Aviation Safety Investigation Report 199600251

Cessna Aircraft Company 207A

29 January 1996

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Aviation Safety Investigation Report

199600251

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number: 199600251 **Occurrence Type:** Accident
Location: 5km NW Kununurra, Aerodrome
State: WA **Inv Category:** 4
Date: Monday 29 January 1996
Time: 1230 hours **Time Zone** WST
Highest Injury Level: None

Aircraft Manufacturer: Cessna Aircraft Company
Aircraft Model: 207A
Aircraft Registration: VH-WOY **Serial Number:** 20700707
Type of Operation: Charter Cargo
Damage to Aircraft: Substantial
Departure Point: Kalumburu WA
Departure Time: 1122 WST
Destination: Kununurra WA

Crew Details:

Role	Class of Licence	Hours on Type	Hours Total
Pilot-In-Command	Commercial	760.0	1410

Approved for Release: Monday, February 5, 1996

The aircraft was returning to Kununurra following a cargo flight to Kalumburu. There was sufficient fuel on board for the flight to Kununurra (71 min) as well as for an additional one hour flying (a company requirement). The fuel was evenly distributed between the right and left tanks. The pilot had planned to use the fuel in the right tank until he passed over Forrest River (approximately 40 min after departing Kalamburu) and then change to the left tank. On departure from Kalumburu the aircraft was climbed to 13,000 ft to check a Kununurra navigation aid before it was descended back to 9,500 ft for the rest of the trip. When the pilot completed his enroute check over Forrest River he made a note on the flight plan form indicating that he had changed the fuel selector to the left tank.

The pilot elected to complete a straight-in approach to runway 12 at Kununurra . He completed his pre-landing checks, which included a fuel check, 10 km from the airport and prior to commencing the approach. As the aircraft descended through 600 ft, 5 km from the airport, the engine stopped. The pilot changed the fuel selector to the other tank and selected the fuel boost pump to On. When the engine did not respond the pilot turned the aircraft to the left in an attempt to land on a road that the aircraft had just passed over. Realising that the aircraft would not reach the road the pilot selected full flap and landed in a paddock. Although he was able to avoid trees the pilot was unable to avoid a fence and the aircraft ran through the fence and across a road. The collision with the fence caused the nosewheel to collapse.

A post accident inspection of the aircraft disclosed that the right fuel tank contained 0.5 L of fuel and the left tank 75 L. No faults were found with either the engine or the aircraft's fuel system.

Calculations indicated that a minimum of 155 L of fuel would have been required to complete the trip as planned at 9,500 ft. Inspection indicated that 160 L was used prior to the engine stoppage. The difference of 5 L can be accounted for by the additional fuel used during the climb from 9,500 ft to 13,000 ft.

The pilot could not recall if he actually changed the selector from the right to the left tank over Forrest River nor could he recall which tank he selected after the engine stopped. The selector was found in the Off position during the post-accident inspection and it is believed the pilot moved it to this position following the accident as an anti-fire precaution.

The evidence indicates that the pilot probably did not move the selectot to the left fuel tank over Forrest River and the engine stopped because all the fuel in the right tank had been exhausted.

Information provided by the pilot and his employer indicated that the pilot was suffering from a significant amount of personal stress at the time of the flight. In addition he had resigned from his job and was due to leave the area the following week. The distraction provided by both the stress and the lifestyle changes may have contributed to the pilot not changing the tank selection although he noted that he had done so.

The fuel situation should have become evident when the pilot completed his pre-landing checks as the aircraft approached Kununurra. However, the pilot reported that although he was aware that one fuel gauge indicated empty and the other indicated over half full the signifance of these readings did not register nor did he check the fuel tank selection. The pilot could not offer any concrete explanation as to why his fuel management did not meet normal expectations. He did indicate that preoccupation with personal events, as mentioned earlier in the report, or an inappropriate mind-set about fuel systems resulting from recent flying experience in the Partenavia PN68 may have been contributing factors.

Safety Action

The operator has taken action to standardise aircraft checklists and procedures, particularly in those areas relating to fuel management. In addition the operator conducted a seminar for all its pilots to increase their awareness of the part that human factors can play in pilot performance.