



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

May 12, 2022

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Medical Officer

A. ACCIDENT INFORMATION

Identification: WPR20FA008

Location: Angel Fire, New Mexico

Date: October 20, 2019

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 the pilot's autopsy and toxicology reports were reviewed. 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 65-year-old male pilot had a history of coronary artery disease and high blood pressure. In 2004, he underwent coronary artery catheterization due to chest pain, and was found to have severe narrowing of his left anterior descending coronary artery (LAD), with other coronary arteries unremarkable. He received a stent in the LAD.

According to the FAA medical case review, the pilot did well after this procedure and was granted an Authorization for Special Issuance of medical certification in 2006, after which he continued to do well on annual evaluations.

The pilot's last aviation medical examination was on March 7, 2019. At that time, he reported 1000 total civilian flight hours. He was 70 inches tall and weighed 192 pounds. He reported using amlodipine and metoprolol, which are prescription medications commonly used to treat high blood pressure; metoprolol also can be used to improve survival after a heart attack, and as part of treatment for certain types of heart failure. The pilot reported using aspirin (an over-the-counter anti-inflammatory medication and pain-and-fever reducer) and atorvastatin (a prescription medication for cholesterol control), both of which are commonly used to reduce cardiovascular risk. Amlodipine, metoprolol, aspirin, and atorvastatin generally are not considered impairing. The pilot reported his cardiac history; the aviation medical examiner (AME) noted that this had previously been reported and was unchanged, and that the pilot had been undergoing annual evaluations by a cardiologist, the most recent report of which the AME reviewed, found satisfactory, and sent to the FAA. The pilot's high blood pressure was noted to meet Conditions AMEs Can Issue (CACI) criteria. No significant issues were identified, and the AME issued the pilot a third-class medical certificate limited by a requirement to wear corrective lenses, and not valid after March 31, 2020.

On June 1, 2019, the pilot had new-onset chest pain for which he underwent another coronary artery catheterization procedure. He was found to have severe narrowing of the proximal portion of the posterior descending coronary artery and received a new stent in this area. The LAD was also re-evaluated; the old stent showed mild re-narrowing. The FAA withdrew the pilot's Authorization for Special Issuance on June 18, 2019, and later reinstated it on August 19, 2019. According to the FAA medical case review, the pilot's medical certificate was valid at the time of the crash.

b. Autopsy

The University of New Mexico Office of the Medical Investigator performed the pilot's autopsy. According to the autopsy report, the cause of death was blunt trauma and the manner of death was accident. The autopsy identified moderate-to-severe multivessel coronary artery disease with two coronary stents present. There was an area of old heart muscle scarring and microscopic changes consistent with old heart attack. The autopsy, including the remainder of the heart examination, did not identify other significant natural disease.

c. Toxicology

At the request of the Office of the Medical Investigator, NMS Labs performed toxicological testing of postmortem heart blood and urine from the pilot. No tested-for substances were detected.¹

¹ Tested-for substances are listed on the NMS Labs website for test codes [8050U](#) and [8051B](#) (accessed May 12, 2022).

The FAA Forensic Sciences Laboratory also tested postmortem specimens from the pilot.² Amlodipine, metoprolol, and atorvastatin were detected in heart blood and urine. Clopidogrel was detected in urine.

d. Descriptions of Detected Substances

Clopidogrel is a prescription medication that can be used to reduce cardiovascular risk in certain medical conditions.³ It is commonly used for months after coronary stent placement to lower the risk of the stent being blocked by a blood clot.⁴ Clopidogrel generally is not considered impairing.

The FAA medical case review indicated that all of the medications detected on FAA toxicological testing were medications that the pilot had reported using.⁵

D. SUMMARY OF MEDICAL FINDINGS

The 65-year-old male pilot had a history of coronary artery disease and high blood pressure. He received a coronary artery stent in 2004, after which he was granted an Authorization for Special Issuance of medical certification in 2006. His last aviation medical examination was on March 7, 2019. At that time, he reported using the medications amlodipine, metoprolol, aspirin, and atorvastatin, which generally are not considered impairing. The aviation medical examiner (AME) judged the report from the pilot's most recent annual cardiology evaluation to be satisfactory, and noted that the pilot's high blood pressure met Conditions AMEs Can Issue (CACI) criteria. The AME issued the pilot a third-class medical certificate limited by a requirement to wear corrective lenses, and not valid after March 31, 2020. On June 1, 2019, the pilot had chest pain for which he received another coronary artery stent. The FAA withdrew the pilot's Authorization for Special Issuance on June 18, 2019, and reinstated it on August 19, 2019.

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² The FAA Forensic Sciences Laboratory tests specimens for over 1,300 substances including toxins, prescription and over-the-counter medications, and illicit drugs.

³ National Institutes of Health National Library of Medicine. Plavix. DailyMed. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=01b14603-8f29-4fa3-8d7e-9d523f802e0b>. Updated March 5, 2021. Accessed May 12, 2022.

⁴ Levine GN, Bates ER, Bittl JA, et al. 2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients With Coronary Artery Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines: An Update of the 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention, 2011 ACCF/AHA Guideline for Coronary Artery Bypass Graft Surgery, 2012 ACC/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease, 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction, 2014 AHA/ACC Guideline for the Management of Patients With Non-ST-Elevation Acute Coronary Syndromes, and 2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery. *Circulation*. 2016;134(10):e123-155. doi:10.1161/CIR.0000000000000404.

⁵ The pilot had not reported using clopidogrel at his last aviation medical examination, but that examination had occurred before his most recent stent placement and subsequent associated reporting to the FAA.

multivessel coronary artery disease with two coronary artery stents present. There was an area of old heart muscle scarring and microscopic changes consistent with old heart attack. The autopsy, including the remainder of the heart examination, did not identify other significant natural disease.

Two laboratories performed toxicological testing of postmortem specimens from the pilot. One laboratory detected amlodipine, metoprolol, and atorvastatin in heart blood and urine, as well as clopidogrel in urine. The other laboratory did not detect any tested-for substances.