

**Aviation Safety Investigation Report
199202552**

Cessna 210-M

08 January 1992

Readers are advised that the Australian Transport Safety Bureau investigates for the sole purpose of enhancing transport safety. Consequently, Bureau reports are confined to matters of safety significance and may be misleading if used for any other purposes.

Investigations commenced on or before 30 June 2003, including the publication of reports as a result of those investigations, are authorised by the CEO of the Bureau in accordance with Part 2A of the Air Navigation Act 1920.

Investigations commenced after 1 July 2003, including the publication of reports as a result of those investigations, are authorised by the CEO of the Bureau in accordance with the Transport Safety Investigation Act 2003 (TSI Act). Reports released under the TSI Act are not admissible as evidence in any civil or criminal proceedings.

NOTE: All air safety occurrences reported to the ATSB are categorised and recorded. For a detailed explanation on Category definitions please refer to the ATSB website at www.atsb.gov.au.

Occurrence Number: 199202552 **Occurrence Type:** Accident**Location:** 2 km SE of Hamilton Island QLD**Date:** 08 January 1992 **Time:** 1433**Highest Injury Level:** Nil**Injuries:**

	Fatal	Serious	Minor	None
Crew	0	0	1	1
Ground	0	0	0	-
Passenger	0	0	0	5
Total	0	0	0	6

Aircraft Details: Cessna 210-M**Registration:** VH-JXA**Serial Number:** 21061846**Operation Type:** Private**Damage Level:** Substantial**Departure Point:** Maroochydore QLD**Departure Time:** 1100**Destination:** Hamilton Island QLD**Approved for Release:** 28th May 1992**Circumstances:**

The pilot reported that, soon after completing the pre-landing checks during the descent to land, the engine lost power. After checking that the mixture was full rich, he called Hamilton Tower to advise of his situation and was cleared for a straight-in approach. The pilot then changed the fuel selector from the left to the right tank for a short time, but did not actuate the electric fuel boost pump. When the engine did not respond, he re-selected the left tank and again attempted unsuccessfully to restart the engine. Moments later the aircraft made a forced landing into the sea approximately 2 km short of the runway. No fault was found with the aircraft which might have contributed to the accident. Only minute quantities of fuel were found in the fuel system and both tanks contained only sea water. The pilot stated that the aircraft departed Maroochydore with full tanks (337 L) with the left tank selected, and that he changed tanks every 30 min during the flight. He said he had not personally refuelled the aircraft but had noted the fuel level in both tanks prior to DEPARTURE to be at the bottom of the filler tubes. These tubes extend downward into each fuel tank from the filler caps a distance of approximately 10-12 cm. The pilot advised that much of the flight was conducted below 2000 ft with the mixture full rich or only slightly lean. Investigation determined that the actual fuel quantity on board at DEPARTURE was 270-280 L (135-140 L per tank). This meant that 55-65 L remained on board at the time of the accident. Judging from the duration of the flight and the tank selection procedure used by the pilot, the left tank should have been selected for 120 min (4x30 min periods) and the right tank for 90 min. Total usage from the left tank should therefore have been 110-120 L, still leaving 20-30 L in the tank when the power loss occurred. However, had the pilot missed a tank change and had the left tank been selected for 150 min instead of 120, the fuel quantity used from the tank would have been around 150 L, close to the calculated quantity in the tank of 135-140 L. It is likely, therefore, that the pilot missed a tank change, thereby draining the left tank, and that the engine lost power as a result of fuel starvation. Because the electric boost pump was not actuated when the pilot selected the right tank after the power loss, it would have taken more time for the

fuel to flow from the right tank to the engine. The left tank was probably reselected before this had time to take place.

Significant Factors:

The following factors were considered relevant to the development of the accident

1. The pilot did not have adequate knowledge of the aircraft fuel system.
2. The aircraft fuel tanks were not filled to capacity prior to DEPARTURE.
3. The pilot probably missed a tank change, thereby draining the left fuel tank.
4. The pilot did not actuate the electric fuel boost pump when attempting to restart the engine.