



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Final Report

Location:	Amagansett, New York	Accident Number:	ERA18LA157
Date & Time:	June 2, 2018, 14:33 Local	Registration:	N41173
Aircraft:	Piper PA 31	Aircraft Damage:	Destroyed
Defining Event:	Loss of control in flight	Injuries:	4 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The commercial pilot of the multiengine airplane was the first of a flight of two airplanes to depart on the cross-country flight, most of which was over the Atlantic Ocean. The pilot of the second airplane stated that he and the accident pilot reviewed the weather for the route and the destination before departing; however, there was no record of the accident pilot receiving an official weather briefing and the information the pilots accessed before the flight could not be determined. The second pilot departed and contacted air traffic control, which advised him of thunderstorms near the destination; he subsequently altered his route of flight and landed uneventfully at the destination. The second pilot stated that he did not hear the accident pilot on the en route air traffic control frequency.

Two inflight weather advisories were issued for the route and the area of the destination about 42 and 15 minutes before the accident flight departed, respectively, and warned of heavy to extreme precipitation associated with thunderstorms. It could not be determined whether the accident pilot received these advisories.

Review of air traffic control communications and radar data revealed that, about 5 miles from the destination airport, the pilot of the accident airplane reported to the tower controller that he was flying at 700 ft and "coming in below" the thunderstorm. There were no further communications from the pilot. The airplane's last radar target indicated 532 ft about 2 miles south of the shoreline. The airplane was found in about 50 ft of water and was fragmented in several pieces. Postaccident examination revealed no preimpact anomalies with the airplane or engines that would have precluded normal operation.

A local resident about 1/2 mile from the accident site took several photos of the approaching thunderstorm, which documented a shelf cloud and cumulus mammatus clouds along the leading edge of the storm, indicative of potential severe turbulence. Review of weather imagery and the airplane's flight path showed that the airplane entered the leading edge of "extreme" intensity echoes with tops near 48,000 ft. Imagery also depicted heavy to extreme intensity radar echoes over the accident site extending to the destination airport.

It is likely that the pilot encountered gusting winds, turbulence, restricted visibility in heavy rain, and low cloud ceilings in the vicinity of the accident site and experienced an in-flight loss of control at low altitude. Such conditions are conducive to the development of spatial disorientation; however, the reason for the pilot's loss of control could not be determined based on the available information.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to fly under a thunderstorm and a subsequent encounter with turbulence and restricted visibility in heavy rain, which resulted in a loss of control.

Findings

Personnel issues	Decision making/judgment - Pilot
Personnel issues	Aircraft control - Pilot
Environmental issues	Thunderstorm - Effect on operation
Environmental issues	Thunderstorm - Decision related to condition
Environmental issues	Convective turbulence - Effect on operation
Environmental issues	Rain - Effect on operation
Aircraft	(general) - Not attained/maintained

Factual Information

History of Flight

Enroute	Windshear or thunderstorm
Enroute-descent	Loss of control in flight (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On June 2, 2018, about 1433 eastern daylight time, a Piper PA-31-350, N41173, was destroyed when it impacted the Atlantic Ocean near Amagansett, New York. The commercial pilot and three passengers were fatally injured. The airplane was privately owned by the pilot who was operating it as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Marginal visual meteorological conditions prevailed, and no flight plan was filed for the flight, which originated from Newport State Airport (UUU), Newport, Rhode Island, and was destined for East Hampton Airport (HTO), East Hampton, New York.

The accident airplane was one of a flight of two airplanes that had flown to UUU from HTO. The pilot of the second airplane, a Beech Bonanza, stated that he and the accident pilot talked for about 1 hour about the weather along the route of flight before departing for the return flight to HTO. They both planned to fly south toward Block Island, Rhode Island, then turn west and follow the Long Island shoreline to HTO. They looked at the weather online. It was visual flight rules (VFR) to the destination. The Bonanza departed first, followed by the accident airplane. After takeoff, the pilot of the Bonanza contacted air traffic control (ATC) and was informed that there was a thunderstorm near HTO and that it was moving slowly. The Bonanza pilot stated that he did not hear the accident pilot on the air traffic control frequency en route, and that, upon contacting the tower controller at HTO, he could hear the controller attempting to contact the accident airplane. The Bonanza subsequently landed uneventfully at HTO.

Radar data provided by the Federal Aviation Administration (FAA) depicted that about 1430, the accident airplane was 5 miles ahead of the Bonanza and over the Atlantic Ocean south of HTO at an altitude of 432 ft mean sea level (msl) and about 6 miles from the airport. The target climbed to 512 ft and then descended to 152 ft. The last radar return at 1433, indicated 532 ft about 2 miles south of Indian Wells Beach. The pilot told air traffic control at HTO, that he was flying at 700 ft and was "coming in below" the thunderstorm. The airplane was about 5 miles from HTO at that point. There were no further communications from the pilot.

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	47,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Unknown
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	Yes
Medical Certification:	Class 2 With waivers/limitations	Last FAA Medical Exam:	May 30, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	3000 hours (Total, all aircraft)		

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Right
Other Aircraft Rating(s):		Restraint Used:	Unknown
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Male
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	Unknown
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

Passenger Information

Certificate:		Age:	Female
Airplane Rating(s):		Seat Occupied:	Rear
Other Aircraft Rating(s):		Restraint Used:	Unknown
Instrument Rating(s):		Second Pilot Present:	No
Instructor Rating(s):		Toxicology Performed:	No
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:			

The pilot held a commercial pilot certificate with ratings for airplane single-engine land, multi-engine land and instrument airplane. He also held a flight instructor certificate. His most recent FAA second-class medical certificate was issued May 30, 2017. At the time of the medical examination, the pilot reported 3,000 total hours of flight experience. The pilot's logbooks were not recovered. His recent flight experience and instrument flight experience could not be determined,

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N41173
Model/Series:	PA 31 350	Aircraft Category:	Airplane
Year of Manufacture:	1984	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	31-8452017
Landing Gear Type:	Retractable - Tricycle	Seats:	7
Date/Type of Last Inspection:	November 3, 2017 Annual	Certified Max Gross Wt.:	6500 lbs
Time Since Last Inspection:	39 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	5776.6 Hrs at time of accident	Engine Manufacturer:	Lycoming
ELT:	C91 installed, not activated	Engine Model/Series:	TIO-540-J2B
Registered Owner:		Rated Power:	350 Horsepower
Operator:	On file	Operating Certificate(s) Held:	On-demand air taxi (135)

The seven-seat, low-wing airplane was manufactured in 1984. It was powered by two Lycoming TIO-540-J2B, 350-horsepower engines equipped with four-bladed Hartzell propellers. The airplane was equipped with a Garmin MX20 MFD and a Garmin 530 GPS, both capable of displaying weather information. The most recent annual inspection was completed on November 3, 2017. At the time of the accident, the airframe total time was 5776.6 hours. The

left engine had 359.5 hours since major overhaul and the right engine had 535.7 hours since major overhaul. The airplane had flown 39 hours since the annual inspection.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	KHTO, 56 ft msl	Distance from Accident Site:	25 Nautical Miles
Observation Time:	18:35 Local	Direction from Accident Site:	341°
Lowest Cloud Condition:	Scattered / 1300 ft AGL	Visibility	7 miles
Lowest Ceiling:	Overcast / 2600 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/ None
Wind Direction:		Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.76 inches Hg	Temperature/Dew Point:	22°C / 20°C
Precipitation and Obscuration:	Light - Thunderstorm - Rain		
Departure Point:	NEWPORT, RI (UUU)	Type of Flight Plan Filed:	None
Destination:	EAST HAMPTON, NY (HTO)	Type of Clearance:	None
Departure Time:	14:10 Local	Type of Airspace:	Class G

At 1435, the weather recorded at HTO included calm wind, 7 miles visibility in light thunderstorm rain showers, scattered clouds at 1,300 ft, scattered clouds at 2,100 ft, overcast ceiling at 2,600 ft, temperature 22°C, dew point 20°C, and an altimeter setting of 29.76 inches of mercury.

Two inflight weather advisories were issued for the route and area of the destination about 42 and 15 minutes before the accident flight departed, respectfully, and warned of heavy to extreme precipitation associated with thunderstorms. There was no record of a weather briefing provided to the pilot of the accident airplane.

Review of weather radar revealed a low-pressure system associated with a frontal wave over Long Island Sound with a cold front stretching westward over Long Island into central New Jersey and a warm front turning back to a cold front eastward. The models also indicated scattered thunderstorms over the area of HTO

Figure 1 depicts the accident airplane's flight track overlaid on the Boston WSR-88D base reflectivity image for 1438 (Echoes less than 10 dBZ have been removed from the image). The airplane's flight track entered the leading of the echoes with a maximum of 53 dBZ "extreme" intensity echoes with tops near 48,000 ft. Extreme intensity echoes over 50 dBZ extended between the accident site and HTO.

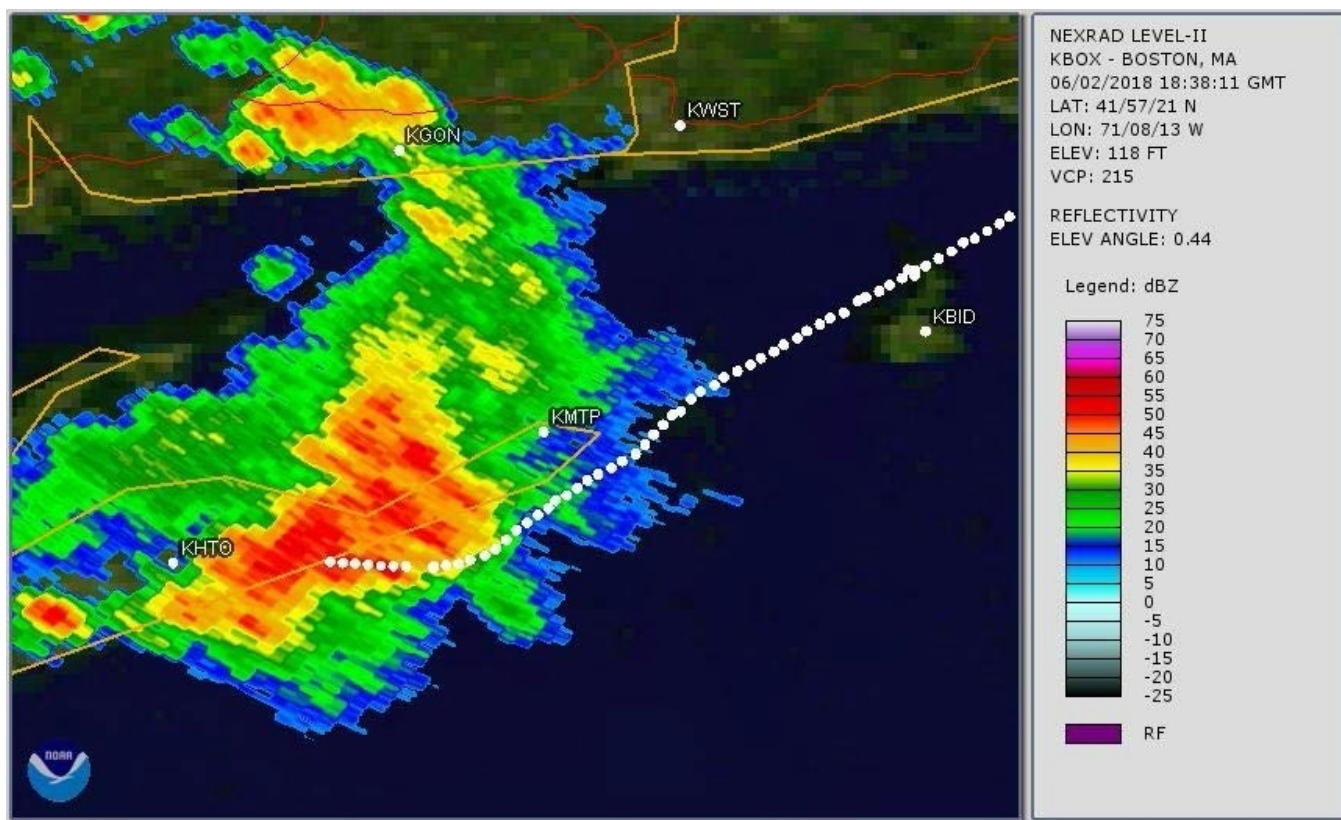


Figure 1: Boston WSR-88D Base Reflectivity Image at 1438 with flight track

A local resident about 1/2 mile from the accident site took several photos of the approaching thunderstorm, which documented a shelf cloud and cumulus mammatus clouds along the leading edge of the storm, indicative of potential severe turbulence.

(For more information, see the NTSB Meteorological Factual Report for this accident in the public docket).

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	3 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	4 Fatal	Latitude, Longitude:	40.571945,-72.074722(est)

The wreckage was located about 1 mile south of Indian Wells Beach in 50 ft of water and was

subsequently recovered for examination. The fuselage was impact damaged, fractured, and separated into multiple pieces. The left and right wings were both separated from the fuselage at the wing root and were fragmented. One left wing fuel cell was recovered.

The left and right engines remained partially attached to the airframe through the mounts. The oil sump was fractured and corroded on both engines. The No. 1 cylinders were impact damaged on both engines. The spark plugs were removed, and the engines were rotated by turning the propeller flange. Continuity to the rear gears and to the valve train was confirmed on each engine. Thumb compression and suction were confirmed for each cylinder. The pistons, valves, and cylinders were examined using a lighted borescope. No anomalies were noted except corrosion and sand consistent with saltwater immersion.

Both left and right propellers were fractured from their respective engine crankshaft mounting flanges and exhibited corrosion consistent with saltwater immersion. Both propeller spinner domes were torn from the propeller assemblies and were not recovered. All four blades of the left and right propellers were bent aft in varying degrees and twisted toward low pitch.

Medical and Pathological Information

An autopsy was performed on the pilot by the Office of the Medical Examiner, Suffolk County, New York. The report listed the cause of death as blunt force trauma.

Forensic toxicology was not performed as the body was recovered from the ocean about 2 days after the accident.

Administrative Information

Investigator In Charge (IIC):	Boggs, Daniel
Additional Participating Persons:	Mathew Cady; FAA FSDO; Farmingdale, NY Jon Hirsch; Piper; Wichita, KS Mike Childers; Lycoming Engines; Atlanta, GA Les Doud; Hartzell Propeller; Piqua, OH
Original Publish Date:	November 6, 2019
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=97383

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).