



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

November 6, 2019

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Chief Medical Officer

A. ACCIDENT: CEN19LA049; Sioux Falls, SD

On December 25, 2018, about 1703 central standard time, a Beech 58P, N6745V, was destroyed when it impacted structures and terrain 3 miles south of the Sioux Falls Regional Airport (FSD), Sioux Falls, South Dakota. A post impact fire ensued. The pilot and passenger were fatally injured. The airplane was owned and operated by a private individual under the provisions of Title 14 Code of Federal Regulations Part 91 as a personal flight. Instrument meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed for the flight. The flight originated from Gerald R. Ford International Airport (GRR), Grand Rapids, Michigan, about 1407 and was en route to Marv Skie-Lincoln County Airport (Y14), Tea, South Dakota.

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 68-year-old male pilot had reported 2,350 total flight hours as of his last medical exam, dated 5/17/2018. At that time, he was 71 inches tall and weighed 228 pounds.

He had a longstanding Statement of Demonstrated Ability (SODA) for deficient color vision, had reported high blood pressure to the FAA beginning in 2000, and also reported having hay fever. He had reported a handful of orthopedic and abdominal surgeries in the distant past. At the last exam, he reported using tamsulosin (a prescription medication used to treat an enlarged prostate), atorvastatin (used to treat high cholesterol), testosterone (a male hormone), and hydrochlorothiazide and lisinopril to treat his blood pressure (prescription blood pressure medications).^{1, 2, 3, 4} None of these medications are considered impairing. No significant abnormalities were found during the exam and he was issued a third class medical certificate limited by a requirement that he have available glasses for near vision.

Autopsy

According to the autopsy performed by the Sanford Health Pathology Clinic, the cause of death was multiple blunt force injuries and the manner of death was accident. The brain was not examined, due to the extent of injury. The heart was fragmented and only two coronary arteries were available for examination; the proximal left anterior descending coronary had approximately 90% luminal stenosis and the left main was not commented on. Microscopy was performed on the heart; 2 of 3 sections of the left ventricle had widespread contraction band necrosis without inflammatory response; coronary arteries had atherosclerotic plaques with calcifications; a few areas of thermal injury to myocytes were noted.

The pathologist gave the pilot an additional diagnosis of acute myocardial infarction (ongoing, acute heart attack) based on his cardiac evaluation.

Review by Office of the Armed Forces Medical Examiner

Contraction band necrosis without inflammation can happen in other conditions than acute myocardial infarction. As a result, the NTSB requested an evaluation of the autopsy and its findings as well as a review of the cardiac slides by the Office of the Armed Forces Medical Examiner (OAFME). Their report includes the following conclusions, “OAFME concurs with the certification of the cause of death and manner of death.

¹ National Institutes of Health. US National Library of Medicine. DailyMed. Tamsulosin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=339c3b57-a339-4578-bfd7-46b25d911ff6> Accessed 10/24/2019.

² National Institutes of Health. US National Library of Medicine. DailyMed. Atorvastatin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=1daa6f20-a032-4541-939d-931f36a020dd> Accessed 10/24/2019.

³ National Institutes of Health. US National Library of Medicine. DailyMed. Hydrochlorothiazide. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7b38ac8a-4540-4eb2-aedd-9aa966d22190> Accessed 10/24/2019.

⁴ National Institutes of Health. US National Library of Medicine. DailyMed. Lisinopril. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=27ccb2f4-abf8-4825-9b05-0bb367b4ac07> Accessed 10/24/2019.

However, OAFME disagrees that the microscopic slides of the heart definitively depict an acute myocardial infarction. Given the reported degree of atherosclerosis of the left anterior descending coronary artery, the decedent may still have had a cardiac event that lead to the mishap, however there is no definitive histologic evidence that this occurred. Histologic evidence of a cardiac event, such as contraction band necrosis, takes hours after the initial insult to develop.”

Toxicology

Toxicology testing performed by the FAA’s Forensic Science Laboratory did not identify any tested-for substances in the available specimen of muscle.⁵

D. SUMMARY OF MEDICAL FINDINGS

The 68-year-old male pilot had a SODA for deficient color vision and had reported high blood pressure and hay fever to the FAA. He had reported a handful of orthopedic and abdominal surgeries in the distant past. At the last exam, he reported using tamsulosin (a prescription medication used to treat an enlarged prostate), atorvastatin (used to treat high cholesterol), testosterone, and hydrochlorothiazide and lisinopril to treat his blood pressure (prescription blood pressure medications). None of these medications are considered impairing. No significant abnormalities were found during the exam and he was issued a third class medical certificate limited by a requirement that he have available glasses for near vision.

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⁵ The 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>

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