



Aviation Investigation Final Report

Location:	Billings, Montana	Accident Number:	WPR20LA128
Date & Time:	April 20, 2020, 09:50 Local	Registration:	N926K
Aircraft:	Piper PA31T	Aircraft Damage:	Destroyed
Defining Event:	Collision during takeoff/land	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

Air traffic control communications revealed that the pilot requested to take off from the departure runway so that he could perform traffic pattern work and return for a landing on the left adjacent runway. Shortly after takeoff and while departing to the west, the pilot was instructed twice to enter the left traffic pattern, with no response. Radar data showed the airplane departing the runway and remaining on runway centerline heading for the length of the flight. The airplane climbed to about 100 ft above ground level and the airplane's groundspeed increased to 81 knots soon after departure then decreased to 70 knots before dropping off radar. Witnesses reported seeing the airplane depart the airport at a low climb rate and slow airspeed. Shortly after, the airplane flew out of view and a column of smoke was seen on the horizon.

Accident site documentation identified symmetrical propeller strikes on the ground consistent with the airplane impacting the ground in a shallow, nose-up, wings level attitude. Examination of the airframe and both engines did not reveal any evidence of a preaccident mechanical failure or malfunction that would have precluded normal performance to allow for sufficient airspeed and climb rate after takeoff. Both the engines exhibited damage signatures consistent with the engines producing symmetrical power at impact.

The pilot's most recent flight in the accident airplane was 2 months before the accident. The pilot was reported to have problems with understanding the accident airplane's avionics system; however, it is unknown if he was having these problems during the accident flight. Review of the pilot's medical history revealed no significant medical concerns or conditions that could pose a hazard to flight.

Probable Cause and Findings

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

The degraded airplane performance after takeoff for reasons that could not be determined from available evidence.

Findings

Not determined	(general) - Unknown/Not determined
Aircraft	Climb rate - Not attained/maintained

Factual Information

History of Flight

Initial climb	Collision during takeoff/land (Defining event)
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On April 20, 2020, about 0950 mountain daylight time, a Piper PA-31T1 airplane, N926K, was destroyed when it was involved in an accident about 1 1/2 miles west of Billings Logan International Airport (BIL), Billings, Montana. The airline transport pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 local flight.

According to air traffic control information, the pilot requested to taxi to runway 28L for takeoff, perform pattern work at BIL, and return to land on runway 28R. After the pilot held short of runway 28L, the controller cleared the pilot for takeoff with instructions to extend the upwind leg. Shortly after takeoff and while departing to the west, the pilot was instructed twice to enter the left traffic pattern for runway 28R, with no response. A subsequent attempt was made to establish communication, with no response. Video from a security camera shows a column of smoke west of the airport about 1.5 minutes after the airplane departed.

Radar data showed the airplane departing runway 28L and remaining on runway centerline heading for the length of the flight. The airplane’s altitude climbed to about 100 ft above ground level and the airplane’s groundspeed increased to 81 knots soon after departure, and then decreased to 70 knots before dropping off radar near the accident site.

Witnesses located near the departure end of runway 28L watched the airplane through a window. The airplane was lower than normal with its gear not retracted as it neared the end of the runway. All the witnesses moved outside to watch as the airplane flew away from their location. One of the witnesses stated that the airplane had a “slow descent trajectory and a slight-nose up attitude.” The airplane passed over a hill and out of view. None of the witness reportedly saw the accident sequence but saw the column of smoke rising from the accident site. Another witness who was sitting in his vehicle near the accident site saw the airplane pass about 250 ft in front of his position. He reported the airplane’s wings were level, and the landing gear was up when it struck the ground. He lost sight of the airplane as it flew into a nearby coulee.

Pilot Information

Certificate:	Airline transport; Commercial	Age:	64, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	May 22, 2019
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	12955 hours (Total, all aircraft)		

The 64-year-old pilot held an airline transport pilot certificate with rating for multiengine land, single engine land and single engine sea. His most recent first-class Federal Aviation Administration (FAA) airman medical certificate was issued on dated May 22, 2019. At that time, he had reported 12,955 total hours of flight experience and 65 hours in last 6 months. The pilot's logbooks were not located during the investigation.

The pilot completed a flight review in the accident airplane in December 2019. According to the flight instructor who conducted the flight review, the pilot seemed "unnerved" by the airplane's avionics. The flight instructor reported that the pilot was a good pilot but did have to spend some extra time with him with the avionics. Additional training specific to the accident airplane was completed on January 25, 2020.

The pilot had flown the airplane eight times in the last three weeks before it was put into scheduled maintenance. The pilot's last flight before maintenance was on February 13, 2020. While the airplane was down for maintenance, the pilot performed 4 hours of aircraft familiarization in the accident airplane with one of the fixed based operator's (FBO) employees. This training included weight and balance review, sample loading, and flight log and aircraft time verification in the avionics system. Additional to the training, the pilot had an hour of avionics run-up checks by himself. The airplane had been returned to service on February 29, 2020.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N926K
Model/Series:	PA31T 1	Aircraft Category:	Airplane
Year of Manufacture:	1980	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	31T8004046
Landing Gear Type:	Retractable - Tricycle	Seats:	
Date/Type of Last Inspection:	November 25, 2019	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	Turbo prop
Airframe Total Time:	4696 Hrs as of last inspection	Engine Manufacturer:	Pratt & Whitney
ELT:		Engine Model/Series:	PT6A-11
Registered Owner:		Rated Power:	550 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

The airplane was manufactured in 1980. The airplane was a multiengine, all-metal, low-wing, with a retractable tricycle landing gear configuration. It was equipped with two 550-shaft-horsepower Pratt and Whitney turbine engines.

The last inspection was completed on November 25, 2019, at an airplane total time of 4,696 hours of operation.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KBIL, 3570 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	15:53 Local	Direction from Accident Site:	107°
Lowest Cloud Condition:	Few / 6000 ft AGL	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	14 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	290°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.97 inches Hg	Temperature/Dew Point:	14°C / -2°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Billings, MT (BIL)	Type of Flight Plan Filed:	None
Destination:	Billings, MT (BIL)	Type of Clearance:	None
Departure Time:		Type of Airspace:	Class D

Airport Information

Airport:	BILLINGS LOGAN INTL BIL	Runway Surface Type:	Asphalt
Airport Elevation:	3662 ft msl	Runway Surface Condition:	Unknown
Runway Used:	28L	IFR Approach:	None
Runway Length/Width:	3800 ft / 75 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:		Aircraft Explosion:	On-ground
Total Injuries:	1 Fatal	Latitude, Longitude:	45.816944,-108.589164(est)

Ground scars found near the top of a coulee consisted of the airplane's fuselage impact mark and symmetrical propeller strikes consistent with the airplane impacting the ground in a shallow, nose-up, wings-level attitude. The airplane continued about 410 ft over the coulee and about 75 ft down the side before impacting the terrain where a postimpact fire ensued. All major structural components of the airplane were located within the debris field.

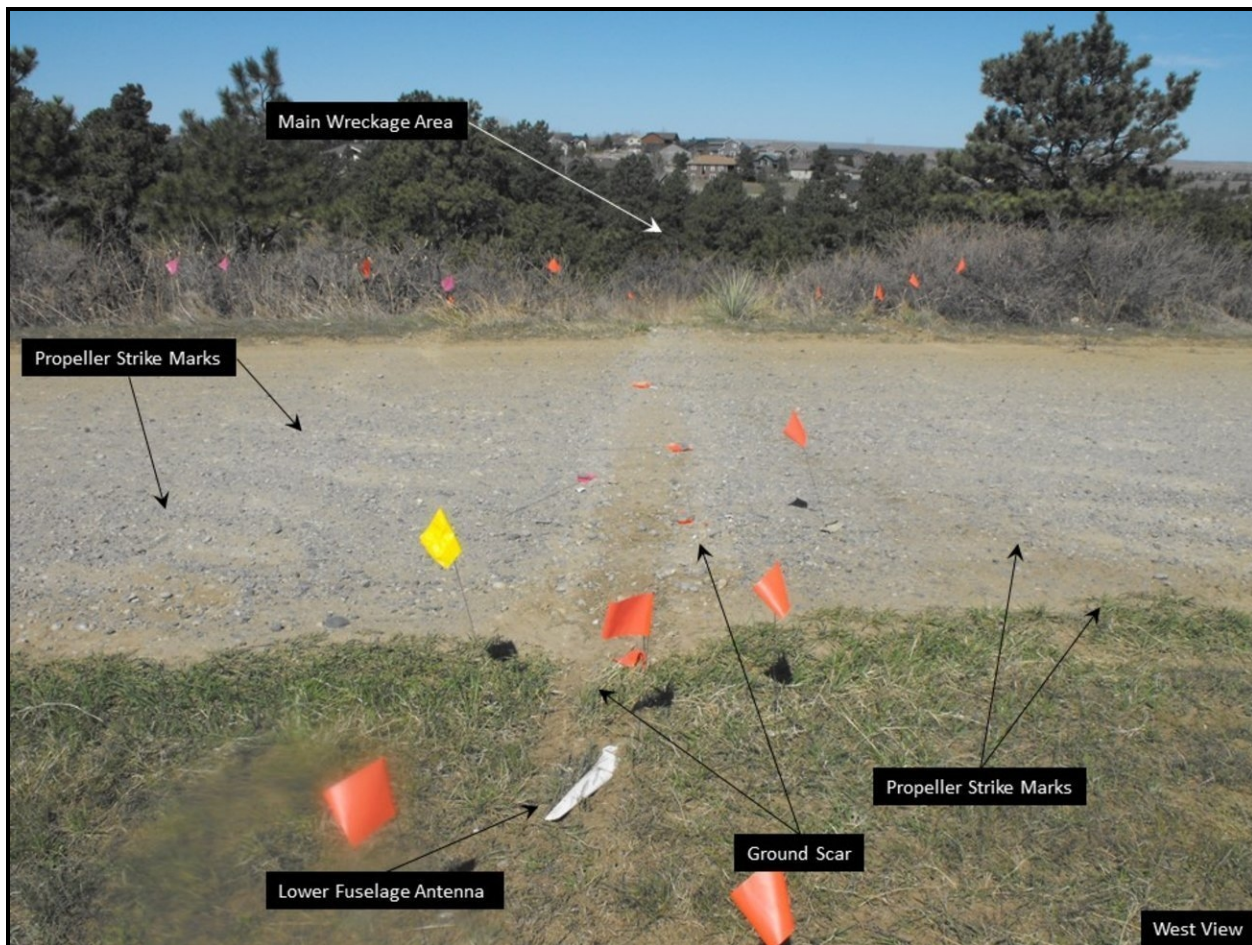


Figure 1-Accident site, initial ground impact marks.

The FAA and a representative from Piper Aircraft Company responded to the accident site, and onsite photographic documentation was accomplished. An airframe examination was performed at the accident site and the wreckage was recovered to a secured facility.

Tests and Research

The engines were shipped to the manufacturer where examinations were conducted on both engines with the FAA conducting the federal oversight. According to the manufacturer, the examination did not reveal any evidence of any pre-impact mechanical anomalies that would have precluded normal operation. The rotational scoring on the compressor and power turbines of both engines are consistent with the engines producing symmetrical power at the time of the impact.

Administrative Information

Investigator In Charge (IIC):	Swick, Andrew		
Additional Participating Persons:	John Cosenza; FAA-FSDO; Helena, MT Jonathon Hirsch; Piper Aircraft; Wichita, KS Les Doud; Hartzell Propeller; Piqua, OH		
Original Publish Date:	December 8, 2022	Investigation Class:	3
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=101183		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).