NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

December 15, 2020

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Medical Officer

A. ACCIDENT: ANC20MA010; Lihue, HI

On December 26, 2019, about 1657 Hawaii standard time, an Airbus AS350 B2 helicopter, N985SA, was destroyed by impact forces and a postcrash fire when it collided with terrain about 24 miles northwest of Lihue, Hawaii. The commercial pilot and six passengers were fatally injured. The helicopter was registered to SAF LTD and operated by Safari Aviation Inc., doing business as Safari Helicopters, as a Title 14 Code of Federal Regulations (CFR) Part 135 on-demand commercial air tour flight. Company flight following procedures were in effect for the visual flight rules flight, which departed Lihue Airport (PHLI), Lihue, Hawaii at 1631.[1]

B. GROUP IDENTIFICATION

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

C. DETAILS OF INVESTIGATION

1. Purpose

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

2. Methods

The pilot's autopsy and toxicology reports were reviewed, as was the Federal Aviation Administration (FAA) medical case review. Investigator reports and relevant regulation and medical literature were also reviewed.

[1] Summary taken from this accident's National Transportation Safety Board Aviation Accident Preliminary Report, originally published January 15, 2020.

3. Findings

a. FAA Medical Case Review

According to the FAA medical case review, the 69-year-old male pilot had his last aviation medical examination on July 17, 2019. At that time, he reported 14,000 total civilian flight hours. He was 72 inches tall and weighed 189 pounds. He reported no active medical conditions or medication use. No significant issues were identified, and he was issued a second-class medical certificate limited by a requirement he wear corrective lenses and possess lenses for near and distant vision.

The medical case review noted that the pilot's certificates had been revoked in 2010 because of a random drug test positive for marijuana. He had undergone a substance abuse evaluation per FAA requirements and had regained certification through special issuance in 2011. He had been released from his special issuance in March 2012 after successfully completing follow-up requirements.

b. Autopsy

Pan Pacific Pathologists, LLC performed the pilot's autopsy. According to the autopsy report, the cause of death was blunt force and thermal injuries, and the manner of death was accident. Due to the severity of the pilot's injuries, the autopsy was extremely limited for identifying natural disease; no major organ structures were identified.

c. Toxicology

Toxicological testing performed by the FAA Forensic Sciences Laboratory identified ethanol at 0.035 grams per deciliter (g/dL) in brain tissue. Ethanol was not detected in muscle, nor was any other tested-for substance.[2]

d. Description of Detected Substance

Ethanol is the intoxicating alcohol in beer, wine, and liquor. Because consumed ethanol can impair judgment, psychomotor performance, cognition, and vigilance, FAA regulation imposes strict limits on flying after consuming ethanol, including prohibiting pilots from flying with a blood ethanol level of 0.04 g/dL or greater.[3,4,5,6] Consumption is not the only possible source of

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[2] The FAA Forensic Sciences Laboratory tests specimens for over 1,300 substances including toxins, prescription and over-the-counter medications, and illicit drugs; information about these substances can be found at the Civil Aerospace Medical Institute WebDrugs website (https://jag.cami.jccbi.gov/toxicology).

[3] Cohen JP, Quan D. Alcohols. In: Tintinalli JE, Ma OJ, Yealy DM, et al., eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide*. 9th ed. New York, NY: McGraw-Hill Education; 2020:1222-1232.

[4] Spitz WU. Forensic aspects of alcohol. In: Spitz WU, Spitz DJ, eds. *Spitz and Fisher's Medicolegal Investigation of Death: Guidelines for the Application of Pathology to Crime Investigation*. 4th ed. Springfield, IL: Charles C Thomas; 2006:1218-1229.

[5] Cook CCH. Alcohol and aviation. *Addiction*. 1997;92(5):539-555.

[6] Office of the Federal Register. 14 CFR 91.17. Electronic Code of Federal Regulations. https://www.ecfr.gov/cgi-bin/text-idx?node=se14.2.91_117. Updated December 9, 2020. Accessed December 11, 2020.

ethanol in postmortem samples – ethanol can also be produced by microbes in a person's body tissues after death.[4]

D. SUMMARY OF MEDICAL FINDINGS

At his last aviation medical examination on July 17, 2019, the 69-year-old male pilot reported 14,000 total civilian flight hours. He reported no active medical conditions or medication use. He was issued a second-class medical certificate limited by a requirement he wear corrective lenses and possess lenses for near and distant vision.

Pan Pacific Pathologists, LLC performed the pilot's autopsy. According to the autopsy report, the cause of death was blunt force and thermal injuries. Due to the severity of the pilot's injuries, the autopsy was extremely limited for identifying natural disease; no major organ structures were identified.

Toxicological testing performed by the FAA Forensic Sciences Laboratory did not find any drugs or alcohol in the pilot's muscle. Testing of brain tissue for alcohol identified ethanol at 0.035 grams per deciliter (g/dL).