



# Aviation Investigation Final Report

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<b>Location:</b>	Springfield, Kentucky	<b>Accident Number:</b>	WPR23LA236
<b>Date &amp; Time:</b>	March 24, 2023, 13:32 Local	<b>Registration:</b>	N146MS
<b>Aircraft:</b>	Piper PA-46-310P	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control in flight	<b>Injuries:</b>	4 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Business		

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## Analysis

The pilot reported that light rain and trace clear air icing were forecast along his intended route of flight, and he encountered those conditions during climb out. As the airplane was climbing through 14,000 ft mean sea level (msl) in instrument meteorological conditions, he noticed the airspeed had decreased 10-15 knots. He checked the wings for ice and did not notice any accumulation but activated the pitot heat at that time as a precaution. After the pitot heat was activated the Primary Flight Display (PFD) and Multi-Function Display (MFD) displayed a red X and went black. Subsequently, the autopilot commanded the airplane to descend. The pilot reported that he was unable to read his standby instruments due to the violent shaking of the airplane during the descent. As the airplane emerged into VMC conditions, the airplane was in an unusual attitude. He disconnected the autopilot and was able to recover the airplane to a level attitude. At this time, the PFD and MFD operation returned. An air traffic controller reported to the pilot that he had lost about 5,000 ft in altitude and airspeed had increased over 200 kts. The pilot responded that his avionics were working again, and that the aircraft was operating normally. He continued with the flight and landed without further incident. Substantial damage was discovered to both wings following the flight.

The airplane's "Before Takeoff checklist" calls for the pitot heat to be activated for flight into icing conditions when visible moisture below +5° C, is anticipated or encountered. A Federal Aviation Administration inspector examined the airplane after the event and verified the pitot heat was operational. The circumstances of the accident are consistent with the pilot failing to activate the pitot heat in a timely manner, which allowed ice to accumulate on the pitot static system. The PFD, MFD, and autopilot subsequently malfunctioned and the pilot lost control of the airplane.

## Probable Cause and Findings

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

The pilot's failure to activate the pitot heat in a timely manner during flight into icing conditions, which resulted in a temporary failure of the flight instruments and a subsequent loss of control.

### Findings

<b>Personnel issues</b>	Use of equip/system - Pilot
<b>Aircraft</b>	Pitot/static anti-ice - Incorrect use/operation

## Factual Information

### History of Flight

<b>Enroute-cruise</b>	Loss of control in flight (Defining event)
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### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	65, Male
<b>Airplane Rating(s):</b>	Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	May 23, 2023
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	May 23, 2023
<b>Flight Time:</b>	(Estimated) 8700 hours (Total, all aircraft), 112 hours (Total, this make and model), 4000 hours (Pilot In Command, all aircraft), 114 hours (Last 90 days, all aircraft), 49 hours (Last 30 days, all aircraft), 3.7 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N146MS
<b>Model/Series:</b>	PA-46-310P	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1984	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	46-8408032
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	Annual	<b>Certified Max Gross Wt.:</b>	4300 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TIO-520
<b>Registered Owner:</b>	MAGNOLIA PARTNERS AVIATION LLC	<b>Rated Power:</b>	310 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KLEX,962 ft msl	<b>Distance from Accident Site:</b>	28 Nautical Miles
<b>Observation Time:</b>	12:54 Local	<b>Direction from Accident Site:</b>	42°
<b>Lowest Cloud Condition:</b>	Few / 8000 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	20°	<b>Turbulence Severity Forecast/Actual:</b>	Light /
<b>Altimeter Setting:</b>	30.1 inches Hg	<b>Temperature/Dew Point:</b>	27°C / 11°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Mount Sterling, KY (IOB)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Arkadelphia, AR (ADP)	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	13:00 Local	<b>Type of Airspace:</b>	Class E

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	3 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	4 None	<b>Latitude, Longitude:</b>	37.68,-85.01(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Nixon, Albert
<b>Additional Participating Persons:</b>	Danny Brickey; FAA; Little Rock, AR
<b>Original Publish Date:</b>	December 21, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=192427">https://data.ntsb.gov/Docket?ProjectID=192427</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).