



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

February 25, 2021

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Medical Officer

A. ACCIDENT: CEN20LA27; Dustin, Oklahoma

Aircraft: Cessna T188, N2690J

Injuries: 1 Fatal

Date/Time: July 10, 2020; 2:40 p.m. (CDT)

Flight Conducted under Part 137; Agricultural (aerial application)

B. GROUP IDENTIFICATION

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

Purpose

This investigation was performed to evaluate the pilot for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

Methods

Federal Aviation Administration (FAA) medical case review and the pilot's autopsy, and FAA Forensic Sciences Laboratory toxicology¹ reports were reviewed. Other pertinent scientific and regulatory issues were reviewed.

FAA Medical Case Review

According to the FAA medical case review, the 62-year-old male pilot held a second class medical certificate with the limitation that he must have glasses available for near vision. His most recent FAA medical certification exam was on 3/13/20 and at that time he reported he had accrued 17,100 total flight hours. He was 66 inches tall and weighed 169 pounds. He reported taking telmisartan and amlodipine to treat high blood pressure. No other medical concerns or issues were identified.

¹ See <https://jag.camii.jccbi.gov/toxicology/> for a complete list of tested-for substances.

Autopsy

According to the autopsy performed by the Office of the Chief Medical Examiner, Tulsa, Oklahoma, the cause of death for the pilot was multiple blunt force injuries and the manner of death was accident. No significant natural disease was identified.

Toxicology

Toxicology testing by the Office of the Chief Medical Examiner detected diphenhydramine in the pilot's cavity blood. FAA Forensic Sciences Laboratory toxicology testing of the pilot's femoral blood detected diphenhydramine at 226 nanograms per milliliter (ng/mL); diphenhydramine was also detected in his urine. The non-sedating medication tamsulosin, which is used to treat an enlarged prostate, was detected in the pilot's cavity blood and urine.²

Diphenhydramine is a sedating antihistamine (commonly marketed as Benadryl) and is available over the counter in many products used to treat colds, allergies, and insomnia. The therapeutic range is 25 to 100 ng/mL and it has a half-life of 3 to 14 hours.³ Diphenhydramine undergoes postmortem distribution and central levels may be two to three times higher than peripheral levels.⁴ FAA provides guidance on wait times before flying after using this medication.⁵

D. SUMMARY OF MEDICAL FINDINGS

At the time of the accident, the 62-year-old male pilot held a second class medical certificate with the limitation that he must have glasses available for near vision. He reported taking telmisartan and amlodipine to treat high blood pressure. According to the autopsy report, the cause of death for the pilot was multiple blunt force injuries and the manner of death was accident. No significant natural disease was identified.

Toxicology testing detected diphenhydramine in the pilot's femoral blood at 226 (ng/mL) and urine. The non-sedating medication tamsulosin was detected in the pilot's cavity blood and urine.

² FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Tamsulosin.

<https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=285>

³ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Diphenhydramine.

<https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=50>.

⁴ Han, E, E Kim, H Hong, S Jeong, J Kim, S In, H Chung, and S Lee. 2012. Evaluation of postmortem redistribution phenomena for commonly encountered drugs. *Forensic Sci Int.* 219(1-3):265-271.

⁵ FAA. 11/13/19. What over-the-counter (OTC) medications can I take and still be safe to fly? OK-20-0302 https://www.faa.gov/licenses_certificates/medical_certification/media/OTCMedicationsforPilots.pdf