

Cessna 152, G-BHVN, 6 June 1996

AAIB Bulletin No: 9/96 Ref: EW/C96/6/3 Category: 1.3

Aircraft Type and Registration: Cessna 152, G-BHVN

No & Type of Engines: 1 Lycoming O-235-N2C piston engine

Year of Manufacture: 1979

Date & Time (UTC): 6 June 1996 at 1152 hrs

Location: Pebworth, Nr Evesham

Type of Flight: Private

Persons on Board: Crew - 1 Passengers - None

Injuries: Crew - 1 fatal Passengers - N/A

Nature of Damage: Aircraft destroyed

Commander's Licence: Private Pilot's Licence

Commander's Age: 52 years

Commander's Flying Experience: 885 hours
(See text for type and recency)

Information Source: AAIB Field Investigation

History of flight

During the morning of 6 June the aircraft flew twice at WellesbourneMountford airfield, a total of 1hr 35 min. It was then refuelled to full for a planned departure at 1130 hrs on a flight to Gloucester Airport to pick up another pilot and return. The weather for the flight was CAVOK, the wind was 100°/7 kt at the surface and 080°/12 kt at 2,000 ft; the temperature and dew point were 22°C and 12°C.

At 1143 hrs, the aircraft took off from Runway 18. From 1147:46 hrs, recorded primary returns from Clee Hill radar showed an aircraft tracking about 245°(M) at a ground speed of about 95 kt. At some point after take off, the pilot had told the WellesbourneMountford air/ground operator that he was "changing frequency to Gloucester". A replay of the Gloucester Airport ATC RTF tape produced no evidence of any transmission having been made.

The aircraft continued to track south west at about 90 to 95 kt until it had passed over Long Marston airfield, at 1149:50 hrs, from when the average ground speed increased to about 115 kt and the track was about 240°(M). This increase in ground speed above the normal cruise speed may indicate that the aircraft had entered a descent with the engine still at some power above idle RPM. The last recorded radar contact, which was about 1/2 km from the accident site, was at 1150:43 hrs.

The aircraft track at initial impact was about 170°(M), compared with the track of 240°(M) noted on the radar. It appears that, very shortly after the final radar contact at 1150:43 hrs, 'VN' turned left through some 70° before the wings were levelled and the aircraft struck the ground.

Technical examination

Examination of the accident site showed that the aircraft's initial impact was into a border of mixed trees, hedge and fence: the fuselage travelled, inverted, a further 15 metres into the next field and most of the portions of wing structure were retained by the hedges and wire fence. The airframe had been very heavily damaged in the initial impact, indicating a speed substantially greater than normal cruising speed. The witness marks on a number of trees showed that the final path was at some 30° below the horizon and the wings were close to level: this was confirmed by the symmetric distribution of the wreckage and damage.

Fuller examination of the airframe and engine showed that, at impact, the airframe was intact and the flaps were fully retracted. The key in the magneto switch was found in the 'BOTH' position, leaving both magnetos still selected, and the fuel-cut off switch was found in the 'ON' position. Staining of the ground by the fuel and inertial damage to the fuel tanks and to the carburettor float showed that there were substantial amounts of fuel in both wing tanks and also in the carburettor bowl at impact. Detailed examination of the flight control system showed no indication of any prior disconnection or malfunction.

The propeller had almost disconnected from its crankshaft flange and showed some evidence of being under power at impact. The engine was stripped at an overhaul facility and this examination showed that the engine was intact and operating at its impact with the ground. The engine's muffler was also examined and there were no cracks to allow carbon monoxide into the cabin.

Flight test

No altitude information is available from primary radar. In order to determine the approximate height at which radar contact with 'VN' would have been lost, a reconstruction of aircraft's flight path

was carried out by the AAIB in a similar aircraft . The results indicated that radar contact with 'VN' would have been maintained down to a height of 350 ft agl.

Pilot's flying experience

The pilot's licence and first log book were not available to the AAIB and he had made no entries in his current log book since 12 September 1995. It is known that he had flown since then but it was not possible to determine the exact number of hours, however, it appears that it was at least 12. These were flown mainly during May 1996 and his last flight prior to the accident appears to have been on the 1 June 1996.

A licence summary obtained from the CAA showed that he was awarded a PPL in 1960; he did little or no flying from then until 1988 when he applied for a reissue. His total flying time was 62 hours. In 1991, when he added Group B, IMC and night ratings to his licence, he had a total of 295 hours. His total flying time of 885 hrs included a significant number of hours on Cessna 150 variants.

Medical and pathology

Post mortem examination of the pilot which was carried out after the accident revealed no pre-existing medical condition which would have contributed to the accident. Toxicology tests found no substances present which would have adversely affected the pilot's flying ability.

A review of the pilot's medical history showed that he was physically healthy apart from a raised blood pressure which was being well controlled by medication. In October 1995 he had been declared unfit to fly because of depression. This was the second episode of depression which he had suffered; he had also been declared unfit to fly at the time of the first episode some four years previously. Both episodes were of sufficient severity to require in-patient treatment. The more recent admission was for two and a half weeks and was followed by a period of out-patient treatment. Both the consultant psychiatrist and his general practitioner, who was also his AME, were convinced that he had made a full and complete recovery, and the former communicated this to the CAA. After examination of the relevant medical documents by a CAA doctor, the licence was reinstated in May 1996.