Aviation Investigation Final Report

Location:	Howell, New Jersey	**Accident Number:**	NYC07FA088
Date & Time:	March 28, 2007, 20:05 Local	**Registration:**	N33521
Aircraft:	Piper PA-28-151	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot was conducting a local flight in good weather, when he radioed air traffic control (ATC), to request a vector to his home airport. At the time, the airplane was about 10 miles southwest of the home airport, heading away from the airport, and the pilot was lost and disoriented. The controller provided the pilot with a position report and a vector to the pilot's airport; however, the pilot subsequently flew erratically at low altitudes and did not respond to calls by ATC several times. The airplane then impacted a wooded area. The pilot had a history of multiple severe medical conditions, and was at high risk for a stroke, having had a previous transient ischemic attack (TIA) (mini-stroke). A TIA or stroke could reasonably account for the pilot's disorientation and confusion just prior to the accident. Although the autopsy did not discover any evidence of stroke, such evidence would only be seen if the pilot had a completed stroke and lived long enough for changes in the brain to become apparent (usually several hours at the least). It is most likely that the pilot's disorientation and confusion immediately prior to the accident were consistent with a stroke or a transient ischemic attack. None of the pilot's severe medical conditions or the medications he was taking was reported to the FAA during the pilot's most recent application for a third class medical certificate. Had they been reported, the certificate would have been denied. The pilot's personal physician believed that the pilot had not been flying as a pilot for at least 5 years. Examination of the wreckage did not reveal any preimpact mechanical malfunctions.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's improper decision to attempt a flight with known serious medical conditions, which resulted in impairment during cruise flight, likely due to a stroke or transient ischemic attack. A factor was the pilot providing false information on his medical application.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: APPROACH

Findings
1. (C) PLANNING/DECISION - IMPROPER - PILOT IN COMMAND
2. PHYSIOLOGICAL CONDITION - PILOT IN COMMAND
3. (C) PHYSICAL IMPAIRMENT(STROKE) - PILOT IN COMMAND
4. (F) INFORMATION INSUFFICIENT - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: DESCENT - UNCONTROLLED

Findings
5. OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On March 28, 2007, about 2005 eastern daylight time, a Piper PA-28-151, N33521, was destroyed when it impacted trees in Howell, New Jersey, while on approach to Monmouth Executive Airport (BLM), Farmingdale, New Jersey. The certificated private pilot was fatally injured. Visual meteorological conditions prevailed, and no flight plan was filed for the local personal flight conducted under 14 CFR Part 91.

According to data from the Federal Aviation Administration (FAA), the pilot contacted McGuire Air Force Base Approach Control (McGuire Approach) at 1955. The pilot believed he was about 5 miles from his home airport, BLM, and requested directions. The pilot further stated that he had lost his ground reference.

At 1956, the McGuire Approach controller radar identified the airplane. At that time, the airplane was about 10 miles southwest of BLM, at an altitude of 2,200 feet, and flying southwest away from BLM. The controller provided a position, and a recommended a vector of 040 degrees. The controller also asked if the pilot would like flight following, and the pilot replied affirmative. The pilot then made a left turn and reversed course to a northeast direction.

At 1959, the pilot reported that he was indicating about 10 miles from BLM, which the controller acknowledged. At that time, the airplane was at 1,300 feet, traveling northeast.

Between 1959 and 2002, the airplane descended to 200 feet and then climbed back to 900 feet. The descent occurred in the vicinity of Lakewood Airport (N12), Lakewood, New Jersey.

At 2002, the pilot reported the he was indicating 7 miles from BLM, and heading 040 degrees. At that time, the airplane was at an altitude of approximately 900 feet. The controller responded that the information appeared to be correct. The controller subsequently attempted to contact the pilot five times, to ask him if he had the airport in sight. The pilot did not respond.

At 2003, after the sixth transmission, the pilot acknowledged the transmission, and subsequently stated the he believed he had the airport in sight. The controller then terminated radar services and approved a frequency change. At that time, the airplane was about 5 miles southwest of BLM, at an altitude of 400 feet.

About 40 seconds later, the pilot radioed McGuire Approach on a frequency which was not in service. The pilot reported that he did not have the airport in sight. The last radar return was

recorded about the same time. It indicated that the airplane was at 100 feet, traveling northeast, about 5 miles southeast of BLM. The last radar return was approximately 1 mile southeast of the accident site.

No further transmissions were received from the accident airplane.

Seven witnesses were identified during the accident investigation. One witness met investigators at the site, and six others were identified on the police report.

The witness who met investigators lived near the accident site. He reported that he saw lights and an airplane traveling through trees, followed by a postcrash fire. The witness did not recall hearing engine noise.

A second witness also lived near the accident site, and was standing in his yard at the time. He reported hearing engine noise, which was constant with no sputtering. He then saw the airplane flying "low," descending into trees.

A third witness was driving near the accident site, with the vehicle windows down. He heard engine noise, but could not be sure if it was normal noise or sputtering. He then saw the airplane and its lights descend into trees.

A fourth witness was standing near the accident site. She saw the airplane descend into the trees at an angle. The witness further stated that she did not hear anything unusual.

Attempts to contact the remaining three witnesses via telephone and written correspondence were unsuccessful.

The accident occurred during the hours of dusk; located about 40 degrees, 07.64 minutes north latitude, and 74 degrees, 09.20 minutes west longitude.

PERSONNEL INFORMATION

The pilot held a private pilot certificate, with a rating for airplane single engine land. His most recent FAA third class medical certificate was issued on August 9, 2005. At that time, the pilot reported a total flight experience of 1,550 hours.

The pilot's logbook was not recovered; however, he had completed an aircraft insurance application on October 4, 2006. At that time, he had reported a total flight experience of 1,800 hours; of which, 275 hours were in the same make and model as the accident airplane.

AIRCRAFT INFORMATION

The airplane's most recent annual inspection was completed on September 15, 2006. At that time, the airplane had accumulated 6,062.5 hours of operation. The engine had accumulated

1,936.4 hours of operation since major overhaul.

METEOROLOGICAL INFORMATION

The reported weather at BLM, at 2015, was: wind from 010 degrees at 7 knots; visibility 10 miles; sky clear; temperature 55 degrees Fahrenheit; dew point 18 degrees Fahrenheit; altimeter 30.27 inches Hg.

WRECKAGE AND IMPACT INFORMATION

The wreckage was located in a wooded area, adjacent to a residential area, approximately 4 miles southwest of BLM. The wreckage was examined on March 29, 2007, and all major components of the airplane were accounted for at the scene. An approximate 150-foot debris path was observed, that originated with tree strikes and a landing gear wheel cover. The debris path extended on a course of approximately 110 degrees, and terminated at the main wreckage. Several freshly cut tree branches were recovered along the debris path. They were cut at approximate 45-degree angles, and the cuts exhibited black paint transfer. The left wingtip and left aileron were located about 130 feet along the debris path.

The main wreckage was resting inverted, and oriented about a 055-degree heading. The cabin and cockpit area were consumed by fire. The empennage, elevator, and rudder remained intact, and were charred. Flight control continuity was established from the cockpit controls to the rudder, elevator, elevator trim, and aileron bellcranks. A jackscrew measurement of the elevator trim revealed that it was in the approximate neutral position. The flap handle was located near the cockpit area, and in the flaps retracted position. The fuel selector was in the right fuel tank position.

The left wing had separated, and was resting near its attach point. The left wing exhibited impact damage consistent with a tree strike. The left flap remained attached to the left wing, and in the retracted position. The left fuel tank was compromised consistent with impact damage. The right wing remained partially attached to the fuselage, and exhibited impact damage along the leading edge. The right aileron and flap remained attached to the right wing. The right flap was in the retracted position, and the right aileron was approximately neutral. The right fuel tank was compromised consistent with impact damage.

The propeller remained attached to the engine, and the engine remained attached to the fuselage. One propeller blade was curled at the tip, and the other propeller blade exhibited s-bending. The carburetor sustained impact damage, and was found separated from its mount flange and throttle plate. The floats, venturi, and data plate had separated and were not recovered. The gascolator was founded separated and fractured.

The engine was removed from the airframe for inspection. The crankshaft was then rotated by hand through an accessory gear drive. Camshaft, crankshaft, and valve train continuity were confirmed, and thumb compression was obtained on all four cylinders. The oil filter contained

oil, and no metallic contamination was observed. When rotated by hand, both magnetos produce spark at all four leads. The top sparkplugs were removed for inspection; their electrodes were intact and light to dark gray in color.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Monmouth County Medical Examiner's Office, Freehold, New Jersey.

Toxicological testing was conducted on the pilot at the FAA Toxicology Accident Research Laboratory, Oklahoma City, Oklahoma. Review of the toxicology report revealed:

"...0.011 (ug/mL, ug/g) ALPRAZOLAM detected in Blood
0.017 (ug/mL, ug/g) ALPRAZOLAM detected in Urine
0.125 (ug/mL, ug/g) ALPHA- HYDROXYALPRAZOLAM detected in Urine
ALPHA- HYDROXYALPRAZOLAM NOT detected in Blood
0.383 (ug/mL, ug/g) CITALOPRAM detected in Blood
CITALOPRAM present in Urine
0.085 (ug/mL, ug/g) N-DESMETHYLCITALOPRAM detected in Blood
N-DESMETHYLCITALOPRAM present in Urine
DI- N-DESMETHYLCITALOPRAM detected in Blood
DI- N-DESMETHYLCITALOPRAM detected in Urine
1.661 (ug/mL, ug/g) LAMOTRIGINE detected in Blood
LAMOTRIGINE present in Urine..."

The pilot was 70 years old at the time of the accident. Review of the pilot's most recent application for an FAA third class medical certificate, dated August 9, 2005, revealed that he reported "No" to "Do You Currently Use Any Medication," and to all items under "Medical History," including specifically "Dizziness or fainting spell," "Heart or vascular trouble," "High or low blood pressure," "Stomach, liver, or intestinal trouble," "Diabetes," "Neurologic disorders; epilepsy, seizures, stroke, paralysis, etc.," "Admission to hospital," and "Other illness, disability, or surgery." The application also indicated "No" for "Visits to Health Professionals Within Last 3 Years."

Review of the pilot's medical records from his primary care physician revealed frequent "regular check up" visits and multiple medications since 1997 for conditions including diabetes, coronary artery disease, high blood pressure, gastroesophageal reflux disease, and degenerative joint disease. In addition, the pilot underwent angioplasty with stent replacement in January 1997, and surgery in May 2002 due to mouth cancer. He had been seen by his primary care physician almost every month since January 2005.

Records further detailed consultations for an episode of visual change in December 1999, diagnosed as a transient ischemic attack (a TIA, sometimes called a "mini-stroke"), for tinnitus and dizziness in November 2000, and for tremor and short-term memory loss in November

2003. An echocardiogram in April 2003 revealed "bowing of the intra-atrial septum" and "a small PFO (patent foramen ovale)." An MRI performed in December 2003 showed changes consistent with a small stroke.

Records of a physician's office visit on March 20, 2007, listed medications for high blood pressure (combined valsartan and hydrochlorothiazide, and amlodipine), for depression (lamotrigine and escitalopram), for tremor (clonazepam and alprazolam), for diabetes (short and long-acting insulin), and for gastroesophageal reflux disease (esomeprazole). A medication originally prescribed in 1999 to reduce clot formation (clopidogrel) following the pilot's TIA was crossed off in the March 20, 2007 entry.

The primary care physician's notes in 2002 described the pilot as having "been a pilot in the past," and at the time of the accident indicated that she was not aware the pilot was flying alone. She documented that the pilot had previously told her that he was no longer flying, and that he was only in his airplane when another licensed pilot was with him.

ADDITIONAL INFORMATION

The wreckage was released to a representative of the owner's insurance company on March 29, 2007.

Pilot Information

Certificate:	Private	**Age:**	70,Male
Airplane Rating(s):	Single-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 With waivers/limitations	**Last FAA Medical Exam:**	August 1, 2005
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	August 1, 2005
Flight Time:	1800 hours (Total, all aircraft), 275 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	**Registration:**	N33521
Model/Series:	PA-28-151	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	28-7515301
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	September 1, 2006 Annual	**Certified Max Gross Wt.:**	2325 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	6063 Hrs as of last inspection	**Engine Manufacturer:**	Lycoming
ELT:	Installed, not activated	**Engine Model/Series:**	O-320
Registered Owner:	Eugene R. Pilot	**Rated Power:**	150 Horsepower
Operator:		**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Dusk
Observation Facility, Elevation:	BLM,159 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	20:15 Local	**Direction from Accident Site:**	15°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	7 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	10°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.27 inches Hg	**Temperature/Dew Point:**	13°C / -8°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Farmingdale, NJ (BLM)	**Type of Flight Plan Filed:**	None
Destination:	(BLM)	**Type of Clearance:**	None
Departure Time:	19:00 Local	**Type of Airspace:**	

Airport Information

Airport:	Monmouth Executive Airport BLM	**Runway Surface Type:**	
Airport Elevation:	159 ft msl	**Runway Surface Condition:**	
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	40.127498,-74.153335

Administrative Information

Investigator In Charge (IIC):	Gretz, Robert
Additional Participating Persons:	Ken Symons; FAA/FSDO; Teterboro, NJ Robert Martellotti; Piper Aircraft; Vero Beach, FL Gregory Erikson; Lycoming Engines; Williamsport, PA
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Note:	
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