



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

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Chief Medical Officer

A. ACCIDENT: WPR16FA087; Astoria, OR

On March 23, 2016, at 1542 Pacific daylight time, a North American AT-6A, N7055D, impacted the Columbia River near Astoria, Oregon. The airplane was registered to, and operated by, the pilot under the provisions of 14 Code of Federal Regulations Part 91. The private pilot and passenger sustained fatal injuries, and the airplane was destroyed by impact forces. The personal flight departed Pearson Field Airport, Vancouver, Washington, at 1506. Visual meteorological conditions prevailed at the time and location of the accident, and no flight plan had been filed.

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 any medical conditions, the use of any medications/illicit drugs, and the presence of any toxins.

2. Methods

The FAA medical case review, FAA blue ribbon medical certification file, autopsy report, toxicology findings, personal medical records, and the investigator's reports were reviewed.

FAA Medical Case Review and Blue Ribbon Medical file

According to the FAA files, the 69 year old male pilot received his first aviation medical certificate in 1996, without limitation. Over the ensuing years he reported multiple eye procedures including radial keratotomy, LASIK, cataract removal, and laser treatment for a traumatic retinal tear. He reported brief treatment for depression in 2000 but afterward repeatedly reported that the symptoms had resolved and he was no longer on medication for it. He reported a series of orthopedic procedures,

chronic back problems, and chronic headaches. In 2005, he reported a hand fracture and lumbar fracture resulting from a previous airplane accident in which he was the pilot and sole occupant. (NTSB ID SEA04LA156; 8/6/2004; Wamic, OR)

At the time of the pilot's last aviation medical exam, dated 7/01/2014, the pilot reported 1140 total hours of flight experience. According to the records, he was 70 inches tall and weighed 164 pounds at that time. He reported having had hand surgery for Dupuytren's contractures since the previous exam and using oral and intranasal steroids (fluticasone and beclomethasone, also marketed as Flovent and Beclonase) as well as ocular drops of cyclosporine (a treatment for dry eye also marketed as Restasis). He was issued a third class medical certificate without limitations.

Autopsy

According to the autopsy performed by the Clatsop County Medical Examiner's Office, the cause of death was multiple blunt force injuries and the manner of death was accident.

Examination of the body for natural disease was limited by the severity of the pilot's injuries; most of the brain was not available for examination. The heart was lacerated but severe coronary artery disease was identified. The proximal third of the left anterior descending coronary artery had approximately 90% occlusion described as a pinpoint lumen. The proximal several millimeters of the left circumflex coronary artery also had 90% or greater occlusion. The myocardium was otherwise grossly normal. No weights or other measurements were given. Microscopic evaluation of the heart did not identify any myocardial fibrosis or inflammation.

Toxicology

Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified sertraline and its metabolite desmethylsertraline as well as trazodone in urine and cavity blood.

Sertraline is an antidepressant prescription medication commonly marketed with the name Zoloft. It is not generally considered sedating.¹ Trazodone is a prescription antidepressant that can be sedating. It comes with this warning, "Trazodone hydrochloride tablets may cause somnolence or sedation and may impair the mental and/or physical ability required for the performance of potentially hazardous tasks. Patients should be cautioned about operating hazardous machinery, including

¹ National Institutes of Health. US National Library of Medicine. DailyMed. Sertraline. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=f9641190-9151-4f7e-89ff-1e7a818c30ee> Accessed 11/22/2017.

automobiles, until they are reasonably certain that the drug treatment does not affect them adversely.” In addition, it can increase the potential for arrhythmias in patients with pre-existing cardiac disease.²

However, major depression is associated with significant cognitive degradation, particularly in executive functioning.³ The cognitive degradation may not improve even with remission of the depressed episode, and patients with severe disease are more significantly affected than those with fewer symptoms or episodes.^{4,5} The FAA’s Guide for Aviation Medical Examiners states “The use of a psychotropic drug is disqualifying for aeromedical certification purposes – this includes all antidepressant drugs, including selective serotonin reuptake inhibitors (SSRIs). However, the FAA has determined that airmen requesting first, second, or third class medical certificates while being treated with one of four specific SSRIs may be considered (see Item 47., Psychiatric Conditions – Use of Antidepressant Medications). The Authorization decision is made on a case by case basis. The Examiner may not issue.”⁶ The four potentially allowable antidepressants are fluoxetine (Prozac), escitalopram (Lexapro), sertraline (Zoloft), and citalopram (Celexa).⁷

Personal Medical Records

Records from care provided in the Kaiser system from 1995 through the accident date were reviewed. In addition to visits for minor illnesses and injuries and those diagnoses reported to the FAA, the pilot was diagnosed with major depression in 1999 and placed on sertraline (Zoloft). The records document remission of his symptoms and he stopped receiving prescriptions for the drug from Kaiser some time between 2002 and 2004.

The pilot presented multiple times to physicians with complaints of fatigue. In 2011, he underwent a sleep study which identified moderate sleep apnea that was treated with continuous positive airway pressure (CPAP) with resolution of the apneas and arousals. However, over the following years his machine was occasionally downloaded and he was never compliant with the FAA requirements of 75% of sleep periods and an average of 6 hours use per sleep

² National Institutes of Health. US National Library of Medicine. DailyMed. Trazodone hydrochloride tablets. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=71961ab1-951d-1493-f76c-2ff25cca2a85> Accessed 11/22/2017.

³ Snyder HR. Major depressive disorder is associated with broad impairments on neuropsychological measures of executive function: A meta-analysis and review. Psychol Bull. 2013;139(1):81-132.

⁴ Nakano Y, Baba H, Maeshima H, Kitajima A, Sakai Y, Baba K, Suzuki T, Mimura M, Arai H. Executive dysfunction in medicated, remitted state of major depression. J Affect Disord. 2008;111(1):46-51.

⁵ Paelecke-Habermann Y, Pohl J, Lepow B. Attention and executive functions in remitted major depression patients. J Affect Disord. 2005;89(1-3):125-35

⁶ Federal Aviation Administration. Airman Medical Examiner’s Guide, 2017. Issued Jan 03, 2017. http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/guide.pdf Pg. 211. Accessed 11/15/2017.

⁷ Federal Aviation Administration. Aviation Medical Examiner’s Guide, 2017. SSRI Decision Path 1. http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/media/SSRI%20Decision%20Path%20-%20I.pdf Accessed 1/16/2017

period.⁸ Of note, the pilot reported multiple visits with respiratory therapy regarding “durable medical equipment” to the FAA but never reported his sleep apnea.

In 2013, he again complained of fatigue and was prescribed trazodone at bedtime to help him sleep. During an evaluation by pulmonology for chronic cough in January 2014, the pilot reported to the doctor that he had continued to use Zolofl daily but was obtaining the drug from India because of a concern about FAA regulations. Eventually, his chronic cough was diagnosed as Valley Fever or coccidioidomycosis – a fungal lung infection common to the southwest. After initial treatment with antifungal medication, this chronic infection was the reason for the pilot’s ongoing use of inhaled steroids.

Beginning in late July 2014, the pilot reported ongoing neurological symptoms thought to be related to multiple mild concussions that had occurred over the previous year while playing basketball. For several months, he was cautioned not to drive or fly and was unable to work. During this period, he reported he believed his ongoing use of sertraline helped him handle the stress induced by his symptoms. By spring 2015, he had begun returning to activities and eventually went back to full time work, driving, and flying. At the time of his last medical evaluation, 3/6/2016, the pilot was taking sertraline, trazodone, and inhaled steroids. On 3/15/2016, a week before the accident, he underwent a minor surgical procedure to release the contracture of the small finger on his right hand.

D. SUMMARY OF MEDICAL FINDINGS

The 69 year old male pilot had reported multiple eye conditions and procedures, multiple orthopedic procedures, chronic back pain, and sinus disease to the FAA. He reported brief treatment for depression in 2000 but said that it had resolved. In 2005, he reported a hand fracture and lumbar fracture resulting from a previous airplane accident in which he was the pilot and sole occupant. (NTSB ID SEA04LA156; 8/6/2004; Wamic, OR) At the time of his last exam, dated 7/01/2014, he reported frequent or severe headaches and having had hand surgery for Dupuytren’s contractures since the previous exam and using oral and intranasal steroids (fluticasone and beclomethasone, also marketed as Flovent and Beclonase) as well as ocular drops of cyclosporine (a treatment for dry eye also marketed as Restasis). He was issued a third-class medical certificate without limitations.

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⁸ Federal Aviation Administration. Guide for Aviation Medical Examiners. Special Issuances AME Assisted - All Classes - Obstructive Sleep Apnea (OSA)
https://www.faa.gov/about/office_org/headquarters_offices/avs/offices/aam/ame/guide/special_iss/all_classes/sleep_apnea/ Accessed 11/24/2017.

were given. Microscopic evaluation of the myocardium did not identify any myocardial fibrosis or inflammation.

Toxicology testing identified sertraline and its metabolite desmethylsertraline as well as trazodone in urine and cavity blood. Review of personal medical records revealed the pilot had been diagnosed with sleep apnea in 2011 and had never reached compliance with FAA requirements regarding its treatment with a CPAP machine. He continuously used sertraline for depression from 1999 forward to the date of the accident, telling one of his personal physicians that he had been obtaining it from India for many years out of concern the FAA might find out. However, he was described as being in remission by several physicians. He was prescribed and used trazodone for sleep from 2013 forward. He was diagnosed and treated for chronic lung disease (Valley Fever) in 2014. He had symptoms of post-concussive syndrome for several months in 2014 and 2015 but these were thought to have completely resolved.