



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

March 17, 2017

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Medical Officer

A. ACCIDENT: ERA16FA006 - Erwin, Tennessee

On October 9, 2015 about 1915 Eastern Daylight Time, a Columbia Aircraft Manufacturer LC41-550FG, N1058S, was destroyed following an inflight breakup, subsequent collision with the ground, and a postimpact explosion near Erwin, Tennessee. The private pilot and one passenger were fatally injured. The flight originated from the Tyson McPhee International Airport (TYS) Knoxville, Tennessee about 1830 and had an intended destination of Monroe County Airport (BMG), Bloomington, Indiana. Night visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan had been filed. The airplane was owned and operated by a private individual. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

B. GROUP IDENTIFICATION:

No group was formed to evaluate the pilot medical issues.

C. DETAILS OF INVESTIGATION

Purpose

The investigation evaluated the pilot for medical conditions, the use of medications/illicit drugs, and the presence of any toxins.

Methods

The pilot's FAA medical certification file, FAA medical case review, personal medical records, autopsy report, and toxicology results were reviewed.

FAA Medical Certification File and FAA Medical Case Review

According to the FAA records, the 45-year-old private pilot was first medically certified on May 31, 2012 and had one additional medical certification exam since then. His most recent medical certification examination, dated April 18, 2014, documented he was 73 inches tall, weighed 198 pounds, and had accrued 279 total flight hours. The pilot had a history of occasional migraine headaches treated with sumatriptan and allergies

treated with mometasone. Sumatriptan is a medication used to treat migraine headaches marketed as Imitrex.¹ Mometasone is a nasal spray used to treat seasonal allergies marketed as Nasonex.² The Aviation Medical Examiner issued the pilot a third class medical certificate with the limitation: Must wear corrective lenses.

Personal Medical Records

According to records from the pilot's family medicine physician that included visits from January 2013 to July 2015, the pilot was generally in good health. His chronic conditions included occasional migraine headaches (every one to two months) treated with sumatriptan and a depressive disorder diagnosed in October 2014 that was treated with citalopram. Sumatriptan is described above. Citalopram is a prescription antidepressant also named Celexa.³ According to the FAA's Guide for Aviation Medical Examiners, pilots treated for depression with citalopram may be considered for special issuance of a medical certificate if the pilot has been clinically stable as well as on a stable dose of medication without any aeromedically significant side effects and/or an increase in symptoms.⁴

The records documented that the pilot's depression had improved significantly on citalopram and the physician noted on the last visit dated July 14, 2015 the patient was doing well on medication had no significant depressive symptoms, no difficulty concentrating, and no suicidal thoughts or wishes. Additionally, the record did not document any adverse effects from the medication. Finally, on that visit the physician documented the pilot had used sumatriptan once to treat a migraine headache since his visit four months earlier.

Autopsy

According to the autopsy performed at the Quillen College of Medicine, the cause of death was multiple blunt force injuries and the manner was accident. The autopsy was limited due to severity of injury; an internal examination was not possible.

Toxicology

FAA Bioaeronautical Research Sciences Laboratory toxicology testing was limited by the absence of available blood or body fluids; only muscle tissue was available. Testing detected 0.01 g/dl of ethanol as well as citalopram and its metabolite N-desmethylocitalopram in muscle. Ethanol is primarily a social drug with a powerful central nervous system depressant. It distributes evenly throughout tissues based on the water content of that tissue. In the United States, a blood level of 0.08 g/dl is considered impairing and current laws prohibit operating a motor vehicle at this level but impairment

¹ National Library of Medicine (U.S.). 2017. *DailyMed*. Bethesda, MD. IMITREX- sumatriptan <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=fec7d073-0b99-48f2-7985-0d8cf970894b> Accessed 02/23/2017

² National Library of Medicine (U.S.). 2017. *DailyMed*. Bethesda, MD. NASONEX- mometasone <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=12df48a0-fd2e-4e1c-b135-e616a1f31f42> Accessed 02/23/2017

³ National Library of Medicine (U.S.). 2017. *DailyMed*. Bethesda, CELEXA- citalopram. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4259d9b1-de34-43a4-85a8-41dd214e9177> Accessed 02/23/2017

⁴ Federal Aviation Administration, Guide for Aviation Medical Examiners, Psychiatric Conditions - Use of Antidepressant Medications, https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/app_process/exam_tech/item_47/amd/antidepressants/ Accessed 02/27/2017

has been documented at levels as low as 0.02 g/dl. Ethanol may also be produced in the body after death by microbial activity.⁵ Citalopram is described above.

SUMMARY OF FINDINGS

The pilot was generally in good health but had depression treated and controlled with citalopram and occasional migraine headaches treated with sumatriptan. The autopsy was limited due to the severity of injury and did not identify any natural disease. Toxicology testing detected 0.01 g/dl ethanol, citalopram, and its metabolite N-Desmethylocitalopram in muscle.

⁵ Federal Aviation Administration. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60> Accessed 03/02/2015