

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



Medical Factual Memorandum for Record

March 3, 2024

A. CASE

NTSB ID: ANC23FA003
Location: Mokuleia, Hawaii
Date: November 5, 2022

B. MEDICAL SPECIALIST

Specialist JE Tuttle MD MHA FACS
National Transportation Safety Board
Washington, DC

C. DETAILS

1.0 Description of Review

For purposes of evaluating the pilot for potentially impairing medical conditions and substances, the above Medical Specialist reviewed the following sources of medical information, along with selected relevant regulation, medical literature, and investigator reports.

- Federal Aviation Administration (FAA) medical case review
- Autopsy report- Pilot
- Toxicology report - Pilot

According to the National Transportation Safety Board investigator in charge, the second occupant of the aircraft was classified as an initial/introductory flight training student, but did not manipulate the aircraft controls during the accident flight

(based on video evidence), did not undergo an autopsy or postmortem toxicological testing, and had not applied for FAA medical certification.

2.0 Summary of Medical Facts

According to the FAA medical case review, the 58-year-old-male pilot had not applied for an FAA medical certificate. FAA medical certification is not necessarily required for a pilot to exercise sport pilot privileges or privileges of a flight instructor certificate with a sport pilot rating, provided other requirements are met.¹

The Department of the Medical Examiner, City and County of Honolulu performed the autopsy of the pilot. According to the autopsy report, the pilot's cause of death was massive blunt force trauma, and the manner of death was accident. Due to the extent of the pilot's injuries, the brain was not available for examination. Examination of the heart and lungs was also limited. Within these limitations, there was no evidence of significant natural disease.

At the request of the Department of the Medical Examiner, NMS Labs performed postmortem testing of the pilot's liver tissue. None of the tested-for substances were detected.²

The FAA Forensic Sciences Laboratory performed toxicological testing of the postmortem tissue of the pilot.³ Ethanol was detected in liver tissue and muscle at 0.012 g/hg and 0.024 g/hg, respectively.⁴ No other tested-for substances were detected in liver or muscle tissue.

Ethanol is a type of alcohol. It is the intoxicating alcohol in beer, wine, and liquor, and, if consumed, can impair judgment, psychomotor performance, cognition, and vigilance.⁵ FAA rules impose strict limits on flying after consuming ethanol, including prohibiting pilots from flying with a blood ethanol level of 0.04 g/dL or

¹ This pilot was flying a Light Sport Aircraft and was medically eligible to fly as a light sport pilot with a valid driver's license. The pilot also had a certified flight instructor certificate for light sport aircraft. Both certificates were valid at the time of the crash.

https://www.faa.gov/sites/faa.gov/files/licenses_certificates/airmen_certification/sport_pilot/LSPBrochure.

² Information about the tissue testing procedure, including tested-for substances, is available on the NMS Labs website at Test Code [8051TI](#).

³ The FAA Forensic Sciences laboratory has the capability to test for around a thousand substances including toxins, prescription and over-the-counter medications, and illicit drugs.

⁴ In tissue, concentrations in g/hg are approximately equivalent to concentrations in g/dL.

⁵ Cook CCH. Alcohol and aviation. *Addiction*. 1997;92(5):539-555.

greater.⁶ Alcohol consumption is not the only possible source of ethanol in postmortem specimens. Ethanol can sometimes be produced by microbes in a person's body after death. Postmortem ethanol production is made more likely by extensive traumatic injury.⁷

Submitted by:

JE Tuttle MD MHA FACS
Medical Officer

⁶ Federal Register :14 Code of Federal Regulations §91.17. Alcohol or drugs. <https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-91/subpart-A/section-91.17>.

⁷ Kugelberg FC, Jones AW. Interpreting results of ethanol analysis in postmortem specimens: a review of the literature. *Forensic Sci Int*. 2007;165(1):10-29. doi:10.1016/j.forsciint.2006.05.004.