

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA23FA046

MEDICAL

Specialist's Factual Report

April 11, 2023

A. ACCIDENT

Location: Southington, Ohio
Date: 10/28/2022
Time: 12:43Local
Airplane: Zenith CH750 Cruiser

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, the pilot's death certificate, FAA Forensic Sciences Laboratory toxicology report,¹ and post-event medical records 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 case review, at the time of the accident, the 82-year-old male pilot did not hold a current FAA medical certificate. His most recent and only FAA medical certification examination was in 2007. At that exam, he reported a history of chronic obstructive pulmonary disease (COPD) and acute coronary syndrome. He received an FAA authorization for special issuance which expired in 2008 for his history of myocardial infarction, angioplasty with stent placement (2006), and COPD.

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 Death Certificate

An autopsy on the pilot was not performed. According to the death certificate issued by the Ohio Department of Health, the pilot's cause of death was multiple blunt trauma due to airplane accident, and the manner of death was accident. The body was 68 inches long and weighed 165 pounds.

3.0 Toxicology

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected ketamine in the pilot's hospital blood at 1,718 nanograms per milliliter (ng/mL) and its metabolite norketamine was detected in his blood at 246 ng/mL. Fentanyl was detected in the pilot's blood at 0.3 ng/mL and its metabolite norfentanyl was also detected. The impairing medication ketamine is an anesthetic and used for pain management; its therapeutic range is 100 to 2,200 ng/mL and it has a half-life of 2 to 4 hours. Fentanyl is a narcotic pain medicine which has a therapeutic range of 2 to 20 ng/mL and a half-life of 3 to 12 hours.²

4.0 Post-Accident Medical Records

Post-accident hospital records were obtained for the pilot. The pilot had extensive widespread cerebral hemorrhage and other injuries and was given a poor prognosis. He had been intubated in the field by emergency medical services and had been given ketamine and fentanyl. His serum drug screen was negative for ethanol and his urine drug screen was positive for the fentanyl he had been given for intubation. Imaging studies showed that the pilot had diffuse coronary artery calcification, an indwelling left-sided pacemaker, and an aortic valve replacement. The pilot died two days after the crash.

E. SUMMARY OF MEDICAL FACTS

The 82-year-old male pilot did not have a current FAA medical certificate. His last FAA medical certification examination was in 2007. At that time, he reported a history of myocardial infarction, angioplasty with stent placement, and COPD. Post-accident imaging showed that he had diffuse coronary artery calcification, an indwelling left-sided pacemaker, and an aortic valve replacement. According to the death certificate, the pilot's cause of death was multiple blunt trauma due to airplane accident, and the manner of death was accident; no autopsy was performed.

² FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs.

Ketamine. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=82>

Norketamine. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=303>

Fentanyl. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=64>

Norfentanyl. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=362>

Toxicology testing detected ketamine in the pilot's hospital blood at 1,718 nanograms per milliliter (ng/mL), norketamine at 246 ng/mL, fentanyl at 0.3 ng/mL, and norfentanyl. Post-accident medical records show ketamine and fentanyl were administered to the pilot when he was being intubated in the field. The pilot had extensive widespread cerebral hemorrhage and other injuries and died two days after the crash.

Submitted by:

Michelle Watters, MD, PhD, MPH
Medical Officer, RE-1