



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

July 7, 2022

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. CRASH: CEN22LA163; Crowell, TX

Date and time: March 31, 2022

Injuries: 2 fatal

B. GROUP IDENTIFICATION

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

C. DETAILS OF INVESTIGATION

1. Purpose

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

2. Methods

The FAA medical case review, autopsy reports, toxicology findings, and the investigator's preliminary report were reviewed. Relevant regulation and medical literature were reviewed as appropriate.

Pilot

FAA Medical Case Review

According to the FAA medical case review, the 61 year old male pilot had had multiple aviation medical exams but last reported having 2 total flight hours during his last application for a medical certificate dated 11/7/2016. He reported having had a heart attack, coronary artery stent placement, and bypass surgery to the FAA, as well as the use of pravastatin to lower his cholesterol. No significant abnormalities were identified, and he was issued a special issuance third class medical certificate limited by the statement, "Not valid for any class after 5/31/20218."

Autopsy

According to the autopsy report issued by American Forensics, the cause of death was blunt force trauma and the manner of death was accident. The pilot was noted to be hypertensive and moderate to severe atherosclerotic heart disease that is not otherwise described. No other significant disease was identified.

Toxicology

Toxicology testing performed by the FAA's Forensic Sciences Laboratory identified ethanol at 0.012 gm/dl in cavity blood but none in urine; acetone and N-propanol were also identified in cavity blood but not in urine. Famotidine was detected in both specimens. Gabapentin was identified at 1872 ng/ml in cavity blood and 107,020 ng/ml in urine; diphenhydramine was not found in cavity blood but was found in urine; cetirizine was found in cavity blood at 31 ng/ml and in urine at 492 ng/ml; hydroxyzine was found at 10 ng/ml in cavity blood and 22 ng/ml in urine; norchlorcyclizine was found at 35 ng/ml in cavity blood and detected in urine and finally alpha-hydroxyalprazolam was not detected in cavity blood but was found in urine.

Description of Substances

Ethanol is a social drug that acts as a central nervous system depressant. After ingestion, ethanol is quickly distributed throughout the body's tissues and fluids fairly uniformly. The distribution pattern parallels the water content and blood supply of each organ. Ethanol may also be produced in the body after death by microbial activity. In this case, levels in various tissues may vary widely. Acetone and N-propanol are other forms of alcohol that may be formed in post mortem tissues.

Famotidine is an over the counter medication used to treat heartburn and commonly marketed with the name Pepcid. It is not considered impairing.

Gabapentin is an antiseizure medication available by prescription and commonly prescribed for the treatment of nerve pain. Gabapentin is associated with significant somnolence/sedation and dizziness/ataxia, particularly when initiating use or increasing doses. It has been shown to be associated with significant driving impairment, although some of these effects may decrease with regular, steady use. It carries warnings about driving, operating heavy machinery, and concomitant use of other drugs that cause depression of the central nervous system.¹

Diphenhydramine is a sedating antihistamine commonly available over the counter with the name Benadryl.

¹ National Institutes of Health. US National Library of Medicine. DailyMed. Gabapentin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=f2d9c3de-4749-4265-a26e-50026ab46ee4> Accessed 7/6/2022.

Cetirizine is a sedating antihistamine available over the counter with the name Zyrtec.

Hydroxyzine is a mildly sedating antihistamine available by prescription.²

Norchlorcyclizine is a metabolite of the sedating antihistamine chlorcyclizine and the anti-motion sickness drug meclizine.

Alpha-hydroxyalprazolam is the main metabolite of alprazolam, a sedating benzodiazepine available by prescription as a Schedule IV controlled substance, commonly marketed with the name Xanax. It carries this specific warning, “Because of its central nervous system depressant effects, patients receiving alprazolam should be cautioned against engaging in hazardous occupations or activities requiring complete mental alertness such as operating machinery or driving a motor vehicle. For the same reason, patients should be cautioned about the concomitant use of alcohol and other central nervous system depressant drugs during treatment with alprazolam.”³

Student Pilot

FAA Medical Case Review

According to the FAA medical case review, the 35 year old male pilot reported having 1 total flight hours during his first and only application for a medical certificate dated 3/29/2022. He reported having no chronic medical conditions and no used of medications to the FAA. No significant abnormalities were identified and he was issued a third class medical certificate without limitations.

Autopsy

According to the autopsy report issued by American Forensics, the cause of death was blunt force trauma and the manner of death was accident. No significant natural disease was identified.

Toxicology

Toxicology testing performed by the FAA’s Forensic Sciences Laboratory did not identify any tested-for substances.

² National Institutes of Health. US National Library of Medicine. DailyMed. Hydroxyzine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=81f9d88f-c50b-4c6a-a25b-46fa162a503e> Accessed 7/6/2022.

³ National Institutes of Health. US National Library of Medicine. DailyMed. Alprazolam. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a23063c0-099a-4256-b95f-3a857bbf704b> Accessed 7/6/2022.

D. SUMMARY OF MEDICAL FINDINGS

Pilot

The 61 year old male pilot had reported having had a heart attack, coronary artery stent placement, and bypass surgery to the FAA, as well as the use of pravastatin to lower his cholesterol.

According to the autopsy report issued by American Forensics, the cause of death was blunt force trauma and the manner of death was accident. The pilot was noted to be hypertensive and moderate to severe atherosclerotic heart disease that is not otherwise described. No other significant disease was identified.

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