



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report **March 29, 2022**

Michelle Watters, MD, PhD, MPH
Medical Officer

A. ACCIDENT: CEN21FA263 – Madisonville, Texas

Date/Time: June 13, 2021; 11:55 p.m. (CDT)
Aircraft: Piper PA-32-260, N3258W
Injuries: 1 fatal, 5 serious
Flight conducted under Part 91 personal flight.

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

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

FAA Medical Case Review

According to the initial FAA medical case review, at the time of the accident, the 68-year-old male pilot held a third class medical certificate with the limitation that he must wear corrective lenses. At the time of the most recent exam (11/27/19), the pilot was 68 inches tall and weighed 178 pounds. He reported having 612 civil flight hours. He reported taking no medications and no medical conditions. No significant medical concerns were identified.

¹ The FAA Forensic Sciences Laboratory has the capability to test for more than 1,300 substances including toxins, common prescription and over-the-counter medications, and illicit drugs. <https://jag.cami.jccbi.gov/toxicology/>

Autopsy

According to the autopsy report by the Southwestern Institute of Forensic Sciences at Dallas, Office of the Medical Examiner, the pilot died as a result of blunt force injuries and the manner of death was accident. The medical examiner reported that the pilot had approximately 85% narrowing of his left anterior descending coronary artery. No other significant natural disease was identified.

Toxicology

FAA Forensic Sciences Laboratory toxicology testing detected the antidepressant sertraline and its metabolite desmethylsertraline in the pilot's heart blood at 1,006 nanograms per milliliter (ng/mL) and 1,533 ng/mL, respectively; both were also detected in his urine. The non-sedating pain and fever reducing over-the-counter medication salicylic acid, commonly known as aspirin, was detected in his cardiac blood and urine.² Toxicology screening performed for the Office of the Medical Examiner detected sertraline, desmethylsertraline, and the non-impairing cholesterol lowering medication atorvastatin.³

Relevant Toxicological and Medical Information

Sertraline, commonly marketed as Zoloft, is a prescription medication indicated for the treatment of depression, PTSD, panic disorder, social anxiety disorder and obsessive-compulsive disorder. Sertraline carries the warning that use may impair the mental and physical ability to perform hazardous tasks. The therapeutic range of sertraline is 10 to 200 ng/mL. Sertraline has an average half-life of about 26 hours; *desmethylsertraline* has a half-life of 62 to 104 hours.^{4,5} The FAA will consider a special issuance of a medical certificate for depression after 6 months of treatment if the applicant is clinically stable and using only one approved treatment medication. Sertraline is one of the FAA approved antidepressant medications.⁶

D. SUMMARY OF MEDICAL FINDINGS

The 68-year-old male pilot held a third class medical certificate with the limitation that he must wear corrective lenses. He reported taking no medications and no medical conditions. According to the autopsy, the pilot died as a result of blunt force injuries and the manner of death was accident. Other than an approximately 85% narrowing of his left anterior descending coronary artery, no other significant natural disease was identified. Toxicological testing identified the antidepressant sertraline at 1,006 nanograms per milliliter (ng/mL) and its metabolite desmethylsertraline in the pilot's heart blood at 1,533 ng/mL; both were also detected in his urine. The non-impairing medications salicylic acid and atorvastatin were also detected.

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

<https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=381>

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

<https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=312>

⁴ NIH. NLM. [DailyMed - SERTRALINE- sertraline tablet, film coated \(nih.gov\)](#) Updated 1/19/22.

⁵ Lewis, RJ, MK Angier, KS Williamson, and RD Johnson. 2013. Analysis of sertraline in postmortem fluids and tissues in 11 aviation accident victims. *Journal of Analytical Toxicology* 37:208-216.

⁶ FAA. Last modified 7/23/18. Guide for Aviation Medical Examiners, Item 47. Psychiatric Conditions - Use of Antidepressant Medications.

https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/app_process/exam_tech/item_47/amd/antidepressants/