

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



Medical Factual Memorandum for Record

June 24, 2026

A. CASE

NTSB ID: WPR24FA290
Location: Novato, California
Date: August 31, 2024

B. MEDICAL SPECIALIST

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

C. DETAILS

1.0 Description of Review

For purposes of evaluating the pilot for potentially impairing substances and potentially impairing medical conditions, the above Medical Specialist reviewed the following sources of medical information, along with selected relevant regulation, medical literature, and National Transportation Safety Board (NTSB) investigator reports.

- Federal Aviation Administration (FAA) medical case review
- Autopsy report (with death investigation information and NMS Labs toxicology) – pilot
- FAA Forensic Sciences Laboratory toxicology report – pilot

2.0 Summary of Medical Facts

2.1 Information from Reviewed Records

According to the FAA medical case review, the 75-year-old male pilot's last aviation medical examination was August 16, 2024 (15 days before the accident). At that time, he reported medical history including high blood pressure and seasonal allergies. His high blood pressure was noted to be qualified under Conditions Aviation Medical Examiners Can Issue (CACI) criteria. He reported using the medications lisinopril (a prescription medication commonly used to treat high blood pressure), aspirin (a medication available without a prescription, commonly used to lower cardiovascular risk, or to treat pain or fever), and tamsulosin (a prescription alpha blocker medication commonly used to treat symptoms of an enlarged prostate). He was issued a third-class medical certificate limited by a requirement to use corrective lenses to meet vision standards at all required distances.

According to the FAA medical case review, the pilot also had a history of prostate cancer with brachytherapy treatment in 2008 and subsequent FAA Letters of Eligibility, most recently in 2014.

The Marin County Sheriff's Office Coroner Division performed the pilot's death investigation and autopsy. According to reviewed death investigation documentation completed by the Coroner, the pilot's sister reported that the pilot had been in good spirits all day on the day of the accident, did not drink alcohol, was not depressed, did not use drugs, and did not have any major medical issues other than prostate cancer 10 to 15 years prior. According to the Coroner's documentation, the pilot's son reported that the pilot did not have any known major medical or mental health issues, did not drink alcohol, and did not use drugs.

According to the pilot's autopsy report, his cause of death was thermal burn injuries with smoke inhalation. There was soot in the airways. The autopsy also identified coronary artery disease, including severe diffuse narrowing of up to 90-100% in the proximal-to-mid portions of the left anterior descending coronary artery. The right coronary artery was narrowed up to 50% by plaque, and the left circumflex coronary artery was narrowed 25-50%. The heart was described as slightly dilated; no other significant abnormalities were noted on visual examination of the heart. Slight to moderate plaque of the aorta and slight patchy plaque of the arteries at the base of the brain were present, as were some kidney tissue changes of the type that may be seen with chronic high blood pressure. Metallic pins consistent with past brachytherapy treatment were seen in the prostate. The remainder of the autopsy did not identify other significant natural disease.

Postmortem toxicological testing of aortic blood performed by NMS Labs at the request of the Coroner Division measured carboxyhemoglobin to be elevated at

17% and identified a presumptive positive result for caffeine (an unverified positive screening test for caffeine without a confirmation test).

Postmortem toxicological testing by the FAA Forensic Sciences Laboratory did not detect carboxyhemoglobin in aortic blood at a reporting threshold of 10%. Chlorthalidone was detected in aortic blood, urine, gastric contents, liver tissue, kidney tissue, muscle tissue, and brain tissue. Tamsulosin and salicylic acid were detected in aortic blood and urine. Ibuprofen was detected in urine and was not detected in aortic blood. No other tested-for substances were detected.¹

2.2 Descriptions of Detected Substances

Carboxyhemoglobin is formed when carbon monoxide binds to hemoglobin in blood, diminishing the blood's ability to deliver oxygen to body tissues. Carbon monoxide is an odorless, tasteless, colorless, nonirritating gas that can be produced during hydrocarbon combustion. Exposure to carbon monoxide usually occurs by inhalation of smoke or exhaust fumes. Nonsmokers normally have carboxyhemoglobin levels of less than 1-3%, while heavy smokers may have levels as high as 10-15%.²⁻⁶

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

Chlorthalidone is a prescription diuretic medication commonly used to treat high blood pressure. Chlorthalidone is not generally considered impairing and is

¹ The FAA Forensic Sciences Laboratory has the capability to test for around a thousand substances including toxins, prescription and over-the-counter medications, and illicit drugs.

² Maloney GE. Carbon monoxide. 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; 2020:1414-1417.

³ Manaker S, Perry H. Carbon monoxide poisoning. In: Post TW, ed. UpToDate. Waltham, MA: UpToDate Inc. <https://www.uptodate.com/contents/carbon-monoxide-poisoning>. Updated March 19,2026. Accessed June 23, 2026.

⁴ Spitz WU. Asphyxia. 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; 2006:783-845.

⁵ Dolinak D, Matshes EW, Lew EO. Environmental injury. In: Dolinak D, Matshes EW, Lew EO, eds. *Forensic Pathology: Principles and Practice*. Burlington, MA: Elsevier Academic Press; 2005:239-258.

⁶ Hampson NB, Piantadosi CA, Thom SR, Weaver LK. Practice recommendations in the diagnosis, management, and prevention of carbon monoxide poisoning. *Am J Respir Crit Care Med*. 2012;186(11):1095-1101. doi:10.1164/rccm.201207-1284CI.

among the high blood pressure medications that the FAA considers acceptable for use by otherwise-qualified pilots after a 7-day initial ground trial to verify absence of side effects.⁷ At his last aviation medical examination 15 days before the crash, the pilot did not report using chlorthalidone, but reported using a different high blood pressure medication (of a different class).

Tamsulosin is a prescription medication commonly used to treat symptoms of a large prostate. Tamsulosin is not generally considered impairing and was among the medications reported by the pilot at his last aviation medical examination.

Salicylic acid is the primary active metabolite of aspirin, a widely available nonprescription medication that can be used to control pain and fever, as well as to reduce cardiovascular risk. Aspirin was among the medications reported by the pilot at his last aviation medical examination. In addition to being a metabolite of aspirin, salicylic acid is a metabolite of some other drugs and is used as a topical skin exfoliant in a variety of retail products. Salicylic acid/aspirin is not generally considered impairing.

Ibuprofen is another anti-inflammatory medication that is widely available over the counter and commonly is used to treat pain and fever. Ibuprofen is not generally considered impairing.

Submitted by:

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Chief Medical Officer

⁷ Federal Aviation Administration. Pharmaceuticals (Therapeutic Medications) Antihypertensive. Guide for Aviation Medical Examiners. https://www.faa.gov/ame_guide/pharm/antihyp. Updated March 11, 2025. Accessed June 23, 2026.