# National Transportation Safety Board
# Aviation Accident Final Report

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| **Location:** | KETCHIKAN, AK | **Accident Number:** | ANC97FA001 |
| **Date & Time:** | 10/13/1996, 1455 AKD | **Registration:** | N64276 |
| **Aircraft:** | de Havilland DHC-2 | **Aircraft Damage:** | Destroyed |
| **Defining Event:** | | **Injuries:** | 3 Fatal |
| **Flight Conducted Under:** | Part 135: Air Taxi & Commuter - Non-scheduled | | |

## Analysis

The pilot and two passengers departed for a remote area on an on-demand charter flight in a float-equipped airplane. An emergency locator transmitter signal was heard in the area of the intended destination about 55 minutes after departure. The flight was reported overdue and search personnel located the wreckage at an elevation of about 2,850 feet in mountainous terrain about 2 and 1/2 hours after departure. The airplane collided with terrain below the top of a steep ridge. Search personnel reported the weather conditions in the area included low ceilings. The conditions deteriorated during subsequent rescue operations. The area forecast included an AIRMET for marginal VFR conditions with mountain obscuration due to clouds and precipitation.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: continued flight by the pilot into adverse weather condition, and his failure to maintain adequate altitude/clearance from mountainous terrain. Factors related to the accident were the high/mountainous terrain, and weather conditions that included low ceilings.

## Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER
Phase of Operation: CRUISE

Findings
1. (F) TERRAIN CONDITION - HIGH TERRAIN
2. (F) WEATHER CONDITION - LOW CEILING
3. (C) FLIGHT INTO ADVERSE WEATHER - PERFORMED - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: MANEUVERING

Findings
4. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
5. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

## Factual Information

History of the Flight

On October 13, 1996, about 1455 Alaska daylight time, a float equipped deHavilland DHC-2, N64276, collided with terrain about 38 miles north of Ketchikan, Alaska. The airplane was being operated as a visual flight rules (VFR) cross-country on-demand passenger flight under Title 14 CFR Part 135 when the accident occurred. The airplane, operated by Seaside Air Service, Ketchikan, was destroyed. The certificated commercial pilot and two passengers received fatal injuries. A VFR flight plan was filed. The flight originated at the Ketchikan Harbor Seaplane base at 1358.

The flight was for the purpose of transporting the passengers to a remote area for goat hunting. After departure, the pilot filed a VFR flight plan at 1204 with the Ketchikan Automated Flight Service Station (AFSS). The pilot indicated the planned destination was Reflection Lake, located about 43 miles north of Ketchikan. There was no further communications from the airplane.

The U.S. Coast Guard reported that an emergency locator transmitter (ELT) signal was detected in the area of the accident about 1455. Local area pilots became concerned and began search operations. The flight was officially declared overdue at 1636 and the wreckage was located about 1640. Search personnel reported that the airplane struck the side of a steep canyon wall about 2,850 feet mean sea level. The wreckage then tumbled down the side of the canyon about 300 feet.

The accident occurred during the hours of daylight at latitude 55 degrees, 59.021 minutes north and longitude 131 degrees, 42.176 minutes west.

Crew Information

The pilot held a commercial pilot certificate with airplane single-engine land, multi-engine land, single-engine sea, and instrument airplane ratings. The most recent second-class medical certificate was issued to the pilot on October 30, 1995, and contained the limitation the pilot must wear lenses for distant vision and possess glasses for near vision.

No personal flight records were located for the pilot. Review of the pilot/operator report submitted to the Safety Board, and the operator's flight and duty time record, revealed the pilot's total aeronautical experience was estimated at 17,000 hours, of which 8,500 hours were accrued in the accident airplane make and model. In the preceding 90 and 30 days prior to the accident, the pilot accrued a total of 219 and 46 hours respectively.

Aircraft Information

The airplane had accumulated a total time in service of 12,474.7 hours. Examination of the maintenance records revealed that the most recent annual inspection was accomplished on January 11, 1996, 493.8 hours before the accident. In addition, a 100-hour inspection was completed on September 25, 1996, 19.7 hours before the accident.

The engine had accrued a total time in service of 7,909.6 hours of operation. The maintenance records note that a major overhaul was accomplished on November 30, 1994, 1,071.9 hours of operation before the accident. Annual and 100-hour inspections were accomplished on the dates specified above for the airframe.

Meteorological Information

The closest official weather observation station is Ketchikan, Alaska, which is located about 38 nautical miles south of the accident site. At 1447, an aviation routine weather report (METAR) was reporting in part: wind, light and variable at 3 knots; visibility, 20 miles; sky condition and ceiling, 2,200 feet scattered, 3,500 feet broken, 6,000 feet broken, 12,000 feet overcast; temperature, 10 degrees C; dew point, 6 degrees C; altimeter, 29.71 inHg.

The terminal area forecast (TAF) for the Ketchikan area issued on October 13, 1997, at 0933, was valid from 1000, October 13, 1996, until 1000 on October 14, 1997. The forecast was reporting in part: Wind, 150 degrees (true) at 12 knots, gusts to 20 knots; visibility greater than 6 statute miles in light rain showers; sky condition and ceiling, 1,500 feet scattered, 3,000 feet broken, 4,500 overcast; temporary changes expected within the valid period: visibility, 3 statute miles in light rain showers and mist; sky condition and ceiling, 500 feet scattered, 1,500 feet scattered.

The National Weather Service, Alaska Aviation Weather Unit, Anchorage, issued a area weather synopsis on October 13, 1996, at 1145. The synopsis, valid until October 14, 1996, at 0600, was reporting in part: A 982 millibar low near Whittier, Alaska, will remain nearly stationary through 0600, October 14, 1996. A 998 millibar low, 180 miles southwest of Sitka, Alaska, will be in the vicinity of Yakutat, Alaska, by 1600, October 13, 1996, and near Burwash, Yukon Territory, Canada, by 2400. An associated trough from the low to near Annette Island, Alaska, will extend from Yakutat to Skagway, Alaska, and southeast by 2400.

The synopsis for southern, southeast Alaska, valid until October 13, 1996, at 2400, included a meteorological notice to airmen (AIRMET). The synopsis was reporting in part: Airmet for mountain obscuration. Mountains temporarily obscured in clouds and precipitation, no change. Sky condition and ceiling, 2,000 scattered, 3,000 broken, 5,000 overcast, merging layers up to 30,000 feet. Light rain showers. Isolated areas, 1,000 feet scattered, 2,000 feet broken, 3,500 feet overcast. Visibility, 5 statute miles in light rain showers and mist. Surface winds, southeast with gusts to 20 knots. Outlook, valid from October 13, 1996, at 2400, to October 14, 1996, at 1800; marginal VFR conditions, ceilings with rain showers. Turbulence; isolated moderate turbulence below 6,000 feet. Icing and freezing level; light isolated moderate mixed icing in clouds and precipitation, 500 feet to 15,000 feet. Freezing level, 5,000 feet.

A pilot who initially spotted the wreckage reported that he had been in the area of the accident about 1100. At that time, the weather conditions were 2,000 feet scattered, visibility 10 to 15 miles, and no rain. When he arrived in the area of the wreckage at 1640, the weather conditions were 4,000 feet overcast, visibility 15 to 20 miles. While waiting for rescue helicopters to arrive in the area, the weather conditions deteriorated and lowered to 2,800 feet overcast with rain and snow squalls. The weather conditions continued to deteriorate with increasing snow and rain.

Communications

Review of the air-ground radio communications tapes maintained by the FAA at the Ketchikan AFSS revealed that the airplane successively and successfully communicated with the positions of "inflight #1" and "inflight #2." No unusual communications were noted between any FAA facility and the accident airplane during the review of the tapes.

A transcript of the air to ground communications between the airplane and the Ketchikan

AFSS is included in this report.

Wreckage and Impact Information

The National Transportation Safety Board investigator-in-charge (IIC), along with an FAA Inspector from the Juneau Flight Standards District Office, attempted to reach the accident site on October 14 and 15, 1996, by helicopter. Low ceilings, with rain and snow, prevented the helicopter from reaching the scene. The accident site was then covered by snow. No further attempts to reach the accident site were made due to the onset of winter. On July 24, 1997, the NTSB IIC again attempted to reach the accident site by helicopter. Low ceilings and rain again prevented the helicopter from reaching the accident site.

Members of the Ketchikan Search and Rescue Squad (KVRS), a volunteer search and rescue organization, assisted Alaska State Troopers with the initial response to the accident scene. The team utilized technical rescue techniques, including the use of climbing ropes, to retrieve the occupants of the airplane. The KVRS members described the accident scene as a near vertical rock face. They reported the airplane fuselage was lodged in two large trees, about 1/2 way down the face of the rock. Evidence of a small postcrash fire was present at the fuselage point of rest.

Following the second attempt to reach the accident site, the NTSB IIC authorized a visit to the scene by an aviation insurance adjuster for the purpose of assessing the retrieval of the wreckage for examination in a less hazardous environment. On August 16, 1997, the adjuster traveled to the scene with several members of the KVRS and photographed the wreckage. Both parties recommended that no retrieval of wreckage should be attempted as long as the fuselage remained lodged in the trees.

Examination of the photographs provided by the KVRS and the adjuster, revealed the airplane collided with terrain, just below a large ridge line. A path of wreckage debris was scattered along the upper, lateral face of the ridge, until dropping off the edge onto a series of small ledges. The fuselage descended down the face of the ridge until lodging in two trees.

All of the airplane's major components were found at the main wreckage area. The engine separated from the fuselage and continued down the face of the ridge to an area of grass and rocks.

The engine sustained impact damage to the front portion of the engine. The propeller hub assembly remained connected to the engine crankshaft. One propeller blade separated from the hub and was located at the top of the ridge along with other wreckage debris. The other two blades remained attached to the hub, but were broken about midspan.

Medical and Pathological Information

A postmortem examination of the pilot was conducted in Ketchikan, Alaska, under the authority of the Alaska State Medical Examiner, 5700 E. Tudor, Anchorage, Alaska, on October 14, 1996.

Additional Information

The pilot held a single-pilot, on demand, air carrier certificate, issued on April 1, 1989. He was the owner/operator and the only pilot. The pilot's last FAR 135 proficiency check ride was completed on November 1, 1995.

Wreckage Release

The Safety Board did not take custody of the wreckage. No parts or components were retained by the Safety Board.

## Pilot Information

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| **Certificate:** | Commercial | **Age:** | 48, Male |
| **Airplane Rating(s):** | Multi-engine Land; Single-engine Land; Single-engine Sea | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | Seatbelt, Shoulder harness |
| **Instrument Rating(s):** | Airplane | **Second Pilot Present:** | No |
| **Instructor Rating(s):** | None | **Toxicology Performed:** | Yes |
| **Medical Certification:** | Class 2 Valid Medical--w/ waivers/lim. | **Last FAA Medical Exam:** | 10/30/1995 |
| **Occupational Pilot:** | | **Last Flight Review or Equivalent:** | |
| **Flight Time:** | 17000 hours (Pilot In Command, all aircraft) | | |

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | de Havilland | **Registration:** | N64276 |
| **Model/Series:** | DHC-2 DHC-2 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | | **Amateur Built:** | No |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 1025 |
| **Landing Gear Type:** | Float | **Seats:** | 8 |
| **Date/Type of Last Inspection:** | 09/25/1996, 100 Hour | **Certified Max Gross Wt.:** | 5370 lbs |
| **Time Since Last Inspection:** | 20 Hours | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 12475 Hours | **Engine Manufacturer:** | P&W |
| **ELT:** | Installed, activated, aided in locating accident | **Engine Model/Series:** | R-985-39A |
| **Registered Owner:** | SEASIDE AIR SERVICE | **Rated Power:** | 450 hp |
| **Operator:** | SEASIDE AIR SERVICE | **Operating Certificate(s) Held:** | On-demand Air Taxi (135) |
| **Operator Does Business As:** | | **Operator Designator Code:** | QSSA |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Unknown | **Condition of Light:** | Day |
| **Observation Facility, Elevation:** | , 0 ft msl | **Distance from Accident Site:** | 0 Nautical Miles |
| **Observation Time:** | 0000 | **Direction from Accident Site:** | 0° |
| **Lowest Cloud Condition:** | Unknown / 0 ft agl | **Visibility** | 0 Miles |
| **Lowest Ceiling:** | Unknown / 0 ft agl | **Visibility (RVR):** | 0 ft |
| **Wind Speed/Gusts:** | / | **Turbulence Type Forecast/Actual:** | / |
| **Wind Direction:** | | **Turbulence Severity Forecast/Actual:** | / |
| **Altimeter Setting:** | | **Temperature/Dew Point:** | 9°C |
| **Precipitation and Obscuration:** | | | |
| **Departure Point:** | , AK (5KE) | **Type of Flight Plan Filed:** | VFR |
| **Destination:** | ROWENA LAKE, AK | **Type of Clearance:** | None |
| **Departure Time:** | 1358 ADT | **Type of Airspace:** | Class G |

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 Fatal | **Aircraft Damage:** | Destroyed |
| **Passenger Injuries:** | 2 Fatal | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 3 Fatal | **Latitude, Longitude:** | |

## Administrative Information

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| **Investigator In Charge (IIC):** | SCOTT R ERICKSON | **Report Date:** | 03/31/1998 |
| **Additional Participating Persons:** | JAMES VUILLE; JUNEAU, AK | | |
| **Publish Date:** | | | |
| **Investigation Docket:** | NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov, or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/. | | |