



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report **February 4, 2022**

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Medical Officer

A. ACCIDENT: ERA21FA133; Vinemont, Alabama

Date/Time: February 20, 2021; 5:48 p.m. (EST)
Aircraft: Piper PA32RT, N10KV
Injuries: 2 fatal
Flight conducted under Part 91 personal flight.

B. GROUP IDENTIFICATION

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

Purpose

This investigation was performed to evaluate the copilot/seller and pilot/buyer for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

Methods

The Federal Aviation Administration (FAA) medical case review, the copilot/seller's personal medical records and FAA Forensic Sciences Laboratory toxicology¹ report, and the pilot/buyer's autopsy report and FAA Forensic Sciences Laboratory toxicology report were reviewed. Other pertinent scientific and regulatory issues were reviewed.

Copilot/seller

FAA Medical Case Review

According to the FAA medical case review, at the time of the accident, the 74-year-old male copilot/seller had an expired medical certificate. His most recent medical certification exam was on 2/18/15; however, his medical certificate was denied for an unspecified condition that was treated with gabapentin. The copilot/seller's prior FAA medical examination was in 2007 and his third class medical certificate expired in 2009. At the 2015 exam, the copilot/seller was 73 inches

¹ The FAA Forensic Sciences Laboratory has the capability to test for more than 1,300 substances including toxins, common prescription and over-the-counter medications as well as illicit drugs. <https://jag.cami.jccbi.gov/toxicology/>

tall and weighed 231 pounds. He reported having 7,000 total flight hours. He reported taking ranitidine, metoprolol, aspirin, glipizide, pravastatin, folic acid, warfarin, and gabapentin. He reported having high blood pressure and a pacemaker. The copilot/seller reported a statement of demonstrated ability (SODA) for blindness in his right eye and defective color vision that was granted in 1968, the year of his first medical certification examination.

Post-accident Medical Records

Post-accident medical records were obtained for the copilot/seller. The copilot/seller was air lifted to the medical center. He had been initially responsive in the field, but quickly lost responsiveness and was intubated in the field. He had second and third degree burns over about 60% of his body. His clinical urine drug screen was negative, and his blood alcohol level was below 0.010 grams per deciliter. One day after admission, the copilot/seller received gabapentin for acute pain management for his burn injury. The copilot/seller died two days after his admission to the hospital.

Pre-accident Medical Records

Personal medical records were obtained for the copilot/seller for three years prior to the accident. His most recent visit to his primary care doctor occurred a couple of weeks prior to the crash on 2/8/21 and his most recent visit to his cardiologist was on 2/2/21. The copilot/seller had a pacemaker with defibrillator implanted in 2019 for sick sinus syndrome; a pacemaker was first implanted in 2006. He had coronary artery disease with a stent placed in his left anterior descending coronary artery in 2008; his most recent coronary angiography in 2019 showed mild to moderate atherosclerosis in the major coronary arteries. The copilot/seller had a history of atrial fibrillation treated with ablation in 2010 and was currently prescribed rivaroxaban (commonly marketed as Xarelto) to prevent blood clots. He also was prescribed isosorbide mononitrate, ranolazine, and nitroglycerin for chest pain (angina). He had memory loss from multi-infarct dementia and reported a personal history of transient ischemic attack. He was prescribed lisinopril, metoprolol, and amlodipine for high blood pressure and rosuvastatin for high cholesterol. He had a history of small bowel cancer with surgical resection in 2007 and 2016. His diabetes was controlled by diet, his hemoglobin A1c on 2/2/21 was 6.5%.² His sleep study in 2018 showed severe obstructive sleep apnea, he reported using the prescribed continuous positive airway pressure (CPAP) therapy nightly. He also had the diagnoses of sleep dysfunction with arousal disturbance and periodic limb movement disorder.

The copilot/seller had war injuries due to shrapnel in his left elbow and left hip, he reported he had no functional use of his left side. The copilot/seller had 100% service-related disabilities which included paralysis of median nerve (60%), hip muscle injury (40%), loss of use of foot (40%), blind in one eye (30%), muscle injury (20%), and paralysis of sciatic nerve (10%). He was taking 1,800 milligrams per day of gabapentin for nerve pain; this dosage had been increased in January 2020 from 900 milligrams per day. He also had a prescription for hydrocodone/acetaminophen (commonly marketed as Vicodin) for pain, which he reported using sparingly. He used a power wheelchair or walker for ambulation. He reported a personal history

² Hemoglobin A1C is a measure of the percentage of hemoglobin molecules that have a glucose molecule attached to them. The test measures the average blood glucose over the past three months. Above 6.5% indicates diabetes. For diabetic individuals, often the A1C goal is below 7.0%. [National Institutes of Health (NIH). U.S. National Library of Medicine (NLM). MedlinePlus. A1C. <https://medlineplus.gov/a1c.html> Page last updated 5/5/21.]

of traumatic brain injury. The copilot/seller had a diagnosis of post traumatic stress disorder for which he was prescribed citalopram; at his most recent mental health visit in November 2020, he denied side effects from citalopram, denied current distressing depressive or anxiety symptoms, and was reported to have a logical, linear, and goal directed thought process with fair insight and judgment.

Toxicology

Toxicological testing performed by the FAA's Forensic Sciences Laboratory identified gabapentin at 1,775 nanograms per milliliter (ng/mL) in the copilot/seller's hospital admission blood. Gabapentin, commonly marketed as Neurontin, is an antiseizure medication that is also used to treat chronic nerve pain. It carries a warning that it "may cause dizziness, somnolence and other symptoms and signs of central nervous system depression" and patients should be advised not to operate complex machinery "until they have gained sufficient experience on gabapentin to assess whether gabapentin impairs their ability to perform such tasks." The therapeutic range of gabapentin is 2,000 to 10,000 ng/mL. Gabapentin has a long half-life that ranges from 6.5 to 52 hours.^{3,4}

Pilot/buyer

FAA Medical Case Review

According to the FAA medical case review, at the time of the accident, the 70-year-old male pilot/buyer held a third class medical certificate without limitation. At the time of the most recent exam (10/6/20), the pilot/buyer was 72 inches tall and weighed 218 pounds. He reported having 1,000 total flight hours. He reported taking lisinopril and hydrochlorothiazide for high blood pressure. No significant medical concerns were identified. His previous FAA medical certification exam had been in 2006.

Autopsy

According to the autopsy report by the Alabama Department of Forensic Science, Huntsville, Alabama, the cause of death in the pilot/buyer was blunt force injuries and the manner of death was accident. No significant natural disease was identified by the medical examiner.

Toxicology

Toxicological testing performed by the FAA's Forensic Sciences Laboratory did not detect any ethanol in the pilot/buyer's cardiac blood or tested-for-drugs in his urine.

D. SUMMARY OF MEDICAL FINDINGS

Copilot/seller

The 74-year-old male copilot/seller had an expired medical certificate. His most recent medical certification exam was on 2/18/15; however, his medical certificate was denied and his previous medical certificate expired in 2009. The copilot/seller reported a SODA for blindness in his right eye and defective color vision that was granted in 1968. According to post-accident medical records, the copilot/seller received second and third degree burns over about 60% of his body

³ NIH. NLM. Updated 12/31/20. DailyMed. Gabapentin capsule.

<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7538e255-95df-4991-aac0-a90d709f1e95>

⁴ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Gabapentin.

<https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=254>

and died two days after his admission to the hospital. Toxicological testing of the copilot/seller's hospital admission blood identified gabapentin at 1,775 ng/mL.

According to pre-accident medical records, the copilot/seller was being treated for several cardiovascular conditions including sick sinus syndrome, coronary artery disease, angina, atrial fibrillation, high blood pressure, and high cholesterol. He had a pacemaker with defibrillator implanted. He had a history of small bowel cancer and diagnoses of diabetes controlled by diet and obstructive sleep apnea treated with CPAP. The copilot/seller had 100% service-related disabilities from war injuries due to shrapnel in his left elbow and left hip, he reported he had no functional use of his left side. He was taking gabapentin daily for nerve pain and hydrocodone/acetaminophen as needed for pain. The copilot/seller had a diagnosis of post-traumatic stress disorder for which he was prescribed citalopram.

Pilot/buyer

The 70-year-old male pilot/buyer held a third class medical certificate without limitation. At the time of the most recent exam (10/6/20), he reported taking lisinopril and hydrochlorothiazide for high blood pressure. According to the autopsy, the cause of the pilot/buyer's death was blunt force injuries and the manner of death was accident. No significant natural disease was identified by the medical examiner. Toxicological testing did not detect any ethanol in the pilot/buyer's cardiac blood or tested-for-drugs in his urine.