

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA23FA060

MEDICAL

Specialist's Factual Report

March 9, 2023

A. ACCIDENT

Location: Oak Hill, Florida
Date: 11/15/2022
Time: 15:30 Local
Airplane: Detrick DA-2; N4307Q

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 student 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 student pilot's autopsy report, and FAA Forensic Sciences Laboratory toxicology report¹ were reviewed. Other relevant medical and regulatory issues were reviewed.

D. FACTUAL INFORMATION—STUDENT PILOT

1.0 FAA Medical Case Review

According to the FAA medical case review, at the time of the accident, the 73-year-old male student pilot was on BasicMed (1/18/22). His most recent FAA medical certification exam was on 4/6/18. At the time of that exam, he was 64 inches tall and weighed 165 pounds. He reported taking omeprazole for gastric reflux. He was issued a third class medical certificate without limitation.

2.0 Autopsy

According to the autopsy report from the Office of the Medical Examiner, District 7, Daytona Beach, Florida, the student pilot's cause of death was blunt force trauma to the head and torso, and the manner of death was accident. The medical

¹ 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/>

examiner reported that the student pilot had up to 60% atherosclerotic disease in his left main and proximal left anterior descending coronary arteries.

3.0 Toxicology

Toxicology testing performed for the medical examiner's office on the student pilot's heart blood was negative for ethanol and drugs of abuse. Toxicology testing by the FAA Forensic Sciences Laboratory detected meclizine at 61 nanograms per milliliter (ng/mL) in the pilot's cavity blood and in his urine. Meclizine's metabolite norchlorcyclizine was detected at 14 ng/mL in cavity blood and in urine. The non-sedating cough suppressant dextromethorphan and its metabolite dextrorphan were also detected in the student pilot's cavity blood and in his urine.²

Meclizine is an antihistamine available over the counter to prevent symptoms of motion sickness such as nausea, vomiting, and dizziness or by prescription to treat vertigo associated with diseases affecting the vestibular system. The therapeutic range of meclizine is 10 to 100 ng/mL, and its half-life is about 5 to 6 hours. *Norchlorcyclizine* is a metabolite of meclizine. Meclizine can cause drowsiness and may impair the mental or physical ability to perform potentially hazardous tasks such as driving or operating heavy machinery.^{3,4} The FAA does not allow the use of this medication chronically or within 36 hours of flying.⁵

E. SUMMARY OF MEDICAL FACTS

The 73-year-old male student pilot was on BasicMed. At the time of his most recent FAA medical certification exam on 4/6/18, he reported taking omeprazole for gastric flux and was issued a third class medical certificate without limitation. According to the autopsy, the student pilot's cause of death was blunt force trauma to the head and torso, and the manner of death was accident. He had up to 60% atherosclerotic disease in his left main and proximal left anterior descending coronary arteries. Toxicology testing detected meclizine at 61 nanograms per milliliter (ng/mL) in the student pilot's cavity blood and in his urine. Meclizine's metabolite norchlorcyclizine was detected at 14 ng/mL in his cavity blood and in his

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

Dextromethorphan. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=42>

Dextrorphan. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=43>

³ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Meclizine.
<https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=155>

⁴ National Institutes of Health (NIH). U.S. National Library of Medicine (NLM). [DailyMed - MECLIZINE HYDROCHLORIDE- meclizine tablet MECLIZINE HYDROCHLORIDE tablet \(nih.gov\)](https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=20222)
Updated 12/30/20.

⁵ FAA. 11/23/22. *Guide for Aviation Medical Examiners*. Pharmaceuticals (Therapeutic Medications) Do Not Issue - Do Not Fly.
https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/pharm/dni_dnf/

urine. Dextromethorphan and its metabolite dextrorphan were also detected in the student pilot's cavity blood and urine; when taken at recommended doses, these two medications are not sedating.

Submitted by:

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