

Aviation Safety Investigation Report
198901535

Bellanca 8-KCAB

27 February 1989

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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: 198901535 **Occurrence Type:** Accident
Location: 2 km south of Moorabbin Airport VIC
Date: 27 February 1989 **Time:** 1426
Highest Injury Level: Nil
Injuries:

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

Aircraft Details: Bellanca 8-KCAB
Registration: VH-BWM
Serial Number: 557-79
Operation Type: Private
Damage Level: Substantial
Departure Point: Melbourne Airport VIC
Departure Time: 1411
Destination: Tyabb VIC

Approved for Release: 6th September 1989

Circumstances:

The pilot planned two flights from Tyabb to Melbourne Airport and return. Prior to DEPARTURE he refuelled the left tank of the aircraft to full and estimated that fuel onboard was then 88 litres. He nominated a fuel endurance of 150 minutes. The planned total flight time was 92 minutes. No problems were encountered on the first return flight which took a total flight time of 59 minutes. On the second flight to Melbourne the aircraft was held for about 15 minutes, due to other traffic. When taxiing for DEPARTURE from Melbourne the pilot noticed the fuel gauges were reading empty, but because these do not read accurately in the ground attitude he did not accept the indications as reliable. After take off the aircraft was climbed to again cruise at 3000 feet. When in the vicinity of Williamstown the pilot noticed both fuel gauges were indicating near empty. The aircraft was rolled and the pilot noted the gauges moved, indicating to him that there was some fuel in each tank. The pilot decided that there was no need to declare an emergency. A decision was made to refuel at Moorabbin but a descent clearance was not available. After vacating controlled airspace, just south of Moorabbin, he advised that the aircraft would divert to Moorabbin. Just as he did so the engine failed and a forced landing was carried out onto a racetrack. The aircraft ran through a fence during the landing roll. Draining both fuel tanks produced about half a litre of fuel. The pilot stated that the mixture had been leaned for all the flights. The total flight time up until the time of engine failure was approximately 125 minutes. In doing his fuel consumption calculations the pilot did not allow for fuel used on taxi/takeoff and the higher consumption rate on climb. Instead he worked on a lean mixture consumption rate for cruise. Calculations using the manufacturers consumption figures found that all usable fuel would have been consumed at the time of the engine failure. There was no reason why the pilot could not have started the flights with full tanks or have refuelled in between them.

Significant Factors:

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

1. The pilot did not adequately complete preflight fuel planning.
2. The pilot did not adequately monitor progressive fuel usage.
3. The engine failed due to fuel exhaustion.
4. The landing area was of restricted dimensions.