

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN22FA331

MEDICAL

Specialist's Factual Report

April 28, 2023

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A. ACCIDENT

Location: North Fork, Idaho
Date: July 21, 2022

B. MEDICAL SPECIALIST

Specialist Turan Kayagil, MD, FACEP
National Transportation Safety Board
Washington, DC

C. DETAILS OF THE INVESTIGATION

1.0 Purpose

This investigation was performed to evaluate the helicopter pilot and copilot for potentially impairing medical conditions and potentially impairing substances.

2.0 Methods

The Federal Aviation Administration (FAA) medical case review and the autopsy and toxicology reports of the pilot and copilot were reviewed. The pilot's FAA medical certification file, records from the copilot's post-crash medical treatment, selected investigator reports, and relevant regulation and medical literature were also reviewed.

D. FACTUAL INFORMATION

1.0 Pilot

1.1 FAA Medical Records

According to reviewed FAA records, the 41-year-old male pilot had his last aviation medical examination on August 18, 2021. At that time, he reported 4300 total civilian flight hours. He was 74 inches tall and weighed 220 pounds. He reported no medication use. He reported a history of obstructive sleep apnea (OSA) treated with an oral appliance. No significant issues were identified, and the Aviation Medical Examiner (AME) issued the pilot a first-class medical certificate, as an AME-Assisted Special Issuance (AASI).¹ The medical certificate was limited by a requirement to wear corrective lenses and was not valid for any class after August 31, 2022.

¹ AASI is a process by which an AME may issue a medical certificate under the provisions of an applicant's FAA Authorization for Special Issuance if the applicant provides specific required medical information from treating physician(s). AASI determinations are subject to review by the FAA. Additional information about the AASI process

According to reviewed records, the pilot's first Authorization for AASI for OSA was in 2016 following his first aviation medical examination, and his last Authorization for AASI for OSA was in September 2021. The pilot was transitioned from using a continuous positive airway pressure (CPAP) device to using an oral appliance in May 2021. A July 2021 letter from a dental sleep specialist stated that the pilot reported doing well with the oral appliance and had undergone a home sleep study showing a normal apnea-hypopnea index (AHI) of 4.3 events per hour while using it.² An August 2021 letter from the pilot's Ear, Nose, and Throat physician noted this result, stated that the pilot had done well with the oral appliance, had no daytime sleepiness, and was okay to fly. The AME who performed the pilot's last aviation medical examination provided this documentation to the FAA along with a letter stating that the pilot had done very well with the oral appliance, felt great, had lost weight, had no daytime drowsiness, and was no longer noted by his partner to snore. The AME letter stated that the pilot reported that he felt he was doing much better with the oral appliance than he had done with his CPAP machine. There is no indication in reviewed records that the oral appliance had any recording capability.

1.2 Autopsy

The Ada County Coroner's Office performed the pilot's autopsy, as authorized by the Lemhi County Coroner. According to the pilot's autopsy report, his cause of death was multiple blunt force injuries. His autopsy did not identify any significant natural disease.

1.3 Toxicology

1.3.1 NMS Labs Toxicology Results

At the request of the Coroner's Office, NMS Labs performed toxicological testing of postmortem femoral blood from the pilot, detecting caffeine.³

1.3.2 FAA Toxicology Results

The FAA Forensic Sciences laboratory also performed toxicological testing of postmortem specimens from the pilot. No tested-for substances were detected.⁴

is available on the [FAA AME Guide website](#).

² In OSA, a person's upper airway soft tissues collapse during sleep, causing the person to have repeated episodes during which breathing temporarily stops (apnea) and/or becomes ineffective (hypopnea). Generally, the severity of OSA is classified by the AHI, which is the number of apnea and hypopnea episodes that occur per hour of sleep. An AHI of less than 5 is normal. Mild OSA corresponds to an AHI of 5-14, moderate OSA corresponds to an AHI of 15-30, and severe OSA corresponds to an AHI of more than 30.

³ Tested-for substances are listed on the NMS Labs website at [Test Code 8084B](#). The reported caffeine result was based on a screening test without secondary confirmation.

⁴ The FAA Forensic Sciences laboratory has the capability to test for around a thousand substances including illicit

1.3.3 Description of Detected Substance

Caffeine is a central nervous system stimulant that is commonly ingested, including in coffee, tea, soft drinks, and chocolate; it is also an ingredient in certain anti-drowsiness medications and headache medications.^{5,6} Caffeine is not generally considered impairing.

2.0 Copilot

2.1 FAA Medical Case Review

According to the FAA medical case review, the 36-year-old male copilot had his last aviation medical examination on December 1, 2021. At that time, he reported 1700 total civilian flight hours. He was 70 inches tall and weighed 200 pounds. He reported no medication use. He reported a history of seasonal/environmental allergies and a 2007 driving under the influence offense.⁷ No significant issues were identified and the copilot was issued a second-class medical certificate without limitation.

2.2 Post-Crash Treatment Records

According to reviewed hospital records from the copilot's post-crash medical care, the copilot experienced cardiac arrest due to his injuries while enroute to the hospital via air ambulance. Resuscitation attempts were unsuccessful and the copilot was declared dead shortly after arriving in the hospital emergency department.

2.3 Autopsy

The State of Montana Department of Justice Forensic Science Division performed the copilot's autopsy. According to the autopsy report, the copilot's cause of death was multiple blunt force injuries and his manner of death was accident. His autopsy did not identify significant natural disease.

drugs, prescription and over-the-counter medications, and toxins. Some of these substances are listed at <https://jag.cami.jccbi.gov/toxicology>.

⁵ National Institutes of Health National Library of Medicine. NoDoz Alertness Aid. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=e700e809-29b5-799e-e053-2a95a90a235c>. Updated October 11, 2022. Accessed April 17, 2023.

⁶ National Institutes of Health National Library of Medicine. Fioricet. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c018be7d-f7b8-45e2-97b8-8e7a71740657>. Updated January 1, 2021. Accessed April 17, 2023.

⁷ According to the FAA medical case review, the copilot had a 2013 Letter of Authorization for alcohol related offense.

2.4 Toxicology

The FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the copilot.⁴ According to the FAA toxicology report, the dissociative anesthetic medication ketamine was detected in the copilot's femoral blood and urine, and the ketamine metabolite norketamine was detected in his femoral blood. Reviewed post-crash treatment records documented that the copilot had been given ketamine as part of his medical care after the crash, prior to arriving at the hospital. The copilot's postmortem toxicological testing was otherwise negative for tested-for substances.

E. SUMMARY OF MEDICAL FACTS

1.0 Pilot

The 41-year-old male pilot had his last aviation medical examination on August 18, 2021. At that time, he reported no medication use. He reported a history of obstructive sleep apnea (OSA) treated with an oral appliance. No significant issues were identified, and the Aviation Medical Examiner (AME) issued the pilot a first-class medical certificate, as an AME-Assisted Special Issuance (AASI). The medical certificate was limited by a requirement to wear corrective lenses and was not valid for any class after August 31, 2022. The pilot's last Authorization for AASI for OSA was in September 2021.

According to the pilot's autopsy report, his cause of death was multiple blunt force injuries. His autopsy did not identify any significant natural disease. His postmortem toxicological testing detected caffeine, which is not generally considered impairing. No other tested-for substances were identified by two laboratories.

2.0 Copilot

The 36-year-old male copilot had his last aviation medical examination on December 1, 2021. At that time, he reported no medication use. He reported a history of seasonal/environmental allergies. No significant issues were identified and he was issued a second-class medical certificate without limitation.

Following the crash, the copilot experienced cardiac arrest while enroute to the hospital. Resuscitation attempts were unsuccessful and the copilot was declared dead shortly after arriving in the hospital emergency department. According to his autopsy report, his cause of death was multiple blunt force injuries and his manner of death was accident. His autopsy did not identify significant natural disease. His postmortem toxicological testing did not detect any tested-for substances, except for ketamine and its metabolite norketamine. Ketamine is an anesthetic drug that was

given to the copilot during his medical treatment after the crash, as documented in reviewed medical records.

Submitted by:

Turan Kayagil, MD, FACEP
Medical Officer