Aviation Investigation Final Report

Location:	Whittier, Alaska	**Accident Number:**	ANC18FA036
Date & Time:	May 12, 2018, 09:40 Local	**Registration:**	N7061W
Aircraft:	Piper PA-28-180	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The student pilot departed on a solo cross-country flight through mountainous terrain. The airplane was subsequently found on the side of a steep, snow-covered mountain near a well-known, charted mountain pass. Detailed radar data were not available, and the airplane's GPS data did not include the end of the flight; therefore, the exact flight track could not be determined.

The damage to the airplane and the debris field were consistent with a high-speed impact into deep snow in a relatively wings-level attitude on a heading toward the destination. Examination of the airframe, engine, and associated systems revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Aviation weather camera images near the time and location of the accident indicated an overcast layer of clouds obscuring the mountain tops, and two pilots reported low ceilings and obscured mountains in the area. Forecast weather products that would have been available to the pilot before the flight indicated visual flight rules (VFR) conditions at the departure airport and marginal VFR conditions from the mountain pass to the destination. There was no record that the pilot obtained a weather briefing for the intended route of flight.

The pilot's flight logbook and current flight instructor(s) were not located or identified; therefore, whether the pilot had adequate training or had been endorsed by an instructor to complete the solo flight could not be determined.

Given the reported and documented weather conditions in the area about the time of the accident, it is likely that the pilot encountered and chose to continue through restricted visibility conditions as he navigated through the mountain pass, which resulted in controlled flight into terrain.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The student pilot's decision to depart and continue on a solo cross-country flight through mountainous terrain in marginal visual flight rules conditions, which resulted in controlled flight into terrain.

Findings

Personnel issues	Decision making/judgment - Student/instructed pilot
Personnel issues	Use of equip/system - Student/instructed pilot
Environmental issues	Low visibility - Decision related to condition
Environmental issues	Low visibility - Effect on operation

Factual Information

History of Flight

Prior to flight	Preflight or dispatch event
Enroute	Loss of visual reference
Enroute	Controlled flight into terr/obj (CFIT) (Defining event)

On May 12, 2018, about 0940 Alaska daylight time, a Piper Cherokee PA-28-180 airplane, N7061W, was substantially damaged when it was involved in an accident near Whittier, Alaska. The student pilot sustained fatal injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* (CFR) Part 91 personal flight.

A family member stated that the pilot was repositioning his airplane from Merrill Field Airport (MRI), Anchorage, Alaska, to Valdez Pioneer Field Airport (VDZ), Valdez, Alaska, where he worked 2 weeks each month. The route comprised remote inland fjords, coastal waterways, and steep mountainous terrain, which required flight through Portage Pass. (Portage Pass is highly-traveled, east-west pass between Turnagain Arm and the Prince William Sound. It is about 1/2-mile wide and bounded by a 4,660-ft peak to the north and a 6,100-ft peak to the south.)

According to Federal Aviation Administration (FAA) air traffic control records, the airplane departed MRI at 0859 and proceeded to the Turnagain Arm waterway, which is a narrow waterway between the Kenai Mountains and the Chugach Mountains, where the pilot reported his position at Bird Creek at 0916. No further radio communications were received from the pilot. A review of data from a recovered Garmin Aera 500 device onboard the airplane revealed that the pilot flew southeast along Turnagain Arm. About 0929, the last data point was recorded about 5 miles from the accident site and indicated the airplane at 1,352 ft mean sea level (msl) at 95 knots ground speed, heading approximately southeast. (See figure 1.)

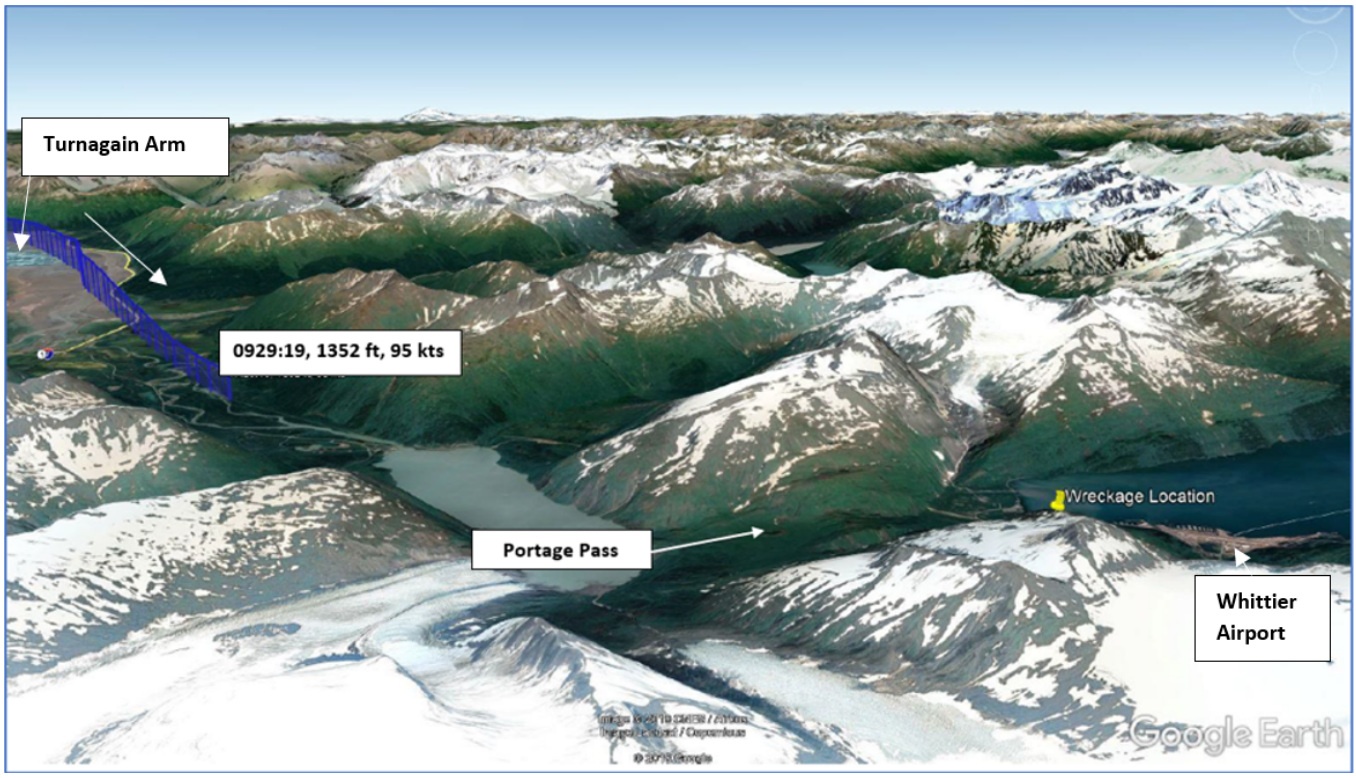

Figure 1. GPS flight track (blue) and wreckage location on Google Earth image.

According to the Alaska Rescue Coordination Center (AKRCC), an emergency locator transmitter (ELT) signal was received about 0940. The ELT was not registered to the airplane owner and there were no overdue airplane reports in Alaska. The AKRCC coordinated a ground and air search with the Civil Air Patrol throughout the day; however, weather at the accident site prevented access to the location in the mountains. After a concerned family member reported the airplane overdue to the Kenai Flight Service Station, the FAA issued an alert notice (ALNOT) at 1516. The wreckage was located about 2100 on a steep, snow-covered mountain about 2,000 ft msl in Portage Pass.

Two pilots who were flying in separate airplanes from Anchorage to Valdez about the time of the accident reported that the weather conditions were marginal. One pilot reported that he barely made it through the highest part of the pass with 500 ft of ground clearance. When he reported his position on the area's common frequency, he heard an unidentified pilot say, "so the pass is finally open." The other transiting pilot decided not to fly low through the pass and found a clear area through which to climb above the weather and mountains near the pass.

Student pilot Information

Certificate:	Student	**Age:**	30,Male
Airplane Rating(s):	None	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	November 1, 2015
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	(Estimated) 30 hours (Total, all aircraft), 30 hours (Total, this make and model)		

The pilot's flight logbook was not located. On his most recent medical certificate application, dated November 17, 2015, he reported 0 hours of flight experience. The pilot's brother estimated that the pilot had flown a few times before the accident since the snow melted. A flight instructor stated that the pilot had first soloed in 2017 with 17 hours of flight training and had soloed multiple times since. He also flew with the pilot on a cross-country flight on the same route as the accident flight about 8 months before the accident. He also stated that, in his opinion, the pilot was not knowledgeable or experienced enough to fly the intended flight solo. The instructor had since moved away from Alaska and was not aware if the pilot had been flying with another instructor.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N7061W
Model/Series:	PA-28-180	**Aircraft Category:**	Airplane
Year of Manufacture:	1962	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-813
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	April 25, 2018 Annual	**Certified Max Gross Wt.:**	2150 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	3275.4 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	C126 installed, activated, aided in locating accident	**Engine Model/Series:**	O-360A-3A
Registered Owner:		**Rated Power:**	180 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	**Condition of Light:**	Day
Observation Facility, Elevation:	PATO,103 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	289°
Lowest Cloud Condition:	Few / 2800 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	Broken / 3400 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots / 18 knots	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	100°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.25 inches Hg	**Temperature/Dew Point:**	6°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	ANCHORAGE, AK (MRI)	**Type of Flight Plan Filed:**	None
Destination:	VALDEZ, AK (VDZ)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class G

AIRMET Sierra was valid for the route of flight at the time of the accident for instrument flight rules (IFR) conditions and occasional mountain obscuration by clouds or precipitation.

The Alaska Aviation Weather Unit published forecast graphical products that were valid at the time of the accident. The flying weather graphic indicated that VFR conditions were forecast for Anchorage and the Turnagain Arm, but marginal VFR conditions (ceiling 1,000 to 3,000 ft and/or visibility 3 to 5 statute miles) were forecast starting about Portage Pass east into the Gulf of Alaska.

Archived images from the FAA aviation weather cameras on the morning of the accident at Whittier and Portage Glacier between 0937 and 0941 depicted obscured mountain tops and visibility between 2 and 10 statute miles (sm) in the areas south and northeast of the accident site. (See figure 2.)

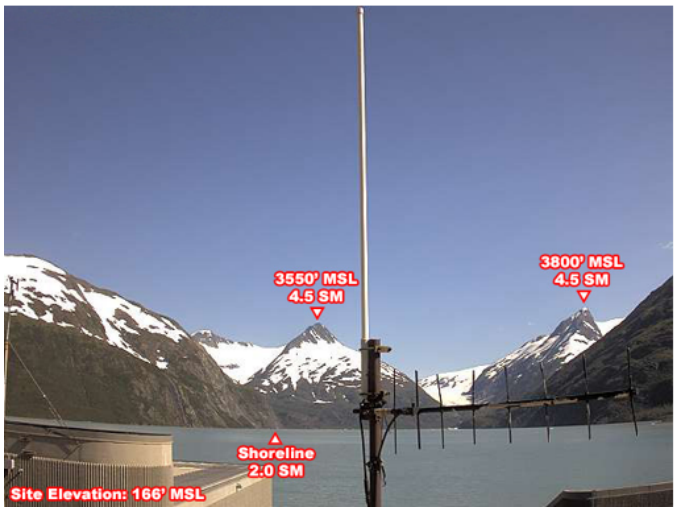

Figure 2. Portage Glacier weather camera image on a clear day (left) and on the accident day at 0937 (right).

A search of official weather briefing sources revealed that the accident pilot did not request a weather briefing through Flight Service or another access-controlled source. Whether the pilot accessed weather information before the flight could not be determined.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	60.763889,-148.715835(est)

The wreckage was located about 1 mile south of Whittier Airport on the side of a mountain at the southeast end of Portage Passage. The NTSB did not access the wreckage due to hazardous steep snow covered terrain. On-scene observations were performed by aerial survey and photographic evidence. A detailed examination was conducted after the wreckage was recovered.

The wreckage came to rest in deep snow on a 40° incline in a slightly nose-up, level attitude on a heading of 110°. Both wings exhibited significant leading-edge crush damage and were each rotated about 30° to the right around the airplane's vertical axis. All of the airplane's major components were located in the immediate vicinity of the main wreckage. (See Figure 3.)

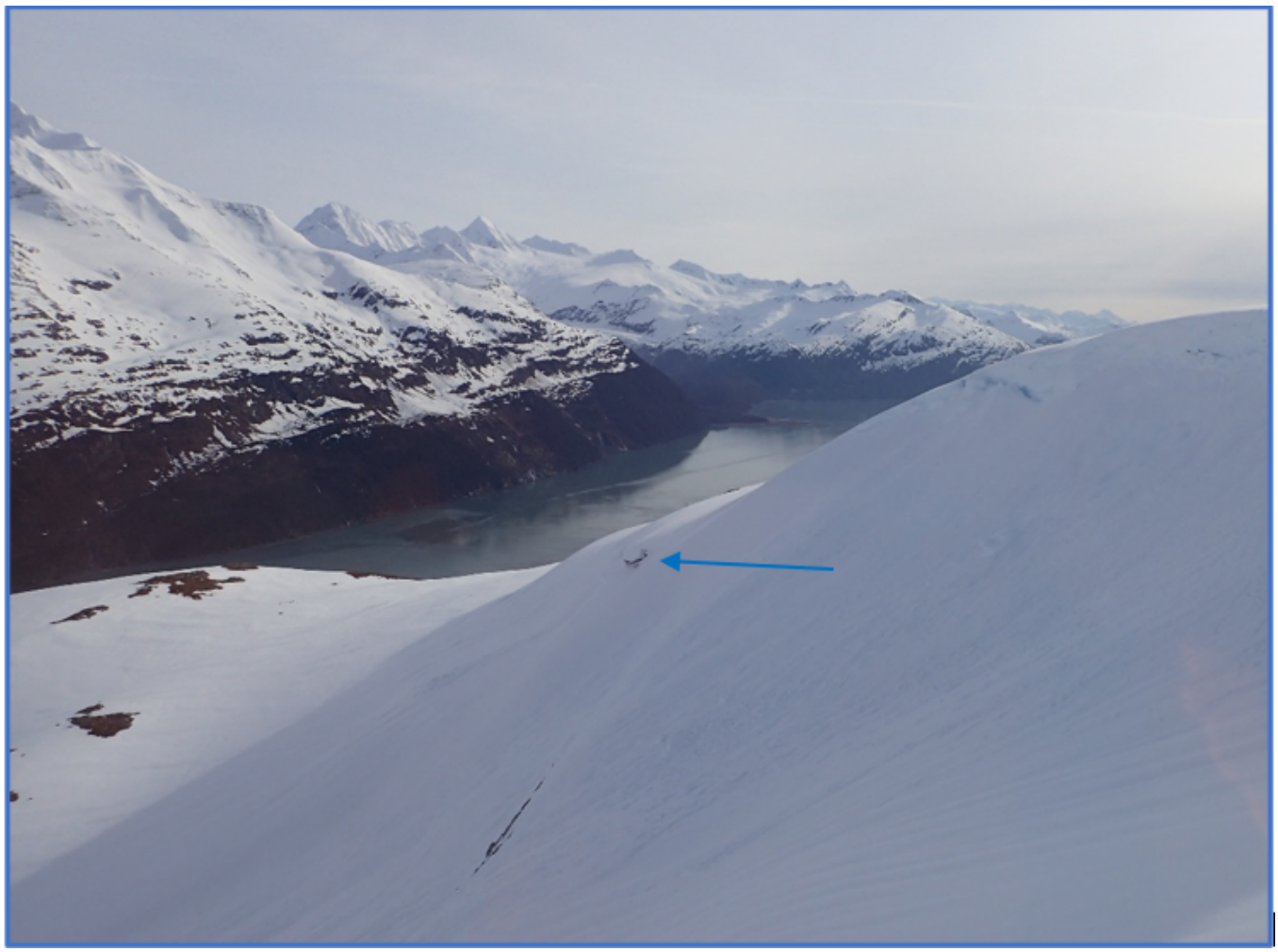

Figure 3. Airplane at the accident site.

The fuselage exhibited extensive damage to the forward section and circumferential buckling aft of the baggage compartment. The cockpit floor was deformed upward with significant inward and upward buckling at the pilot station. The front left seat outboard lap belt connector was pulled out of the left fuselage mounting structure by the rivets on the lap belt connector. The rivets were "pull type" fasteners that did not comply with the solid rivets required by the manufacturer. Photographs provided by the rescue and recovery crew revealed that the pilot's shoulder harness was not fastened to the lap belt.

Flight control cable continuity was confirmed from cockpit controls to the stabilator and rudder. The aileron cables were continuous from the control column chain to recovery separations aft of the main wing spar, except for an overload separation of the chain along the tee-bar. The manual flap handle was in the stowed position (flaps retracted). The flap cables were continuous from the handle to the torque tube.

The right wing main spar was fractured at the fuselage; the fracture surfaces exhibited a dull, grainy

appearance consistent with overload separation.

The empennage remained attached and intact. Minor buckling was evident below the vertical stabilizer fairing and significant buckling deformation inboard of stabilator on the right side. The rudder was attached and intact with trailing edge impact damage. The stabilator was attached and rotated to the left around the vertical axis about 40 °.

The wing fuel tanks were breached and no fuel was present at the time of the examination. The fuel selector valve was between the right and left tank positions and the valve was functional. No fuel was observed in the airframe fuel lines. The fuel strainer bowl and screen were free of debris.

The propeller remained attached to the engine and indicated mild aft bending and some torsional twisting. Engine control continuity was established from the engine to cuts in the cables made during the recovery process.

A detailed examination of the engine established mechanical continuity throughout the engine, valve train, and accessory section. Thumb compression was obtained on all cylinders and a borescope examination revealed no pre-accident anomalies with the cylinder barrels, pistons, cylinder heads, or valves. The magnetos produced spark at the ignition leads when the crankshaft was manually rotated.

No preaccident anomalies were noted with the airframe or engine that would have precluded normal operation.

Medical and Pathological Information

The Alaska State Medical Examiner's Office, Anchorage, Alaska, performed an autopsy of the pilot. The pilot's cause of death was blunt impacts of the head, trunk, and extremities.

The FAA's Forensic Sciences Laboratory performed toxicology testing on the pilot's tissue samples, which identified Ranitidine in the urine and Cetirizine in the blood and urine. Ranitidine is a non-sedating stomach acid-reducing medication and is not considered impairing. Cetirizine is a potentially sedating allergy medicine.

Administrative Information

Investigator In Charge (IIC):	Price, Noreen
Additional Participating Persons:	William Lowen; Federal Aviation Administration; Anchorage, AK Troy Helgeson; Lycoming Engines Jonathon Hirsch; Piper Aircraft
Original Publish Date:	December 3, 2020 **Investigation Class:** 2
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97241