

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



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MEDICAL

Specialist's Factual Report

July 21, 2023

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A. ACCIDENT

Location: Delta, Colorado
Date: September 17, 2021

B. MEDICAL SPECIALIST

Specialist Turan Kayagil, MD, FACEP
National Transportation Safety Board
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C. DETAILS OF THE INVESTIGATION

1.0 Purpose

This investigation was performed to evaluate the pilot for potentially impairing substances and potentially impairing medical conditions.

2.0 Methods

The Federal Aviation Administration (FAA) medical case review and the pilot's autopsy and toxicology reports were reviewed. 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 55-year-old male pilot's last aviation medical examination was on November 5, 2020. At that time, he reported 1000 total civilian flight hours. He was 76 inches tall and weighed 277 pounds. He reported no medication use and no active medical conditions. No significant issues were identified, and he was issued a second-class medical certificate limited by a requirement to wear corrective lenses.

2.0 Autopsy

The Pathology Group, P.C., Grand Junction, Colorado, performed the pilot's autopsy as authorized by the Delta County Coroner's Office, Delta, Colorado. According to the pilot's autopsy report, his cause of death was multiple blunt force injuries and his manner of death was accident. The autopsy did not identify significant natural disease.

3.0 Toxicology

3.1 FAA Toxicology Results

The FAA Forensic Sciences laboratory performed toxicological testing of postmortem specimens from the pilot.¹ Diphenhydramine, famotidine, desloratadine, and pseudoephedrine were detected in cavity blood and urine.

3.2 Descriptions of Detected Substances

Diphenhydramine is a sedating antihistamine available over the counter in multiple sleep aids and cold and allergy products. Diphenhydramine can cause cognitive and psychomotor slowing and drowsiness. It typically carries a warning that it may impair performance of tasks like driving and operating heavy machinery.^{2,3,4} The FAA states that pilots should not fly within 60 hours of using diphenhydramine, to allow time for it to be cleared from circulation.^{5,6}

Famotidine is an over-the-counter stomach acid suppression medication.⁷ Desloratadine is a prescription non-sedating antihistamine medication that can be used to treat allergy symptoms and hives, and is also a metabolite of a similar

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 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 July 21, 2023.

³ Couper FJ, Logan BK. *Drugs and Human Performance Fact Sheets*. National Highway Traffic Safety Administration. DOT HS 809 725. April 2014 (Revised). <https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/809725-drugshumanperformfs.pdf>. Accessed July 21, 2023.

⁴ National Institutes of Health National Library of Medicine. Benadryl Allergy Liqui-Gels. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=bfeae100-e2d1-4607-be3b-2d9b15cd4f7f>. Updated May 17, 2023. Accessed July 21, 2023.

⁵ Federal Aviation Administration. Guide for aviation medical examiners: pharmaceuticals (therapeutic medications) do not issue - do not fly. Federal Aviation Administration website. https://www.faa.gov/ame_guide/pharm/dni_dnf. Updated July 10, 2023. Accessed July 21, 2023.

⁶ 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 July 21, 2023.

⁷ National Institutes of Health National Library of Medicine. Pepcid AC Original Strength. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=54f4086f-e443-4e7e-8c7e-94e152e1c256>. Updated March 27, 2023. Accessed July 21, 2023.

medication, loratadine, which is available over the counter.^{8,9} Pseudoephedrine is a drug commonly used as a nasal decongestant; it is widely available in a variety of cold and allergy medications sold “behind the counter” with no requirement for a prescription.^{10,11} Famotidine, desloratadine, and pseudoephedrine are not generally considered impairing.

E. SUMMARY OF MEDICAL FACTS

The 55-year-old male pilot’s last aviation medical examination was on November 5, 2020. At that time, he reported no medication use and no active medical conditions. He was issued a second-class medical certificate limited by a requirement to wear corrective lenses.

According to the pilot’s autopsy report, his cause of death was multiple blunt force injuries and his manner of death was accident. The autopsy did not identify significant natural disease.

The pilot’s postmortem toxicological testing detected diphenhydramine, famotidine, desloratadine, and pseudoephedrine in cavity blood and urine.

Submitted by:

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⁸ National Institutes of Health National Library of Medicine. Clarinex. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c671342e-69a2-4ca5-abc2-8166ed4240d4>. Updated November 14, 2022. Accessed July 21, 2023.

⁹ National Institutes of Health National Library of Medicine. Claritin. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=acf2d393-53d7-062f-e053-2995a90a0d60>. Updated March 24, 2023. Accessed July 21, 2023.

¹⁰ National Institutes of Health National Library of Medicine. Sudafed Sinus Congestion. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c05d7e27-6821-468f-b27d-9c0b02a07b0f>. Updated March 23, 2023. Accessed July 21, 2023.

¹¹ Food and Drug Administration. Legal requirements for the sale and purchase of drug products containing pseudoephedrine, ephedrine, and phenylpropanolamine. Food and Drug Administration website. <https://www.fda.gov/drugs/information-drug-class/legal-requirements-sale-and-purchase-drug-products-containing-pseudoephedrine-ephedrine-and>. Updated November 24, 2017. Accessed July 21, 2023.