

AVIATION OCCURRENCE REPORT

CONTROLLED FLIGHT INTO TERRAIN

**HARBOUR AIR LIMITED
DE HAVILLAND DHC-3 OTTER C-GCMY
ALLIFORD BAY, BRITISH COLUMBIA 18 nm S
18 AUGUST 1996**

REPORT NUMBER A96P0178

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

Controlled Flight into Terrain

Harbour Air Limited

De Havilland DHC-3 Otter C-GCMY

Alliford Bay, British Columbia 18 nm S

18 August 1996

Report Number A96P0178

Summary

The float-equipped, turbine-engine, DHC-3 Otter departed from Tasu, British Columbia, at about 1940 Pacific daylight saving time (PDT), with the pilot and two passengers on board, on a charter, visual flight rules (VFR) flight to Alliford Bay, 26 nautical miles to the north. When the aircraft did not arrive at destination, the operator initiated a search. The aircraft wreckage was located the following day, 18 nautical miles (nm) south of Alliford Bay, in rugged terrain at an elevation of 1,700 feet above sea level (asl). The aircraft was destroyed, and there were no survivors.

Ce rapport est également disponible en français.

Other Factual Information

The aircraft was certified, equipped, and maintained in accordance with existing regulations and approved procedures. There was no evidence of any pre-impact mechanical or structural failure. The weight and centre of gravity of the aircraft were within the prescribed limits. The pilot was qualified for the flight. There was no evidence that physiological factors affected the pilot's performance.

The aircraft had left Alliford Bay at 1836 PDT and flown to Tasu, on the south end of Newcombe Inlet, to pick up two passengers. As was the informal practice when route weather information was required, the Harbour Air flight dispatcher had called the Sewell Inlet logging camp, located two thirds of the way along the flight-planned route, and requested weather information. There was no weather reporting station at Sewell Inlet and no values of ceiling or visibility were provided to the Harbour Air dispatcher or recorded elsewhere. The dispatcher was advised by an employee at the campsite that there was light drizzle at this location, and that the visibility was restricted by fog.

The 2000 PDT Environment Canada actual weather report for the Sandspit airport, 6 nm east of Alliford Bay, was as follows: sky condition 900 feet scattered, 2,800 feet scattered, estimated ceiling 4,700 feet broken, 10,000 feet overcast, visibility 15 miles in light rain showers, temperature 14 degrees Celsius, dewpoint 11 degrees Celsius, wind 240 degrees magnetic at 6 knots, and altimeter setting 29.86 inches of Mercury.

At about 1940 PDT, the aircraft departed from Tasu for the 20-minute flight back to Alliford Bay. A witness reported seeing the Otter flying north from Newcombe Inlet and into the valley where it was later found. The witness recalled that, at his position 4 nm south of the accident site, there had been a heavy rain shower lasting several minutes, which had diminished to a light drizzle when the aircraft flew overhead. He was unable to estimate the ceiling or cloud cover at the time.

The pilot's planned route was to leave Tasu heading toward the north end of Newcombe Inlet, cross some low terrain for about two miles, and then turn eastward through a valley to Sewell Inlet en route to Alliford Bay. Just north of the turn-off to Sewell Inlet, there is a valley leading northward into a box canyon where the terrain rises abruptly to 3,350 feet asl. The two valleys are similar in appearance and both have a creek and a road following the valley floor. The aircraft flew past the valley leading to Sewell Inlet, continued north into the valley leading to the box canyon, and subsequently struck the side of the valley at 1,700 feet asl.

Wreckage damage and impact scars indicated that the aircraft was in controlled, wings-level flight and on a heading of about 210 degrees magnetic when it struck the ground. At the accident site, there was characteristic evidence that the engine was delivering power, and the speed at impact was estimated to have been about 80 miles per hour. The Pratt & Whitney PT6 A-135 turbine engine was later examined at the engine manufacturer's facility in Montreal; it was concluded that the engine was operational at the time of impact, and that it was capable of producing maximum rated power. The power setting at the time of impact was not established.

Analysis

It is probable, because of low visibility in fog and light drizzle, that the pilot made a navigational error and inadvertently entered the valley to the north rather than turning to the east toward Sewell Inlet. The aircraft heading at impact, 150 degrees off the required heading, indicates that the pilot had turned the aircraft around. This reversal of course could have been made because the pilot recognized that he was in the wrong valley or because he began to encounter adverse weather conditions.

Because the aircraft struck the terrain in a wings-level attitude, indicating no last-second evasive manoeuvring by the pilot, it is likely that the pilot's forward visibility was restricted and that he did not see the ground in time to avoid impact. If the weather observed by the witness, 4 nm south of the accident site, had prevailed in the valley at the time of the accident, it is likely that the aircraft would have entered the clouds prior to it reaching the crash elevation of 1,700 feet. Once the aircraft was in cloud, the pilot would have had no other option than to climb to avoid the high terrain. It is probable that the pilot delayed his decision to reverse course until he was unable to avoid the weather.

Findings

1. The aircraft was certified, equipped, and maintained in accordance with existing regulations and approved procedures.
2. The aircraft weight and centre of gravity were within the prescribed limits.
3. No pre-crash airframe failure or engine defect was found.
4. The pilot was certified, trained, and qualified for the flight in accordance with existing regulations.
5. The pilot probably made a navigational error because of restricted visibility in fog and light drizzle and inadvertently entered the valley toward the north.
6. The pilot reversed course because he recognized that he was in the wrong valley or because he began to encounter adverse weather conditions.
7. It is probable that the pilot delayed his decision to reverse course until he was unable to avoid the weather.
8. It is probable that the pilot entered cloud and did not see the ground in time to take evasive action.

Causes and Contributing Factors

The pilot probably made a navigational error because of restricted visibility in fog and light drizzle and entered the wrong valley, and he delayed his decision to reverse course until he was unable to avoid the weather.

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.