



National Transportation Safety Board Aviation Accident Final Report

Location:	PORT HEIDEN, AK	Accident Number:	ANC98LA018
Date & Time:	01/30/1998, 1700 AST	Registration:	N9316F
Aircraft:	Cessna 208A	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The pilot departed in visual meteorological conditions of three to four miles visibility with high ceilings. He stated the airplane encountered freezing rain about five miles south of the airport while in cruise flight at 1,200 feet msl, and rapidly accumulated ice on the airframe, wings, and windshield. The pilot said he initially changed altitude in an attempt to exit the icing conditions. Ice accumulation continued, so he elected to return. While maneuvering to land at the airport, the airplane was unable to maintain altitude at full engine power. He said that any angle of bank resulted in the onset of prestall buffet, so he decided to land on a frozen lake south of the airport. He said that the airplane did not reach the lake, 'mushed into the ground,' and during the flare/touchdown, the left wing stalled. The pilot did not have access to the official weather prior to departure. The National Weather Service contracted observer, made his observation from a location about five miles south of the official weather station at the airport. The FAA AWOS-3 was inoperative. Examination of the airplane after the accident revealed a 1/2 inch layer of clear ice covering all the upper and lower airfoil surfaces of the airplane, from leading edges to between 1/3 and 1/2 of the chords. All antennas were coated with approximately 1/2 inch of clear ice. The airplane was not equipped with ice protection equipment except for pitot heat and windshield heat.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's inadequate in-flight decision resulting in airframe ice accumulation to the extent that degraded aircraft performance and insufficient airspeed occurred followed by a stall. Contributing factors were freezing rain and icing conditions.

Findings

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

Findings

1. (F) WEATHER CONDITION - ICING CONDITIONS
2. (C) IN-FLIGHT PLANNING/DECISION - INADEQUATE - PILOT IN COMMAND
3. WEATHER CONDITION - FREEZING RAIN
4. AIRFRAME - ICE

Occurrence #2: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: EMERGENCY DESCENT/LANDING

Findings

5. AIRCRAFT PERFORMANCE - DETERIORATED
6. (C) AIRSPEED - INADEQUATE - PILOT IN COMMAND
7. (C) STALL/MUSH - INADVERTENT - PILOT IN COMMAND

Occurrence #3: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: EMERGENCY LANDING

Findings

8. TERRAIN CONDITION - TUNDRA

Factual Information

On January 30, 1998, at 1700 Alaska standard time, a Cessna 208A airplane, N9316F, was destroyed when it impacted frozen tundra, about one mile southwest of the Port Heiden Airport, Port Heiden, Alaska. The airline transport pilot received minor injuries. The airplane was operated by Peninsula Airways, Inc., of Anchorage, Alaska. The flight departed at 1700, and was conducted under 14 CFR Part 135 as a nonscheduled cargo flight from Port Heiden southbound to Chignik, Alaska.

During a telephone interview with the NTSB investigator-in-charge (IIC) at 1700 on February 3, 1998, the pilot reported departing in visual meteorological conditions of three to four miles visibility with high ceilings. He stated the airplane encountered freezing rain about five miles south of the airport while in cruise at 1,200 feet msl, and rapidly accumulated ice on the airframe, wings, and windshield. The pilot said he initially changed altitude in an attempt to exit the icing conditions. Ice accumulation continued, so he elected to return to Port Heiden. While maneuvering to land at the airport, the airplane was unable to maintain altitude while at full engine power. The pilot related that any angle of bank resulted in the onset of prestall buffet. He stated that he decided to land on a frozen lake south of the airport. He said that the airplane did not reach the lake, "mushed into the ground," and that when he attempted to flare to land, the left wing stalled.

He said the airplane was not equipped with deice boots, nor propeller anti-ice. It was equipped with an electrically heated windshield, which the pilot indicated was melting ice into slush. The pilot noted that he was unable to see through the windshield. Postaccident testing of the electric windshield heat revealed no discrepancies.

Photographs taken immediately after the accident, and postaccident inspection by two FAA inspectors on February 4, 1998, revealed a 1/2 inch layer of clear ice covering all the upper and lower airfoil surfaces of the airplane, from leading edges to between 1/3 and 1/2 of the chords. All antennas were coated with approximately 1/2 inch of clear ice.

No terminal weather forecast is available for Port Heiden. The Area Forecast valid for the time of the accident did not include freezing precipitation.

Weather observations for Port Heiden are obtained from a part-time certified weather observer under contract to the National Weather Service (NWS). This individual has calibrated observation instruments which are contractually required to be located at the airport. After recording the weather, the observer sends the information via modem to the NWS. This weather is then available to anyone with access to NWS data, normally within five minutes of the observation.

The 1553 NWS data base observation indicates light snow. Light snow is not entered on the observer's "Surface Weather Observations (Metar/Speci)" form at 1545.

The weather observation for Port Heiden, entered into the NWS data base at 1653 was: visibility of one mile in -SN (light snow), vertical visibility of 100 feet, temperature minus 7 degrees C. The observation entered on the observer's "Surface Weather Observations (Metar/Speci)" form at 1645, submitted to the NWS, indicated -SNFZDL (light snow and freezing drizzle), and a vertical visibility of 200 feet.

The observer's "Surface Weather Observations (Metar/Speci)" form contains an entry for a

SPECI (special observation) at 1705 of one mile visibility, light snow and freezing drizzle, and a vertical visibility of 100 feet. No special observation is in the NWS data base. The next recorded observation is at 1945.

The pilot stated the departure weather was high ceilings, three miles visibility, and light precipitation. The station manager who helped load the airplane, stated the weather at the time of departure (1650) was 600 to 700 feet overcast, 3 to 4 miles visibility, and light precipitation. Both of these individuals said they observed the weather observer depart the airport about 1630. The station manager told two FAA inspectors that the weather observer did not return to the airport until about 1715.

The observer told these FAA inspectors that he took weather observations from his home, about five miles south of the airport, and that he had the equipment there to do so. A review of the NWS contract for this station indicated the required calibrated equipment is located at the observer's office at the airport.

Interviews with NWS managers revealed that weather observations are not valid if not taken from the specified geographic location.

On the date of the accident, the 37th edition of the Kodiak VFR sectional chart, valid until February 28, 1998, depicted an automated weather observation station (AWOS-3) to be available at Port Heiden on frequency 124.4 Mhz. Interviews between the NTSB investigator and both NWS managers and company pilots revealed that this station was not commissioned. Weather information was not available on this frequency, nor had it ever been. The 38th edition of this chart did not depict this AWOS-3 station.

14 CFR 135.213 states in part, "(a) Whenever a person operating an aircraft under this part is required to use a weather report..., that person shall use that of the U.S. National Weather Service, or a source approved by the National Weather Service... . However... the pilot in command may, if such a report is unavailable, use ... that pilot's own observations... ."

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	47, Male
Airplane Rating(s):	Multi-engine Land; Multi-engine Sea; Single-engine Land	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:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last Medical Exam:	09/05/1997
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	15000 hours (Total, all aircraft), 4500 hours (Total, this make and model), 14800 hours (Pilot In Command, all aircraft), 226 hours (Last 90 days, all aircraft), 75 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Cessna	Registration:	N9316F
Model/Series:	208A 208A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	208-00011
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	01/22/1998, Continuous Airworthiness	Certified Max Gross Wt.:	7000 lbs
Time Since Last Inspection:	29 Hours	Engines:	1 Turbo Prop
Airframe Total Time:	13478 Hours	Engine Manufacturer:	P&W
ELT:	Installed, not activated	Engine Model/Series:	PT-6A
Registered Owner:	PENINSULA AIRWAYS, INC.	Rated Power:	500 hp
Operator:	PENINSULA AIRWAYS, INC.	Air Carrier Operating Certificate:	Commuter Air Carrier (135); On-demand Air Taxi (135)
Operator Does Business As:	PENAIR	Operator Designator Code:	PNSA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	, 0 ft msl	Observation Time:	0000
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Unknown / 0 ft agl	Temperature/Dew Point:	-7° C
Lowest Ceiling:	Overcast / 1500 ft agl	Visibility	3 Miles
Wind Speed/Gusts, Direction:	6 knots, 260°	Visibility (RVR):	0 ft
Altimeter Setting:		Visibility (RVV):	0 Miles
Precipitation and Obscuration:			
Departure Point:	PORT HEIDEN, AK (PTH)	Type of Flight Plan Filed:	Company VFR
Destination:	CHIGNIK, AK (AJC)	Type of Clearance:	None
Departure Time:	1650 AST	Type of Airspace:	Class G

Airport Information

Airport:	PORT HEIDEN (PTH)	Runway Surface Type:	
Airport Elevation:	86 ft	Runway Surface Condition:	
Runway Used:	0	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing; Traffic Pattern

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	MATTHEW L THOMAS	Adopted Date:	02/15/2001
Additional Participating Persons:	ALICE L GOMMOLL; ANCHORAGE, AK FRANK L MCGARR; ANCHORAGE, AK TERRY A BATEMAN; ANCHORAGE, 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.nts.gov/pubdms/ .		

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