

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



Medical Factual Memorandum for Record

March 25, 2024

A. CASE

NTSB ID: ERA23FA025
Location: Brentwood, Tennessee
Date: October 10, 2022

B. MEDICAL SPECIALIST

Specialist JE Tuttle MD MHA FACS
National Transportation Safety Board
Washington, DC

C. DETAILS

1.0 Description of Review

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

- Federal Aviation Administration (FAA) medical case review
- Autopsy report- Pilot
- Toxicology report - Pilot

2.0 Summary of Medical Facts

According to the FAA medical case review, the 62-year-old-male pilot's last aviation medical examination was on April 20, 2016. At that time, he was 69 inches tall and weighed 235 pounds. He reported taking alfuzosin (a prescription medication used to treat symptoms of an enlarged prostate), lisinopril (a prescription medication used to treat high blood pressure), rosuvastatin (a prescription medication used to treat high cholesterol and lower cardiovascular risk), and aspirin (an over-the-counter anti-inflammatory agent and anti-platelet agent to prevent blood clots). None of these medications are generally considered impairing. The pilot reported a history of high blood pressure, angina, and a coronary artery bypass grafting procedure (CABG) in 2007, coronary artery stent placement in 2014, benign prostatic hypertrophy (BPH), high cholesterol, and sleep apnea with use of a continuous positive airway pressure (CPAP) device. The pilot was issued a third-class medical certificate limited by a requirement to wear corrective lenses and not valid after April 30, 2017. The pilot had completed a BasicMed course on October 12, 2021, and reported completing a Comprehensive Medical Examination Checklist (CMEC) on August 6, 2021.¹

According to the FAA medical case review, the pilot had received Authorization for Special Issuance for a third-class medical certificate for myocardial infarction, angina, coronary artery disease requiring CABG, high blood pressure, sleep apnea, and use of medication, initially in 2008. The pilot also had received Authorization for Aviation Medical Examiner (AME)-Assisted Special Issuance for the previous indications with the addition of CPAP and coronary artery stent placement, initially in 2014.²

CPAP records for recent compliance were not available for review.

The Office of the Medical Examiner, Center for Forensic Medicine, Williamson County, performed the autopsy of the pilot. According to the autopsy report, the

¹ BasicMed provisions allow pilots who meet certain requirements to fly without current medical certification. Among those requirements, a pilot must have completed a BasicMed training course within 24 calendar months and must have had a medical examination with a state-licensed physician using the CMEC within 48 months. Aircraft and operating restrictions also apply. For details, see 14 Code of Federal Regulations (CFR) Part 68, 14 CFR 61.113(3) and https://www.faa.gov/licenses_certificates/airmen_certification/basic_med/.

² AME-Assisted Special Issuance is a process by which an AME may re-issue a medical certificate under the provisions of an applicant's FAA Authorization for Special Issuance if the applicant provides specific required medical information from treating physician(s) as set forth in the Authorization letter. AMEs may not issue initial Authorizations, and AME-Assisted Special Issuance determinations are subject to review by the FAA. Additional information about the AME-Assisted Special Issuance process is available on the [FAA AME Guide website](#).

³ Kitman DW, Scholz DG, Hagem 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 Clinic Proceedings*. 1988;63(2):137-146. doi:[https://doi.org/10.1016/s0025-6196\(12\)64946-](https://doi.org/10.1016/s0025-6196(12)64946-)

pilot's cause of death was blunt force injuries and thermal burns. The manner of death was accident. The autopsy revealed an enlarged heart. Heart weight was 600 g (normal heart weight for a male of the pilot's autopsy body weight of 229 pounds is roughly 300-530 g).³ Severe native coronary artery disease was noted. CABG grafts were patent without stenoses. The liver was noted to be cirrhotic. Examination of the brain, lungs, and remainder of the heart revealed no evidence of other significant natural disease.

At the request of the Department of the Medical Examiner, NMS Labs performed postmortem testing of the pilot's blood. No tested-for substances were detected.⁴

The FAA Forensic Sciences Laboratory performed toxicological testing of the postmortem blood, vitreous fluid, and urine of the pilot.⁵ Cetirizine was detected in blood at 116 ng/mL and urine at 2286 ng/mL. Rosuvastatin was detected in blood and urine. Naproxen was detected in blood but inconclusive in urine.

Cetirizine is a second-generation antihistamine medication that is available over the counter and is commonly used to treat allergy symptoms. Cetirizine typically carries a warning that users may experience drowsiness and should use caution when driving a motor vehicle or operating machinery.⁶ Data on sedation and psychomotor impairment from cetirizine are mixed, with some studies but not others finding some sedating and impairing effects.^{7,8,9} The FAA states that pilots should wait 48 hours

³ Kitman DW, Scholz DG, Hagem 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 Clinic Proceedings*. 1988;63(2):137-146. doi:[https://doi.org/10.1016/s0025-6196\(12\)64946-](https://doi.org/10.1016/s0025-6196(12)64946-)

⁴ Information about the blood testing procedure, including tested-for substances, is available on the NMS Labs website at Test Code [8041B](#). Additionally, blood was tested for carboxyhemoglobin (a marker of carbon monoxide exposure).

⁵ 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.

⁶ National Institutes of Health National Library of Medicine. Zyrtec Allergy. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b165db38-b302-4220-8627-77cb07bb078c>. Updated May 19, 2023. Accessed February 27, 2024.

⁷ Adelsberg BR. Sedation and performance issues in the treatment of allergic conditions. *Arch Intern Med*. 1997;157(5):494-500.

⁸ Moskowitz H, Wilkinson CJ. Antihistamines and Driving-Related Behavior: A Review of the Evidence for Impairment. National Highway Traffic Safety Administration. DOT HS 809 714. May 2004. <https://www.nhtsa.gov/sites/nhtsa.gov/files/antihistamines20text.pdf>. Accessed February 27, 2024.

⁹ Du Q, Zhou Y. Placebo-controlled assessment of somnolence effect of cetirizine: a meta-analysis. *Int Forum Allergy Rhinol*. 2016;6(8):871-879. doi:10.1002/alr.21746.

after using cetirizine before flying, to allow time for the drug to be cleared from circulation.¹⁰

Rosuvastatin is a prescription medication used to treat high cholesterol and lower cardiovascular risk.¹¹ It is not generally considered impairing.

Naproxen is an over-the-counter nonsteroidal anti-inflammatory drug used to relieve musculoskeletal pain and reduce fever.¹² It is not generally considered impairing.

Submitted by:

JE Tuttle MD MHA FACS
Medical Officer

¹⁰ Federal Aviation Administration. Allergy – antihistamine & immunotherapy medication. Guide for Aviation Medical Examiners. https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/AllergyAntihistamineImmunotherapyMedication.pdf. Updated October 26, 2022. Accessed February 27, 2024,

¹¹ National Institutes of Health National Library of Medicine. Rosuvastatin calcium. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b94b5b36-c04e-45ee-b933-59c4302f2661>. Updated March 1, 2023. Accessed March 18, 2024.

¹² National Institutes of Health National Library of Medicine. Naproxen sodium. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=d5c185d9-0bea-4970-b1e7-201a51106ad6>. Updated June 1, 2022. Accessed March 18, 2024.