

Piper PA-38-112, G-BSKC, 2 June 1996

AAIB Bulletin No: 8/96 Ref: EW/G96/06/03 Category: 1.3

Aircraft Type and Registration: Piper PA-38-112, G-BSKC

No & Type of Engines: 1 Lycoming O-235-L2A piston engine

Year of Manufacture: 1979

Date & Time (UTC): 2 June 1996 at 1225 hrs

Location: Moss Bank Farm, Tewin, Herts

Type of Flight: Private (Training)

Persons on Board: Crew - 1 Passengers - 1

Injuries: Crew - None Passengers - None

Nature of Damage: Damage to nose landing gear and rightwing

Commander's Licence: Commercial Pilot's Licence with FlyingInstructor rating

Commander's Age: 47 years

Commander's Flying Experience: 1,400 hours (of which 800 were on type)

Last 90 days - 85 hours

Last 28 days - 34 hours

Information Source: Aircraft Accident Report Form submitted by the pilot and subsequent AAIB enquiries

The purpose of the flight was an air experience lesson. The weather was reported as similar to the Luton Airport 1220 hrs METAR:

Surface wind 280°/6 kt

Visibility > 10 Km

Cloud Scattered, base 4,500 ft

Temperature/Dew point 16°/6°C.

The flying instructor reported that this was the aircraft's fourth flight of day; he had been the pilot on the first and third flights. He had noticed no problems on the previous flights and everything appeared normal during the power check prior to the accident flight.

The take off was normal until, just below 300 ft agl, the engine began to misfire and lose power; the flying instructor immediately turned the aircraft crosswind towards the only available landing area. The engine indications appeared normal although it continued to misfire and, despite selecting a straight and level attitude, the aircraft continued to descend. The flying instructor turned about 30° left to avoid trees on the north east edge of the field, made a brief Mayday call, touched down in a field of corn and ran across a track into a deeply furrowed potato field. Following a gentle nose over, the aircraft came to rest in a normal attitude on the landing gear. Both occupants were wearing lap and diagonal upper torso restraint and escaped through the door without injury.

Fuel was drained from the wing tanks prior to the aircraft being recovered; the CFI of the Flying School which operated the aircraft reported that 12 gal of fuel were recovered from the right tank and 3.7 litres from the left. The fuel tank selector was in the OFF position. The total fuel capacity of the PA38 is 121 litres (26.9 imp gal) of which 3.5 litres per tank are unusable.

When the flying instructor was subsequently asked specific questions about the fuel state of the aircraft he quite justifiably remarked that it is difficult to state categorically whether or not actions which are done routinely on all flights were in fact done on the day of the accident flight. With this in mind, to the best of his recall, he visually inspected both fuel tanks before the first flight of the day. He estimated that the total fuel was over 16 imp gal, enough for 3 hours normal flying. The first flight was a check flight on a student who flew the second flight solo on a short cross country. The third flight was by the flying instructor and he reported that the total time for all three flights was 1:40 hr.

Prior to the accident flight he again visually checked both tanks; fuel was barely visible in the left tank and the right tank was about $\frac{1}{3}$ full. He estimated that the total fuel was at least 10 imp gal. The planned flight was 30 minutes and take off was within 5 minutes of engine start. The flying instructor reported that the fuel pump was on, the right tank was selected for take off and at no time did he move the selector to the left tank.

The flying instructor also reported that he had experienced running a tank dry on more than one occasion in the past and the engine symptoms were not the same as experienced on this flight, which was a partial power loss rather than a total failure.

At the time of writing, no examination or repair action had been undertaken on either the engine or the airframe.