



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report **August 22, 2022**

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Medical Officer

A. ACCIDENT: WPR22FA054 – Visalia, California

Date/Time: December 4, 2021; 6:40 p.m. (PST)
Aircraft: Beech V35, N7933M
Injuries: 4 Fatal
Flight Conducted under Part 91 personal flight.

B. GROUP IDENTIFICATION

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

Purpose

This investigation was performed to evaluate the pilot for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

Methods

The Federal Aviation Administration (FAA) medical case review and the pilot's autopsy and FAA Forensic Sciences Laboratory toxicology¹ reports were reviewed. Other pertinent scientific and regulatory issues were reviewed.

FAA Medical Case Review

According to the FAA medical case review, at the time of the accident, the 78-year-old male pilot had a medical certificate that expired for all classes in 2017. He had completed his BasicMed requirements on 5/5/21. At the time of the most recent FAA medical certification exam (4/28/16) the pilot was 73 inches tall and weighed 186 pounds. He reported having 2,030 civil flight hours. He reported taking atorvastatin for high cholesterol. He had a remote history of angioplasty and stenting and a right carotid endarterectomy. No significant medical concerns

¹ The FAA Forensic Sciences Laboratory has the capability to test for more than 1,300 substances including toxins, common prescription and over-the-counter medications, and illicit drugs. <https://jag.cami.jccbi.gov/toxicology/>

were identified, and he was issued a third class medical certificate by special issuance for coronary artery disease with the limitation that he must wear corrective lenses.

Autopsy

According to the autopsy report from the Tulare County Coroner's Office, Tulare, California, the cause of death in the pilot was blunt trauma and the manner of death was accident. The examination was limited by extensive injuries, the brain, heart, and lungs were not available for examination.

Toxicology

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected ethanol in the pilot's liver, kidney, and muscle tissue at 0.402 grams per hectogram (gm/hg), 0.045 gm/hg, and 0.035 gm/hg, respectively.² Isopropanol was also detected in his liver tissue at 0.009 gm/hg but was not detected in his kidney and muscle tissue. Tissue samples were reported to have exhibited putrefaction. The non-impairing cholesterol lowering medication atorvastatin was detected in the pilot's liver and muscle tissue.³ Toxicology testing performed for the coroner's office detected no ethanol or tested for drugs in the pilot's muscle tissue.

Ethanol is a social drug commonly consumed by drinking beer, wine, or liquor. It acts as a central nervous system depressant; it impairs judgment, psychomotor functioning, and vigilance. Ethanol is water soluble, and after absorption it quickly and uniformly distributes throughout the body's tissues and fluids. The distribution pattern parallels water content and blood supply of the tissue. Ethanol can be produced after death by microbial activity; sometimes in conjunction with other alcohols, such as isopropanol. Extensive trauma increases the spread of bacteria and raises the risk of ethanol production after death.⁴

D. SUMMARY OF MEDICAL FINDINGS

The 78-year-old male pilot was on BasicMed; he completed his requirements on 5/5/21. At the time of the most recent FAA medical certification exam (4/28/16), he reported taking atorvastatin for high cholesterol and a remote history of angioplasty and stenting and a right carotid endarterectomy. According to the autopsy report, the cause of the pilot's death was blunt trauma and the manner of death was accident. The examination was limited by extensive injuries.

Toxicology testing detected ethanol in the pilot's liver (0.402 gm/hg), kidney (0.045 gm/hg), and muscle tissue (0.035 gm/hg); no ethanol was detected in the pilot's muscle tissue by another laboratory. Isopropanol was detected in his liver tissue at 0.009 gm/hg. The non-impairing cholesterol lowering medication atorvastatin was detected in the pilot's liver and muscle tissue.

² Grams per hectogram in tissue samples are directly comparable to grams per deciliter in liquid samples.

³ National Institutes of Health (NIH). U.S. National Library of Medicine (NLM). [DailyMed - ATORVASTATIN CALCIUM tablet \(nih.gov\)](#) Updated 6/20/21

⁴ Kugelberg, FC and AW Jones. 2007. Interpreting results of ethanol analysis in postmortem specimens: a review of the literature. *Forensic Science International* 165(1):10-29.