



National Transportation Safety Board

Aviation Accident Final Report

Location:	NOME, AK	Accident Number:	ANC98FA046
Date & Time:	05/14/1998, 1525 AKD	Registration:	N192AV
Aircraft:	Cessna 208	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious, 6 Minor, 3 None
Flight Conducted Under:		Part 135: Air Taxi & Commuter - Scheduled	

Analysis

The certificated airline transport pilot, and nine passengers departed on a scheduled VFR commuter flight for a destination about 160 miles south of the departure airport. The terminal forecast for the destination airport, located in Class E airspace, was indicating a visibility greater than six miles, with scattered clouds at 2,500 feet. Temporary conditions included a visibility of five miles in light rain and snow, with broken clouds at 2,000 feet. While enroute, an obscured ceiling began to lower, and the pilot said he descended to 1,000 feet msl. The pilot said the visibility decreased to between three to four miles, and he began to follow a road toward the destination. About six miles north of the destination, the pilot obtained an airport advisory. The weather conditions at the destination airport were one mile visibility in light snow and mist, and a ceiling of 1,000 feet broken. The pilot requested a Special VFR clearance. As the in-flight visibility decreased to 1 mile, the pilot said he decided to begin a right turn back to an area of better visibility. During the turn, he said he entered white-out conditions. He leveled the wings of the airplane, and applied engine power to begin a climb. The airplane then collided with snow covered terrain, about 850 feet msl. The location of the accident is about 1 mile north of the Class E airspace.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's continued VFR flight into instrument meteorological conditions. Factors in the accident were low ceilings, whiteout conditions, and snow covered terrain.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: MANEUVERING - TURN TO REVERSE DIRECTION

Findings

1. (F) TERRAIN CONDITION - SNOW COVERED
2. (F) WEATHER CONDITION - LOW CEILING
3. (F) WEATHER CONDITION - WHITEOUT
4. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND

Factual Information

HISTORY OF THE FLIGHT

On May 14, 1998, about 1525 Alaska daylight time, a Cessna 208 airplane, N192AV, sustained substantial damage during an in-flight collision with terrain, about 5 1/2 miles northeast of Nome, Alaska. The airplane was being operated as a visual flight rules (VFR) scheduled domestic commuter flight under Title 14 CFR Part 135, when the accident occurred. The airplane was operated by Baker Aviation, Kotzebue, Alaska, as Flight 435. The certificated airline transport pilot, and five passengers received minor injuries. One passenger received serious injuries, and three passengers were not injured. Instrument meteorological conditions prevailed in the area of the accident. A VFR flight plan was filed. The flight originated at the Ralph Wein Memorial Airport, Kotzebue, Alaska, about 1402.

The pilot stated that prior to departing on the accident flight, he obtained a weather briefing from the Kotzebue Flight Service Station (FSS) for the current, and forecast weather conditions at Nome, and Kotzebue.

A review of the Kotzebue FSS telephone conversation tapes indicated the pilot called at 1337, and requested an abbreviated weather briefing for the current conditions at Nome, the terminal forecast for Nome, and the terminal forecast for Kotzebue for the next three to four hours. The flight service station specialist provided the current weather conditions at Kotzebue, and the Nome terminal forecast. Computer problems prevented the briefer from providing current conditions at Nome, or the Kotzebue terminal forecast. The specialist offered to provide the Kotzebue area forecast, but the pilot declined the briefing.

After departure, the pilot indicated an obscured ceiling began to lower in an area about 70 miles south of Kotzebue. He said the airplane was in cruise flight at 4,500 feet mean sea level while en route to Nome. As the flight progressed southbound, the ceilings continued to lower, and the pilot said he descended to 2,500 feet. About 12 miles north of Nome, the pilot indicated he descended to 1,500 feet, and the visibility was between 3 to 4 miles.

At 1515, about 6 miles north of Nome, the pilot of the accident airplane contacted the Nome Automated Flight Service Station (AFSS), and obtained an airport advisory. The Nome flight service station specialist reported the Nome airport advisory as: "...wind, 080 degrees, at 20 knots, favoring runway 09, altimeter 29.63; Nome weather, IFR, visibility 1 mile in light snow and mist, ceiling 1,000 feet broken, 1,500 feet overcast." At 1516, the pilot requested, and received, a Special VFR clearance to enter the Nome Class E airspace.

At 1519, a second company airplane, (N9642F, operating as Flight 461), en route to Nome from Shishmaref, Alaska, contacted the Nome AFSS and requested a Special VFR clearance into the Nome Class E airspace. The pilot of Flight 461 was subsequently given a SVFR clearance after agreeing to maintain visual separation from the accident airplane. The pilot of Flight 461 indicated he was about 5 to 10 miles behind the accident airplane. Upon arrival at Nome, he described the visibility as 3 miles.

As the accident flight progressed toward Nome, the pilot of the accident airplane said he descended to 1,000 feet, and the visibility began decreasing to 1 mile. The pilot indicated he was maintaining visual contact with a road that was located along the east side of Newman Peak (elevation 1,152 feet msl). The pilot said when the visibility decreased to 1 mile, he decided to begin a right turn back to an area of better visibility. During the turn, the pilot said

he entered white-out conditions. He leveled the wings of the airplane, and applied engine power to begin a climb. The airplane then collided with the snow covered terrain of Newman Peak, about 850 feet msl. The location of the accident is about 1 mile north of the Nome Class E airspace.

After landing at Nome without seeing the accident airplane, the pilot of Flight 461 inquired by radio if any personnel at the Nome AFSS had heard, or seen the accident airplane. The answer was negative. At 1527, the pilot of Flight 461 alerted Nome AFSS personnel that he was hearing an emergency locator transmitter (ELT) signal.

The accident occurred during the hours of daylight at latitude 64 degrees, 33.364 minutes north and longitude 165 degrees, 17.420 minutes west.

CREW INFORMATION

The pilot holds an airline transport pilot certificate with airplane single-engine land, multiengine land, and single-engine sea ratings. In addition, the pilot holds a flight instructor certificate with airplane single-engine, multiengine, and instrument airplane ratings. The most recent first-class medical certificate was issued to the pilot on May 4, 1998, and contained no limitations.

According to the pilot/operator report (NTSB form 6120.1/2) submitted by the operator, the pilot's total aeronautical experience consists of about 3,713 hours, of which 362 were accrued in the accident airplane make and model. In the preceding 90 and 30 days prior to the accident, the report lists a total of 325 and 105 hours respectively.

The pilot completed his basic company indoctrination on January 26, 1998. He completed his FAA Part 135 check ride on February 2, 1998. The check ride included instrument procedures.

AIRCRAFT INFORMATION

The airplane had accumulated a total time of 5,574.3 hours. The airplane is maintained on an approved airworthiness inspection program (AAIP). The most recent Phase 1 mini-check inspection was accomplished on April 30, 1998, 80.9 hours before the accident.

METEOROLOGICAL INFORMATION

An area forecast for the southern Seward Peninsula, and eastern Norton Sound, issued on May 14, 1998, at 1145, and valid until 0000, was reporting, in part: "Clouds and weather; AIRMET for mountain obscuration. Mountains obscured in clouds, and precipitation, intensifying. Through 1800, 2,500 feet scattered, 4,000 feet broken, 12,000 feet broken, tops at 15,000 feet, widely separated layers above, tops 25,000 feet. Temporary conditions of 2,500 feet broken. Isolated ceilings below 1,000 feet, visibility 3 to 5 statute miles in light snow and mist. Beyond 1800, few clouds at 500 feet, 2,500 feet broken, 4,000 feet overcast, tops at 10,000 feet, visibility 5 statute miles in light rain and snow. Widely separated layers above, tops 25,000 feet. Temporary ceilings below 1,000 feet, visibility below 3 statute miles in light rain and snow, light snow and mist. Additionally, all points in the vicinity of Norton Sound, surface winds from the southeast at 20 knots. Outlook, valid from May 15, 1998, at 0000 to 1800; IFR, ceilings in rain, snow, and mist. Turbulence, isolated moderate turbulence from the surface to 6,000 feet, becoming temporary after 1800. Icing and freezing level, through 1800, temporary light rime icing in clouds, and in precipitation from the surface to 10,000 feet. Freezing level near the surface. Beyond 1600, light isolated moderate rime icing in clouds, and in precipitation, 1,500 feet to 15,000 feet. Freezing level, 1,500 feet."

An amended area forecast for the southern Seward Peninsula, and eastern Norton Sound, issued on May 14, 1998, at 1440, and valid until 0000, incorporated the following changes to the forecast: "...Additionally, all points, surface winds from the east to the southeast at 20 knots. Gusts of 30 knots through channels. ...Icing and freezing level, light isolated moderate rime icing in clouds, and in precipitation, 1,500 feet to 15,000 feet. Freezing level, 1,000 feet."

A terminal forecast for Nome, issued on May 14, 1998, at 0940, and valid from 1000 until 1000 on May 15, 1998, was reporting, in part: "Wind 120 degrees at 12 knots, visibility greater than 6 statute miles. Clouds and sky condition, 600 feet scattered, 2,000 feet scattered, 5,000 feet overcast. Temporary conditions from 1000 to 1200, wind 100 degrees at 15 knots, visibility 4 statute miles in light snow and mist, clouds at 800 feet broken. From 1200, wind 100 degrees at 15 knots, visibility greater than 6 statute miles, clouds, 1,500 feet scattered, 2,500 feet broken, 7,000 feet overcast. Temporary conditions, from 1200 to 1900, visibility 5 statute miles in light rain and snow, clouds at 2,000 feet broken, 4,000 feet overcast. From 1900, wind 100 degrees at 20 knots, visibility greater than 6 statute miles in light rain, clouds at 1,000 feet scattered, 3,000 feet overcast. Temporary conditions from 1900 to 1000 on May 15, 1998, visibility 5 statute miles in light rain and mist, clouds at 500 feet broken, 1,000 feet overcast."

An amended terminal forecast for Nome, issued on May 14, 1998, at 1340, and valid from 1400 until 1000 on May 15, 1998, was reporting, in part: "Wind 100 degrees at 15 knots, visibility greater than 6 statute miles, clouds and sky condition, 2,500 feet scattered, 4,500 feet broken, 7,000 feet overcast. Temporary conditions from 1200 to 1900, visibility 5 statute miles in light rain and snow, clouds at 2,000 feet broken, 4,000 feet overcast. From 1900, wind 100 degrees at 20 knots, visibility greater than 6 statute miles in light rain, clouds at 1,000 feet scattered, 3,000 feet overcast. Temporary conditions, from 1900 to 1000 on May 15, 1998, visibility 5 statute miles in light rain and mist, clouds at 500 feet broken, 1,000 feet overcast."

At 1511, a special weather observation at Nome was reporting in part: "Wind, 080 degrees at 17 knots; visibility, 1 statute mile in light snow and mist; clouds, 1,000 feet broken, 1,500 feet overcast; temperature, 34 degrees F; dew point, 32 degrees F; altimeter, 29.63 inHg."

COMMUNICATIONS

A review of telephone conversation tapes, and air-ground radio communications tapes maintained by the FAA at the Kotzebue FSS, and the Nome AFSS, revealed that the pilot of the accident airplane successfully communicated with the positions of In-Flight One, and In-Flight Two at Kotzebue, and In-Flight One at Nome.

A transcript of all communications between the airplane, and the Kotzebue FSS, and Nome AFSS, is included in this report.

AERODROME AND GROUND FACILITIES

The Nome Airport, elevation 37 feet msl, is located along the coast of Norton Sound on the Seward Peninsula. The airport is not served by an air traffic control tower, nor is any terminal area radar service available. The Nome AFSS is located on the field. The Nome airport has precision and nonprecision instrument approach procedures.

WRECKAGE AND IMPACT INFORMATION

The National Transportation Safety Board investigator-in-charge (IIC) examined the airplane wreckage at the accident site on May 15, 1998. A path of wreckage debris and ground scars

from the first observed point of ground contact, to the wreckage point of rest was observed on a magnetic heading of 207 degrees. (All heading/bearings noted in this report are oriented toward magnetic north.)

The airplane struck slightly rising snow covered terrain. The first observed portion of airplane wreckage noted along the wreckage path, was a belly mounted cargo pod door. Additional portions of the airplane were located along the wreckage path that extended for about 362 feet. Wreckage items found along the path included portions of the cargo pod, several engine components including the engine mount, front windshield, engine cowling with a portion of distorted external exhaust stack, the nose gear, and the entire separated engine/propeller assembly. The main fuselage was lying inverted at the end of the wreckage path.

The wings and lift struts remained attached to their respective wing, and fuselage attach points. The leading edge of the right wing tip was torn, and crushed in an aft direction with some upward curling of the torn pieces of wing material. The entire outboard end of the wing tip was curled downward. The filament of the right wing position light bulb was intact and tightly coiled. The right aileron, and the right flap, were attached to the wing. The flap appeared retracted. The horizontal, forward facing portion of the pitot tube, installed on the underside of the right wing, was bent downward and aft.

The cabin fuselage was bent, and buckled inward along the upper right roof area, adjacent to the right wing carry-through.

The left wing exhibited minor denting. The left aileron and flap were attached to the wing and undamaged. The flap appeared retracted.

The elevator remained attached to the horizontal stabilizer. Both stabilizers appeared undamaged. The rudder remained attached to the vertical stabilizer, but both were crushed and bent about 90 degrees to the right, just above the upper surface of the fuselage.

The belly mounted cargo pod was fractured and broken away from the fuselage. The nose wheel assembly was broken away from the fuselage. The main landing gear remained attached to the fuselage. The forward, leading edge of the main landing gear fairings displayed aft crushing.

The separated engine/propeller assembly was located about 96 feet from the fuselage. The engine mounts/tubing were fractured and broken from their respective fuselage/firewall attach points. A portion of engine cowling remained attached to the engine. The accessory gear case remained attached to the aft end of the engine.

The three metal propeller blades, and the hub assembly remained connected to the engine. One propeller blade exhibited spanwise "U" shape bending. A second propeller blade exhibited spanwise aft bending, about 45 degrees. A third propeller blade was not visible, buried in the snow.

A separated portion of engine cowling and the external exhaust tube was located about 133 feet from the fuselage. The exhaust tube exhibited extensive crushing and folding. Examination of the edges of several of the metal folds did not reveal any evidence of cracking or breaking.

SEARCH AND RESCUE

Following the crash, search personnel were alerted that the accident airplane was overdue, and an ELT signal was being received. Search airplanes, and snow machines began looking for the

accident site. The wreckage was located about 2 1/2 hours after the accident.

ADDITIONAL INFORMATION

Class G airspace (uncontrolled airspace), for noncommercial operators, allows VFR operations with 1 mile of visibility, and clear of clouds. Class E airspace (general controlled airspace), surrounding nontowered airports (Nome), allows VFR operations with 3 miles of visibility, and 500 feet below, 1,000 feet above, and 2,000 feet horizontal from any clouds. When the weather conditions deteriorate, Special VFR (SVFR) operations are permitted in the Nome Class E surface area. The surface area is depicted on the VFR sectional chart for the Nome area. It extends about 7 nautical miles east of the Nome VORTAC (12 miles east of the Nome Airport); about 3 miles north of the Nome VORTAC, about 4 miles north of the Nome Airport; about 6.5 miles west of the Nome Airport; and about 5.5 miles south of the Nome Airport.

Air traffic control (ATC) of the controlled airspace around the Nome airport for IFR operations, is coordinated by the Anchorage Air Route Traffic Control Center (ARTCC). When no IFR traffic is utilizing the airspace, the Nome AFSS issues traffic advisories to VFR traffic. Under a letter of agreement, and after the ARTCC releases the surface area, the Nome AFSS issues SVFR clearances to local traffic to provide a means of takeoff and landings without an IFR clearance. Once an airplane has been granted a SVFR clearance, no other airplane may operate in the surface area until the airplane has landed, or has traveled outside of the surface area boundary. An exception to the procedure may allow more than one airplane to operate in the surface area, if all participating air traffic agree to maintain visual separation from each other.

Title 14 CFR Part 135.203, VFR Minimum Altitudes, states, in part: "Except for takeoff and landing, no person may operate under VFR, (a) An airplane - (1) During the day, below 500 feet above the surface or less than 500 feet horizontally from any obstacle..." Part 135.205, VFR Visibility Requirements, states, in part: No person may operate an airplane under VFR in uncontrolled airspace (Class G) when the ceiling is less than 1,000 feet, unless the visibility is at least 2 miles."

Title 14 CFR Part 91.157, Special VFR (SVFR) Weather Minimums, states in part: "(a) ...special VFR operations may be conducted under the weather minimums and requirements of this section, instead of those contained in 91.155, below 10,000 feet msl, within the airspace contained by the upward extension of the lateral boundaries of the controlled airspace designated to the surface for an airport. (b) Special VFR operations may only be conducted - (1) With an ATC clearance. (2) Clear of clouds. (3) Except for helicopters, when flight visibility is at least 1 statute mile... (c) No person may takeoff or land an airplane (other than a helicopter) under special VFR - (1) Unless ground visibility is at least 1 statute mile..."

WRECKAGE RELEASE

The Safety Board released the wreckage, located in Nome, Alaska, to the owner's representatives on May 15, 1998. No parts or components were retained by the Safety Board.

Pilot Information

Certificate:	Airline Transport; Flight Instructor	Age:	36, 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):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last Medical Exam:	05/04/1998
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	34713 hours (Total, all aircraft), 362 hours (Total, this make and model), 3056 hours (Pilot In Command, all aircraft), 325 hours (Last 90 days, all aircraft), 105 hours (Last 30 days, all aircraft), 7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Cessna	Registration:	N192AV
Model/Series:	208 208	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	20800215
Landing Gear Type:	Tricycle	Seats:	10
Date/Type of Last Inspection:	04/30/1998, AAIP	Certified Max Gross Wt.:	8000 lbs
Time Since Last Inspection:	81 Hours	Engines:	1 Turbo Prop
Airframe Total Time:	5574 Hours	Engine Manufacturer:	P&W
ELT:	Installed, activated, aided in locating accident	Engine Model/Series:	PT-GA-114
Registered Owner:	CESSNA FINANCE CORP	Rated Power:	600 hp
Operator:	BAKER AVIATION INC.	Air Carrier Operating Certificate:	Commuter Air Carrier (135); On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	BAJA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Day
Observation Facility, Elevation:	OME, 37 ft msl	Observation Time:	1511 ADT
Distance from Accident Site:	5 Nautical Miles	Direction from Accident Site:	215°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	1°C / 0°C
Lowest Ceiling:	Broken / 1000 ft agl	Visibility:	1 Miles
Wind Speed/Gusts, Direction:	17 knots, 80°	Visibility (RVR):	0 ft
Altimeter Setting:	29 inches Hg	Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	KOTZEBUE, AK (OTZ)	Type of Flight Plan Filed:	VFR
Destination:	(OME)	Type of Clearance:	Special VFR
Departure Time:	1402 ADT	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	1 Serious, 5 Minor, 3 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 6 Minor, 3 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	SCOTT R ERICKSON	Adopted Date:	03/30/2000
Additional Participating Persons:	HUGH KEITH; ANCHORAGE, AK GREG HARDING; KOTZEBUE, 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/ .		

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