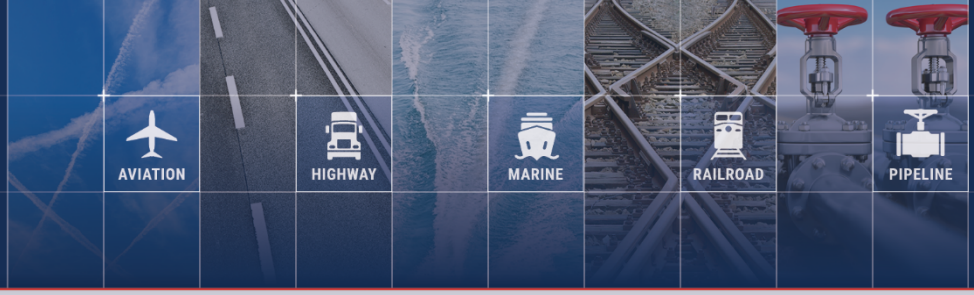

Aviation Investigation Final Report

Location:	Bullard, Texas	**Accident Number:**	CEN12FA628
Date & Time:	September 12, 2012, 14:55 Local	**Registration:**	N4842P
Aircraft:	Piper PA-23-250	**Aircraft Damage:**	Substantial
Defining Event:	Loss of control in flight	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane was en route to its destination when it was observed to make several turns before it pitched nose up, climbed, rolled to the right, and then headed toward the ground nose first. Several witnesses observed airplane components floating down after the airplane. All witnesses reported hearing loud engine noises throughout the event. Impact signatures were consistent with a nose down attitude with a near vertical descent angle. Distribution of the airplane wreckage supported the observation by eyewitnesses of an inflight breakup. An examination found that both wings failed in overload with positive wing loading. In addition, there was no evidence of flight control over travel or flutter. It could not be determined whether the pilot intended to perform the abnormal maneuver or if it was the result of a physiological issue.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's undetermined maneuver which exceeded the airplane's structural limit and resulted in an inflight breakup.

Findings

Aircraft	(general) - Not specified
Aircraft	(general) - Capability exceeded
Personnel issues	(general) - Pilot

Factual Information

History of Flight

Maneuvering	Unknown or undetermined
Maneuvering	Loss of control in flight (Defining event)
Maneuvering	Aircraft structural failure

On September 12, 2012, about 1455 central daylight time, a Piper PA-23-250 airplane, N4842P, impacted terrain following an in-flight break-up near Bullard, Texas. The commercial pilot was fatally injured and the airplane was substantially damaged. The airplane was registered to X Aviation LLC, Houston, Texas, and operated by a private individual under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed for the flight. The flight originated from the David Wayne Hooks Memorial Airport (KDWH), Houston, Texas, about 1355, and was en route to the Tyler Pounds Regional Airport (KTYR), Tyler, Texas.

According to eyewitness statements, the airplane approached Lake Palestine, near Bullard, while flying several thousand feet above the ground. The airplane was observed to make several turns, pitched nose up, and climbed. The airplane then rolled to the right and headed toward the ground nose first. Several witnesses observed airplane components floating down after the airplane. All witnesses reported hearing loud engine noises throughout the event.

Pilot Information

Certificate:	Commercial; Flight instructor	**Age:**	51,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane single-engine	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	April 5, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 27, 2012
Flight Time:	938 hours (Total, all aircraft), 24 hours (Total, this make and model), 792 hours (Pilot In Command, all aircraft), 45 hours (Last 90 days, all aircraft), 14 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

The pilot, age 51, held a commercial pilot certificate for airplane single engine land, multi-engine land, and instrument airplane. He was previously issued a flight instructor certificate for airplane single engine which expired on August 31, 1983. On April 5, 2012, the pilot was issued a first class special authorization, interim issuance medical certificate due to hyperthyroidism. A review of the pilot's log book revealed that the pilot had accumulated a total of 937.7 hours,

39.4 hours of multiengine time, and 24.4 hours in the make and model of the accident airplane. He obtained his multiengine land rating on April 28, 2012.

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N4842P
Model/Series:	PA-23-250	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	27-413
Landing Gear Type:	Retractable - Tricycle	**Seats:**	6
Date/Type of Last Inspection:	August 31, 2012 Annual	**Certified Max Gross Wt.:**	4800 lbs
Time Since Last Inspection:	9 Hrs	**Engines:**	2 Reciprocating
Airframe Total Time:	6085 Hrs at time of accident	**Engine Manufacturer:**	LYCOMING
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-540 SERIES
Registered Owner:	On file	**Rated Power:**	250 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

The twin-engine, low wing, six seat, retractable landing gear airplane was manufactured in 1961 with the serial number 27-413. It was powered by two 250-horsepower Lycoming O-540-A1D5 engines driving metal, two-blade, constant speed, Hartzell HC-A2VK-2 propellers. The airplane's last annual inspection was conducted on August 31, 2012, at a total airframe time of 6,076.35 hours. The left engine's starter cable was replaced on the day of the accident. There was no record of any other recent maintenance performed on the airplane.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KTYR,544 ft msl	**Distance from Accident Site:**	15 Nautical Miles
Observation Time:	14:53 Local	**Direction from Accident Site:**	7°
Lowest Cloud Condition:	Few / 5000 ft AGL	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	11 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	130°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.03 inches Hg	**Temperature/Dew Point:**	32°C / 18°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Houston, TX (KDWH)	**Type of Flight Plan Filed:**	Unknown
Destination:	Tyler, TX (KTYR)	**Type of Clearance:**	Unknown
Departure Time:	13:55 Local	**Type of Airspace:**	

At 1453, an automated weather reporting facility at KTYR reported wind from 130 degrees at 11 knots, 10 miles visibility, few clouds at 5,000 feet, temperature 90 degrees Fahrenheit (F), dew point 64 degrees F, and a barometric pressure of 30.03 inches of mercury.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:		**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	32.1375,-95.432777(est)

The accident site was located on a road near a wooded, residential area. Damage to trees surrounding the accident site was consistent with a steep descent angle. Airplane components were located in several directions from the accident site at distances up to one-half mile. The largest concentration was within a 40 yard radius of the main wreckage, however wing components were scattered to the north and east of the accident site. Ground impact signatures consisted of two impact craters, one for left engine and one for the fuselage. The main wreckage consisted of the fuselage, empennage, rudder, elevators, both engines, and portions of both wings. The odor of fuel was detected at the accident site.

The left wing was fragmented outboard of the left engine. The left flap was found at the accident site along with a portion of the left aileron. The left wing tip was found near a lake shore about 175 yards

north of the accident site and the inboard portion of the aileron located about 500 yards north of the accident site. The right wing was fragmented outboard of the right engine. The right flap was found 40 yards east of the accident site along with the right aileron. A large section of the right wing was recovered from a lake about 175 yards north of the accident site, with the right wing tip was located 380 yard east of the accident site. Both engines remained attached to the wing mounts. The left engine was fractured in multiple places. The left propeller fractured at the first crankshaft web. One blade displayed leading edge polishing, deep nicks, gouges, and chordwise scratches. The opposite blade had leading edge polishing and chordwise scratches from the blade root to near mid span where it was displayed aft. The right engine's crankcase was fractured in multiple locations. The right propeller hub remained attached to the engine and one blade had fractured from the hub. Both blades displayed curling, leading edges nicks and gouges, and chordwise scratches. Flight control continuity was established from the flight controls to the rudder and elevators, and to the aileron bellcranks. The cockpit section was fragmented, torn, and displaced. The left engine's tachometer displayed 1,650 rpm with a Hobbs time of 315.4 hours and the right engine's tachometer displayed 1,450 rpm with a Hobbs time of 313.8 hours. Most of the other cockpit instruments were unreadable or destroyed.

Medical and Pathological Information

An autopsy was performed on the pilot by Forensic Medical Management Services of Texas as authorized by the Justice of the Peace, Precinct 2, Smith County, Texas. The cause of death was blunt force injuries and the manner of death was ruled an accident.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. The specimens provided were negative for ethanol and drugs.

Tests and Research

A layout of the airplane's wings and fuselage was conducted. Both wings displayed near symmetric damage and deformation with signatures that both wings failed in overload with positive wing loading. Examination of the empennage did not reveal any signatures of over travel or flutter.

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Gavin Hill; Federal Aviation Administration; Dallas, TX Michael McClure; Piper Aircraft Company; Dallas, TX
Original Publish Date:	January 13, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85019