



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Harriestown, NY	<b>Accident Number:</b>	NYC04FA100
<b>Date &amp; Time:</b>	04/02/2004, 1925 EST	<b>Registration:</b>	N4686J
<b>Aircraft:</b>	Piper PA-28R-180	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	2 Fatal
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Personal		

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## Analysis

Arriving in the area of the destination airport, the weather was reported as, 1-3/4 statute miles of visibility; light snow, mist; overcast cloud layer at 200 feet; temperature of 34 degrees Fahrenheit; dew point of 32 degrees Fahrenheit. The pilot performed an ILS procedure towards the runway. An employee at the airport received a radio transmission from the accident airplane, requesting a current altimeter setting. The employee replied back with the current altimeter setting. Moments later, the employee heard a transmission from the airplane that it was on a 4 mile final for the ILS approach. No further transmissions were received from the airplane. The airplane came to rest in a wooded area, about 3/4-mile from the runway threshold, about 300 feet right of the extended centerline. Review of the approach plate for the ILS approach revealed that the minimum glide slope intercept altitude at the beginning of the final approach segment on the precision approach was 4,300 feet msl. The glide slope altitude at the final approach fix for the non-precision approach, which was located about 4 miles from the approach end of the runway, was 3,619 feet msl. The glide slope altitude at the middle marker, which was located about 0.4 miles from the approach end of the runway, was 1,853 feet msl. Review of recovered GPS data revealed that about 1.75 miles from the runway, the airplane turned to the left of the final approach course. When the airplane was about 1/2 mile left of the final approach course, it began a turn to the right towards the final approach course. The last GPS data point was recorded about 5,073 feet from the runway threshold, along the final approach course, at an altitude of 1,765 feet msl. The elevation at the airport was 1,663 feet msl. Review of the pilot's logbook revealed times spans in excess of 6 months, where the pilot did not record 6 instrument approaches or IFR holding procedures. The pilot's last recorded instrument flight proficiency flight was dated October 26, 1996. According to Federal Aviation Regulations, Part 61.57 Recent flight experience, pilot-in-command, "...no person may act as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR, unless within the preceding 6 calendar months, that person has...performed and logged under actual or simulated instrument conditions, at least six instrument approaches, holding procedures, and intercepting and tracking courses through the use of navigation systems...a person who does not meet the instrument experience requirements within the prescribed time, or within 6 calendar months after the prescribed time, may not serve as pilot in command under IFR or in weather conditions less than the

minimums prescribed for VFR until that person passes an instrument proficiency check..."

## 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 rules procedures resulting in a collision with a tree. Factors related to the accident were the dark night conditions, low visibility, and low cloud ceiling.

### Findings

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Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

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

#### Findings

1. OBJECT - TREE(S)
2. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
3. (F) LIGHT CONDITION - DARK NIGHT
4. (F) WEATHER CONDITION - LOW CEILING
5. (F) WEATHER CONDITION - SNOW

## Factual Information

### HISTORY OF FLIGHT

On April 2, 2004, about 1925 eastern standard time, a Piper PA-28R-180, N4686J, was substantially damaged after impacting terrain during an approach to the Adirondack Regional Airport (SLK), Harrietstown, New York. 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 Leesburg Executive Airport (JYO), Leesburg, Virginia. The personal flight was conducted under 14 CFR Part 91.

According to a Federal Aviation Administration (FAA) inspector, the airplane arrived at JYO the day before the accident, and was fueled with 25.9 gallons of aviation fuel.

On the day of the accident, the pilot received a weather briefing from the Leesburg Flight Service Station (FSS), and subsequently filed an IFR flight plan. He then departed JYO about 1530. The flight proceeded uneventfully towards SLK, and was cleared for the ILS runway 23 approach at SLK at 1858. At 1909, the radar services were terminated.

An employee at the SLK airport received a radio transmission from the accident airplane, requesting a current altimeter setting. The employee replied back with the current altimeter setting. Moments later, the employee heard a transmission from the airplane that it was on a 4 mile final for the ILS runway 23 approach. No further transmissions were received from the airplane.

The airplane was located the following day by rescue personnel. It came to rest inverted, in a wooded area, about 3/4-mile from the runway 23 threshold, and about 300 feet right of the extended centerline.

Review of radar data revealed that the airplane crossed the SLK VOR, which was co-located on the airport, at 6,000 feet msl, and proceeded outbound on a course of approximately 050 degrees. The airplane also began a descent to 5,000 feet msl after crossing the VOR. About 9 miles from the SLK VOR, the airplane made a left hand turn. Approximately 10 seconds later, the airplane turned to the right. The turn continued until intercepting the final approach course for the runway 23 localizer, where a gradual descent began. The last target observed was about 2.25 miles prior to the SLK VOR, at an altitude of 2,500 feet msl.

A hand-held global positioning system (GPS) was found in the wreckage, and was forwarded to the manufacturer for data extraction. The data revealed that the airplane departed from JYO, and proceeded in a northerly direction towards SLK at an average airspeed of 153 mph. About 5 minutes after passing the SLK VOR at 5,555 feet msl, the airplane reversed course, and began to track the final approach course inbound towards the runway. About 1.75 miles from the runway, the airplane turned to the left of the final approach course. When the airplane was about 1/2 mile left of the final approach course, it began a turn to the right towards the final approach course. The last data point was recorded about 5,073 feet from the runway threshold, along the final approach course, at an altitude of 1,765 feet msl.

The accident occurred during the hours of darkness, at 44 degrees, 24.336 minutes north longitude, 74 degrees, 11.42 minutes west latitude, at an elevation of 1,640 feet.

### PILOT INFORMATION

The pilot held a private pilot certificate with ratings for airplane single engine land, and instrument airplane.

The pilot's most recent application for a Federal Aviation Administration (FAA) third class medical certificate was dated on May 14, 1996.

Review of the pilot's logbook revealed that he had accumulated about 1,215 hours of total flight experience, of which 285 hours were recorded as "actual instrument." During the previous 6-month period, the pilot recorded 5 instrument approaches, and 14.9 hours of "actual instrument." The pilot did not record any IFR holding procedures during the 6-month period. Further review of the pilot's logbook revealed times spans in excess of 6 months, where the pilot did not record 6 instrument approaches or IFR holding procedures. The pilot's last recorded instrument flight proficiency flight was dated October 26, 1996.

#### AIRCRAFT INFORMATION

A review of the airframe and engine records did not reveal any abnormalities with the engines or the airframe.

The airplane's most recent annual inspection was completed on March 31, 2004, at a total aircraft time of 3,108 hours.

#### METEOROLOGICAL INFORMATION

The weather reported at SLK, at 1924, included winds from 090 at 5 knots; 1-3/4 statute miles of visibility; light snow, mist; overcast cloud layer at 200 feet; temperature of 34 degrees Fahrenheit; dew point of 32 degrees Fahrenheit; and an altimeter setting of 29.75 inches of mercury.

An AIRMET, issued at 1545, and valid until 2200, called for moderate rime and mixed icing in clouds and in precipitation, between the freezing level and 15,00 feet. The freezing level was expected to be between 4,000 and 6,000 feet.

#### AIDS TO NAVIGATION

Review of the approach plate for the ILS Runway 23 approach at SLK revealed that the outbound minimum altitude from the SLK VOR, for the full approach, was 5,000 feet msl. The outbound course was 047 degrees, and continued to the initial approach fix (IAF). Upon crossing the IAF, the outbound course was 049 degrees, and the minimum descent altitude was 4,800 feet msl. Upon completion of the course reversal, the inbound course was 229 degrees. The glide slope crossing altitude at the beginning of the final approach segment on the precision approach was 4,300 feet. The glide slope altitude at BRIEL intersection, which was located about 5.8 miles from the approach end of the runway, was 3,619 feet. The glide slope altitude at the middle marker, which was located about 0.4 miles from the approach end of the runway, was 1,853 feet. The minimums for the full approach were 1/2 statute mile visibility, and a decision height of 200 feet agl.

The airport elevation at SLK was 1,663 feet msl.

#### WRECKAGE INFORMATION

Examination of the accident site on April 3-4, revealed terrain which consisted of evergreen and hardwood trees reaching a height of about 40 feet. The ground surrounding the accident site was covered with about 4 feet of snow. The wreckage path was oriented on a 230-degree

heading, with the main fuselage coming to rest on a 235-degree heading.

The first tree strike area was located about 150 feet prior to the main fuselage. A 48-inch section of the outer left wing was located about 60 feet beyond the first tree strike. About 10 feet from the outer left wing, the remaining section of the inboard left wing was located. A large section of a 9-inch diameter hardwood tree was found lying on the ground about 4 feet past the wing section. About 35 feet beyond the fallen tree was a 6-foot wide, 15-foot long, and 1-foot deep, crater. About 40 feet beyond the crater was the main wreckage. The right wing, and empennage section remained attached to the fuselage. All flight control surfaces were accounted for at the accident site. The left wing main landing gear assembly was located under the fuselage.

When the outer left wing was examined, a 12-inch deep "u"-shaped dent on the leading edge were noted. Tree bark was observed in the dent compression mark.

When the inboard left wing was examined, two large, deep, dents on the leading edge was noted. Tree bark was observed in the dent compression marks.

The engine was removed from the airframe and examined. The crankshaft was rotated freely through the accessory drive section. Thumb compression and valve train continuity was attained on all cylinders.

The top and bottom spark plugs were removed; their electrodes were intact and light gray in color. The left and right magnetos were removed from the engine, and when rotated by hand, produced spark on all four towers.

The fuel line connected to the fuel divider manifold and the fuel servo was removed and contained fuel. The fuel flow divider cap was removed, and liquid similar in color and odor to aviation 100 low lead fuel was observed. The fuel servo filter screen was absent of debris. All four 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 sump screen was removed from the engine. Carbon deposits and a Teflon tape remnant were observed in the screen and its cap.

Internal examination of each cylinder was conducted using a lighted borescope. Each cylinder displayed no abnormalities 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.

The 2-bladed propeller remained attached to the engine. Both blades were broken loose inside the hub assembly, and displayed s-bending and chord-wise scratching.

The cockpit area was severely damaged.

Examination of the cockpit area revealed that the fuel selector was observed in the "left" tank position. The fuel boost pump switch was in the "off" position. The pitot heat switch was in the "off" position. The autopilot switch was in the "off" position.

The pilot's airspeed indicator was recovered, but had sustained impact damage. The airspeed indicator displayed a reading of 71 knots. The altimeter indicator displayed a reading of 3,220 feet. The Kollsman window displayed an altimeter setting of 29.73. The remaining primary

instruments were either destroyed or impact damaged.

The throttle lever was destroyed. The mixture and propeller controls were in the full forward position; however, they had sustained impact damage.

Control cable continuity for the right wing, rudder, stabilator, and trim surfaces located on the tail section of the airplane, were confirmed to the cockpit area; however, recovery personnel cut the cables that extended to the flight controls in the cockpit. All cable ends to the left wing were separated. No corrosion was observed at the separation points.

The landing gear was determined to be extended, by noting the fracture locations on the strut assemblies. The flap position was determined to be in the 10-degree position.

#### MEDICAL AND PATHOLOGICAL INFORMATION

The Franklin County Coroners Office, Franklin County, New York, performed an autopsy of the pilot, on April 4, 2004.

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

#### ADDITIONAL INFORMATION

##### - Instrument Experience -

According to Federal Aviation Regulations, Part 61.57 Recent flight experience, pilot-in-command:

"(c) Instrument experience. Except as provided in paragraph (e) of this section, no person may act as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR, unless within the preceding 6 calendar months, that person has:

(1) For the purpose of obtaining instrument experience in an aircraft (other than a glider), performed and logged under actual or simulated instrument conditions, either in flight in the appropriate category of aircraft for the instrument privileges sought or in a flight simulator or flight training device that is representative of the aircraft category for the instrument privileges sought,

(i) At least six instrument approaches;

(ii) Holding procedures; and

(iii) Intercepting and tracking courses through the use of navigation systems.

(d) Instrument proficiency check. Except as provided in paragraph (e) of this section, a person who does not meet the instrument experience requirements of paragraph (c) of this section within the prescribed time, or within 6 calendar months after the prescribed time, may not serve as pilot in command under IFR or in weather conditions less than the minimums prescribed for VFR until that person passes an instrument proficiency check consisting of a representative number of tasks required by the instrument rating practical test."

##### - Instrument Landing System (ILS) -

According to the Aeronautical Information Manual chapter on Navigation Aids, Instrument Landing System (ILS), it stated that "Make every effort to remain on the indicated glide path."

It also cautioned the pilot to, "Avoid flying below the glide path to assure obstacle/terrain clearance is maintained."

- Wreckage Release -

The airplane wreckage was released on April 4, 2004.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	57, Male
<b>Airplane Rating(s):</b>	Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Seatbelt, Shoulder harness
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 3 Expired	<b>Last FAA Medical Exam:</b>	05/14/1996
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	10/26/1996
<b>Flight Time:</b>	1218 hours (Total, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N4686J
<b>Model/Series:</b>	PA-28R-180	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	No
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	28R-30587
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	03/01/2004, Annual	<b>Certified Max Gross Wt.:</b>	2650 lbs
<b>Time Since Last Inspection:</b>	6 Hours	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3108 Hours at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, activated, aided in locating accident	<b>Engine Model/Series:</b>	IO-360
<b>Registered Owner:</b>	Paul N. Gurlich	<b>Rated Power:</b>	180 hp
<b>Operator:</b>	Paul N. Gurlich	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	SLK, 1663 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1924 EST	Direction from Accident Site:	230°
Lowest Cloud Condition:		Visibility	1.75 Miles
Lowest Ceiling:	Overcast / 200 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.75 inches Hg	Temperature/Dew Point:	1°C / 0°C
Precipitation and Obscuration:	Light - Snow		
Departure Point:	Leesburg, VA (JYO)	Type of Flight Plan Filed:	IFR
Destination:	Harriettstown, NY (SLK)	Type of Clearance:	IFR
Departure Time:	1530 EST	Type of Airspace:	Class E

## Airport Information

Airport:	Adirondack Regional Airport (SLK)	Runway Surface Type:	Unknown
Airport Elevation:	1663 ft	Runway Surface Condition:	Unknown
Runway Used:	23	IFR Approach:	ILS
Runway Length/Width:		VFR Approach/Landing:	None

## Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	1 Fatal	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 Fatal	Latitude, Longitude:	44.409167, -74.195000

## Administrative Information

Investigator In Charge (IIC):	Stephen M Demko	Report Date:	10/27/2005
Additional Participating Persons:	James W Leavitt; FAA; Latham, NY George Hollingsworth; Piper Aircraft; Vero Beach, FL Aaron Spotts; Lycoming Engines; Williamsport, PA		
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 <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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