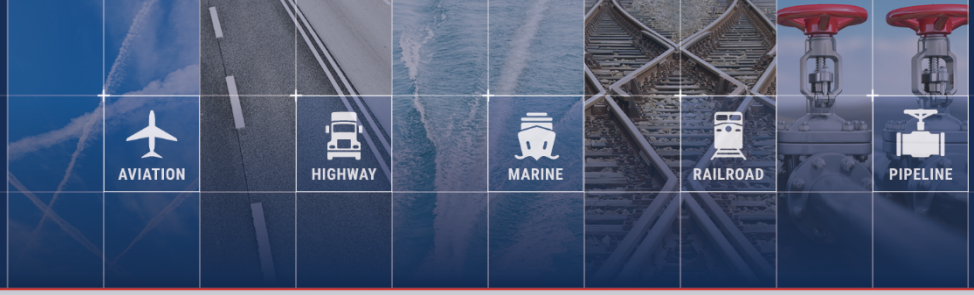

Aviation Investigation Factual Report

Location:	Old Bridge, New Jersey	**Accident Number:**	NYC06FA078
Date & Time:	March 12, 2006, 22:20 Local	**Registration:**	N8446F
Aircraft:	Piper PA-34-200T	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	2 Fatal, 2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Factual Information

HISTORY OF FLIGHT

On March 12, 2006, about 2220 eastern standard time, a Piper PA-34-200T, N8446F, was destroyed when it impacted trees and terrain while maneuvering near Old Bridge Airport (3N6), Old Bridge, New Jersey. The certificated private pilot and one passenger were fatally injured, and two additional passengers were seriously injured. Night instrument meteorological conditions prevailed, and no flight plan was filed for the flight that departed from Grand Strand Airport (CRE), North Myrtle Beach, South Carolina, at 1934. The personal flight was conducted under 14 CFR Part 91.

According to radar data obtained from the Federal Aviation Administration (FAA), a radar target correlated to be the accident airplane approached Old Bridge Airport from the southwest. The target maneuvered consistent with entering the airport traffic pattern on a left downwind leg to land on runway 24. The target continued in the traffic pattern, descending to 400 feet msl on the final leg of the approach, where radar contact was lost about 1/2 mile from the runway threshold. No further radar targets were observed.

A witness, located about 1/2 mile south of the airport, heard the accident airplane fly over her house at a "very low" altitude, heading in an easterly direction. The airplane then turned toward runway 24, and "dipped down" at a point about halfway down the runway. She initially thought that the airplane might land, but then saw the airplane pitch upward and enter a climbing turn to the right.

Another witness, located about 1 mile beyond the departure end of runway 24, saw the accident airplane as it came toward him from the runway. He heard the airplane's engines "revving," and saw the lights of the airplane coming toward him. The airplane then turned right, and disappeared from view. Shortly thereafter the witness heard the sounds of impact.

The witness also noted that the weather at the time of the accident was "foggy."

A review of air traffic control and flight service station communication data revealed that the pilot had not contacted any facilities prior to the accident flight, or after departing the Myrtle Beach area.

The accident occurred during the hours of night at 40 degrees, 19.930 minutes north latitude, 74 degrees, 21.232 minutes west longitude.

PERSONNEL INFORMATION

The pilot held a private pilot certificate with ratings for airplane single and multiengine land. He did not hold an instrument rating. His most recent FAA third class medical certificate was issued on August 10, 2005, and on that date he reported 1,657 total hours of flight experience.

AIRCRAFT INFORMATION

The airplane's most recent annual inspection was completed on January 10, 2006, and at that time the airplane had accumulated 4,027 total hours of flight time. The airplane had accumulated an additional 18 hours of flight time since that date.

METEOROLOGICAL INFORMATION

The weather reported at Belmar-Farmingdale Airport (BLM), Belmar, New Jersey, about 14 nautical miles southeast of Old Bridge Airport, at 2215, included winds from 280 degrees at 4 knots, an overcast ceiling at 100 feet, less than 1/4 statute mile visibility, temperature 48 degrees Fahrenheit, dewpoint 46 degrees Fahrenheit, and an altimeter setting of 30.04 inches of mercury.

A witness reported that he was driving on a road adjacent and perpendicular to the departure end of runway 24, about 10 minutes prior to the accident. He reported that when he typically drove down the road, he would always look down the airport runway. On the night of the accident, he could see that the airport beacon and runway lights were illuminated; however, he could only see about halfway down the runway due to the weather conditions. He reported that the horizontal visibility was "really bad," and estimated it to be about 1/8 mile in fog.

AIRPORT INFORMATION

Old Bridge Airport had a single 3,594-foot by 50-foot runway oriented in a 06/24 configuration.

WRECKAGE AND IMPACT INFORMATION

The airplane came to rest in a wooded area, about 1/2 mile northwest of the airport. The initial impact point was a tree, about 50 feet tall. The wreckage path was about 350 feet long, and oriented in a direction of 040 degrees magnetic.

The right wing flap was located at the base of the tree, and portions of the aileron cables from the right wing were located in the tree. Various airplane parts were located along the wreckage path, including portions of both wing tips, small portions of the vertical stabilizer and stabilator, and the nose of the airplane. Numerous broken tree trunks and branches were also dispersed along the wreckage path.

The right wing, including the right engine and cowling, was located about 30 feet west of the main wreckage, and the outermost portion of the wing was consumed by fire. The left wing was partially separated from the fuselage near the wing root, and remained connected by the

aileron cable, engine control cables, and wire bundles. The aft portion of the fuselage was almost completely separated from the main fuselage, and was folded underneath so that the vertical stabilizer was pointing downward and the leading edges of the stabilator and vertical stabilator were pointing rearward. The vertical stabilizer was also partially detached from the aft fuselage. The aft fuselage remained attached to the forward fuselage by a small amount of fuselage skin and the stabilator control cables. The vertical stabilizer and stabilator were separated from the fuselage, but remained attached by their respective control cables.

Control cable continuity was confirmed from the stabilator and left aileron to the cabin area. The right aileron cable, rudder control cables, rudder trim cables, and stabilator trim cables were severed, and exhibited signatures consistent with overload failure. The flap control handle was observed in the 10-degree detent; however, the flap position could not be confirmed due to impact damage. The landing gear position selector was destroyed by impact forces. The left main landing gear was down, and the actuator was fully extended and separated from the landing gear strut. One end of the actuator remained attached to the inboard section of the left wing spar, which remained attached to the fuselage center-section. The right main landing gear was collapsed and dislodged from its well. The nose landing gear was separated from the fuselage, and was located about 5 feet from the main wreckage.

Examination of the cabin interior revealed that none of the seat belt buckles were fastened, and that the aft facing, co-pilot side passenger seat had been removed prior to the accident flight.

The left engine crankshaft was rotated via the accessory section, and continuity was confirmed throughout the powertrain. Compression was obtained on all six cylinders. Borescope examination of all six cylinders revealed no anomalies. The turbocharger was rotated by hand, and was free of any impediment to movement. Examination of the fuel pump and fuel manifold revealed that they contained fuel and were free of obstructions. The top six spark plugs were removed, and five of the six electrodes were light gray in color, while the number 2 cylinder electrode was white. The left magneto was damaged, and could not be rotated. Crankshaft rotation produced spark at all terminal leads of the right magneto.

The left propeller had separated from its respective engine aft of the propeller flange. The propeller blades were bent opposite to the direction of rotation, and exhibited chordwise scratching and gouging. One of the blades was bent aft at about mid-span, one was bent aft about 8 inches from the blade tip and was missing the outermost 3 inches of blade tip, while the other blade was straight.

The right engine crankshaft was rotated via the propeller, and continuity was confirmed throughout the powertrain and the accessory section. Compression was obtained on all six cylinders. Borescope examination of all six cylinders revealed no anomalies. The turbocharger was rotated by hand, and was free of any impediment to movement. Examination of the fuel pump and fuel manifold revealed that they contained fuel, and were free of obstructions. The top six spark plugs were removed, and all of the electrodes were

gray in color. Crankshaft rotation produced spark at all of the top spark plug terminal leads.

The right propeller remained attached to its respective engine. All three propeller blades were twisted perpendicular to the plane of rotation, and were bent opposite to the direction of rotation. The blades exhibited s-bending, and chordwise scratching and gouging. In addition, the outboard 3 inches of blade tip were missing from all three blades.

The vacuum pumps from both engines were removed and rotated by hand, which produced pressure and suction on the respective ports.

MEDICAL AND PATHOLOGICAL INFORMATION

The FAA's Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing on the pilot.

ADDITIONAL INFORMATION

According to the FAA Airplane Flying Handbook FAA-H-8083-3 (Chapter 10, "Night Operations"), "Night flying is very different from day flying and demands more attention of the pilot. The most noticeable difference is the limited availability of outside visual references. Therefore, flight instruments should be used to a greater degree in controlling the airplane. This is particularly true on night takeoffs and climbs.… After becoming airborne, the darkness of night often makes it difficult to note whether the airplane is getting closer to or farther from the surface. To ensure the airplane continues in a positive climb, be sure a climb is indicated on the attitude indicator, vertical speed indicator (VSI), and altimeter.… Necessary pitch and bank adjustments should be made by referencing the attitude and heading indicators. It is recommended that turns not be made until reaching a safe maneuvering altitude."

The handbook later states, "Generally, at night it is difficult to see clouds and restrictions to visibility, particularly on dark nights or under overcast. The pilot flying under VFR [visual flight rules] must exercise caution to avoid flying into clouds or a layer of fog.… Remember that if a descent must be made through fog, smoke, or haze in order to land, the horizontal visibility is considerably less then when looking through the restriction than it is when looking straight down through it from above. Under no circumstances should a VFR night-flight be made during poor or marginal weather conditions unless both the pilot and the aircraft are certificated and equipped for flight under instrument flight rules (IFR)."

The wreckage was released to a representative of the owner's insurance company on March 14, 2006.

Pilot Information

Certificate:	Private	**Age:**	56,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Without waivers/limitations	**Last FAA Medical Exam:**	August 1, 2005
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	January 1, 2006
Flight Time:	1657 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N8446F
Model/Series:	PA-34-200T	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	34-7770084
Landing Gear Type:	Retractable - Tricycle	**Seats:**	5
Date/Type of Last Inspection:	January 1, 2006 Annual	**Certified Max Gross Wt.:**	4750 lbs
Time Since Last Inspection:	18.8 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	4027 Hrs as of last inspection	**Engine Manufacturer:**	Continental
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	TSIO-360-E
Registered Owner:	On file	**Rated Power:**	220 Horsepower
Operator:	On file	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	**Condition of Light:**	Night
Observation Facility, Elevation:	BLM,159 ft msl	**Distance from Accident Site:**	14 Nautical Miles
Observation Time:	22:15 Local	**Direction from Accident Site:**	135°
Lowest Cloud Condition:		**Visibility**	0.25 miles
Lowest Ceiling:	Overcast / 100 ft AGL	**Visibility (RVR):**	
Wind Speed/Gusts:	4 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	280°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.04 inches Hg	**Temperature/Dew Point:**	9°C / 8°C
Precipitation and Obscuration:			
Departure Point:	Myrtle Beach, SC (CRE)	**Type of Flight Plan Filed:**	None
Destination:	Old Bridge, NJ (3N6)	**Type of Clearance:**	None
Departure Time:	19:34 Local	**Type of Airspace:**	

Airport Information

Airport:	Old Bridge Airport 3N6	**Runway Surface Type:**	Asphalt
Airport Elevation:	87 ft msl	**Runway Surface Condition:**	Unknown
Runway Used:	24	**IFR Approach:**	None
Runway Length/Width:	3594 ft / 50 ft	**VFR Approach/Landing:**	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Fatal, 2 Serious	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal, 2 Serious	**Latitude, Longitude:**	40.332221,-74.353889

Administrative Information

Investigator In Charge (IIC):	Muzio, David
Additional Participating Persons:	Tim Murphy; FAA/FSDO; Teterboro, NJ George Hollingsworth; New Piper; Staunton, VA Josh Cawthra; Teledyne Continental Motors; Mobile, AL
Report Date:	August 31, 2006
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=63331