

No: 8/85

Ref: EW/C924/01

Aircraft type and registration: Cessna 210/L G-MANT (light single engined fixed wing aircraft)

Year of Manufacture: 1975

Date and time (GMT): 24 July 1985 at 2215 hrs

Location: Cranfield Aerodrome, Bedfordshire

Type of flight: Private (pleasure)

Persons on board: Crew — 1 Passengers — 1

Injuries: Crew — Nil Passengers — Nil

Nature of damage: Aircraft severely damaged

Commander's Licence: Private Pilot's Licence

Commander's Age: Over 21 years

Commander's Total Flying Experience: 1100 hours (of which 5 were on type)

Information Source: AIB Field Investigation.

The flight originated at Cranfield and it was intended to fly via Southend to Le Touquet and return by the same route that evening. The aircraft was owned by a student pilot of about 120 hours experience who, under the supervision of an instructor, was to fly the first two legs during the remaining hours of daylight. The return journey was to be flown by the instructor who elected to remain in the right hand seat, being more accustomed to this position.

Prior to departure, 179 litres of fuel were uplifted to provide full tanks. A drain check of the starboard wing tank produced some 5cc of water and so this was repeatedly drained and checked until the samples were pure. Following an extensive ground run, which revealed no abnormalities, the flight took off at 1655 hrs. The Southend — Le Touquet and Le Touquet — Southend flights were without incident and the aircraft landed at Southend, homebound, at 2045 hrs and was shut down.

With the transit formalities complete, the student pilot attempted but was unable to start the engine until a ground engineer suggested using the fuel booster pump, normally used for priming only, during the start. After several more attempts the engine was started successfully and, following a normal power check, the aircraft took off for Cranfield at 2120 hrs.

Cranfield had closed shortly after the aircraft left there at 1655 but the instructor believed that there still might be someone in attendance who could turn on the runway lights for their arrival. In the hope of alerting someone to their presence, they therefore joined the Cranfield circuit visually and descended to about 100 feet on finals for runway 22. At this height, an overshoot was initiated with the intention to climb to 1500 feet and divert to Luton Airport.

The instructor stated that, as the aircraft passed an indicated (QNH) height of around 1000 feet (650 feet agl) the engine lost power, although it continued to run at about idle power. Appreciating that they had just overflowed runway 22 and not knowing what obstructions were

hidden in the darkness ahead, the instructor performed an immediate 180° right turn and lined up with the centre-line of runway 04. Believing the aircraft to be well positioned for a forced landing on that runway, 20° of flap were selected and the approach continued.

On very short finals the aircraft's left main gear struck the last approach light, situated in a grass field which was separated from the undershoot area of runway 04 by a road and bounded by hedges. At about this time the student, seeing the hedge ahead of the aircraft, and mindful of the remedial effect of the booster pump during the engine start, put the pump on and applied full throttle, whereupon the engine responded.

The aircraft touched down quite gently in the grass immediately before the approach light where, after about 14 metres, the left main wheel struck a partially embedded concrete block. Continuing for a further 14 metres, the aircraft struck a steep lip up to the edge of the road and, no doubt assisted by power from the engine, was thrown into the air. The instructor remembers closing the throttle at around this time. The next contact with the ground occurred as the aircraft, with about 40° of bank, struck its right wingtip on the threshold of the runway, some 46 metres further on. The nose of the aircraft struck the ground, separating the propeller. The aircraft continued along the runway centre-line on its right wheel, belly, and left wingtip, slewing in a clockwise direction and coming to rest after another 23 metres, on a heading of about 200°M. The left main wheel and nose wheel had separated from the aircraft and the entire tail empennage was bent to the right, splitting the left rear section of the fuselage. However, there was no fire and the cockpit area had suffered very little damage. Both occupants had been wearing the full seat harness and, having unfastened them, evacuated the aircraft via the left door.

The Aerodrome Fire Service, although closed down for the night, was alerted by a witness in a gliding club adjacent to the accident site, and attended the scene to apply "Petroseal" to the fuel spillage. When this had been done, the student pilot re-entered the wreckage and turned off some of the electrical systems.

The propeller score marks on the runway surface confirmed that the engine had been rotating at high rpm at impact.

Because it appeared that use of the electrical fuel booster pump had resolved the particular problems of firstly, an engine start and secondly, a power loss, the mechanical fuel pump was removed for examination but displayed no evidence of malfunction. Examination of the fuel distribution system revealed nothing amiss. However, the fuel in the aircraft's right hand tank was found to contain a small quantity of water.