

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



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MEDICAL

Specialist's Factual Report

May 16, 2024

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A. ACCIDENT

Location: Bakersfield, California
Date: October 4, 2024

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 pilot for potentially impairing or incapacitating medical conditions and substances.

2.0 Methods

The pilot's Federal Aviation Administration (FAA) medical case review was reviewed, as were his autopsy report (including Coroner's Office report and NMS Labs toxicology report) and FAA Forensic Sciences Laboratory toxicology report. Selected investigator reports and relevant regulation and medical literature were also reviewed.

D. FACTUAL INFORMATION

1.0 FAA Medical Case Review

According to the FAA medical case review, the 78-year-old male pilot's most recent aviation medical examination was January 4, 2023. At that time, he reported 7,001 total civilian flight hours. He was 70 inches tall and weighed 200 pounds. He reported no medication use and no active medical conditions. He was issued a third-class medical certificate limited by a requirement to use corrective lenses to meet vision standards at all required distances.

2.0 Autopsy and Death Investigation

The Kern County Sheriff-Coroner's Office performed the pilot's autopsy and death investigation. Death investigation information accompanying the autopsy report indicated that the pilot was taken to a hospital emergency department in cardiac arrest, arriving at 2:04 p.m., unresponsive with cardiopulmonary resuscitation

(CPR) in progress. He did not respond to resuscitative efforts and was declared dead in the emergency department at 2:12 p.m. Admission blood was not drawn.

The Investigating Deputy Coroner spoke with the passenger, who was the pilot's spouse. According to the spouse, the pilot suddenly went unresponsive about 45 minutes to an hour into the flight. He did not voice any complaints or make any exclamations before going unresponsive. The spouse stated the pilot had been very healthy, without any medical conditions or medication use, and had been avidly physically active.

According to the pilot's autopsy report, his cause of death was hypertensive and atherosclerotic cardiovascular disease, and his manner of death was natural. The autopsy identified an enlarged heart, with a weight of 620 grams (normal heart weight is roughly 370 - 500 grams for a male of body weight 200 pounds).¹ All four chambers of the heart were described as severely dilated. Coronary artery disease was present, with plaque causing up to 60% narrowing of the left anterior descending coronary artery, 50% narrowing of the right coronary artery, and 30% narrowing of the left circumflex coronary artery. No coronary artery blood clot was identified. There was an 8 cm × 5 cm × 1 cm area of fibrosis of the left ventricle consistent with scarring from old heart attack. The autopsy did not identify significant natural disease other than heart disease; the pulmonary arteries and brain were not examined. The only identified traumatic injuries were sternum and rib fractures after CPR.

3.0 Toxicology

At the request of the Kern County Sheriff-Coroner's Office, NMS Labs performed toxicological testing of postmortem heart blood from the pilot. Caffeine was presumptively detected (detected by a screening test without a second test to confirm the result).

The FAA Forensic Sciences Laboratory also performed toxicological testing of postmortem specimens from the pilot. Albuterol and desmethylsildenafil were detected in urine and were not detected in blood.

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

¹ Kitzman DW, Scholz DG, Hagen PT, Ilstrup DM, Edwards WD. Age-related changes in normal human hearts during the first 10 decades of life. Part II (maturity): a quantitative anatomic study of 765 specimens from subjects 20 to 99 years old. *Mayo Clin Proc.* 1988;63(2):137-146. doi:10.1016/s0025-6196(12)64946-5.

Albuterol is a prescription medication commonly used to relax tight lungs and improve wheezing and cough in conditions such as asthma and bronchitis. Albuterol is not typically impairing, although it may carry a warning about cautious use in patients with heart disease, due to a potential for causing rare but significant cardiovascular side effects.² According to the FAA medical case review for this accident, pilot use of albuterol as needed up to twice weekly is acceptable, but pilot medical certification on albuterol depends on the underlying condition (which was not reported in this case).

Desmethylsildenafil is a metabolite of sildenafil (which was not detected in this case). Sildenafil is a prescription medication commonly used to treat erectile dysfunction, as a sexual enhancement aid, or in the treatment of certain other conditions, including pulmonary hypertension. Sildenafil is not typically impairing, although the FAA states that pilots should wait 8 hours after using it before flying, to monitor for side effects.³

E. SUMMARY OF MEDICAL FACTS

The 78-year-old male pilot's most recent aviation medical examination was January 4, 2023. At that time, he reported no medication use and no active medical conditions. He was issued a third-class medical certificate limited by a requirement to use corrective lenses to meet vision standards at all required distances.

The Kern County Sheriff-Coroner's Office performed the pilot's autopsy and death investigation. Death investigation information accompanying the autopsy report indicated that the pilot was taken to a hospital emergency department in cardiac arrest. He did not respond to resuscitative efforts and was declared dead in the emergency department shortly after arrival. Admission blood was not drawn.

The Investigating Deputy Coroner spoke with the passenger, who was the pilot's spouse. According to the spouse, the pilot suddenly went unresponsive about 45 minutes to an hour into the flight. He did not voice any complaints or make any exclamations before going unresponsive. The spouse stated the pilot had been very healthy, without any medical conditions or medication use, and had been avidly physically active.

² National Institutes of Health National Library of Medicine. ProAir Digihaler. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=667ce3ec-5217-4b10-b712-f3e54fbbf087>. Updated June 1, 2022. Accessed May 16, 2025.

³ Federal Aviation Administration. Pharmaceuticals (therapeutic medications) erectile dysfunction and benign prostatic hyperplasia medications. Guide for Aviation Medical Examiners. https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/pharm/ed/. Updated August 25, 2017. Accessed May 16, 2025.

According to the pilot's autopsy report, his cause of death was hypertensive and atherosclerotic cardiovascular disease, and his manner of death was natural. The autopsy identified an enlarged heart. All four chambers of the heart were described as severely dilated. Moderate coronary artery disease was present. There was old scar tissue of the left cardiac ventricle, consistent with past heart attack. The pulmonary arteries and brain were not examined. The only identified traumatic injuries were sternum and rib fractures after CPR.

Submitted by:

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