

Aircraft: Rheims Cessna 152 G-BGOC

Year of manufacture: 1977

Date and time (GMT): 26 January 1983 at 1730 hrs

Location: 2 miles south of Cowdenbeath, Fife

Type of flight: Private, training

Persons on board: Crew - 1 Passengers - Nil

Injuries: Crew - 1 (serious) Passengers - N/A

Nature of damage: Aircraft destroyed

Commander's Licence: None (Student Pilot)

Commander's Age: 28 years

Commander's total flying experience: 41 hours

The pilot was engaged in the qualifying cross-country exercise towards his Private Pilot's Licence. The intended route was from Glenrothes-Dundee-Sunderland-Glenrothes, landing at Dundee and Sunderland. The accident occurred on the final flight back to Glenrothes in deteriorating weather conditions almost 1 hour after sunset. The pilot had no previous experience of night flying.

Prior to his departure from Glenrothes at 1240 hrs he had been briefed by his instructor that he should not waste time at Dundee or Sunderland due to the limited daylight available although the exact time of sunset was not established. His instructor obtained a weather forecast for the route giving the wind at 2000 feet as 260°/35 kts becoming 240° later, patches of stratus at 1200 feet in Central Scotland with a risk of rain by 1600 hrs, with turbulence near high ground. This forecast proved to be accurate.

The pilot spent 28 minutes on the ground at Dundee before departing at 1344 hrs. The flight to Sunderland was uneventful and, apart from the first leg from Dundee across the Firth of Forth to North Berwick, the navigation had been accomplished by following the coast line to Sunderland where he arrived at 1505 hrs. He then completed his flight planning for his return flight to Glenrothes. The navigational log was later recovered from the aircraft wreckage and it showed that the pilot had planned on a route wind of 240°/35 kts but that he had applied the resulting drift angle in the wrong direction on his navigational computer. The effect of this was to create course-to-steer errors of over 40° and optimistic ground speeds, the total time of the flight was incorrectly calculated as 58 minutes instead of 1 hour 22 minutes. The pilot did not depart from Sunderland until 1551 hrs. Using the incorrect flight time of 58 minutes he could not have expected to arrive at Glenrothes until 1649 hrs - 17 minutes after sunset - but a more accurate ETA would have been at 1713 hrs, just after the end of civil twilight.

For the first hour of the return flight he was able to follow the coastline as far as Dunbar. From there he decided to route to the east of the Bass Rock having been previously warned about the dangers to overflying aircraft from the seagull colonies on the rock, and then to set course for Glenrothes. At 1658 hrs he contacted Edinburgh Approach by radio and reported that he was abeam Dunbar at a height of 1600 feet and he was instructed to call again when crossing the south coast of the Firth of Forth. At 1705 hrs he reported that he was over the north bank of the Forth at 'Aberdour' - a position some 26 miles upwind of his previous position report. During the next 5 minutes he made two further position reports of 'Inverkeithing' and 'Dunfermline', however the Edinburgh Approach Controller had both radar and VDF indications that the aircraft was, in fact, over the south coast of the Firth to the east of Edinburgh. The pilot was requested to fly a 360° orbit which confirmed the radar identification. The exact route followed by the aircraft after passing the Bass Rock could not be established nor why the pilot had turned to the southeast and returned to the south coast of the Firth, but it was noted that he had written the course-to-steer as 225° on his navigation log instead of 325°.

After the radar identification had been confirmed he was given a course that would take him to the conspicuous road and rail bridges over the Forth at Queensferry, from where he would be able to follow the motorway to the north, this being a frequently used routing by light aircraft. The pilot later stated that it was by now quite dark, his forward visibility was further reduced by patches of low cloud and drizzle, and he was having some difficulty in controlling the aircraft because of the turbulent conditions. He also stated that he had considered asking for an approach into Edinburgh Airport but decided against it as he felt unsure of the approach procedures.

At 1727 hrs the aircraft was observed on radar to turn to the north-east, crossing the north bank of the Forth about 2 miles east of the bridges. The pilot was informed of his position and advised to climb if he could do so without entering cloud and to inform ATC if at any time he did not have the ground in sight. He replied that he could probably climb to 1500 feet after which no further communications were received from the aircraft. It was observed to turn to the north-east and then to start an orbit before it disappeared from the radar screen at 1730 hrs. Search and rescue procedures were then initiated.

The aircraft struck the ground on a hillside south of Cowdenbeath at a height of 600 ft, travelling in a south-westerly direction. The pilot survived the impact and was able to make his way to the lights of a farm house. He was later admitted to hospital with serious injuries. The accident occurred at 1730 hrs.

The only food taken that day by the pilot had been a light breakfast of cornflakes and tea some nine hours earlier. Medical opinion is that low blood-sugar levels have been shown to reduce both mental and physical abilities and that, while it was probably not a major contributory factor in this accident, nevertheless, it was undesirable in that it might have slowed the pilot's thought processes.