Aviation Safety Investigation Report 198801395

Cessna T210L

24 September 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: 198801395 **Occurrence Type:** Accident
Location: Shepparton VIC
Date: 24 September 1988 **Time:** 950
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 T210L
Registration: VH-JUP
Serial Number: 210-60552
Operation Type: Private
Damage Level: Substantial
Departure Point: Bankstown NSW
Departure Time: 0705
Destination: Moorabbin VIC

Approved for Release: June 27th 1989

Circumstances:

Because of the load carried the pilot could not take a full load of fuel. The aircraft was not equipped with a calibrated dipstick or a ladder. Due to the position of the tank caps on top of the high wing the absence of these items of equipment made it difficult for the pilot to make an accurate visual assessment of the fuel contents. After checking the tanks the pilot arranged for 30 litres of fuel to be added to the right tank. The reported fuel gauge indications at engine start were 30 US gallons (113 litres) in the left tank and 35 US gallons (132 litres) in the right tank. His planned fuel consumption rate was 60 litres an hour, indicating a total endurance of just over four hours. The flight plan time for the flight was slightly under three hours. The flight proceeded normally initially and the pilot said he used a power setting of 23-24 inches of manifold pressure and 2400 RPM. The cruise fuel flow was set to 90 pounds per hour (57 litres). Near Henty while cruising at 4000 feet the pilot became concerned when the total indicated fuel contents had fallen to 25 US gallons (95 litres) and he advised Melbourne Flight Service that he would land at Mangalore which was on his planned track. Not long afterwards the total gauge indications fell to under 10 US gallons (38 litres) and he told flight Service he was diverting to Shepparton, with an estimate of 0950 hours for arrival there. At about 10 miles from Shepparton the engine misfired and the pilot changed the tank selection from right to left. He entered the circuit at Shepparton on mid downwind at about 1800 feet and tracked for left base runway 18. On base leg the engine failed completely and the pilot realised he could not reach the runway. He selected a grass area into wind and touched down firmly while tracking approximately west. The nose wheel detached on the soft surface and the right main gear leg was damaged as the aircraft slid to a stop. Inspection of the fuel tanks revealed there was no fuel left in either tank. Testing of the fuel flow gauge showed it was accurate. No evidence was found to show that there had been any fuel leakage or loss in flight. Having regard for this it was likely that on DEPARTURE Bankstowm the fuel contents were somewhat less than the pilot thought. A calibration

check of the fuel gauges showed significant errors. At an indicated contents of 30 US gallons the left tank held 22.5 gallons, and when the right gauge indicated 35 US gallons the right tank contents were 26.4 gallons.

Significant Factors:

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

1. The aircraft was not equipped with a calibrated dip stick or a ladder.

2. The pilot did not take adequate steps to positively establish the actual fuel contents prior to DEPARTURE.

3. Inaccurate fuel gauges.

4. Engine failure due to fuel exhaustion.