



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

June 13, 2022

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Medical Officer

A. ACCIDENT INFORMATION

Identification: CEN20LA304

Location: Monrovia, Indiana

Date: July 24, 2020 (approximately 13:16 local time)

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 Federal Aviation Administration (FAA) medical case review and selected post-crash medical records were reviewed, as were the pilot's autopsy and toxicology reports. Selected investigator reports and relevant regulation and medical literature were also reviewed.

3. Findings

a. Medical Case Review

According to the FAA medical case review, the 75-year-old male pilot's last aviation medical examination was on February 5, 2019. At that time, he reported 4400 total civilian flight hours. He was 68 inches tall and weighed 172 pounds. He reported no medication use and no active medical conditions. No significant issues were identified, and he was issued a third-class medical certificate limited by a requirement to have available glasses for near vision.

b. Post-Crash Medical Treatment

According to reviewed post-crash medical records, responding emergency medical services (EMS) providers found the pilot alert and able to speak with difficulty, having been extricated from the crashed aircraft prior to EMS arrival. Management by EMS included sedating the pilot and placing an airway device. The pilot was transported by helicopter to a hospital with trauma/burn center capabilities. Physicians there determined that he had a very poor prognosis due to the extent of his burns. As a result, his care plan was focused on his comfort, and imaging and laboratory studies were limited. He died later the same day, July 24, 2020.

Reviewed post-crash medical records did not document the pilot's past medical history or prior medications, nor did the records document any post-crash findings of significant pre-existing natural disease. A hospital blood test, the result of which was reported at 15:46 on the crash date (collection time not specified), was negative for ethanol (less than 0.003 g/dL).

c. Autopsy

The Marion County Coroner's Office performed the pilot's autopsy, which, at the Office's discretion, was limited to an external examination only. According to the autopsy report, the cause of death was thermal burn injuries and the manner of death was accident. No internal examination was performed.

d. Toxicology

The FAA Forensic Sciences Laboratory performed toxicological testing of post-crash specimens from the pilot.¹ The opioid pain medication morphine was detected in blood at 279 ng/mL. The anesthetic medication ketamine and its metabolite norketamine were detected in blood, at 697 ng/mL and 260 ng/mL, respectively. Another anesthetic medication, etomidate, was also detected in blood. All of those substances were attributable to medications administered to the pilot during his initial post-crash medical care, as verified from review of the pilot's post-crash medical records. Additionally, FAA testing detected amlodipine and atorvastatin in blood.

e. Descriptions of Detected Substances

Amlodipine, sometimes marketed as Norvasc, is a prescription medication commonly used to treat high blood pressure. It may also be used as part of treatment for coronary artery disease.² Atorvastatin, sometimes marketed as Lipitor, is a prescription medication commonly used to help control cholesterol

¹ The FAA Forensic Sciences Laboratory tests specimens for over 1,300 substances including toxins, prescription and over-the-counter medications, and illicit drugs.

² National Institutes of Health National Library of Medicine. Norvasc. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=abd6a2ca-40c2-485c-bc53-db1c652505ed>. Updated April 4, 2022. Accessed June 13, 2022.

and reduce cardiovascular risk.³ Amlodipine and atorvastatin generally are not considered impairing.

D. SUMMARY OF MEDICAL FINDINGS

The 75-year-old male pilot's last aviation medical examination was on February 5, 2019. At that time, he reported no medication use and no active medical conditions. No significant issues were identified, and he was issued a third-class medical certificate limited by a requirement to have available glasses for near vision.

The pilot initially survived and was transported to a hospital for specialized burn/trauma care. He was determined to have a very poor prognosis due to the extent of his burns, so his care was focused on his comfort, and medical testing was limited. No significant pre-existing natural disease was documented. An early hospital blood test for ethanol was negative. The pilot died in the hospital on the crash date.

The Marion County Coroner's Office performed the pilot's autopsy, which was limited to an external examination only. According to the autopsy report, the cause of death was thermal burn injuries and the manner of death was accident.

Toxicological testing detected the medications amlodipine and atorvastatin in the pilot's blood. Those medications generally are not considered impairing. Also detected in blood were morphine, ketamine, norketamine, and etomidate, all of which were attributable to medications administered to the pilot during his initial medical care after the crash.

³ National Institutes of Health National Library of Medicine. Lipitor. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c6e131fe-e7df-4876-83f7-9156fc4e8228>. Updated November 16, 2021. Accessed June 13, 2022.