



# Aviation Investigation Final Report

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<b>Location:</b>	Sebastian, Florida	<b>Accident Number:</b>	ERA23FA185
<b>Date &amp; Time:</b>	April 7, 2023, 14:43 Local	<b>Registration:</b>	N44588
<b>Aircraft:</b>	Piper PA-32-260	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Aerodynamic stall/spin	<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

At the end of the local flight, the pilot completed a straight-in approach to his home airport for landing. Witnesses reported that the airplane appeared slower than normal during the landing approach and that the wings were wobbling. The airplane touched down on its nose landing gear and bounced back into the air as the pilot simultaneously increased engine power. The left wing dropped and the airplane descended off the side of the runway, impacted terrain, and cartwheeled before coming to rest.

Examination of the airframe and engine revealed no preimpact mechanical malfunctions that would have prevented normal operation. The witness statements, debris path, and impact signatures were consistent with an aerodynamic stall. The circumstances of the accident are consistent with the pilot's exceedance of the airplane's critical angle of attack during while attempting to recover from the bounced landing, which resulted in an aerodynamic stall, loss of control, and impact with terrain.

## Probable Cause and Findings

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

The pilot's failure to maintain airplane control during recovery from a bounced landing, which resulted in the exceedance of the airplane's critical angle of attack and an aerodynamic stall.

## Findings

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**Personnel issues**

Aircraft control - Pilot

**Aircraft**

Pitch control - Incorrect use/operation

## Factual Information

### History of Flight

<b>Landing-flare/touchdown</b>	Abnormal runway contact
<b>Landing-aborted after touchdown</b>	Attempted remediation/recovery
<b>Initial climb</b>	Aerodynamic stall/spin (Defining event)

On April 7, 2023, at 1443 eastern daylight time, a Piper PA-32-260, N44588, was substantially damaged when it was involved in an accident near Sebastian, Florida. The private pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

Automatic dependent surveillance - broadcast (ADS-B) data provided by the Federal Aviation Administration (FAA) revealed that the flight departed X26 about 1330 to the east and flew over the coast of Florida for about 1 hour. During the flight, the pilot flew north and south along the coastline about 4,000 ft mean sea level (msl) then performed several turns, climbs, and descents before returning inland, where he conducted several other maneuvers before returning to the airport. He entered a 5-nautical mile straight-in approach to runway 10, a 3,199-ft-long paved runway.

Several witnesses located in the skydive drop zone about 600 ft from the approach end of runway 10 stated that the airplane was on final approach, appeared slower than normal, and the wings were wobbling as it approached. As the airplane descended to the runway, it touched down hard before bouncing back into the air and displayed a nose-up attitude; there was a simultaneous rapid increase in engine power. The left wing then dropped, and the airplane rolled to the left and descended. The left wing contacted the ground off the side of the runway and cartwheeled about 75 ft before the airplane came to rest.

The pilot held an FAA first-class medical certificate issued on March 8, 2023. Review of his logbook revealed about 606 hours total flight experience and 105 hours in the accident airplane. His most recent flight review was completed on February 12, 2020. The pilot averaged about 4 flights a month at 1.2 hours per flight average in the 12 months before the accident.

The airplane came to rest inverted on the left (pilot's) side of the fuselage on level terrain north of the runway at an elevation of 22 ft msl. The wreckage path was oriented on a heading of 345° magnetic and ground scars at the initial impact point contained red position light glass and portions of the auxiliary fuel tank. During the impact sequence, the left wing sheared off and the propeller struck the ground, creating 6-inch-deep symmetrical gouges in the soil. The left wing was located next to the engine compartment; its fuel tank contained about 15 gallons of aviation fuel. The right wing fractured at the wing root and was laying over the underside of

the airplane supported by cables and fuel lines; it contained about 15 gallons of aviation fuel. The fuel selector, which was found in the right main tank position, was manipulated by hand and operated and showed no evidence of anomaly.

Flight control continuity was established from all primary flight control surfaces to the main cabin area; the left aileron cables were separated and displayed evidence of overload failure. The stabilator trim jackscrew measured 1 inch, consistent with a neutral to nose-up trim position. The flap handle and corresponding flap actuators were in the fully extended position.

The pilot's seatbelts and shoulder harness were cleanly cut, indicating that the pilot was wearing the harnesses; this was corroborated by fire rescue personnel. The belt buckle operated as designed.

The forward fuselage was buckled and crumpled in several areas but remained mostly intact from the right side of the cockpit and aft to the empennage. The most severe damage was to the left side of the forward cockpit. The engine compartment was compromised by impact forces, displacing the engine and propeller slightly. Examination of the cockpit revealed that all engine and propeller controls were in the full forward position.

There was no evidence of a post-impact fire. The carburetor was impact-separated, but remained with the engine via the control cables. The fuel line from the engine-driven fuel pump to the carburetor was intact and undamaged. The line was removed, and no fuel was present. The electric fuel pump was turned on and operated. The engine drive fuel pump was fractured at the mounting flange and remained with the engine via the connecting fuel lines. Both left and right magnetos were removed and manually operated; both magnetos produced robust spark at each of the posts. The spark plugs displayed normal coloration and normal electrodes as compared to the Champion Aerospace AV-27 Check-A-Plug chart.

The oil filter contained no foreign debris or ferrous material. The oil appeared dark brown in color and all lubricated components appeared to be well lubricated.

The engine crankcase was manually rotated 720° degrees. Powertrain continuity was confirmed and all pistons, and the valve springs and pushrods operated as designed. There was adequate compression on each of the six cylinders. Continuity of the crankshaft to the camshaft was confirmed throughout the engine.

The propeller hub remained attached to the flange and both blades were damaged. Both "A" and "B" propeller blades showed evidence of abrasive polishing on the outer 12 inches of blade tip. The A blade contained a compound bend and twist and bending in the opposite direction of rotation. There was also a buckling wave bend on the trailing edge.

No airframe or engine anomalies were discovered that would have precluded normal operation.

An autopsy of the pilot was performed by the Medical Examiner Department, District 19, St. Lucie, Martin, Indian River and Okeechobee Counties, Florida. The pilot's cause of death was multiple blunt force injuries and manner of death was an accident.

Toxicology testing performed by the FAA's Forensic Sciences Laboratory did not detect any substance that would be considered impairing. Additional testing was conducted postmortem by Steward Reference Laboratory of Melbourne, Florida, and was negative for alcohol and illicit substances.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	87, Male
<b>Airplane Rating(s):</b>	Single-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>	None	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	March 8, 2023
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	(Estimated) 606 hours (Total, all aircraft), 1 hours (Last 24 hours, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N44588
<b>Model/Series:</b>	PA-32-260	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1974	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	32-7400050
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	6
<b>Date/Type of Last Inspection:</b>	May 16, 2022 Annual	<b>Certified Max Gross Wt.:</b>	3400 lbs
<b>Time Since Last Inspection:</b>	60.48 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	4309 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	C91A installed, activated, did not aid in locating accident	<b>Engine Model/Series:</b>	O-540-L4B5
<b>Registered Owner:</b>	N44588 LLC	<b>Rated Power:</b>	260 Horsepower
<b>Operator:</b>	N44588 LLC	<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>	VRB,19 ft msl	<b>Distance from Accident Site:</b>	10 Nautical Miles
<b>Observation Time:</b>	14:53 Local	<b>Direction from Accident Site:</b>	155°
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	10 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	120°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.13 inches Hg	<b>Temperature/Dew Point:</b>	29°C / 19°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Sebastian, FL	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Sebastian, FL	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	SEBASTIAN MUNI X26	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	21 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	10	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	3199 ft / 75 ft	<b>VFR Approach/Landing:</b>	Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	27.81325,-80.495583

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Mccarter, Lawrence
<b>Additional Participating Persons:</b>	Ryan M Sebek; FAA FSDO; Orlando, FL Ryan Enders; Lycoming; Williamsport, PA Robert Martellotti; Piper; Vero beach, FL
<b>Original Publish Date:</b>	June 5, 2024
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=107025">https://data.nts.gov/Docket?ProjectID=107025</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](#).