



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

May 19, 2020

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. ACCIDENT: ERA19LA012; Westhampton Beach, NY

On October 13, 2018, about 1100 eastern daylight time, a Piper PA-34-200T airplane, N593MS, was substantially damaged when it experienced an in-flight breakup and impacted the Atlantic Ocean near Westhampton Beach, New York. The flight instructor, the private pilot receiving instruction, and a passenger were fatally injured. The airplane was owned by the instructor and operated under the provisions of Title 14 Code of Federal Regulations Part 91. Instrument meteorological conditions (IMC) prevailed along the route of flight, and no flight plan was filed for the instructional flight, which originated from Danbury Municipal Airport (DXR), Danbury, Connecticut, about 1025 and was en route to Charleston Executive Airport (JZI), Charleston, South Carolina.

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 certified flight instructor (CFI) and student pilot for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

2. Methods

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

CFI

FAA Medical Case Review

According to the FAA medical case review, the 47 year old male CFI

reported 4,000 total flight hours as of his last medical exam, dated 7/18/2018. At that time, he was 66 inches tall and weighed 192 pounds. He had reported no chronic medical problems and no use of medications to the FAA. No significant abnormalities were identified on the physical exam and he was issued a third class medical certificate without limitations.

Autopsy

According to the autopsy performed by the Suffolk County, New York, Office of the Medical Examiner, the cause of death was injuries due to blunt impact and the manner of death was accident. No significant natural disease was identified.

Toxicology

Toxicology testing performed by the FAA's Forensic Science Laboratory identified 0.013 gm/dL of ethanol in cavity blood but none in vitreous. In addition, rosuvastatin and metoprolol were found in liver tissue and metoprolol was found in cavity blood.

Medication Descriptions

Ethanol is the intoxicant commonly found in beer, wine, and liquor. It is also produced after death by microbial activity but vitreous and urine are less susceptible to this production.¹ 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.² As a result, 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.³ Ethanol may also be produced in body tissues by microbial activity after death.¹

Rosuvastatin is a prescription cholesterol lowering medication often marketed with the name Crestor.⁴ Metoprolol is a prescription medication

¹ Federal Aviation Administration. CAMI toxicology Drug Information for: Ethanol <http://jag.cami.jcabi.gov/toxicology/DrugDetail.asp?did=60> Accessed 4/14/2016.

² Cook, C.C., Alcohol and aviation. Addiction (Abingdon, England), 1997. 92(5): 539-555.

³ US Government Printing Office .eCFR- Code of Federal Regulations. 91.17. Available from: <http://www.ecfr.gov/cgi-bin/text-idx?rgn=div8&node=14:2.0.1.3.10.1.4.9>. Accessed 4/14/2020.

⁴ National Institutes of Health. US National Library of Medicine. DailyMed. Rosuvastatin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=134c5455-5171-66f3-e0c4-c475978ffb22> Accessed 5/13/2020.

used to treat high blood pressure and prevent recurrent heart attacks.⁵ Neither is considered impairing.

Pilot Receiving Instruction

FAA Medical Case Review

According to the FAA medical case review, the 53 year old male pilot receiving instruction had a single medical exam dated 8/26/1986. At that time, he reported no flight hours. No disease was reported or identified and he received a second class medical certificate limited by a requirement he use corrective lenses.

Autopsy

According to the autopsy performed by the Suffolk County, New York, Office of the Medical Examiner, the cause of death was multiple blunt impact injuries and the manner of death was accident. No significant natural disease was identified.

Toxicology

Toxicology testing performed by the FAA's Forensic Science Laboratory identified 0.010 gm/dL of ethanol in cavity blood but none in urine. In addition, 0.01 ug/ml of morphine was found in cavity blood and 0.137 ug/ml in urine.

Medication Descriptions

Ethanol is described above.

Morphine is a prescription opioid pain medication available as a Schedule II controlled substance in oral, injection, and sublingual preparations. It carries this warning for patients, "May impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating machinery." ⁶ In people taking it only for brief periods (who have not developed tolerance), the range of blood levels associated with effects is between 0.01 and 0.10 ug/ml.⁷

D. SUMMARY OF MEDICAL FINDINGS

CFI

The 47 year old male CFI had reported no chronic medical problems and no use of medications to the FAA.

⁵ National Institutes of Health. US National Library of Medicine. DailyMed. Metoprolol. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=2d948600-35d8-4490-983b-918bdce488c8> Accessed 5/13/2020.

⁶ National Institutes of Health. US National Library of Medicine. DailyMed. Morphine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a2c1f1b7-70b0-416b-8bdf-9eae156e34b> Accessed 5/13/2020.

⁷ Federal Aviation Administration. Forensic Toxicology Drug Information. Morphine. <http://jag.camii.jccbi.gov/toxicology/DrugDetail.asp?did=176> Accessed 5/13/2020.

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