



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

October 13, 2021

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. ACCIDENT: ERA21LA171; Palmyra, PA

Date and time: April 3, 2021

Injuries: 1 serious

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 file, toxicology findings, and post accident emergency treatment records were reviewed as well as the investigator's preliminary report. Relevant regulation and medical literature were reviewed as appropriate.

Pilot

FAA Medical File

According to the FAA medical file, the 68 year old male pilot had obtained a medical certificate and student pilot certificate in 1984. At that time, he reported no medical conditions or medications. He then applied for a medical certificate on 5/9/2015. This was his last FAA medical exam. At that time, he reported having had surgery for a broken pelvis, high cholesterol, and low testosterone. He reported using fenofibrate for his cholesterol and topical testosterone. These medications are not considered impairing. He also reported the intermittent use of Aleve, an over the counter analgesic, and methylprednisolone (an oral steroid

medication) for reasons that were not specified. His height was reported as 71 inches and his weight at 290 pounds. No significant abnormalities were identified and he was issued a third class medical certificate without limitations.

This medical certificate had expired for all classes of operation as of 5/31/2017. The pilot had applied for and completed the requirement of BasicMed as of November 15, 2019.

Post Accident Emergency Medical Treatment Records

Records from the pilot's admission to a trauma center following the accident were reviewed. During his hospitalization, the pilot reported having arthritis with chronic low back pain, obstructive sleep apnea treated with use of a continuous positive airway pressure device, high blood pressure, high cholesterol, a previous pulmonary embolism (2017), and chronic kidney disease. The pilot reported using the following medications: Vicodin (a combination of acetaminophen and hydrocodone), apixaban, fenofibrate, nasal fluticasone, and hydrochlorothiazide. A clinical urine drug screen identified opiates.

Toxicology

Toxicology tests performed by the FAA's Forensic Sciences Laboratory on leftover blood and urine specimens obtained by the hospital when the pilot arrived, identified hydrocodone (38 ng/ml in blood) and its active metabolites dihydrocodeine and hydromorphone in blood and urine; cyclobenzaprine (24 ng/ml in blood) and its metabolite norcyclobenzaprine in blood and urine; as well as metoprolol, naproxen, ibuprofen, and acetaminophen in blood and urine.

Description of Substances

Vicodin, a combination of acetaminophen and hydrocodone is available as a Schedule II controlled substance. Hydrocodone is an opioid and carries a significant risk of addiction, abuse, or misuse. It also carries this warning, "may impair the mental or physical abilities needed to perform potentially hazardous activities such as driving a car or operating machinery. Warn patients not to drive or operate dangerous machinery unless they are tolerant to its effects and know how they will react to the medication."¹ Blood levels where novice users would expect to have effects are between 10 and 50 ng/ml.² Acetaminophen is an analgesic, often marketed by itself with the name Tylenol.

¹ National Institutes of Health. US Library of Medicine. DailyMed. Hydrocodone/acetaminophen. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=6174bddf-786e-ff87-b6ae-5bab18dc1722> Accessed 7/13/2021.

² Federal Aviation Administration. Forensic Toxicology Drug Information. Hydrocodone. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=73> Accessed 7/13/2021.

Apixaban is a blood thinner available by prescription and used to prevent recurrent stroke, deep venous thrombosis, and pulmonary embolism. Its use increases the risk of bleeding but it is not known to have direct psychoactive effects.³

Fenofibrate is a cholesterol lowering agent. It is not considered impairing.⁴ Nasal fluticasone is a topical nasal spray used to treat allergy symptoms. It is not considered impairing.⁵

Hydrochlorothiazide is a prescription medication used to treat high blood pressure. It is not considered impairing.⁶

Cyclobenzaprine is a prescription medication that acts in the brain to relieve muscle spasm. It is well known to cause significant drowsiness and carries this warning, “especially when used with alcohol or other central nervous system depressants, may impair mental and/or physical abilities required for performance of hazardous tasks, such as operating machinery or driving a motor vehicle.”⁷ Effects are expected when blood levels are between 5 and 40 ng/ml.⁸

Metoprolol is a prescription medication used to treat high blood pressure and prevent recurrent heart attacks. It is not generally considered impairing.⁹

Naproxen and ibuprofen are both analgesic medications, often sold with the names Aleve and Motrin. They are not generally considered impairing.

³ National Institutes of Health. US Library of Medicine. DailyMed. Apixaban. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=095a08ac-cf0e-497e-a682-ddef38d6b29c> Accessed 7/13/2021.

⁴ National Institutes of Health. US Library of Medicine. DailyMed. Fenofibrate. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=da2f0ba4-7c16-4fb0-bc1c-45540e8fefbf> Accessed 7/13/2021.

⁵ National Institutes of Health. US Library of Medicine. DailyMed. Fluticasone. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=cf2e16be-0126-412e-9ddd-013f97a7a742> Accessed 7/13/2021.

⁶ National Institutes of Health. US Library of Medicine. DailyMed. Hydrochlorothiazide. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=841b7962-bf5d-4c45-b594-80b17ba5187d> Accessed 7/13/2021.

⁷ National Institutes of Health. US Library of Medicine. DailyMed. Cyclobenzaprine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b12fb4ea-182e-462b-b6ed-cfd2f6bb71e8> Accessed 7/13/2021.

⁸ Federal Aviation Administration. Forensic Toxicology Drug Information. Cyclobenzaprine. <https://jag.camii.jccbi.gov/toxicology/DrugDetail.asp?did=133> Accessed 7/13/2021.

⁹ National Institutes of Health. US Library of Medicine. DailyMed. Metoprolol. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=90aa06a3-100f-4466-b950-506303707b01> Accessed 7/13/2021.

D. SUMMARY OF MEDICAL FINDINGS

The 68 year old male pilot had last applied for a medical certificate on 5/9/2015. At that time, he reported having had surgery for a broken pelvis, high cholesterol, and low testosterone. He reported using fenofibrate for his cholesterol and topical testosterone. These medications are not considered impairing. He also reported the intermittent use of Aleve, an over the counter analgesic, and methylprednisolone (an oral steroid medication) for reasons that were not specified. His height was reported as 71 inches and his weight at 290 pounds. No significant abnormalities were identified, and he was issued a third class medical certificate without limitations.

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