



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

March 31, 2022

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. ACCIDENT: WPR22FA073; Marana, AZ

Date: December 31, 2021

Injuries: 1 fatal

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

FAA Medical Case Review

According to the FAA medical case review, the 67- year-old male pilot had reported 567 total hours of flight experience as of his last aviation medical exam, dated 9/5/2014. At that time, he was 67 inches tall and weighed 176 pounds. He had reported no chronic medical conditions and no use of medications to the FAA but had had a previous aviation accident in 2010 resulting in minor injuries. No significant abnormalities were identified at his last exam and he was issued a third class medical certificate limited by a requirement he wear corrective lenses. The pilot had completed the BasicMed Course on 4/28/2017 and the Comprehensive Medical Examination Checklist (CMEC) on 9/5/2017. The medical case

review noted that the pilot's BasicMed registration had expired at the time of the crash.

Autopsy

According to the autopsy report issued by Pinal County Medical Examiner, the cause of death was multiple blunt force trauma and the manner of death was accident. The pilot was noted to have significant coronary artery disease with 75% stenosis of the left anterior descending coronary artery and 50% stenosis of the right coronary artery. No comment was made about scarring of the myocardium.

Toxicology

Toxicology tests performed by the NMS Labs at the request of the medical examiner identified 0.800 gm/100 g as well as 5700 ng/g of methamphetamine and 960 ng/g of its metabolite amphetamine in liver tissue. No blood specimens were available for toxicology testing.

Toxicology testing performed by the FAA's Forensic Sciences Laboratory identified no ethanol in liver or muscle. However, 1150 ng/g of methamphetamine was found in liver and 113 ng/g was identified in muscle. In addition, 150 ng/g of amphetamine (the primary metabolite of methamphetamine) was found in liver. Amphetamine was also identified in muscle.

Substance Descriptions

Ethanol is primarily a social drug with a powerful central nervous system depressant. After absorption, 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.¹ In this case, levels in various tissues may vary widely.

Methamphetamine is a Schedule II controlled substance and is available in low doses by prescription to treat ADHD, ADD, obesity, and narcolepsy. It is also readily available as a street drug. Symptoms of street use of methamphetamine follow a typical pattern. In the early phase, users experience euphoria, excitation, exhilaration, rapid flight of ideas, increased libido, rapid speech, motor restlessness, hallucinations, delusions, psychosis, insomnia, reduced fatigue or drowsiness, increased alertness, a heightened sense of well-being, stereotypes behavior, feelings of increased physical strength, and poor impulse control. In addition, the heart rate, blood pressure, and respiratory rate increase and they may have palpitations, dry mouth, abdominal cramps, twitching, dilated pupils, faster reaction times, and increased strength. As the initial effects wear off

¹ Federal Aviation Administration. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60> Accessed 03/02/2015

users commonly experience dysphoria, restlessness, agitation, and nervousness; they may experience paranoia, violence, aggression, a lack of coordination, delusions, psychosis, and drug craving.²

D. SUMMARY OF MEDICAL FINDINGS

The 67 year old male pilot had reported no chronic medical conditions or use of medications to the FAA. He had no medical certification at the time of the crash.

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² National Highway Traffic Safety Administration. <https://www.nhtsa.gov/sites/nhtsa.gov/files/809725-drugshumanperformfs.pdf> Accessed 3/31/2022.