that there was heavy electrical tracking and arcing within the HT cap. It was also noted that the LT lead from the contact breaker to the coil was badly damaged, to the extent that it could have given intermittent electrical continuity. There was no obvious reason for the teeth to have stripped from the gear, although it was suggested by the agency that engine backfiring could have caused this type of damage.



DAMAGED LT LEAD

ELECTRICAL TRACKING

STRIPPED TEETH