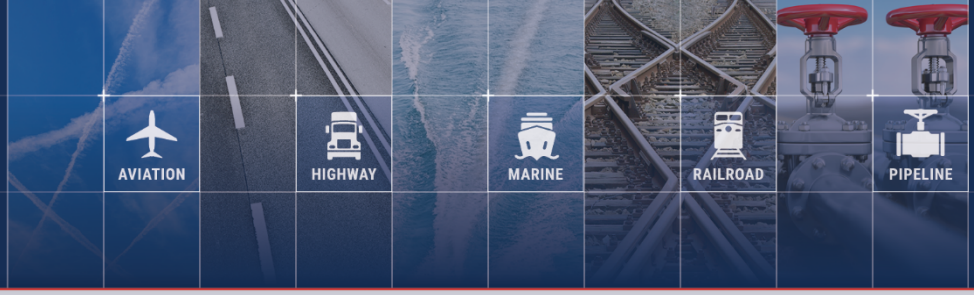


# Aviation Investigation Final Report

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| **Location:** | Lake, Mississippi | **Accident Number:** | CEN19FA120 |
| **Date & Time:** | April 13, 2019, 00:15 Local | **Registration:** | N4890L |
| **Aircraft:** | Piper PA28 | **Aircraft Damage:** | Destroyed |
| **Defining Event:** | Loss of control in flight | **Injuries:** | 1 Fatal |
| **Flight Conducted Under:** | Part 91: General aviation - Personal | | |

## Analysis

The noninstrument-rated pilot was operating the airplane on a cross-country flight in dark night instrument meteorological conditions. There was no record of the pilot obtaining a weather briefing, filing a flight plan, or making any radio transmissions. Primary radar data and weather data showed the airplane entering an area of thunderstorms and convective activity. The radar track ended when the airplane was about 8,400 ft mean sea level. A resident near the accident area heard the sound of an airplane and a loud “bang” and noted strong wind, rain, and thunderstorms at the time.

Examination of the main wreckage revealed that the airplane impacted the ground in a high-speed, near-vertical condition, and the accident site encompassed a linear area about 1,500 ft long. The main wreckage was destroyed by impact forces, and the engine and propeller assembly were buried in a 4-ft-deep crater. The left aileron, outboard sections of the left and right wings, and the left and right horizontal stabilizers were located about 1,500, 1,000, and 900 ft from the main wreckage, respectively. Fractured areas of the left and right wings and the horizontal stabilizers were consistent with overload separation before ground impact. The debris path and separated sections of the wings and empennage were consistent with an in-flight breakup. Examinations of the engine and airframe did not reveal evidence of any pre-existing anomalies that would have precluded normal operation. Flight control continuity was established, and the propeller blades showed evidence of rotation at impact.

The pilot did not have an instrument rating, and his instrument proficiency could not be verified. Based on toxicological and operational evidence, it is likely that impairing effects from the pilot’s use of methamphetamine contributed to the accident. Whether effects from his use of buprenorphine also contributed to the accident cannot be determined.

## Probable Cause and Findings

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

The noninstrument-rated pilot's loss of control while flying in dark night instrument meteorological weather conditions with convective activity, which resulted in the airplane exceeding its structural limitations and experiencing an in-flight breakup. Contributing to the accident was the pilot's lack of preflight planning and impairment from drugs.

## Findings

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| **Personnel issues** | Aircraft control - Pilot |
| **Personnel issues** | Total instrument experience - Pilot |
| **Personnel issues** | Weather planning - Pilot |
| **Personnel issues** | Illicit drug - Pilot |
| **Aircraft** | (general) - Capability exceeded |
| **Environmental issues** | (general) - Decision related to condition |
| **Environmental issues** | Dark - Decision related to condition |

# Factual Information

## History of Flight

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| **Enroute-cruise** | Loss of control in flight (Defining event) |

On April 13, 2019, about 0015 central daylight time, a Piper PA28-180 airplane, N4890L, was destroyed when it was involved in an accident near Lake, Mississippi. The pilot sustained fatal injuries. The airplane was being operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The dark night cross-country flight originated from Picayune Municipal Airport (MJD), Picayune, Mississippi, about 2306 on April 12, 2019, and was destined for Ackerman Choctaw County Airport (9M4), Ackerman, Mississippi. Primary radar data showed that about 0009 on April 13, the airplane's flight track was heading northeast about 7,700 ft mean sea level (msl). About 0013, the airplane's altitude had increased to 8,400 ft msl. About 50 seconds later, the last recorded radar point showed the airplane at 8,400 ft msl. There was no discreet transponder code associated with the airplane; radar information was derived from code 1200 primary targets. There were no radio communications or distress calls heard from the pilot on any air traffic control frequencies.

About 0015, a resident near the accident location called 911 after he was awakened by the sound of an airplane and a loud "bang." The resident stated that strong wind, rain, and thunderstorms were in the area and that when he opened the door of his house, the wind "blew it open." Search operations ensued, and the fragmented main wreckage was located early in the morning in a field, with various airplane parts scattered in an adjacent heavily wooded area.

## Pilot Information

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| **Certificate:** | Private | **Age:** | 33,Male |
| **Airplane Rating(s):** | Single-engine land | **Seat Occupied:** | Left |
| **Other Aircraft Rating(s):** | None | **Restraint Used:** | 3-point |
| **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 10, 2018 |
| **Occupational Pilot:** | No | **Last Flight Review or Equivalent:** | August 30, 2018 |
| **Flight Time:** | 200 hours (Total, all aircraft), 100 hours (Total, this make and model), 30 hours (Last 90 days, all aircraft), 10 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft) | | |

The pilot's logbooks were not recovered. A friend of the pilot estimated that the pilot had a total of 200 hours of flight experience, with about 100 hours in the accident airplane. His instrument flight experience could not be estimated.

## Aircraft and Owner/Operator Information

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| **Aircraft Make:** | Piper | **Registration:** | N4890L |
| **Model/Series:** | PA28 180 | **Aircraft Category:** | Airplane |
| **Year of Manufacture:** | 1967 | **Amateur Built:** | |
| **Airworthiness Certificate:** | Normal | **Serial Number:** | 28-4256 |
| **Landing Gear Type:** | Tricycle | **Seats:** | 4 |
| **Date/Type of Last Inspection:** | May 22, 2018 Annual | **Certified Max Gross Wt.:** | 2400 lbs |
| **Time Since Last Inspection:** | | **Engines:** | 1 Reciprocating |
| **Airframe Total Time:** | 2508 Hrs as of last inspection | **Engine Manufacturer:** | Lycoming |
| **ELT:** | Installed, not activated | **Engine Model/Series:** | O-360-AVA |
| **Registered Owner:** | | **Rated Power:** | 200 Horsepower |
| **Operator:** | On file | **Operating Certificate(s) Held:** | None |

## Meteorological Information and Flight Plan

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| **Conditions at Accident Site:** | Instrument (IMC) | **Condition of Light:** | Night |
| **Observation Facility, Elevation:** | MEI,298 ft msl | **Distance from Accident Site:** | 31 Nautical Miles |
| **Observation Time:** | 00:42 Local | **Direction from Accident Site:** | 90° |
| **Lowest Cloud Condition:** | Unknown | **Visibility** | 10 miles |
| **Lowest Ceiling:** | Overcast / 2900 ft AGL | **Visibility (RVR):** | |
| **Wind Speed/Gusts:** | 4 knots / | **Turbulence Type Forecast/Actual:** | Convective / Convective |
| **Wind Direction:** | 360° | **Turbulence Severity Forecast/Actual:** | Moderate / Moderate |
| **Altimeter Setting:** | 29.99 inches Hg | **Temperature/Dew Point:** | 18°C / 16°C |
| **Precipitation and Obscuration:** | | | |
| **Departure Point:** | Picayune, MS (MJD ) | **Type of Flight Plan Filed:** | None |
| **Destination:** | Ackerman, MS (9M4 ) | **Type of Clearance:** | None |
| **Departure Time:** | 11:06 Local | **Type of Airspace:** | Class E |

Dark night instrument meteorological conditions prevailed in the accident area with thunderstorms, lightning, and rain. Weather radar showed that the airplane was flying through an area of significant convective activity. A search of the Federal Aviation Administration (FAA) Automated Flight Service Station contract provider Leidos data indicated no contact from the pilot obtaining a weather briefing, filing a flight plan, or requesting flight assistance. A separate check of third-party vendor data also indicated no contact with the pilot for any weather briefing data. It is therefore unknown what information the pilot used for any preflight planning or familiarization before departure.

## Wreckage and Impact Information

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| **Crew Injuries:** | 1 Fatal | **Aircraft Damage:** | Destroyed |
| **Passenger Injuries:** | | **Aircraft Fire:** | None |
| **Ground Injuries:** | N/A | **Aircraft Explosion:** | None |
| **Total Injuries:** | 1 Fatal | **Latitude, Longitude:** | 32.340154,-89.364466 |

Examination of the main wreckage revealed evidence consistent with the airplane impacting the ground in a high-speed, near-vertical condition. The airplane's engine and propeller were buried about 3 ft into the ground. There was no postimpact fire. The inboard sections of the left and right

wings were attached to the fuselage at their respective roots and exhibited aft and upward deformations. Outboard sections of the left and right wings, and portions of the empennage, were not found with the main wreckage. A search of the wooded area adjacent to the main wreckage was conducted. The farthest part from the main wreckage (the left aileron) was located about 1,500 ft from the main wreckage, outboard sections of the left and right wings were located about 1,000 ft from the main wreckage, and the left and right horizontal stabilizers were located about 900 ft from the main wreckage. The debris path and separated sections of the wings and empennage were consistent with an in-flight breakup. See figure.

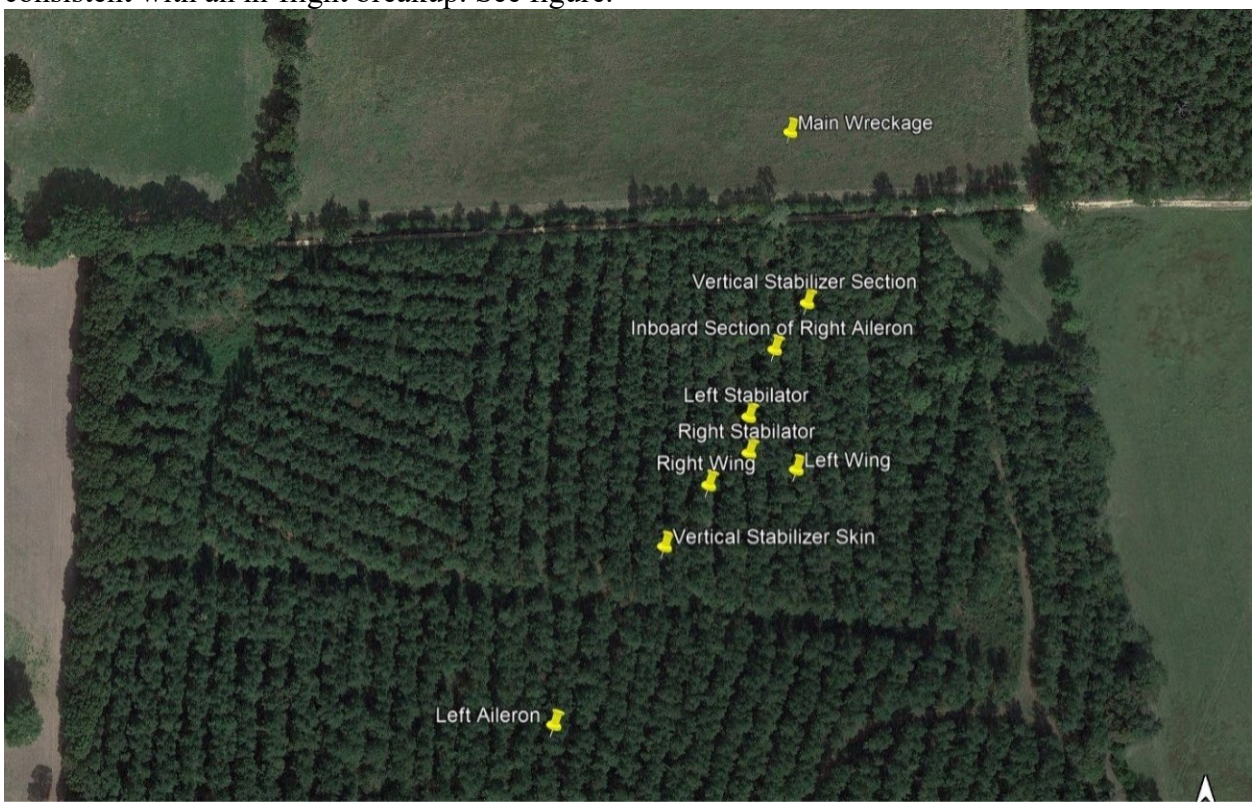

Figure. Wreckage distribution.

All airframe parts were located within the main wreckage and surrounding woods and then examined at a secure hangar. Flight control continuity was confirmed to all flight control surfaces except where recovery and overload separations existed. Fractured areas of the left and right wings and the horizontal stabilizers were consistent with overload separation before ground impact. Examination of the engine did not reveal evidence of any preimpact anomalies that would have precluded normal operation. Both propeller blades were bent, twisted, and polished, consistent with rotation at the time of impact.

## Medical and Pathological Information

The Mississippi State Medical Examiner's Office, Pearl, Mississippi, performed the pilot's autopsy. According to the autopsy report, the cause of death was "massive blunt force trauma."

Toxicological testing by the FAA Forensic Sciences Laboratory identified substances at the following concentrations in nanograms per milliliter (ng/mL) or nanograms per gram (ng/g): methamphetamine at 827 in cavity blood, 1175 in liver, 3230 in lung, 686 in kidney, 735 in spleen, 190 in muscle, 593 in heart, and 760 in gastric fluid; amphetamine at 103 in cavity blood, 215 in liver, 431 in lung, 81 in kidney, 103 in spleen, 18 in muscle, 62 in heart, and 79 in gastric fluid; buprenorphine at 1046 in cavity blood, 117 in liver, 37 in lung, 275 in kidney, 62 in spleen, 3 in muscle, 19 in heart, and 209 in gastric fluid; norbuprenorphine at 318 in cavity blood, 190 in liver, 233 in lung, 115 in kidney, 77 in spleen, 31 in heart, 49 in gastric fluid, and an unquantified amount in muscle; and naloxone at 79 in cavity blood, 16 in liver, 2 in lung, 21 in kidney, 4 in spleen, and 9 in gastric fluid.

Methamphetamine is a central nervous system stimulant drug. Amphetamine is a metabolite of methamphetamine and is also a central nervous system stimulant. Methamphetamine and amphetamine are Drug Enforcement Agency Schedule II controlled substances, with a high potential for abuse and dependence. The drugs typically carry warnings that they may impair the ability to engage in potentially hazardous activities, such as driving a motor vehicle. Such impairment can result from drug or withdrawal effects. Both methamphetamine and amphetamine are considered "do not issue/do not fly" medications by the FAA.

Buprenorphine is a prescription medication commonly used to treat opioid dependence. Buprenorphine can itself be addicting and may be abused; it is a Drug Enforcement Agency Schedule III controlled substance. It can also be sedating and typically carries a warning that it may impair the mental or physical abilities required for the performance of potentially dangerous tasks such as driving or operating machinery. Norbuprenorphine is an active metabolite of buprenorphine. Buprenorphine is often taken under the tongue in the form of a tablet or strip that contains naloxone, an opioid-blocking drug, in a 1:4 ratio with buprenorphine. Regardless of whether it is combined with naloxone, buprenorphine is considered a "do not issue/do not fly" medication by the FAA. Naloxone itself is not generally considered impairing.

## Administrative Information

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| **Investigator In Charge (IIC):** | Lemishko, Alexander |
| **Additional Participating Persons:** | Patrick Penson; FAA FSDO; Jackson, MS<br>Damian Galbraith; Piper Aircraft; Vero Beach, FL |
| **Original Publish Date:** | July 15, 2021 **Investigation Class:** 3 |
| **Note:** | The NTSB traveled to the scene of this accident. |
| **Investigation Docket:** | https://data.ntsb.gov/Docket?ProjectID=99254 |