



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

September 5, 2019

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. ACCIDENT: ERA19FA010; Culpeper, VA

On October 12, 2018, about 2000 eastern daylight time, an experimental, amateur-built Vans RV-8, N804RL, was destroyed when it collided with terrain while maneuvering in Culpeper, Virginia. The commercial pilot was fatally injured. Night visual meteorological conditions prevailed, and no flight plan was filed. The local airshow flight originated at Culpeper Regional Airport (CJR) and was conducted under the provisions of Title 14 Code of Federal Regulations Part 91.

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.

Pilot

FAA Medical Case Review

According to the FAA medical case review, the 60 year old male pilot had reported 13,000 civilian flight hours as of his last medical exam, dated 2/27/2018. At that time, he was 71 inches tall and weighed 165 pounds. The pilot had reported no chronic medical conditions but did report the use

of atorvastatin, a non-impairing cholesterol lowering medication to the FAA. No significant abnormalities were identified during the examination and the pilot was issued a second class medical certificate limited by a requirement that he wear corrective lenses.

Autopsy

According to the autopsy performed by the Office of the Chief Medical Examiner, Commonwealth of Virginia, the cause of death was multiple blunt force injuries. The brain was not examined, due to the extent of injury. No natural disease was identified.

Toxicology

Toxicology testing performed by the FAA's Forensic Science Laboratory identified ethanol at 0.017 gm/dl in liver and 0.021 gm/dl muscle.¹

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.² 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.⁴

D. SUMMARY OF MEDICAL FINDINGS

The 60 year old male pilot had reported no chronic medical conditions but did report the use of atorvastatin, a non-impairing cholesterol lowering medication, to the FAA.

According to the autopsy performed by the Office of the Chief Medical Examiner, Commonwealth of Virginia, the cause of death was multiple blunt force injuries. The brain was not examined, due to the extent of injury. No natural disease was identified.

Toxicology testing performed by the FAA's Forensic Science Laboratory identified ethanol at 0.017 gm/dl in liver and 0.021 gm/dl muscle.

¹ The laboratory at FAA Forensic Sciences Laboratory has the capability to test for more than 1300 substances including toxins, common prescription and over-the-counter medications as well as illicit drugs. See: <http://jag.cami.jccbi.gov/toxicology/default.asp?offset=0>

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

³ 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>.

⁴ Federal Aviation Administration. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60> Accessed 12/02/2016