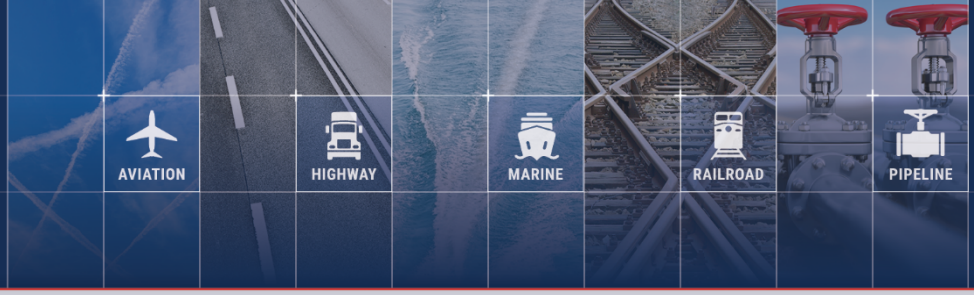

Aviation Investigation Factual Report

Location:	Louisville, Kentucky	**Accident Number:**	ERA20LA053
Date & Time:	December 10, 2019, 13:03 Local	**Registration:**	N9097W
Aircraft:	Piper PA28	**Aircraft Damage:**	Substantial
Defining Event:	Hard landing	**Injuries:**	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

On December 10, 2019, about 1303 eastern standard time, a Piper PA-28-235, N9097W, was substantially damaged when it was involved in an accident near Louisville, Kentucky. The pilot was not injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot stated that he was on the return leg of a round-trip flight when he contacted the Bowman Field Airport (LOU) air traffic control tower and reported a 3-mile left base position for runway 24. He was cleared for a visual approach to runway 24 and began descending to traffic pattern altitude while he performed before landing procedures and reduced speed. He turned onto the final leg of the airport traffic pattern for runway 24 and descended using the visual approach slope indicator with no "irregular indications of plane operation." Automated terminal information service "Zulu" was current and included wind from 280° at 7 knots. He maintained approach speed with a slight crosswind, the flaps set to the second notch or 25°, and pitch trim set to neutral. He maintained 85 knots to the threshold, and after crossing the threshold he began to slow to 70 knots. When in ground effect with no stall annunciation, he began to flare the airplane. Suddenly the nose "jerked down" and he was unable to physically manipulate the control yoke. The airplane impacted the pavement of runway 24 with the nose gear, causing it to collapse. The airplane came to rest on left of the runway 24 centerline about 30 ft from the end of the aiming point marking, with the nose and left main landing gear in the grass, and the right main landing gear wheel still on the runway. The pilot secured the electrical system, turned off the fuel selector, and exited the airplane.

Examination of the airplane at the accident site before recovery by a Federal Aviation Administration (FAA) inspector revealed the right wing was displaced downward outboard of the inboard fuel tank and the nose landing gear was collapsed aft. Gouges were noted on the runway centerline about 120 ft from the displaced threshold; the gouges were consistent with being made by the propeller. Marks on the runway from the displaced right wing and collapsed nose landing gear continued from the initial impact to the resting position of the airplane.

Initial examination of the airplane at the accident site revealed only slight movement of the stabilator. Examination of the airplane following recovery by representatives of the Federal Aviation Administration (FAA) revealed impact damage to the flight control pulleys near the control yoke lower mount area caused by a portion of the collapsed nose landing gear assembly. The vertical portion of the control column was displaced enough to cause the pilot's control yoke slide tube to contact the bottom of the directional gyro (DG). After the DG was placed back into the instrument panel and pressure applied to the control yoke opposite the direction of displacement, the stabilator control moved freely to the stops in both directions. Testing of the stabilator control cables also with FAA oversight revealed they were 2 pounds below the appropriate reading correlated to the temperature. The stabilator trim actuator was found positioned slight airplane nose-up, which corresponded to the cockpit setting.

A review of automatic dependent surveillance-broadcast data for the flight revealed that between 1302:54 and 1303:24 (last target), the airplane traveled about 4,070 ft in about 30 seconds, which correlated to an average calculated groundspeed of about 81 knots.

The airplane flight manual specified the stall speed range at gross weight for clean configuration (no flaps extended) and flaps extended are 61 and 53 knots, respectively.

According to NTSB personnel, the wind reported by LOU ATCT was consistent with the surface observations. The wind of 20+ knots did not occur until about 2,500 ft mean sea level, which did not meet the low level windshear criteria.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	70,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Lap only
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	July 26, 2019
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	July 30, 2019
Flight Time:	1877 hours (Total, all aircraft), 361 hours (Total, this make and model), 1551 hours (Pilot In Command, all aircraft), 79 hours (Last 90 days, all aircraft), 24 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N9097W
Model/Series:	PA28 235	**Aircraft Category:**	Airplane
Year of Manufacture:	1965	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-10707
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	March 28, 2019 Annual	**Certified Max Gross Wt.:**	2900 lbs
Time Since Last Inspection:	170 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	3828 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	C91A installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540-B4B5
Registered Owner:	On file	**Rated Power:**	235 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KLOU,546 ft msl	**Distance from Accident Site:**	
Observation Time:	12:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots / None	**Turbulence Type Forecast/Actual:**	Unknown / Convective
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	Unknown / Moderate
Altimeter Setting:	30.22 inches Hg	**Temperature/Dew Point:**	-1°C / -12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Bowling Green, KY (BWG)	**Type of Flight Plan Filed:**	None
Destination:	Louisville, KY (LOU)	**Type of Clearance:**	VFR flight following
Departure Time:	12:13 Local	**Type of Airspace:**	

Airport Information

Airport:	Bowman Field Airport LOU	**Runway Surface Type:**	Asphalt
Airport Elevation:	546 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	4358 ft / 75 ft	**VFR Approach/Landing:**	Full stop;Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 None	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 None	**Latitude, Longitude:**	38.230834,-85.657775(est)

Administrative Information

Investigator In Charge (IIC):	Monville, Timothy
Additional Participating Persons:	Ronald Killingsworth; FAA/FSDO; Louisville, KY
Report Date:	March 22, 2022
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=100681