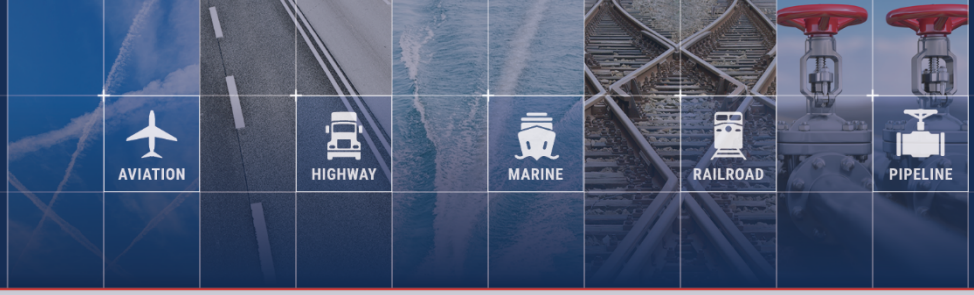

Aviation Investigation Final Report

Location:	Delta Junction, Alaska	**Accident Number:**	ANC18FA050
Date & Time:	June 24, 2018, 10:40 Local	**Registration:**	N8664Y
Aircraft:	Piper PA 18-150	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The commercial pilot was conducting a personal cross-country flight in a single-engine airplane with a passenger. After the airplane failed to arrive at the intended destination, an extensive search was launched; the airplane was located on a knoll consisting of trees and muskeg 3 days after it departed a private airstrip. The airplane sustained substantial damage to the wings and fuselage.

A review of archived weather information for the area about the estimated time of the accident revealed a ceiling between 5,000 ft and 6,000 ft above ground level with forward visibility between 6 and 10 statute miles.

Postaccident examination of the airplane and engine revealed no evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation. Thus, based on the available evidence, the investigation could not determine the exact cause of the accident.

The emergency locator transmitter was found in the "OFF" position, which prevented the beacon from activating and producing an audible signal, and may have contributed to the length of the search.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Undetermined based on the available evidence.

Findings

Not determined	(general) - Unknown/Not determined

Factual Information

History of Flight

Enroute	Unknown or undetermined (Defining event)

On June 24, 2018, about 1040 Alaska daylight time, a Piper PA-18 airplane, N8664Y, sustained substantial damage when it impacted terrain about 26 miles southwest of Delta Junction, Alaska. The commercial pilot and the passenger were fatally injured. The airplane was registered to and operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 visual flight rules flight. Visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which departed Sewell Strip, Salcha, Alaska, about 1022 and was destined for a homestead about 8 miles west of McCarthy, Alaska.

On June 25, family members contacted the Air Force Rescue Coordination Center to report the overdue airplane. An alert notice was issued at 1139, and an extensive search began, which consisted of assets from the Alaska Air National Guard, the Alaska Army National Guard, the US Marine Corps, the Civil Air Patrol, the Alaska State Troopers, and volunteers. The airplane was located on June 27 by an aircrew from the Alaska Army National Guard.

A review of archived Federal Aviation Administration (FAA) radar data showed that the airplane departed Sewell Strip about 1022, and the last radar return was about 1037. The accident site was about 9 miles south of the last radar return.

Pilot Information

Certificate:	Commercial	**Age:**	63,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Front
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 3 Without waivers/limitations	**Last FAA Medical Exam:**	May 1, 2018
Occupational Pilot:	UNK	**Last Flight Review or Equivalent:**	
Flight Time:	9600 hours (Total, all aircraft)		

The pilot, age 63, held a commercial pilot certificate with an airplane single-engine land rating. The pilot was issued an FAA third-class airman medical certificate on May 9, 2018, without any limitations. On the application for this medical certificate, the pilot reported that he had accumulated 9,600 total hours of flight experience.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8664Y
Model/Series:	PA 18-150 150	**Aircraft Category:**	Airplane
Year of Manufacture:	1970	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18-8895
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:		**Certified Max Gross Wt.:**	1750 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	LYCOMING
ELT:	C91A installed, not activated	**Engine Model/Series:**	O-320 SERIES
Registered Owner:		**Rated Power:**	150 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The two-seat, high-wing Piper PA-18 airplane was manufactured in 1970. It was powered by a Lycoming O-320 series engine. The engine was last inspected in accordance with an annual inspection on June 11, 2018. At that time, the engine had accumulated 3,452 total hours, with 1,449 hours since the last major overhaul.

The airplane was equipped with a legacy, 121.5- MHz emergency locator transmitter (ELT) but was not equipped with a digital 406-MHz ELT that transmits a distress signal to search and rescue satellites, thereby alerting rescue personnel within minutes of the location of the crash site. As of February 1, 2009, the 121.5-MHz ELTs stopped being monitored by search and rescue satellites, and installation of the digital 406-MHz ELTs is on a voluntary basis.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Unknown	**Condition of Light:**	Day
Observation Facility, Elevation:	PABI,1277 ft msl	**Distance from Accident Site:**	22 Nautical Miles
Observation Time:	17:53 Local	**Direction from Accident Site:**	68°
Lowest Cloud Condition:		**Visibility**	10 miles
Lowest Ceiling:	Broken / 6000 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	260°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.95 inches Hg	**Temperature/Dew Point:**	13°C / 9°C
Precipitation and Obscuration:	Light - None - Rain		
Departure Point:	Salcha, AK	**Type of Flight Plan Filed:**	None
Destination:	Mccarthy, AK (0AK8)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Unknown

The closest official weather reporting facility was Allen Army Airfield (PABI), about 22 miles northeast of the accident site. At 0953, a METAR reported, in part, wind 260° at 8 knots; visibility 10 statute miles; light rain; ceiling 6,000 ft broken, 10,000 ft overcast; temperature 55°F; dewpoint 48°F; and altimeter setting of 29.96 inches of mercury.

A review of archived weather information for the area for June 24 between 1000 and 1130 revealed a ceiling between 5,000 ft and 6,000 ft above ground level with forward visibility between 6 and 10 statute miles.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	63.858612,-146.493057

The National Transportation Safety Board (NTSB) investigator-in-charge (IIC), along with another NTSB investigator and two Alaska State Troopers, reached the accident site on June 28 with assistance from the Alaska Army National Guard. The airplane was located on a knoll consisting of sparsely populated spruce trees and muskeg on a heading of about 265° and an elevation of about 2,550 ft mean sea level. The initial ground scar was discernable by disturbed vegetation and small wreckage fragments, which included the right navigation light lens. The main wreckage came to rest about 100 ft from the initial ground scar.

Both wings sustained substantial damage, and the fuselage exhibited extensive crushing and impact damage.

Flight control continuity was established from the elevator and rudder control surfaces via cables to a point under the cabin floorboard where damage precluded cable movement. Aileron control continuity was established from the control surface via cables to the cuts into the fuselage. The right wing upper cable bell crank was fractured consistent with impact damage. All other cables remained attached.

The propeller separated from the engine at the propeller hub and was located about 20ft prior to the main wreckage. Both blades exhibited torsional twisting and S bending, consistent with the production of power.

The ELT was still secure in the cradle with the antenna attached. Upon removal, it was discovered that the switch was in the "OFF" position. When the switch was moved to the "ON" position, a signal was heard broadcasting on frequency 121.5 MHz. When the switch was moved back to "OFF," the broadcast stopped. The switch was then positioned to "ARM," and ELT G-force activation was tested, at which point the signal was again heard. A placard on the ELT showed the battery was manufactured in April 2017, due to expire in June 2019.

On August 6, the NTSB IIC, along with another NTSB investigator, performed a follow-up examination of the engine and fuel system. No anomalies, contamination, or evidence of malfunction was found in any of the engine accessories. The spark plugs and rocker arm covers were removed from the engine. All spark plugs exhibited normal operational signatures with no defects or anomalies noted. The crankshaft was rotated by hand using a hand tool attached to the propeller flange. Thumb compression and suction were obtained on all four cylinders. Continuity was established throughout the engine and valvetrain. When the crankshaft was rotated, the left and right magnetos produced spark at all ignition wires.

Postaccident examination of the airplane and engine revealed no evidence of preimpact mechanical failures or malfunctions that would have precluded normal operation.

Medical and Pathological Information

An autopsy of the pilot was performed by the State of Alaska Medical Examiner's Office, Anchorage, Alaska. His cause of death was multiple blunt force injuries.

Toxicology testing performed by the FAA Forensic Sciences Laboratory on specimens from the pilot was negative for drugs, ethanol, and carbon monoxide.

Administrative Information

Investigator In Charge (IIC):	Williams, David
Additional Participating Persons:	Brandon Parker; FAA; Fairbanks, AK
Original Publish Date:	November 6, 2019
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=97628