

# National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



WPR23FA092

## MEDICAL

Specialist's Factual Report

April 28, 2023

## **A. ACCIDENT**

Location: Modesto, California  
Date: 1/18/2023  
Time: 13:07 Local  
Airplane: Cessna 414; N4765F

## **B. MEDICAL SPECIALIST**

Specialist Michelle Watters, MD, PhD, MPH  
National Transportation Safety Board, RE-1  
Washington, DC

## **C. DETAILS OF THE 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, the pilot's autopsy report, and FAA Forensic Sciences Laboratory toxicology report<sup>1</sup> were reviewed. Other relevant medical and regulatory issues were reviewed.

## **D. FACTUAL INFORMATION–PILOT**

### **1.0 FAA Medical Case Review**

According to the FAA medical case review, at the time of the accident, the 80-year-old male pilot held a third class FAA medical certificate with the limitation that he must use corrective lenses to meet vision standards at all required distances. His most recent FAA medical certification exam was on 1/9/23 and at that time he reported he had accrued 4,503 total flight hours. He was 70 inches tall and weighed 218 pounds. The pilot reported taking rivaroxaban (commonly marketed as Xarelto) to prevent blood clots. The pilot had a medical history of obstructive sleep apnea controlled with CPAP (controlled positive airway pressure) and a prior history of atrial fibrillation that was in sinus rhythm after ablation; the pilot had received a special issuance for both conditions.

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<sup>1</sup> The FAA Forensic Sciences Laboratory has the capability to test for more than 1,000 substances including toxins, common prescription and over-the-counter medications, and illicit drugs. <https://jag.cami.jccbi.gov/toxicology/>

## 2.0 Autopsy

According to the autopsy report prepared for the Stanislaus County Sheriff's Office, Coroner's Division, Modesto, California, the pilot's cause of death was blunt injuries, and the manner of death was accident. Other than an enlarged heart (490 grams), the pathologist identified no significant natural disease in the pilot.

## 3.0 Toxicology

Toxicology testing performed by the FAA Forensic Sciences Laboratory detected the sedating antihistamine diphenhydramine in the pilot's liver and muscle tissue. Loratadine and its metabolite desloratadine were also identified in his liver and muscle tissue; this antihistamine is generally considered non-impairing.<sup>2</sup>

*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. Diphenhydramine carries the warning that use of the medication may impair mental and physical ability to perform potentially hazardous tasks. It has a half-life of 3 to 14 hours.<sup>3</sup> FAA provides guidance on wait times before flying after using this medication; post-dose observation time is 60 hours.<sup>4,5</sup>

## E. SUMMARY OF MEDICAL FACTS

The 80-year-old male pilot held a third class FAA medical certificate with the limitation that he must use corrective lenses to meet vision standards at all required distances. He had a special issuance for obstructive sleep apnea and for his history of atrial fibrillation treated with ablation. At his most recent FAA medical certification exam on 1/9/23, he reported taking rivaroxaban to prevent blood clots. According to the autopsy report, the pilot's cause of death was blunt injuries, and his manner of death was accident. Other than an enlarged heart (490 grams), no significant natural disease was identified. Toxicology testing detected diphenhydramine in the pilot's liver and muscle tissue. The generally non-impairing antihistamine loratadine and its metabolite desloratadine were also identified in his liver and muscle tissue.

Submitted by:  
Michelle Watters, MD, PhD, MPH  
Medical Officer, RE-1

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<sup>2</sup> FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs.

Loratadine. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=150>.

Desloratadine. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=379>

<sup>3</sup> FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs.

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

<sup>4</sup> FAA. 11/13/19. OK-20-0302 [Over the Counter Medications \(faa.gov\)](https://www.faa.gov/over-the-counter-medications)

<sup>5</sup> FAA. Updated 10/26/22. [AllergyAntihistamineImmunotherapyMedication.pdf \(faa.gov\)](https://www.faa.gov/allergy-antihistamine-immunotherapy-medication)