



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report **October 25, 2021**

Michelle Watters, MD, PhD, MPH
Medical Officer

A. ACCIDENT: CEN21FA277; Conway, Arkansas

Date/Time: June 18, 2021; 1:57 p.m. (CDT)
Aircraft: Cirrus SR20; N62WR
Injuries: 1 Fatal
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 Federal Aviation Administration (FAA) medical case review and the pilot's autopsy report, Forensic Sciences Laboratory toxicology¹ report, and personal medical records were reviewed. Other relevant medical and regulatory issues were reviewed.

FAA Medical Case Review

According to the FAA medical case review, the 38-year-old male pilot was on BasicMed. His last FAA medical certification examination was in 2009 where he received a third class medical certificate without limitations. At that exam, he reported 205 total flight hours and was 74 inches tall and weighed 180 pounds. He reported taking no medications and having no medical conditions. After his first FAA medical certification examination in 1999, he had received a special issuance for attention deficit hyperactivity disorder and oppositional defiant disorder that had been diagnosed when the pilot was 12 years old.

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

Autopsy

According to the autopsy report from the State Crime Laboratory, Medical Examiner Division, Little Rock, Arkansas, the pilot's death was caused by multiple blunt force injuries and the manner of death was accident. No significant natural disease was identified.

Toxicology

FAA Forensic Sciences Laboratory toxicology testing detected the antidepressant bupropion at 6,618 nanograms per milliliter (ng/mL) and its metabolite hydroxybupropion at 444 ng/mL in the pilot's cavity blood. The mood stabilizing medication lamotrigine was detected in his cavity blood at 2,134 ng/mL. All three compounds were also detected in his urine.

Relevant Toxicological and Medical Information

Bupropion is a medication prescribed as an antidepressant (commonly marketed as Wellbutrin) or for smoking cessation (commonly marketed as Zyban). *Hydroxybupropion* is the major active metabolite of bupropion. The therapeutic range of bupropion is 10 to 143 ng/mL in the blood and its half-life is 4 to 24 hours. The treatment of depression would require FAA review before flying, and bupropion is not one of the drugs that FAA will permit use for depression. According to the FAA, bupropion carries the warning that the medication may impair mental or physical ability required to perform hazardous tasks.^{2,3,4}

Lamotrigine is a prescription medication indicated for treatment of bipolar disorder and adjunctive treatment of epilepsy. It is commonly marketed as Lamictal. The plasma half-life of lamotrigine is 12 to 62 hours and its therapeutic range is 400 to 3,500 ng/mL. Lamotrigine can have impairing performance effects including dizziness and drowsiness, and patients should be warned not to operate complex machinery while on the medication.^{5,6}

Pre-event Medical Records

One record was obtained from the health care provider who completed the pilot's BasicMed form on 1/16/21. The pilot reported no medical conditions and the use of no medications.

D. SUMMARY OF MEDICAL FINDINGS

The 38-year-old male pilot was on BasicMed. Records from the health care provider who completed his BasicMed form stated the pilot had reported no medical conditions and the use of no medications. On his first FAA medical certificate, the pilot had received a special issuance for attention deficit hyperactivity disorder and oppositional defiant disorder that had been diagnosed when he was 12 years old. According to the autopsy report, the pilot's death was

² NIH. NLM. Updated 11/4/20. [DailyMed - BUPROPION HYDROCHLORIDE tablet \(nih.gov\)](https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=20222)

³ FAA. Last modified 2/28/18. Guide for Aviation Medical Examiners. Decision Considerations - Aerospace Medical Dispositions. Item 47. Psychiatric Conditions - Psychiatric Conditions Table of Medical Dispositions. https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/app_process/exam_tech/item_47/amd/table/

⁴ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Bupropion. <https://jag.camii.jccbi.gov/toxicology/DrugDetail.asp?did=20>

⁵ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Lamotrigine. <https://jag.camii.jccbi.gov/toxicology/DrugDetail.asp?did=234>

⁶ NIH. NLM. [DailyMed - LAMOTRIGINE- lamotrigine tablet LAMOTRIGINE tablet \(nih.gov\)](https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=20222) Updated 4/30/21.

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