



# Aviation Investigation Final Report

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<b>Location:</b>	Engadine, Michigan	<b>Accident Number:</b>	CHI90LA280
<b>Date &amp; Time:</b>	December 1, 1989, 23:45 Local	<b>Registration:</b>	N2440P
<b>Aircraft:</b>	Piper PA-22-150	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>		<b>Injuries:</b>	1 Fatal
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

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## Analysis

The airplane impacted trees and the terrain in a heavily wooded swamp. The airplane departed on a night cross country flight on December 1, 1989, and failed to arrive at its destination. At 2312, the pilot contacted a flight service station while en route for the forecast weather along his route. At 2342, the pilot contacted the Minneapolis Air Route Traffic Control Center (ZMP) and stated that he was "a little disoriented and would like a [transponder] code and a heading toward Sault Ste Marie (ANJ), Michigan." Two transponder codes were assigned to N2440P, but attempts to establish radar contact were not successful. The last communication with N2440P was at 2345 when the pilot informed ZMP that their transmissions were "pretty weak." A witness who reported seeing an airplane flying at tree-top level stated there was heavy snow in the area at the time. The wreckage was located by hunters on October 12, 2002. The airplane descended through the trees for approximately 150 feet on a northeasterly heading prior to coming to rest in a nearly inverted attitude. Flight control continuity was established. The engine separated from the airframe at the engine mounts. The engine was buried in the swamp with approximately 1 1/2 inches of one propeller blade being visible. There were no immediate plans to remove the wreckage from the swamp.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A collision with trees and the terrain for undetermined reasons.

## Findings

Occurrence #1: UNDETERMINED

Phase of Operation: UNKNOWN

### Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

## Factual Information

### HISTORY OF FLIGHT

On December 1, 1989, a Piper PA-22-150, N2440P, operated by an Airline Transport Rated pilot collided with trees and the terrain in a heavily wooded area in Engadine, Michigan. The pilot was fatally injured and the airplane was substantially damaged. The 14 CFR Part 91 personal flight was operating in both visual meteorological and instrument meteorological conditions along its proposed route of flight. No flight plan was filed. The flight originated from the Cheboygan County Airport (SLH), Cheboygan, Michigan, en route to the Delta County Airport (ESC) Escanaba, Michigan.

The airplane was reported as missing when the accident happened. The wreckage was located by hunters on October 12, 2002. The hunters reported finding the wreckage to the Michigan State Police on October 13, 2002.

According to the pilot's employer, the pilot's duty time on the day of the flight started at 0900 and continued until 1500 when he took a two hour break. At 1700 he resumed duty and flew a round trip to Erie, Pennsylvania, in a Piper Seneca. He returned to Cheboygan sometime before 2300.

The employer last talked to the pilot just before 2300. At that time, the pilot stated that he was going to try to fly to Escanaba and if the weather was bad, he would probably just return to Chippewa, Michigan, and drive to Escanaba in the morning.

At 2312, N2440P contacted the Flight Service Station in Lansing, Michigan, and requested the forecast weather for Marquette, Michigan, and Green Bay, Wisconsin. An intermittent dialogue concerning the weather and flight conditions along the proposed route continued until 2317.

At 2342, N2440P contacted the Minneapolis Air Route Traffic Control Center (ZMP) and stated that he was "a little disoriented and would like a [transponder] code and a heading toward Sault Ste Marie (ANJ), Michigan." Two transponder codes were assigned to N2440P, but attempts to establish radar contact were not successful. The last communication with N2440P was at 2345 when the pilot informed ZMP that their transmissions were "pretty weak."

A witness who was driving west on US 2, approximately 4.5 miles west of Naubinway, Michigan, reported seeing a low flying airplane that matched the description of N2440P around 2330. She reported the airplane was traveling west at tree-top level. She stated it was snowing heavily at the time and the wind was blowing off the lake. Naubinway is approximately 5 miles east of the accident site.

On December 2, 1989, at 0600, the Director of Operations for Midwest Flying Service, received a telephone call from the pilot's wife inquiring as to the whereabouts of her husband. After the telephone conversation, the director went to the airport and found that the pilot's airplane was not in the hangar. He then reported the airplane overdue and a search was initiated.

On December 2, 1989, at 1040, the USAF opened a search mission for N2440P. Elements of the Michigan and Wisconsin Civil Air Patrol, the U.S.Coast Guard, and USAF 305th Air Rescue Squadron participated in the search. There were 101 sorties flown, totaling 279 hours, in support of the mission. The search was suspended on December 22, 1989.

#### PERSONNEL INFORMATION

The pilot held an airline transport certificate with single and multi-engine land ratings. In addition, the pilot held a certified flight instructor (CFI) certificate with single engine land, multi-engine land, and instrument ratings. The CFI certificate had been renewed on August 18, 1989. The pilot was also a licensed airframe and powerplant mechanic.

The pilot's last second class medical certificate was issued on March 21, 1989. There were no restrictions on the certificate.

Pilot logbooks were not located at the time of the accident. The pilot reported having a total of 3,200 hours flight hours when he received his CFI renewal on August 18, 1989.

#### AIRCRAFT INFORMATION

Maintenance records for the airplane were not located at the time of the accident. Therefore, the total flight time and maintenance history of the airplane could not be established.

#### METEOROLOGICAL INFORMATION

A weather observation station, located at ANJ, about 55 nautical miles (nm) from the accident site on a 065 degrees magnetic heading, recorded the weather the accident as:

Observation Time: 2352 est  
Wind: 110 degrees magnetic at 9 knots  
Visibility: 8 statute miles  
Sky Condition: 700 broken  
Temperature:-3 degrees Celsius  
Dew Point: -4 degrees Celsius  
Precipitation: light snow  
Pressure: 29.82 inches of mercury

A weather observation station, located at ESC, about 68 nautical miles (nm) from the accident site on a 250 degrees magnetic heading, recorded the weather the accident as:

Observation Time: 2345 est  
Wind: 220 degrees magnetic at 10 knots  
Visibility: 7 statute miles  
Sky Condition: 1,500 scattered, 3,000 overcast  
Temperature: 3 degrees Celsius  
Dew Point: 1 degrees Celsius  
Precipitation: none  
Pressure: 29.69 inches of mercury

The National Weather Service Area Forecast (FA) CHI FA 020245 issued December 2/0245Z until December 2/1500Z called for:

- (1) Flight precautions ... Icing, IFR
- (2) Occasional moderate rime icing in clouds below 10,000 feet
- (3) Occasional ceilings below 1,000 feet overcast/obscured visibility below 3 miles, light snow
- (4) Above ground level 3,000 to 5,000 feet scattered to broken, 10,000 to 12,000 feet overcast, tops 16,000 feet with occasional visibilities 3 to 5 miles in light snow.

A witness reported heavy snow in the area of the accident site around the time of the accident.

#### WRECKAGE AND IMPACT INFORMATION

An inspector from the Federal Aviation Administration Flight Standards District Office in Grand Rapids, Michigan, inspected the accident site on October 22, 2002.

The main wreckage was located in a heavily wooded cedar swamp. A global positioning system (GPS) receiver recorded the position of the main wreckage as 46-degrees 09-minutes 16.9-seconds north latitude, 85-degrees 39-minutes 49.1-seconds west longitude.

The inspector reported the airplane descended through the trees for approximately 150 feet on a northeasterly heading prior to coming to rest in a near inverted attitude. The airplane sustained substantial impact damage. Both wings and the tail remained attached to the fuselage. Flight control continuity to both ailerons, the elevator, and the rudder was established. The engine separated from the airframe at the engine mounts. The engine was buried in the swamp with approximately 1 1/2 inches of one propeller blade being visible.

There were no immediate plans to remove the wreckage from the swamp.

#### MEDICAL AND PATHOLOGICAL INFORMATION

Positive identification of the pilot was made by the Mackinac County Medical Examiner's Office.

## ADDITIONAL INFORMATION

The original report of this accident was created as CHI90-F-AMS1 with a location listed as Cheboygan, Michigan.

### Pilot Information

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	37, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 Valid Medical—no waivers/lim.	<b>Last FAA Medical Exam:</b>	March 21, 1989
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	3200 hours (Total, all aircraft)		

### Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Piper	<b>Registration:</b>	N2440P
<b>Model/Series:</b>	PA-22-150	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	22-2811
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	1950 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>		<b>Engine Model/Series:</b>	O-320-A1A
<b>Registered Owner:</b>	Karl E. Warm	<b>Rated Power:</b>	150 Horsepower
<b>Operator:</b>		<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Night
<b>Observation Facility, Elevation:</b>	ANJ,716 ft msl	<b>Distance from Accident Site:</b>	55 Nautical Miles
<b>Observation Time:</b>	23:52 Local	<b>Direction from Accident Site:</b>	65°
<b>Lowest Cloud Condition:</b>	Unknown	<b>Visibility</b>	8 miles
<b>Lowest Ceiling:</b>	Broken / 700 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	110°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.81 inches Hg	<b>Temperature/Dew Point:</b>	-3°C / -4°C
<b>Precipitation and Obscuration:</b>	Light - None - Snow		
<b>Departure Point:</b>	Cheboygan, MI (Y15)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Escanaba, MI (ESC)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Fatal	<b>Latitude, Longitude:</b>	46.154445,-85.663612

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Sullivan, Pamela
<b>Additional Participating Persons:</b>	Frank S Schaefer; FAA - Grand Rapids FSDO; Grand Rapids, MI
<b>Original Publish Date:</b>	May 30, 2003
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=55901">https://data.ntsb.gov/Docket?ProjectID=55901</a>

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The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).