



Aviation Investigation Final Report

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|--------------------------------|--------------------------------------|-------------------------|------------|
| Location: | NEGUANEE, Michigan | Accident Number: | CHI99FA332 |
| Date & Time: | September 1, 1999, 20:40 Local | Registration: | N91901 |
| Aircraft: | Piper PA-12 | Aircraft Damage: | Destroyed |
| Defining Event: | | Injuries: | 1 Fatal |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

The floatplane impacted a microwave tower at 2040 edt while maneuvering 1/4 mile from the lake where it typically landed. Official sunset was 2030 and the sun's azimuth was 283 degrees. The pilot had 'Defective distant vision, right eye, 20/60, uncorrectable.' A witness reported, 'It appeared as though he was doing a circle back towards his house-a routine I had seen him do many times before. This time ... he seemed to be flying much lower, closer to the trees, than usual. The witness reported, 'He appeared to have circled around again, and this time the engine was revved up considerably higher. Again, his flight was uncharacteristically low. I wondered whether it was [the pilot] flying the plane because I'd never seen him fly like this before.' He reported, 'I went into the house and within a few minutes I heard what sounded like a rifle blast.' The left pontoon was located about 46 feet from the base of the tower. It exhibited cable scratching and crushing and bending of its main strut. The main wreckage was located about 120 feet from the base of the tower. The inspection revealed no airframe or engine pre-impact anomalies. The propeller exhibited chordwise scratching, leading edge gouging, 'S' bending, and blade tip curl. The side lights on the tower were observed operating the night of the accident after the airplane had impacted the tower.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the pilot failed to maintain clearance from the tower.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT

Phase of Operation: MANEUVERING

Findings

1. (C) ALTITUDE/CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
2. PHYSICAL IMPAIRMENT(VISUAL DEFICIENCY) - PILOT IN COMMAND
3. OBJECT - TOWER(MARKED)
4. LIGHT CONDITION - OTHER

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

History of Flight

On September 1, 1999, at 2040 eastern daylight time, a Piper PA-12 floatplane, N91901, was destroyed when it impacted a 200 foot communications tower located approximately 1/4 statute mile from the intended landing site on the Dead River Basin, Neguane, Michigan. The private pilot was fatally injured. The 14 CFR Part 91 personal flight had departed from the bay at Marquette, Michigan, approximately 25 minutes prior to the accident. The communications tower was located approximately 8 nautical miles and 288 degrees from the departure point. The official sunset at Marquette, Michigan, was 2030 EDT, and the sun's azimuth at sunset was 283 degrees. Visual meteorological conditions prevailed and no flight plan had been filed. There were no witnesses to the accident.

A witness reported hearing the airplane depart from the bay at Marquette, Michigan, at approximately 2015.

A neighbor of the pilot reported seeing the airplane flying in the area between 1930 and 2030. He reported, "At 8:30p, just before I finished cutting the lawn, I noticed [the pilot] was apparently coming in for a landing or so I assumed. He was throttled back but was a little higher than normal. I then went into my home and at approximately 8:40p I heard what sounded like a large caliber rifle shot with a lingering echo." He reported, "It was still daylight and we walked to a place where we could see the tower and indeed saw that the top 25% of the tower had been knocked off and was dangling."

Another neighbor of the pilot reported that he had been out walking and observed the airplane flying to the west. He reported, "It appeared as though he was doing a circle back towards his house-a routine I had seen him do many times before. This time, though, I made a mental note that he seemed to be flying much lower, closer to the trees, than usual. At the time, the plane's engine seemed to be on more of a coast, rather than 'revved up.' He appeared to have circled around again, and this time the engine was revved up considerably higher. Again, his flight was uncharacteristically low. I wondered whether it was [the pilot] flying the plane because I'd never seen him fly like this before." He reported, "I went into the house and within a few minutes I heard what sounded like a rifle blast."

Personnel Information

The pilot was a private pilot with single engine land and single engine sea ratings, and was instrument rated in airplanes. He held a Third Class medical certificate. He had a total of about 1,136 hours of flight time.

Three pilot flight logbooks were obtained. The logbooks indicated the pilot had started flying in 1960. The last flight entered into the logbook was on June 23, 1998, when the pilot satisfactorily completed a Biennial Flight Review in a Cessna 172. There were no other flights recorded during 1998. The logbook indicated the pilot had flown three times in 1997. A friend of the pilot's reported the pilot, "...flew the aircraft very little last year."

FAA medical records indicated the pilot had injured his right eye as a result of a fall and that he was given a medical waiver on February 5, 1987. The defect noted on the waiver was, "Defective distant vision, right eye, 20/60 uncorrectable." The Third Class medical certificate he received on June 19, 1998, required that corrective glasses must be worn.

Aircraft Information

The floatplane equipped airplane was a single engine Piper PA-12, serial number 12-22, on EDO floats. The airplane seated two and had a maximum gross weight of 1,750 pounds. The engine was a 150 horsepower Lycoming O-320 engine. The pilot had purchased the airplane in 1990.

The last annual inspection was conducted on August 27, 1999. The airplane had flown four hours since the last inspection and had a total time of 2,188 hours.

The airplane's fabric was replaced in 1999 and the work completed as part of the annual inspection. The mechanic's Description of Work stated, "Disassembled aircraft for complete fabric recover. Removed fabric inspected wing and fuselage structures and control systems. Recovered aircraft using polyfiber system..." and, "...reassembled aircraft and rigged control systems in accordance with Piper Service Manual. Re-weighed aircraft and revised weight and balance."

Meteorological Conditions

At 1950, the weather reported at Marquette County was wind at 230 degrees at 10 knots, sky clear, temperature 70 degrees, dew point 55 degrees, altimeter 30.05.

Wreckage and Impact Information

The airplane wreckage was located at coordinates N 46 degrees 34.239 minutes, and W 87 degrees 33.994 minutes. The main wreckage was located about 120 feet on a 300 degree heading from the base of the Michigan's Department of Natural Resources (DNR) Dead River Basin microwave tower.

The top guide wire cable from the eastern guide wire base to the microwave tower was found lying on the ground. The wire exhibited a red paint transfer and a 90 degree bend in the cable which was 56 feet from the frayed end of the wire. About the top 40 feet of the 200 foot microwave tower was toppled over, and the beacon lights on top of the tower were broken.

The airplane's left pontoon was found 46 feet from the base of the tower on a 300 degree heading. The pontoon exhibited scratching along the inside portion of the pontoon. The forward left pontoon strut exhibited a 90 degree bend to the aft and the leading edge of the strut was crushed aft. The nose of the pontoon covered with a black rubber bumper. A piece of the gray radome cover which is normally located near the top of the microwave tower was found with a black transfer mark on it.

The main wreckage was found about 74 feet from the left pontoon on a 300 degree heading. The airplane was found inverted with an impact angle of about 45 degrees nose down. The right pontoon was located behind the right wing and fuselage. The empennage, tail cone, wings, cabin, and engine compartment were located at the main impact site. The propeller had separated from the propeller flange and was located about 218 feet on a 300 degree heading from the base of the microwave tower.

The inspection of the flight controls revealed there was continuity from the flight controls to the control surfaces. The inspection revealed no pre-impact airframe anomalies. The inspection of the engine revealed there was continuity to the engine accessories when the crankshaft was rotated. All four cylinders exhibited thumb compression. The left magneto produced spark on all four towers.

One of the propeller blades exhibited leading edge gouges and a rust colored paint transfer along the leading edge of the blade. The blade tip had separated from the blade. A chordwise gouge was on the chamber side of the blade. The other propeller blade exhibited "S" bending with tip curl. It had gouging along the leading edge of the blade and chordwise scratching.

Medical and Pathological Information

An autopsy was performed at Marquette General Hospital.

A Forensic Toxicology Fatal Accident Report was prepared by the FAA Civil Aeromedical Institute. The report was negative.

Additional Information

The operating status of the Dead River Basin's microwave tower lights was routinely monitored and recorded. The status of the tower lights on August 31, 1999 at 2002:07, was "Equipment Message 6," which meant the lights were on. The status of the tower lights on September 1, 1999, at 2103:41, was, "No Signal Received." The videotape taken of the accident site by a local Marquette, Michigan, TV station on the night of the accident revealed that the side lights located midway up the tower were operating. The status of the tower lights on September 2, 1999, at 2204:36, was, "No Signal Received." The side lights were observed operating on the night of September 2, 1999.

The Federal Aviation Administration was a party to the investigation.

The aircraft wreckage was released to the family of the pilot.

Pilot Information

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|----------------------------------|---------------------------------------|--|---------------|
| Certificate: | Private | Age: | 75, Male |
| Airplane Rating(s): | Single-engine land; Single-engine sea | Seat Occupied: | Front |
| Other Aircraft Rating(s): | None | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | Yes |
| Medical Certification: | Class 3 Valid Medical-w/ waivers/lim | Last FAA Medical Exam: | June 19, 1998 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 1136 hours (Total, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|------------------------|---------------------------------------|-----------------|
| Aircraft Make: | Piper | Registration: | N91901 |
| Model/Series: | PA-12 PA-12 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Normal | Serial Number: | 12-22 |
| Landing Gear Type: | Float | Seats: | 3 |
| Date/Type of Last Inspection: | August 27, 1999 Annual | Certified Max Gross Wt.: | 1750 lbs |
| Time Since Last Inspection: | 4 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 2188 Hrs | Engine Manufacturer: | Lycoming |
| ELT: | Not installed | Engine Model/Series: | O-320-TCA274 |
| Registered Owner: | HOWARD C. KITZMAN | Rated Power: | 150 Horsepower |
| Operator: | | Operating Certificate(s) Held: | None |
| Operator Does Business As: | | Operator Designator Code: | |

Meteorological Information and Flight Plan

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|---|----------------------------------|---|------------------|
| Conditions at Accident Site: | Visual (VMC) | Condition of Light: | Dusk |
| Observation Facility, Elevation: | MQT ,1419 ft msl | Distance from Accident Site: | 2 Nautical Miles |
| Observation Time: | 19:50 Local | Direction from Accident Site: | 180° |
| Lowest Cloud Condition: | Unknown | Visibility | 20 miles |
| Lowest Ceiling: | None | Visibility (RVR): | |
| Wind Speed/Gusts: | 10 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 230° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 30 inches Hg | Temperature/Dew Point: | 21°C / 13°C |
| Precipitation and Obscuration: | No Obscuration; No Precipitation | | |
| Departure Point: | MARQUETTE , MI | Type of Flight Plan Filed: | None |
| Destination: | DEAD RIVER LAKE, MI | Type of Clearance: | None |
| Departure Time: | 20:15 Local | Type of Airspace: | Class E |

Airport Information

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|-----------------------------|---|----------------------------------|--|
| Airport: | | Runway Surface Type: | |
| Airport Elevation: | | Runway Surface Condition: | |
| Runway Used: | 0 | IFR Approach: | |
| Runway Length/Width: | | VFR Approach/Landing: | |

Wreckage and Impact Information

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|----------------------------|---------|-----------------------------|---------------------------|
| Crew Injuries: | 1 Fatal | Aircraft Damage: | Destroyed |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Fatal | Latitude, Longitude: | 46.490818,-87.590309(est) |

Administrative Information

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| Investigator In Charge (IIC): | Silliman, Jim |
| Additional Participating Persons: | VITO CARELLO; GRAND RAPIDS , MI |
| Original Publish Date: | November 30, 2000 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=47273 |

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

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](#).