Aviation Safety Investigation Report 198800704

Cessna P210-N

13 March 1988

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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: 198800704 **Occurrence Type:** Accident
Location: 3 km W of Outer Harbour SA
Date: 13 March 1988 **Time:** 1931
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None
Crew	0	0	0	0
Ground	0	0	0	-
Passenger	1	0	1	2
Total	**1**	**0**	**2**	**2**

Aircraft Details: Cessna P210-N
Registration: VH-SWM
Serial Number: P21000146
Operation Type: Private
Damage Level: Substantial
Departure Point: Mintabie SA
Departure Time: 1601
Destination: Adelaide SA

Approved for Release: 25 May 1988

Circumstances:

The pilot had planned to complete the flight without an enroute refuelling stop, providing that the headwind component was not excessive. He retained a stock of fuel at the DEPARTURE strip, however this had become depleted, and he was reluctant to delay his DEPARTURE until further stocks arrived the following day. By draining the remaining fuel from a number of near-empty drums, the pilot assessed that he had sufficient fuel to complete the journey. No visual inspection of the quantity of fuel in the tanks was made, although the pilot had placed a hand into the filler neck of the left tank, and was able to splash fuel with his fingers. About 135 minutes after DEPARTURE, while cruising at 9500 feet, the pilot detected a change in engine note and some rough running. He altered the mixture control setting without effect, but following a slight reduction in power the engine again ran smoothly. As it approached the destination the aircraft was given clearances to descend to 5000 feet above mean sea level (amsl). The pilot contacted Adelaide Approach when the aircraft was 31 miles (57 kilometres) from the aerodrome, and was further cleared to descend to 1000 feet amsl. This clearance allowed the pilot to descend at whatever rate he considered appropriate for the circumstances. He later advised that the aircraft was at 1000 feet amsl and about 11 miles (20 kilometres) from the aerodrome when the engine again ran roughly and then lost all power. He changed the fuel tank selection and carried out other trouble checks, but the engine failed to respond. The aircraft was too low for the pilot to be able to glide to land, and he was forced to carry out a ditching in St Vincent Gulf. Neither the pilot nor the passenger in the front seat had the sash portion of their seat harnesses fastened, and both suffered injuries when they struck their heads on the instrument panel. However, all occupants managed to evacuate the aircraft before it sank, but no life jackets had been carried on the flight. The group remained together in the water for some time, but then one passenger swam away and was not seen again. The Distress phase of Search and Rescue procedures was initiated immediately after the pilot transmitted a Mayday call advising of the engine failure. An airborne aircraft was diverted, and was in the accident area within 4 minutes. It was joined within 15 minutes by an

RAAF aircraft, and later by helicopters and boats. The search was hampered by approaching darkness, and by the survivors having no coloured flotation support or signalling equipment. Rescue of those remaining together was effected some three and a half hours after the ditching. The aircraft was subsequently salvaged. A detailed examination of the engine and fuel system revealed that the engine had failed from fuel exhaustion. It was considered likely that the pilot had commenced the flight with less fuel on board than he believed was the case. It was also possible that the fuel quantity gauges were giving erroneous indications, however the relevant transmitters were affected by impact and corrosion damage, and their previous serviceability could not be determined.

Significant Factors:

It was considered that the following factors were relevant to the development of the accident

1. The pilot did not visually check the contents of the fuel tanks, to ensure that sufficient fuel was carried on the aircraft to safely complete the planned flight with the required reserves.

2. The fuel quantity gauges were possibly over-reading.

3. The engine failed when all usable fuel was exhausted.

4. At the time of the engine failure, the aircraft was beyond gliding distance to land.

Reccomendations:

1. It is recommended that the Department of Transport and Communications publish material to remind pilots of their responsibility to be aware of the actual quantity of fuel on board an aircraft prior to the commencement of a flight.

2. Although not directly related to this accident, it was established that during the outbound flight two days previously, the pilot had flown across St Vincent Gulf at 1500 feet amsl. It is further recommended that the Department publish information to remind pilots of their responsibility regarding the carriage and use of life jackets when flights are planned outside gliding distance to land.

3. There is some doubt that pilots are aware of the provisions contained in the Visual Flight Guide relating to rates of climb and descent in controlled airspace. It is also recommended that the Department publish educational material on this matter.