

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA22FA397

MEDICAL

Specialist's Factual Report

February 14, 2023

A. ACCIDENT

Location: Arthur, Kentucky
Date: September 3, 2022
Time: 17:40 Local
Airplane: Rotorcraft JetExec Helicopter; N162NH

B. MEDICAL SPECIALIST

Specialist Michelle Watters, MD, PhD, MPH
National Transportation Safety Board, RE-1
Washington, DC

C. DETAILS OF THE 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 toxicology reports¹ were reviewed. Other relevant medical and regulatory issues were reviewed.

D. FACTUAL INFORMATION–PILOT

1.0 FAA Medical Case Review

According to the FAA medical certification file, at the time of the accident, the 69-year-old male pilot held a first class medical certificate with the limitation that he must have available glasses for near vision. At his most recent FAA medical certification examination on 2/7/22, he reported 25,800 total flight hours. He was 67 inches tall and weighed 137 pounds. The pilot reported taking the antiviral medication valacyclovir for herpes suppression. The file contained a 2008 FAA letter of eligibility for a variant from normal stress test.

¹ The FAA Forensic Sciences Laboratory has the capability to test for more than 1,000 substances including toxins, common prescription and over-the-counter medications, and illicit drugs. <https://jag.cami.jccbi.gov/toxicology/>

2.0 Autopsy

According to the autopsy report from the Office of the State Medical Examiner, Louisville, Kentucky, the pilot's cause of death was multiple blunt force injuries to body, and the manner of death was accident. No significant natural disease was identified.

3.0 Toxicology

Toxicology testing performed by the FAA Forensic Sciences Laboratory on the pilot's blood was positive for ethanol at 0.022 grams per deciliter (gm/dL); ethanol was not detected in his urine. N-propanol was detected in his blood but not in his urine. No other tested-for drugs were detected in his urine. Putrefaction was noted for tissue samples. Toxicology testing performed for the medical examiner's office was negative for alcohol in his central blood and tested drugs of abuse in his central blood and urine.

Ethanol

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 *propanol*. Extensive trauma increases the spread of bacteria and raises the risk of ethanol production after death.²

E. SUMMARY OF MEDICAL FACTS

The 69-year-old male pilot held an FAA first class medical certificate with the limitation that he must have available glasses for near vision. At his most recent FAA medical certification examination on 2/7/22, he reported taking the antiviral medication valacyclovir. According to the autopsy report, the pilot's cause of death was multiple blunt force injuries to body, and the manner of death was accident. No significant natural disease was identified. Toxicology testing detected ethanol in the pilot's blood at 0.022 grams per deciliter (gm/dL); no ethanol was detected in his urine. N-propanol was detected in his blood.

Submitted by:
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Medical Officer, RE-1

² 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.