Aviation Investigation Final Report

Location:	White Mountain, Alaska	**Accident Number:**	ANC08LA042
Date & Time:	March 11, 2008, 10:50 Local	**Registration:**	N66036
Aircraft:	Cessna 180	**Aircraft Damage:**	Substantial
Defining Event:	Loss of visual reference	**Injuries:**	2 Minor, 1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airline transport pilot was in cruise flight at 2,500 feet msl over snow-covered mountainous terrain. He said the weather conditions were reported as having a ceiling of about 3,000 feet, and a visibility of 10 miles. The route crossed an area of low hills, and the pilot said the visibility began to deteriorate. He descended to about 2,000 feet msl, and suddenly flew into whiteout conditions. The airplane collided with a mountain ridge and overturned. The airplane received structural damage to the wings, landing gear, and fuselage. A pilot who flew to the site shortly after the accident stated that he had difficulty seeing the ridge line. He stated that “visibility was good, about 5 miles, but I couldn’t make out the ridge. The ridge line was relatively horizontal, without any contrasting features, making it difficult to identify against the sky.”

The Federal Aviation Administration’s Aeronautical Information Manual (AIM), Section 7-5-13, “Potential Flight Hazards, Flying in Flat Light and Whiteout Conditions,” notes that whiteout “occurs when a person becomes engulfed in a uniformly white glow…a result of being surrounded by blowing snow, dust, sand, mud or water.” The AIM states that flat light “is an optical illusion, also known as ‘sector or partial whiteout.’ Flat light conditions are usually accompanied by overcast skies inhibiting visual cues. Flat light can completely obscure features of the terrain, creating an inability to distinguish distances and closure rates.” According to the AIM, “flat light conditions can lead to a whiteout environment quite rapidly, and both atmospheric conditions are insidious; they sneak up on you as your visual references slowly begin to disappear.”

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot’s inadvertent flight into flat light/whiteout conditions over snow-covered terrain.

Findings

Environmental issues	Mountainous/hilly terrain - Not specified
Environmental issues	Whiteout - Effect on operation
Environmental issues	Snowy/icy terrain - Not specified

Factual Information

History of Flight

Enroute-cruise	Loss of visual reference (Defining event)
Enroute-cruise	Collision with terr/obj (non-CFIT)

On March 11, 2008, about 1050 Alaska daylight time, a wheel ski-equipped Cessna 180 airplane, N66036, sustained substantial damage when it collided with snow-covered terrain, about 16 miles east-northeast of White Mountain, Alaska. The airplane was being operated as a visual flight rules (VFR) cross-country personal flight under Title 14, CFR Part 91, when the accident occurred. The airplane was operated by the pilot who was volunteering his airplane in support of the annual Iditarod sled dog race in Alaska. The airline transport certificated pilot was not injured. The two passengers received minor injuries. The flight originated at the Koyuk Airport, Koyuk, Alaska, about 1020, en route to White Mountain, and no flight plan was filed.

During a telephone conversation with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), on March 11, the pilot reported that he departed from Koyuk with several other airplanes, and the weather conditions were reported as having a ceiling of about 3,000 feet, and a visibility of 10 miles. As the flight progressed toward White Mountain, he was in cruise flight at 2,500 feet msl. The route crossed low hills east of the airport, and the pilot said the visibility began to deteriorate. He descended to about 2,000 feet msl, and suddenly flew into whiteout conditions. The airplane collided with a mountain ridge about 2,000 feet msl and overturned. The airplane received structural damage to the wings, landing gear, and fuselage. A pilot who flew to the site shortly after the accident stated that he had difficulty seeing the ridge line. He stated that “visibility was good, about 5 miles, but I couldn’t make out the ridge. The ridge line was relatively horizontal, without any contrasting features, making it difficult to identify against the sky.”

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Pilot Information

Certificate:	Airline transport; Commercial; Flight engineer; Flight instructor	**Age:**	72,Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	**Seat Occupied:**	Left
Other Aircraft Rating(s):	Glider; Helicopter	**Restraint Used:**	
Instrument Rating(s):	Airplane; Helicopter	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Glider; Helicopter; Instrument airplane; Instrument helicopter	**Toxicology Performed:**	No
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	September 1, 2007
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	January 1, 2008
Flight Time:	19930 hours (Total, all aircraft), 2300 hours (Total, this make and model), 17000 hours (Pilot In Command, all aircraft), 43 hours (Last 90 days, all aircraft), 35 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N66036
Model/Series:	180	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1805298
Landing Gear Type:	Tailwheel; Ski/wheel	**Seats:**	3
Date/Type of Last Inspection:	September 1, 2007 Annual	**Certified Max Gross Wt.:**	3190 lbs
Time Since Last Inspection:	50 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	2980 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, aided in locating accident	**Engine Model/Series:**	O-470
Registered Owner:	C. Kenneth Moon	**Rated Power:**	230 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Day
Observation Facility, Elevation:		**Distance from Accident Site:**	
Observation Time:		**Direction from Accident Site:**	
Lowest Cloud Condition:		**Visibility**	5 miles
Lowest Ceiling:	Indefinite (V V) / 3000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:		**Temperature/Dew Point:**	
Precipitation and Obscuration:	N/A - None - Haze		
Departure Point:	Koyuk, AK (PAKK)	**Type of Flight Plan Filed:**	None
Destination:	White Mountain, AK (WMO)	**Type of Clearance:**	None
Departure Time:	10:20 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:	2 Minor	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Minor, 1 None	**Latitude, Longitude:**	64.709724,-162.762771

Administrative Information

Investigator In Charge (IIC):	Erickson, Scott
Additional Participating Persons:	Rod Beaman; FAA-FAI-FSDO 01; Fairbanks, AK
Original Publish Date:	August 28, 2008
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=67647