



# Aviation Investigation Final Report

<b>Location:</b>	Tulsa, Oklahoma	<b>Accident Number:</b>	CEN19TA327
<b>Date &amp; Time:</b>	September 2, 2019, 10:20 Local	<b>Registration:</b>	N1R
<b>Aircraft:</b>	Piper PA60	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Aerodynamic stall/spin	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The private pilot reported that he flew a normal approach; however, he initiated the landing flare too high. The airplane subsequently stalled and dropped about 10 ft, which caused the nose landing gear to collapse and damaged the forward pressure bulkhead. The pilot stated that he had verified that the landing gear were down and locked before landing, and reported that the accident was "not caused by any apparent mechanical failures."

## Probable Cause and Findings

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

The pilot's improper landing flare, which resulted in an aerodynamic stall and hard landing.

## Findings

<b>Aircraft</b>	Landing flare - Not attained/maintained
<b>Aircraft</b>	Angle of attack - Not attained/maintained
<b>Personnel issues</b>	Aircraft control - Pilot

## Factual Information

### History of Flight

<b>Landing-flare/touchdown</b>	Aerodynamic stall/spin (Defining event)
<b>Landing-flare/touchdown</b>	Hard landing
<b>Landing</b>	Landing gear collapse

On September 2, 2019, about 1020 central daylight time, a Piper PA-60 Aerostar airplane, N1R, sustained substantial damage during a hard landing on runway 36L at Tulsa International Airport (TUL), Tulsa, Oklahoma. The pilot and passenger were not injured. The nose landing gear collapsed which resulted in damage to the forward pressure bulkhead. The airplane was registered to CBU Aviation LLC and operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed at the airport, and the flight was operated on an instrument flight rules flight plan. The flight originated from Rogers Executive Airport (ROG), Rogers, Arkansas, about 0945 and was destined for TUL.

The pilot reported flying a normal approach to runway 36L; however, he initiated the landing flare too high. The airplane subsequently stalled and dropped about 10 ft which caused the nose landing gear to collapse. The airplane came to rest on an adjacent taxiway. He had verified that the landing gear was down and locked (three green indicator panel lights) before landing. He stated the accident was "not caused by any apparent mechanical failures."

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	81, Male
<b>Airplane Rating(s):</b>	Single-engine land; 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>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	June 1, 2019
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	November 6, 2017
<b>Flight Time:</b>	2300 hours (Total, all aircraft), 500 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N1R
<b>Model/Series:</b>	PA60 602P	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1982	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	60-8265043
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	5
<b>Date/Type of Last Inspection:</b>	May 1, 2019 Annual	<b>Certified Max Gross Wt.:</b>	6800 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Reciprocating
<b>Airframe Total Time:</b>	3571.2 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	TIO-540-U2A
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	350 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>	TUL,678 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	09:53 Local	<b>Direction from Accident Site:</b>	180°
<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>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	200°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.09 inches Hg	<b>Temperature/Dew Point:</b>	27°C / 24°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Rogers, AR (ROG )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Tulsa, OK (TUL )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	09:30 Local	<b>Type of Airspace:</b>	Class E

## Airport Information

<b>Airport:</b>	Tulsa International TUL	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	678 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	36L	<b>IFR Approach:</b>	RNAV
<b>Runway Length/Width:</b>	6101 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop;Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	36.198333,-95.888053(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sorensen, Timothy
<b>Additional Participating Persons:</b>	Rena Allmond; FAA Flight Standards; Oklahoma City, OK
<b>Original Publish Date:</b>	January 28, 2021
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</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=100308">https://data.ntsb.gov/Docket?ProjectID=100308</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](#).