

**AVIATION OCCURRENCE REPORT**

**COLLISION WITH WATER**

**WAYCO AVIATION  
CESSNA 180J C-FRLI  
KNOT LAKE, BRITISH COLUMBIA  
07 SEPTEMBER 1996**

**REPORT NUMBER A96P0201**

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

## Aviation Occurrence Report

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### *Summary*

The pilot departed Nimpo Lake, British Columbia, in the float-equipped Cessna 180J aircraft at about 1020 Pacific daylight saving time (PDT) for a 25-minute visual flight to Knot Lake, 35 nautical miles southwest. This was the pilot's second flight of the day, the first being to another lake located in the vicinity of Knot Lake.

When the aircraft had not returned to Nimpo Lake by 1330 PDT, the company owner took off from Nimpo Lake in a Beaver aircraft to conduct an aerial search. He heard the signal from an emergency locator transmitter (ELT) near Knot Lake; however, he could not locate the source. He then returned to Nimpo Lake and notified the Rescue Coordination Centre (RCC). The missing aircraft was found later that day on Knot Lake, partially afloat and sinking. The pilot had been fatally injured, and his body was recovered from the submerged aircraft the next day by RCMP divers.

## *Other Factual Information*

The purpose of the flight was to pre-position a client's personal belongings and equipment at Knot Lake. At the time of the accident, the aircraft contained 175 pounds of belongings, a 70-pound outboard motor, 40 pounds of outboard motor gasoline, and the 190-pound pilot. The weight of the fuel in the aircraft tanks was estimated to have been 200 pounds. The aircraft weight at take-off was estimated at 2,600 pounds; the maximum allowable weight was 2,950 pounds. A cargo net was available to secure the cargo, but it is not known if it was used on this flight.

The aircraft was equipped with shoulder harnesses; however, the RCMP divers reported that the pilot was wearing only the lap belt when they removed him from the aircraft. The medical investigation revealed that he had received a severe head laceration and had drowned. Toxicological testing excluded the presence of alcohol and drugs.

The aircraft sank to the bottom of the east side of the lake in about 35 feet of water, and it is probable that the point of water impact was nearby. The RCMP divers reported that the fuselage was damaged, although, with underwater visibility of less than one metre in the heavily silted lake, they were unable to determine the extent of that damage. They reported that both floats were separate from the aircraft, that the left wing had separated from the aircraft and was missing, and that the propeller and the engine mounts were bent. The described damage is consistent with the characteristics of damage resulting from a cartwheeling impact with the water. Because of the winter freeze-up, the aircraft was not recovered.

The aircraft maintenance log-books contained no evidence of deficiencies relevant to the circumstances of the accident. The aircraft journey log-book was in the aircraft and was not recovered. Records show that the aircraft had flown a total of 6,965.5 hours, the engine had been overhauled at 1,470.4 hours, and the wing and tail bolts were last inspected on 06 July 1996.

The pilot began his employment as an office manager for Wayco Aviation in June 1996. He flew occasional trips as a co-pilot until 23 August 1996, when he was assigned to pilot-in-command flying duties. The pilot had a commercial licence with multi-engine and float endorsements, a class one instrument rating, and a valid medical certificate. At the time of the accident, he had about 850 total flying hours, of which 212 hours were on float-equipped aircraft. He had flown about 20 hours with the company before the accident and had landed at Knot Lake on at least seven other occasions.

The pilot's employer had flown with him a number of times and considered him to be a competent pilot, as did other company pilots who had flown with him. Those who had seen him the night before the accident reported that he went to bed early. Those who saw him in the morning observed that he appeared rested and that nothing in his manner was out of the ordinary.

Wayco Aviation pilots are able to obtain an aviation area weather forecast by calling a "1-800" number. It is not known if the pilot used this service before the occurrence flight; however, as it was his second flight into the area that day, he would have had first-hand knowledge of the local weather.

Persons fishing at the north end of Knot Lake, about a mile from the accident site, saw the accident aircraft fly overhead from north to south. They estimated that the aircraft was five seconds from landing when they lost sight of it behind a spit of land, but they did not see the accident. They reported that the surface of the lake was very rough and that whitecaps were present. There was no one found who had witnessed the accident.

The Wayco Aviation company owner reported that when he was at the accident site about two hours after the accident occurred, the cloud base and the visibility were suitable for operations at the lake. He described the location on the lake where the accident pilot apparently chose to land as being at the confluence of two airflows, one from the prevailing south wind and one caused by air flowing down a glacial ravine onto the lake from the west. He said that the mixing of these two airflows often created an area of hazardous turbulence. He noted that the air was turbulent and the water rough, and that, although the Beaver aircraft was better suited to rough-water landings than was the Cessna 180, he had to carefully select a landing area and then exercise caution during the landing.

The pilot who found the missing aircraft often flew to Knot Lake, and he, too, reported that landing conditions are often hazardous when the described wind conditions are present. He arrived at the accident site about three hours after the accident occurred and saw water spouts up to 60 feet in height rising from the lake surface. He said that he would not have landed had he not spotted the missing aircraft in the water.

## *Analysis*

The aircraft damage described by the RCMP divers is typical of damage that occurs when an aircraft has cartwheeled on the water after having struck the water with a wing tip. However, why and in what attitude the aircraft struck the water was not determined. It is probable that the pilot encountered turbulence and lost control of the aircraft during an attempted landing.

It was not determined if the pilot's head injury was the result of him either striking the aircraft or being struck by loose cargo during the crash sequence. It was also not determined if the severity of the pilot's injuries would have been reduced had he been wearing the available shoulder harness.

## *Findings*

1. The pilot was not wearing the available shoulder harness.
2. The aircraft was maintained in accordance with existing directives.
3. Strong winds known to cause hazardous turbulence were present in the area at the time of the accident.
4. It is probable that the pilot encountered turbulence and lost control of the aircraft during an attempted landing.

## *Causes and Contributing Factors*

The aircraft struck the water and crashed, probably because the pilot encountered turbulence and lost control of the aircraft during an attempted landing.

*This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson Benoît Bouchard, and members Maurice Harquail, Charles Simpson and W.A. Tadros, authorized the release of this report on 14 May 1997.*