

# National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



## Medical Factual Memorandum for Record

February 5, 2026

### A. CASE

NTSB ID: CEN24FA101  
Location: Ranchitos Las Lomas, Texas  
Date: January 29, 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 certification file - pilot
- FAA medical case review
- Autopsy report - pilot
- FAA Forensic Sciences Laboratory toxicology report - pilot

## 2.0 Summary of Medical Facts

### 2.1 Information from Reviewed Records

The 63-year-old male pilot's last aviation medical examination was April 25, 2017. At that time, he reported using the medications metformin (a prescription oral medication commonly used to control blood sugar in prediabetes and diabetes) and atorvastatin (a prescription medication commonly used to help control cholesterol and reduce cardiovascular risk). The aviation medical examiner (AME) noted that the pilot had prediabetes.<sup>1</sup> The AME noted that the pilot failed color vision testing, and commented that the pilot missed 6 out of 10 plates on pseudoisochromatic color vision testing. The AME issued the pilot a third-class medical certificate, with the limitation "Not valid for night flying or by color signal control." That medical certificate subsequently expired. The pilot completed a BasicMed Course, most recently in March 2023, and reported completing a BasicMed Comprehensive Medical Examination Checklist (CMEC), most recently in March 2021.<sup>2</sup>

FAA medical certification records indicated that the pilot had a history of red-green color vision deficiency and had failed color vision testing at multiple (but not all) previous aviation medical examinations, as far back as 1982.

The Webb County Medical Examiner's Office performed the pilot's autopsy. According to the pilot's autopsy report, his cause of death was multiple blunt force injuries, and his manner of death was accident. Structural evaluation of his heart was not possible due to injury. Within this limitation, his autopsy did not identify significant natural disease.

Postmortem toxicological testing by the FAA Forensic Sciences Laboratory detected delta-8-tetrahydrocannabinol (delta-8-THC) at 7.9 ng/mL in cavity blood and at 2.4 ng/g in liver tissue. Carboxy-delta-8-THC was detected at 3.8 ng/mL in cavity blood and at 79.9 ng/g in liver tissue. Carboxy-delta-9-tetrahydrocannabinol (carboxy-delta-9-THC) was detected at 1.6 ng/g in liver tissue; carboxy-delta-9-THC testing in cavity blood was inconclusive. Gabapentin was detected at 1557 ng/mL in cavity blood and at 2059 ng/g in liver tissue. Alprazolam was detected at 5 ng/g in liver tissue and was not detected in cavity blood. Meloxicam was detected in cavity blood and liver tissue.

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<sup>1</sup> Prediabetes is a term for elevated blood sugar that does not meet criteria for diabetes, but that indicates increased risk of developing diabetes and related complications in the future.

<sup>2</sup> BasicMed provisions allow pilots who meet certain requirements to fly as pilot in command or as a required flightcrew member without current medical certification. Among those requirements, a pilot must have completed a BasicMed education 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 apply, including prohibitions on operations during medical deficiency ([14 CFR 61.53](#)) and while using drugs that affect faculties in a way contrary to safety ([14 CFR 91.17\(a\)\(3\)](#)).

## 2.2 Descriptions of Detected Substances

Delta-8-THC is a psychoactive chemical similar to the primary psychoactive chemical in cannabis, delta-9-tetrahydrocannabinol (delta-9-THC). Delta-8-THC effects are similar to those of delta-9-THC, including similar potentially impairing cognitive and psychomotor effects. Such effects may include impaired motor coordination, reaction time, decision making, problem solving, vigilance, and ability to judge time and distance.<sup>3</sup> Delta-8-THC is available from retailers in a variety of products for oral consumption, smoking, and inhalation. Very little delta-8-THC is present in the cannabis plant, so delta-8-THC used in consumer products typically is chemically manufactured from cannabidiol (CBD), another chemical in the cannabis plant.<sup>4,5,6</sup> Delta-8 THC products are marketed with a variety of claims, but have not been evaluated or approved by the United States Food and Drug Administration for safe use in any context, and may contain contaminants, including delta-9-THC.<sup>7,8</sup> Carboxy-delta-8-THC is a non-psychoactive metabolite of delta-8-THC. Carboxy-delta-9-THC is a non-psychoactive metabolite of delta-9-THC.

This investigation did not identify published FAA policy specific to delta-8-THC use by pilots. The FAA medical case review for this accident stated that products containing delta-8-THC are not specifically addressed by the FAA but should be

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<sup>3</sup> Couper F, Huestis M, Fulford J, et al. *Drugs and Human Performance Fact Sheets: 2024*. National Highway Traffic Safety Administration. DOT HS 813 650. December 2024 (Revised). <https://rosap.ntl.bts.gov/view/dot/78924>. Accessed January 15, 2026.

<sup>4</sup> Wurz GT, Montoya E, DeGregorio MW. Examining impairment and kinetic patterns associated with recent use of hemp-derived  $\Delta 8$ -tetrahydrocannabinol: case studies. *J Cannabis Res*. 2022;4(1):36. doi:10.1186/s42238-022-00146-9.

<sup>5</sup> Tagen M, Klumpers LE. Review of delta-8-tetrahydrocannabinol ( $\Delta 8$ -THC): Comparative pharmacology with  $\Delta 9$ -THC. *Br J Pharmacol*. 2022;179(15):3915-3933. doi:10.1111/bph.15865. Erratum in: *Br J Pharmacol*. 2023;180(1):130.

<sup>6</sup> United States Centers for Disease Control and Prevention (CDC). Increases in availability of cannabis products containing Delta-8 THC and reported cases of adverse events. CDC Health alert Network. <https://stacks.cdc.gov/view/cdc/109759>. Updated September 14, 2021. Accessed January 15, 2026.

<sup>7</sup> United States Food and Drug Administration (FDA). 5 things to know about delta-8 tetrahydrocannabinol – delta-8 THC. FDA Consumer Updates. <https://www.fda.gov/consumers/consumer-updates/5-things-know-about-delta-8-tetrahydrocannabinol-delta-8-thc>. Updated May 4, 2022. Accessed January 15, 2026.

<sup>8</sup> LoParco CR, Rossheim ME, Walters ST, Zhou Z, Olsson S, Sussman SY. Delta-8 tetrahydrocannabinol: a scoping review and commentary. *Addiction*. 2023;118(6):1011-1028. doi:10.1111/add.16142.

considered as much of a hazard to flight safety as marijuana. The FAA considers marijuana use by pilots unacceptable, regardless of state laws.<sup>9,10,11</sup>

Gabapentin is a prescription medication that can be used to treat nerve pain, certain types of seizures, restless legs syndrome, and other conditions. Gabapentin may cause sedation and dizziness and can impair coordination and performance of tasks such as operating motor vehicles and heavy machinery. The drug typically carries a warning that users may not be able to accurately assess how sleepy or impaired it makes them, and that they should not operate motor vehicles or complex machinery until they have gained enough experience to determine whether the drug impairs their ability to do so.<sup>3,12</sup> The FAA considers gabapentin to be a "Do Not Issue/Do Not Fly" medication.<sup>13</sup>

Alprazolam, sometimes marketed as Xanax, is a high-potency benzodiazepine drug available as a prescription oral medication commonly used to treat anxiety and panic disorder.<sup>14</sup> In addition to medicinal use, alprazolam commonly is misused.<sup>15</sup> Alprazolam can cause sedation and psychomotor impairment, with adverse effects on tracking, attention, and reaction speed.<sup>3</sup> Alprazolam medication typically carries a warning against engaging in hazardous occupations requiring mental alertness such as operating machinery or driving a motor vehicle.<sup>14</sup> The FAA considers alprazolam to

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<sup>9</sup> 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](https://www.faa.gov/ame_guide/pharm/dni_dnf). Updated July 10, 2023. Accessed January 15, 2026.

<sup>10</sup> Federal Aviation Administration. Aeromedical factors. In: *Pilot's Handbook of Aeronautical Knowledge*. FAA-H-8083-25C. Oklahoma City: United States Department of Transportation, Federal Aviation Administration, Airman Testing Standards Branch, AFS-630; 2023. [https://www.faa.gov/sites/faa.gov/files/19\\_phak\\_ch17.pdf](https://www.faa.gov/sites/faa.gov/files/19_phak_ch17.pdf). Accessed January 15, 2026.

<sup>11</sup> Federal Aviation Administration. Controlled substances and CBD products. Guide for Aviation Medical Examiners. [https://www.faa.gov/about/office\\_org/headquarters\\_offices/avs/offices/aam/ame/guide/media/Controlled\\_Substances\\_and\\_CBD\\_Products.pdf](https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/Controlled_Substances_and_CBD_Products.pdf). Updated May 25, 2022. Accessed January 15, 2026.

<sup>12</sup> National Institutes of Health National Library of Medicine. Neurontin. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=ee9ad9ed-6d9f-4ee1-9d7f-cfad438df388>. Updated July 12, 2022. Accessed January 15, 2026.

<sup>13</sup> Federal Aviation Administration. Pharmaceuticals (therapeutic medications) do not issue - do not fly. Guide for Aviation Medical Examiners. [https://www.faa.gov/ame\\_guide/pharm/dni\\_dnf](https://www.faa.gov/ame_guide/pharm/dni_dnf). Updated July 10, 2023. Accessed January 15, 2026.

<sup>14</sup> National Institutes of Health National Library of Medicine. Xanax. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=388e249d-b9b6-44c3-9f8f-880eced0239f>. Updated January 18, 2023. Accessed January 15, 2026.

<sup>15</sup> Ait-Daoud N, Hamby AS, Sharma S, Blevins D. A review of alprazolam use, misuse, and withdrawal. *J Addict Med*. 2018;12(1):4-10. doi:10.1097/ADM.0000000000000350.

be a “do not fly” medication, and instructs AMEs not to issue medical certificates to pilots who report having an open prescription for chronic use of alprazolam.<sup>16</sup>

Meloxicam is a prescription non-steroidal anti-inflammatory drug (NSAID) commonly used to treat arthritis pain. Meloxicam is not generally considered impairing.

Submitted by:

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Chief Medical Officer

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<sup>16</sup> 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](https://www.faa.gov/ame_guide/pharm/dni_dnf). Updated July 10, 2023. Accessed January 15, 2026.