Aviation Safety Investigation Report 198900815

Cessna 172-N

1 July 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: 198900815 **Occurrence Type:** Accident
Location: Lake Evella NT
Date: 1 July 1989 **Time:** 1152
Highest Injury Level: Fatal
Injuries:

	Fatal	Serious	Minor	None
Crew	2	0	0	0
Ground	0	0	0	-
Passenger	1	1	0	0
Total	**3**	**1**	**0**	**0**

Aircraft Details: Cessna 172-N
Registration: VH-RWQ
Serial Number: 17271456
Operation Type: Aerial Work
Damage Level: Destroyed
Departure Point: Lake Evella NT
Departure Time: N/K
Destination: Gove NT

Approved for Release: 28th November 1989

Circumstances:

A pilot who is based at Lake Evella was on scene soon after the accident occurred. He located the pilot-in-command who conveyed the following sequence of events. The takeoff was commenced from the threshold of the strip. The aircraft was being flown by the pilot under instruction. It lifted off further down the strip than the instructor expected, then commenced climbing at 80 knots. Very shortly after lift off the engine suffered a partial power loss. The instructor took control of the aircraft and checked fuel contents and saw that the mixture was rich. He then closed the throttle because he realized that he would have to land the aircraft on the remaining runway and overrun area and lowered full flap. He then assessed that he could not land in the available cleared area ahead so he turned right into wind and looked for a cleared area to land. The aircraft then flew into trees, striking several large trees before impacting with the ground at a low speed. The instructor said that he and probably the surviving passenger were thrown clear of the aircraft during the impact sequence, however, both were badly burned. The investigation focussed on trying to determine the reason for the engine malfunction. One possibility considered was that the take-off was commenced with the fuel selector in the OFF position. This was considered a possibility because the student pilot was trained overseas and may have been trained to switch the fuel selector off during the shutdown checks. The operator's normal procedure was to leave the fuel selector ON after engine shutdown. Another possibility was that the instructor may have turned the selector to the OFF position in order to check the thoroughness of the students pre-start checks. The fuel selector was badly damaged by fire, but it was determined that the selector, although displaced slightly from the BOTH position, was in a position where the fuel supply to the engine would not have been interrupted. A trial was made using the same model aircraft, in order to estimate how far into the take off run the aircraft would get if the engine was started with the fuel selector in the OFF position. The engine failed due to fuel starvation after one minute five seconds idling at 1000 RPM. It was considered that due to the distance of the tarmac area from the threshold of the runway used for DEPARTURE, the engine would have stopped before

the take-off could have commenced. Therefore the hypothesis that the take-off was commenced with the fuel selector in the OFF position has been discounted. The engine was dismantled and examined in order to determine pre-impact serviceability. No defect that could have caused either a partial or complete engine failure was discovered. However, the investigation was impeded by the extensive post impact fire damage to the components of the engine. Parts of the air induction system and carburettor were destroyed, although some testing was possible. The magnetos were damaged to the extent that meaningful examination was impossible. Therefore a malfunction of one of the vital components of the engine cannot be discounted. The loss of power occurred when the aircraft was approximately 100 feet above ground level. From such a height it is not possible to turn back and land on the runway and in this case there was insufficient runway ahead to land. The strip is surrounded by trees which meant that there was no suitable area for a forced landing within gliding distance.

Significant Factors:

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

1. The engine lost power very shortly after take-off for reasons which could not be determined.

2. There was no suitable area within gliding distance for a forced landing.