



National Transportation Safety Board Aviation Accident Final Report

Location:	Leominster, MA	Accident Number:	NYC04FA136
Date & Time:	06/01/2004, 2131 EDT	Registration:	N21072
Aircraft:	Piper PA-32-300	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	2 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane was destroyed after impacting terrain during an approach in instrument meteorological conditions. At the destination airport, weather was reported as 3 statute miles of visibility and mist, and an overcast cloud layer at 700 feet. The overcast ceiling was variable from 400 to 1,100 feet agl. The flight progressed without incident, and once in the vicinity of the destination airport, the pilot requested and was subsequently cleared for the GPS approach. No further transmissions were received from the pilot. The airplane struck trees, and came to rest in a wooded area, about 1-3/4 miles from the runway 32 threshold, and about 1/2-mile right of the extended centerline. A postcrash fire consumed the main wreckage. The elevation of the accident site was 563 feet msl. Review of the approach plate for the GPS approach revealed that the inbound course from the final approach fix, located about 5 miles prior to the airport, was 324 degrees. The minimums for the straight in approach to runway 32 were 1 statute mile of visibility, and a minimum decision altitude of 960 feet msl (624 feet agl). No procedure turn was required for the approach. Review of radar data revealed that after the airplane crossed the final approach fix, it turned right, away from the final approach course, and began tracking northbound for several seconds. The airplane then made a left turn and proceeded inbound towards the airport and tracked an approximate 300-degree course until the last radar return was received, where the airplane was about 1 mile southeast of the airport at 1,000 feet msl. The pilot had accumulated about 409 hours of total flight experience. Within the previous 6 months, he had accumulated 7 hours, of which 1.7 hours were conducted in simulated instrument conditions, and .7 hours were in actual instrument conditions. The pilot's most recent flight conducted in nighttime conditions was about 20 months prior to the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to follow instrument flight procedures resulting in a collision with trees. A factor related to the accident was the low cloud ceiling, and dark night.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

1. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
2. LACK OF RECENT EXPERIENCE - PILOT IN COMMAND
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) LIGHT CONDITION - DARK NIGHT

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: APPROACH - FAF/OUTER MARKER TO THRESHOLD (IFR)

Findings

5. OBJECT - TREE(S)
6. ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND

Factual Information

HISTORY OF FLIGHT

On June 1, 2004, about 2131 eastern daylight time, a Piper PA-32-300, N21072, was destroyed after impacting terrain in Leominster, Massachusetts, during an approach to the Fitchburg Municipal Airport (FIT), Fitchburg, Massachusetts. The certificated private pilot and passenger were fatally injured. Night instrument meteorological conditions prevailed, and an instrument flight rules (IFR) flight plan was filed for the flight that originated from the Manchester Airport (MHT), Manchester, New Hampshire. The personal flight was conducted under 14 CFR Part 91.

According to a Federal Aviation Administration (FAA) inspector, the airplane was fueled earlier at FIT with 16.7 gallons of aviation fuel prior to departing for MHT to pick up the passenger. Upon arriving at MHT, the airplane was refueled with 14.1 gallons of aviation fuel. The flight departed from MHT about 2109, and proceeded towards FIT.

Review of air traffic control data revealed that the pilot was instructed to "cross TOPTO at or above 2,500, cleared GPS 32 approach," which he acknowledged. No further transmissions were received from the pilot.

Review of radar data obtained from the FAA revealed that the accident airplanes flight track began at 2108:50. The airplane was at an altitude of 900 feet in the vicinity of MHT. At 2129:34, the airplane crossed abeam CLETR, the final approach fix for the GPS RWY 32 approach at FIT. At that point the airplane had been tracking a northwesterly heading approximately 320 degrees. After passing CLETR, the airplane turned right, away from the final approach course, and began tracking northbound for several seconds. At 2129:57, the airplane made a left turn and proceeded inbound towards the airport and tracked approximately a 300-degree course. The last radar return was received at 2131:44, where the airplane was about 1 mile southeast of FIT at 1,000 feet, and a ground speed of 110 knots.

The airplane came to rest on its right side, on top of a stone wall, in a wooded area, about 1-3/4 miles from the runway 32 threshold, and about 1/2-mile right of the extended centerline. A postcrash fire consumed the main wreckage.

A witness, located about 1/2-mile southwest of the accident site, heard an airplane fly overhead. The airplane noise was "louder than usual." The witness looked out her window and observed an airplane flying over the tree tops, from right to left, and "the engine sounded fine. Just loud because the plane was so low." The witness then heard a sound similar to "chopping of leaves from the tree tops," followed by silence, and a few seconds later, the sound of snapping trees.

The accident occurred during the hours of darkness, at 42 degrees, 32.430 minutes north longitude, 071 degrees, 43.18 minutes west latitude, at an elevation of 563 feet.

PILOT INFORMATION

The pilot held a private pilot certificate for airplane single-engine, and instrument airplane. The pilot's most recent application for a FAA third class medical certificate was dated on December 16, 2002.

Review of the pilot's logbook, which was found in the wreckage, revealed that he had

accumulated about 409 hours of total flight experience. Within the previous 6 months, he had accumulated 7 hours, of which 1.7 hours were conducted in simulated instrument conditions, and .7 hours were in actual instrument conditions. The pilot's most recent flight conducted in nighttime conditions was on November 15, 2002.

AIRCRAFT INFORMATION

The airplane's most recent annual inspection was completed on May 6, 2004, at a total aircraft time of 3,087.9 hours.

The airplane was equipped with a Garmin GPS 400 unit, and an autopilot. There were no documents recovered to confirm if the GPS unit was coupled to the autopilot.

METEOROLOGICAL INFORMATION

The weather reported at FIT, at 2117, included winds from 080 degrees at 4 knots; 3 statute miles of visibility; mist; an overcast cloud layer at 700 feet agl; temperature of 48 degrees Fahrenheit; dew point of 46 degrees Fahrenheit; and an altimeter setting of 29.80 inches of mercury. The overcast ceiling was variable from 400 to 1,100 feet agl.

AIRPORT INFORMATION

The airport elevation at FIT was 348 feet msl.

AIDS TO NAVIGATION

Review of the approach plate for the GPS Runway 32 approach at FIT revealed that the initial approach fix (IAF), TOPTO waypoint, was located 22.3 miles, outbound 211 degrees from the MHT VOR. The outbound course from TOPTO was 234 degrees, and continued 5 miles to the DELSO waypoint. The minimum altitude for the segment was 2,500 feet msl. The final approach course from DELSO was 324 degrees, and continued 5 miles to the final approach fix (FAF), CLETR waypoint. The minimum crossing altitude at CLETR was 2,000 feet msl. CLETR intersection was located 5 miles from the runway 32 threshold. The minimums for the straight in approach to runway 32 were 1 statute mile of visibility, and a minimum decision altitude of 960 feet msl (624 feet agl). No procedure turn was required for the approach.

WRECKAGE INFORMATION

Examination of the accident site on June 2, 2004, revealed terrain that consisted of evergreen and hardwood trees reaching a height of about 80 feet. The foliage surrounding the accident site was wilted, consistent with being sprayed with aviation fuel and exposure to heat. The wreckage path was about 280 feet in length, and was oriented on a 050-degree heading, with the main fuselage coming to rest on a 055-degree heading.

The first tree strike area was located about 250 feet prior to the main fuselage. Surrounding the tree strike area, were branches of varying diameters that were cut at 45-degree angles and displayed black and red paint transfer. Along the wreckage path were wing skin sections from the left wing and the empennage assembly.

All flight control surfaces were accounted for at the accident site.

When the right side of the stabilator was examined, a 3-inch deep u-shaped dent was present on the leading edge. Tree bark was observed in the dent compression mark.

The 3-bladed propeller assembly was separated from the engine. All three blades broke loose from the hub assembly, and were located about 30-40 feet beyond the main wreckage. The blades displayed s-bending and leading edge nicks. One blade exhibited chord-wise scratching. The propeller blades were painted black, with red and white stripes painted on the tips.

Examination of the cockpit area revealed that the fuel selector was in the "left" tank position, and that the flap handle was in retracted position.

The pilot's airspeed indicator was recovered, but sustained impact damage. The airspeed indicator displayed a reading of 0 knots. The altimeter displayed a reading of 495 feet. The Kollsman window displayed an altimeter setting of 29.78 inches of mercury. The attitude indicator and directional gyro were disassembled. Evidence of rotational scoring was observed on the inside gyro rotor housings of both instruments.

The remaining primary flight instruments and engine instruments; the throttle, mixture, and propeller controls were destroyed.

The engine was recovered from the accident site and examined on June 3, 2004. The crankshaft was rotated through the accessory drive section. Thumb compression and valve train continuity was confirmed to the number 3 through number 6 cylinders. The number 1 cylinder head was separated from its barrel, and disintegrated. The number 2 cylinder intake and exhaust push rods were bent, which restricted the movement of the rocker arms.

With the exception of the number 1 cylinder, the top and bottom spark plugs of all remaining cylinder heads were removed; their electrodes were intact and dark gray in color. When the left magneto was removed from the engine case and rotated by hand, it produced spark from all leads. The right magneto was found separated from the engine.

Fuel was present at the fuel distributor, injector screen, and the engine driven fuel pump. The fuel servo filter screen was absent of debris. All five remaining fuel injector nozzles were removed, and were absent of debris.

Oil was present throughout the engine, and no metal contamination was observed in the oil or oil filter. The oil pump assembly was intact, and no damage was noted. The oil sump screen was removed from the engine and was absent of debris.

Internal examination of each remaining cylinder was conducted using a lighted borescope. No abnormalities were observed to the valves, top surfaces of each piston, or the cylinder walls.

The vacuum pump was removed from the engine. When rotated, suction from the inlet and outlet lines was observed. Disassembly of the pump did not reveal any abnormalities.

MEDICAL AND PATHOLOGICAL INFORMATION

The Commonwealth of Massachusetts, Department of Health, Office of the Chief Medical Examiner, Boston, Massachusetts, performed an autopsy on the pilot, on June 2, 2004.

The FAA Toxicology and Accident Research Laboratory, Oklahoma City, Oklahoma conducted toxicological testing on the pilot.

ADDITIONAL INFORMATION

The airplane wreckage was released on June 3, 2004, to a representative of the owners insurance company.

Pilot Information

Certificate:	Private	Age:	47, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Without Waivers/Limitations	Last FAA Medical Exam:	12/01/2002
Occupational Pilot:		Last Flight Review or Equivalent:	12/01/2002
Flight Time:	400 hours (Total, all aircraft), 4 hours (Last 90 days, all aircraft), 1 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N21072
Model/Series:	PA-32-300	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	32-7840183
Landing Gear Type:	Tricycle	Seats:	6
Date/Type of Last Inspection:	05/01/2004, Annual	Certified Max Gross Wt.:	3400 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	3089 Hours as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	IO-540
Registered Owner:	James P. Normandin	Rated Power:	300 hp
Operator:	James P. Normandin	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	FIT, 348 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	2117 EDT	Direction from Accident Site:	160°
Lowest Cloud Condition:		Visibility	3 Miles
Lowest Ceiling:	Overcast / 700 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	80°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.8 inches Hg	Temperature/Dew Point:	9° C / 8° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Manchester, NH (MHT)	Type of Flight Plan Filed:	IFR
Destination:	Fitchburg, MA (FIT)	Type of Clearance:	IFR
Departure Time:	2109 EDT	Type of Airspace:	

Airport Information

Airport:	Fitchburg Municipal Airport (FIT)	Runway Surface Type:	Unknown
Airport Elevation:	348 ft	Runway Surface Condition:	Unknown
Runway Used:	32	IFR Approach:	Global Positioning System
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	1 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	42.546111, -71.721667

Administrative Information

Investigator In Charge (IIC):	Stephen M Demko	Report Date:	04/25/2006
Additional Participating Persons:	Barry Donahue; FAA; Windsor Locks, CT George Hollingsworth; Piper Aircraft; Vero Beach, FL Mike Childers; Lycoming Engines; Williamsport, PA Richard Bunker; Massachusetts Aeronautics Commission; Boston, MA		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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