

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



WPR21FA025

MEDICAL

Specialist's Factual Report

November 7, 2022

A. ACCIDENT

Location: Cordes Lakes, Arizona
Date: October 24, 2020
Time: 10:28 Local
Airplane: Lancair 235; N25NL

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 34-year-old male pilot held a first class medical certificate without limitations. At the time of his most recent exam (7/29/20), the pilot was 73 inches tall and weighed 162 pounds. He reported having 7,500 total flight hours and taking no medications or having any medical conditions.

2.0 Autopsy

According to the autopsy report from the Yavapai County Medical Examiner, Prescott, Arizona, the pilot's cause of death was multiple injuries (plane crash) and the

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/>

manner of death was accident. The examination was limited by massive trauma, no brain was available for examination. No significant natural disease was identified.

3.0 Toxicology

Toxicology testing performed for the medical examiner's office on the pilot's cavity blood was positive for ethanol at 0.038 grams per deciliter (gm/dL) and caffeine. Toxicology testing performed by the FAA Forensic Sciences Laboratory detected ethanol in the pilot's cavity blood at 0.035 gm/dL; no ethanol was detected in his urine. N-butanol was also detected in his cavity blood.

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

E. SUMMARY OF MEDICAL FACTS

The 34-year-old male pilot held a first class medical certificate without limitations. At his most recent exam (7/29/20), he reported taking no medications or having any medical conditions. According to the autopsy report, the pilot's cause of death was multiple injuries (plane crash) and the manner of death was accident. While the brain was not available for examination, no significant natural disease was identified. Toxicology testing detected ethanol in the pilot's cavity blood at 0.038 and 0.035 grams per deciliter (gm/dL); no ethanol was detected in his urine. N-butanol was also detected in his cavity blood.

Submitted by:

Michelle Watters, MD, PhD, MPH
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.