

National Transportation Safety Board

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HUMAN PERFORMANCE

Specialist's Factual Report

May 3, 2024

A ACCIDENT

Location: Gilford, New Hampshire
Date: September 23, 2023
Time: 1942 eastern daylight time (EDT)
 2342 Coordinated universal time (UTC)
Airplane: Cessna 150, N6312G

B HUMAN PERFORMANCE SPECIALIST

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C SUMMARY

On September 30, 2023, at 1942 eastern daylight time¹, a Cessna 150, N6312G, was substantially damaged when it was involved in an accident near Gilford, New Hampshire. The pilot was fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations Part 91 personal flight.

D FACTUAL INFORMATION

ADS-B data provided by the Federal Aviation Administration (FAA) revealed that the pilot departed Rhode Island T.F. Green International Airport (PVD) Providence, Rhode Island, about 1810 for Laconia Municipal Airport (LCI), Laconia, New Hampshire. The destination airport (LCI) had a surveyed elevation of 545.4 ft. Runway 26 had a heading of 248 degrees true (264 degrees magnetic). Runway 8 had a heading of 68 degrees true (84 degrees magnetic). The airplane was not equipped with an autopilot, and the pilot was not instrument rated.

About 1940, the pilot joined the downwind leg of the left traffic pattern for LCI runway 26 from the southwest and stopped its descent about 1,150 msl (about 600 agl²). The airplane climbed to about 1,350 ft msl as it continued flying parallel to and about 0.25 nm from the runway. After passing abeam the threshold of runway 26, the airplane continued a downwind leg for an additional 2.0 nm, flying out over the lake on a course of about 66 degrees true (80 degrees magnetic). The last three ADS-B data points indicated the airplane's altitude was about 0.4 nm beyond the shoreline at an altitude of about 1,275 ft msl and beginning a left turn. Google Earth indicated the lake was 3.7 nm across from shore to shore for the airplane's location and direction of travel.

¹ All times listed hereafter are provided in eastern daylight time.

² Altitudes cited are geometric altitudes from the airplane's Mode S data.

A Ring surveillance camera located southeast of the accident site captured the airplane's impact with the water. When the airplane first appeared in these recorded images, its lights appeared to be inside and partially obscured by low clouds, and the airplane appeared to be in a shallow descent. After about 12 seconds, the airplane emerged from the clouds in a steep, spiral dive and impacted the water. The airplane's direction of turn could not be clearly discerned, however, an eyewitness located near a beach in Lake Shore Park, south-southeast of the crash site, reported that the airplane appeared to be in a right turn when it impacted the water.

Sunset occurred about 1829 (73 minutes before the accident). An eyewitness described the sky as "dark" and "hazy" due to wildfire smoke. The Ring camera images indicated the sky was overcast with no visible sources of celestial illumination. The camera also revealed little cultural lighting along the shores of Lake Winnepesaukee or on the surface of the lake in the vicinity of the accident site.

An instructor pilot and friend of the pilot provided the pilot's biennial flight review in Rhode Island on September 9, 2023. He was at PVD with the pilot as the pilot was reviewing weather for his intended route of flight. The accident pilot said he thought the ceilings looked good, but the friend was concerned that the temperature and dewpoint would converge and reduce visibility by the time the pilot arrived at LCI. The friend encouraged the pilot to delay the trip. The pilot, however, had already experienced multiple weather-related delays and insisted on departing.

The pilot's friend texted the pilot at 1849 to ask how the flight was going and the pilot replied by texting a photo of the instrument panel of his airplane. This photo showed the pilot's iPad fastened to the yoke in front of him. It was showing a primary flight display on the left half of the screen and a navigation display on the right half. The navigation display had a visual flight rules (VFR) sectional chart overlay. The cockpit was illuminated by a red overhead light and traditional "round dial" flight instruments were visible behind the iPad. A lower portion of the windscreen was visible in the photo, but no horizon or ground lights could be seen. The pilot's friend sent additional texts between 1916 and 1917 warning the pilot that instrument meteorological conditions (IMC) were present at LCI and urging him to divert to another airport. The pilot did not respond.

The pilot's friend told investigators the pilot's girlfriend was supposed to pick him up at LCI and that after the accident he learned from the pilot's girlfriend that the two had plans for a "special dinner" that evening. The pilot's friend did not know the occasion. The pilot's friend said he believed the pilot's decision making was degraded by "get-there-itis."

Various factors have been implicated in pilots' improper decisions to continue VFR flight in instrument meteorological conditions. Errors could stem from the situation

assessment or action selection stages of decision making.³ Errors in situation assessment stage could stem from an inability to accurately assess weather conditions in flight. Errors in action selection could stem from flawed mental risk assessment. Risk assessment can be influenced by motivational factors. For example, pilots are more likely to press on in deteriorating conditions if they have already invested a significant amount of time in a flight, likely to avoid the inconvenience of diverting or returning to their airport of origin.⁴ Social pressure is another motivational factor. Social pressure can create motivational conflicts between social obligations and the desire to maintain an adequate safety margin. This could contribute to plan continuation bias, a reluctance to delay or divert a flight despite evidence that it is no longer safe to continue a flight as planned.⁵ Loss of outside visual references during a visual flight rules (VFR) flight poses a high risk of spatial disorientation and loss of control for pilots who are not instrument rated and current, and the risk is higher at night.^{6,7,8}

Submitted by:

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³ Orasanu, J., Martin, L., and Davidson, J. (2001). Cognitive and Contextual Factors in Aviation Accidents: Decision Errors. In *Linking Expertise and Naturalistic Decision Making*, edited by E. Salas and G. Klein. Lawrence Erlbaum Associates Publishers: 209-25.

⁴ Wiegmann, D.A., Goh, J., and O'Hare, D. (2001). Pilots' decisions to continue visual flight rules (VFR) flight into adverse weather: Effects of distance traveled and flight experience. *FAA Technical Report ARL-01-11/FAA-01-3*.

⁵ Orasanu, Martin, & Davidson (2001). Ibid.

⁶ Bryan L. A., Stonecipher J. W., and Aron K. (1954). 180-degree turn experiment. *University of Illinois Bulletin*, 52 (Aeronautics Bulletin 11).

⁷ Lyons, T. J., W. R. Ercoline, O'Toole, K, and Grayson, K. (2006). Aircraft and related factors in crashes involving spatial disorientation: 15 years of U.S. Air Force data. *Aviation, Space, and Environmental Medicine*, 77, 720-3.

⁸ Wilson, D.R. (1999). Darkness increases risks of flight. *Flight Safety Foundation, Human Factors and Aviation Medicine*, 46 (6), 1-8.