



# **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Research and Engineering  
Washington, DC

## **Medical Factual Report**

**October 7, 2021**

Mary Pat McKay, MD, MPH  
Chief Medical Officer

### **A. ACCIDENT: CEN21LA080; Hitchcock, TX**

**Date and time:** December 8, 2020, 15:40 local

**Injuries:** 1 fatal

### **B. GROUP IDENTIFICATION**

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

### **C. DETAILS OF INVESTIGATION**

#### **1. Purpose**

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

#### **2. Methods**

The FAA medical case review, autopsy report, toxicology findings, and the investigator's reports were reviewed. Relevant regulation and medical literature were reviewed as appropriate.

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

According to the FAA medical case review, the 50 year old male pilot had reported 17,825 total flight hours as of his last medical exam, dated 2/28/2020. At that time, he was 75 inches tall and weighed 234 pounds. Since 1986, he had reported no medical conditions, no use of medications, and no visits to health providers to the FAA. No significant abnormalities were identified on the physical exam and he was issued a first class medical certificate without limitations.

### Autopsy

According to the autopsy performed by the County of Galveston Medical Examiner's Office, the cause of death was multiple blunt force injuries and the manner of death was accident. There was extensive damage and parts of the brain and heart were not available for examination. However, no significant natural disease was identified.

### Toxicology

Toxicology testing performed by NMS Labs at the request of the medical examiner identified ethanol at 0.252 gm/dl in femoral blood.

Toxicology testing performed by the FAA's Forensic Sciences Laboratory identified ethanol at 0.160 gm/dl in liver tissue, 0.348 gm/dl in lung, 0.238 gm/dl in lung and 0.196 gm/dl in brain. In addition, cetirizine was identified at 60 ng/ml in cavity blood and in liver tissue.

### Substance Descriptions

Ethanol is the intoxicant commonly found in beer, wine, and liquor. It acts as a central nervous system depressant. After ingestion, at low doses, it impairs judgment, psychomotor functioning, and vigilance; at higher doses it can cause coma and death. The effects of ethanol on aviators are generally well understood; it significantly impairs pilots' performance, even at very low levels.<sup>1</sup> Federal Aviation Regulations, Section 91.17 (a) prohibits any person from acting or attempting to act as a crewmember of a civil aircraft while having 0.040 gm/dl or more ethanol in the blood.<sup>2</sup>

After ingestion, ethanol is rapidly distributed throughout body fluids and tissues, as it is water soluble. Ethanol may also be produced in the body after death by microbial activity.<sup>3</sup> Post mortem production often results in widely variable test results such as a negative result in one specimen and positive results in others.

Cetirizine is a sedating antihistamine commonly marketed with the names Zyrtec and Zyzal. Instructions for patients include this warning, "When using this product drowsiness may occur. Avoid alcoholic drinks. Alcohol, sedatives and tranquilizers may increase drowsiness. Be careful

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<sup>1</sup> Cook, C.C., Alcohol and aviation. *Addiction* (Abingdon, England), 1997. 92(5):539-555.

<sup>2</sup> US Government Printing Office .eCFR- Code of Federal Regulations. 91.17. Accessed 6/16/2015. Available from: <http://www.ecfr.gov/cgi-bin/text-idx?rgn=div8&node=14:2.0.1.3.10.1.4.9>.

<sup>3</sup> Federal Aviation Administration. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60> Accessed 03/02/2021

when driving a motor vehicle or operating machinery.”<sup>4</sup> The typical range where anti-allergy effects are expected are between 190 and 1450 ng/ml.<sup>5</sup>

#### **D. SUMMARY OF MEDICAL FINDINGS**

The 50 year old male pilot had reported no medical conditions, no use of medications, and no visits to health providers to the FAA.

According to the autopsy performed by the County of Galveston Medical Examiner's Office, the cause of death was multiple blunt force injuries and the manner of death was accident. There was extensive damage and parts of the brain and heart were not available for examination. However, no significant natural disease was identified.

Toxicology testing performed by NMS Labs at the request of the medical examiner identified ethanol at 0.252 gm/dl in femoral blood.

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<sup>4</sup> National Institutes of Health. US National Library of Medicine. DailyMed. Cetirizine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=0542dfb2-6ef3-4242-b8fc-9e889757cbd7> Accessed 5/19/2021.

<sup>5</sup> Federal Aviation Administration. Forensic Toxicology Drug Information. Cetirizine. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=131> Accessed 5/19/2021.