



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

MEDICAL FACTUAL REPORT

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A. ACCIDENT: CEN15LA195 - Chippewa Falls, Wisconsin

On April 11, 2015, at 1132 central standard time, an experimental Quad City Challenger II airplane, formerly registered as N30796, impacted terrain while on visual pattern downwind at the Rosenbaum Field Airport (3WI9), near Chippewa Falls, Wisconsin. The pilot was fatally injured and the airplane was substantially damaged. The airplane, with an expired registry, was operated by the pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Day visual meteorological conditions prevailed for the local flight, which departed without a flight plan at an unknown time.

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

Methods

The FAA medical case review, FAA toxicology report, autopsy report, and personal medical records were reviewed.

FAA Medical Case Review

According to the FAA medical case review, the 77-year-old male pilot was 69 inches tall, weighed 234 pounds, and reported he had accrued 200 total flight hours as of his most recent FAA medical certification exam, dated May 10, 2004. He had reported a history of hypothyroid disease and elevated cholesterol since 2002. He reported the use of levothyroxine, atorvastatin and indomethacin. The examination did not identify any abnormal findings. The FAA Aviation Medical Examiner issued him a second class medical certificate with the following limitation: must wear corrective lenses.

Personal Medical Records

Primary care and cardiology records from January 2012 until April 2015 were reviewed. According to the latest primary care record, dated April 09, 2015 (2 days before the accident), his documented height was 70 inches, weight was 251 pounds, and his BMI was 36 kg/m².¹ The reason for the visit was to evaluate his chronic diseases including: coronary artery disease status post 4 vessel bypass graft surgery in 2008, hypothyroidism, high blood pressure, hyperlipidemia, diet controlled diabetes mellitus type 2 complicated by peripheral neuropathy, and major depressive disorder (recurrent). His medications included: atenolol and lisinopril (medications to control blood pressure marketed as Tenormin and Zestril respectively);^{2,3} levothyroxine (a thyroid replacement medication marketed as Synthroid);⁴ fluoxetine (an antidepressant medication marketed as Prozac);⁵ atorvastatin (a cholesterol lowering medicine marketed as Lipitor);⁶ tamsulosin (a medication to treat enlarged prostate marketed as Flomax);⁷ naproxen (an over-the-counter medication to control pain and swelling) and aspirin (an over-the-counter medication used to control pain, inflammation and fever also used to decrease the risk of recurrent heart attacks).

The primary care physician documented that the pilot had no chest pain or discomfort and no shortness of breath and his high blood pressure was “well controlled”. Additionally, the pilot’s type 2 diabetes was controlled without medications and his hemoglobin A1C was 6.4 percent.⁸ Furthermore, the pilot had peripheral neuropathy.⁹ The physician’s note stated “In terms of peripheral neuropathy, I encouraged him to go to physical therapy for strengthening of lower extremities, to help prevent falls. I told him

¹ According to the National Institute of Health a BMI of over 30 kg/m² indicates obesity and increase the risk of Type II diabetes, high blood pressure, cardiovascular disease, and sleep apnea.

² National Library of Medicine (U.S.). 2005. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. TENORMIN- atenolol tablet. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=746db603-a6e1-4dc3-c2d8-92314419098c> Accessed 9/8/2016.

³ National Library of Medicine (U.S.). 2005. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. ZESTRIL- lisinopril tablet. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a95727ae-2bf1-e675-4a36-71043a8af3b8> Accessed 9/8/2016.

⁴ National Library of Medicine (U.S.). 2005. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. SYNTHROID- levothyroxine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=1e11ad30-1041-4520-10b0-8f9d30d30fcc> Accessed 9/8/2016.

⁵ National Library of Medicine (U.S.). 2005. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. PROZAC- fluoxetine hydrochloride. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c88f33ed-6dfb-4c5e-bc01-d8e36dd97299> Accessed 9/8/2016.

⁶ National Library of Medicine (U.S.). 2005. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. LIPITOR- atorvastatin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c6e131fe-e7df-4876-83f7-9156fc4e8228> Accessed 9/8/2016.

⁷ National Library of Medicine (U.S.). 2005. *DailyMed*. Bethesda, MD: U.S. National Library of Medicine, National Institutes of Health, Health & Human Services. FLOMAX- tamsulosin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=c00d5f7b-dad7-4479-aae2-fea7c0db40ed> Accessed 9/8/2016.

⁸ Hemoglobin A1C is a measure of how much glucose is bound to hemoglobin; it corresponds to the average blood glucose level and is a measure of diabetic control over several weeks. The target hemoglobin A1C level, representing good control, is less than 7%, which correlates to an average blood sugar of 154 mg/dl.

⁹ Diabetic neuropathy results from damage to the small blood vessels supplying the nerves. The most common type of neuropathy is characterized by progressive loss of sensation in the feet and hands. Additionally, individuals may not be unaware of the exact position of their feet or of how much pressure to apply control pedals.

walking on uneven ground should not happen anymore. He needs to have some kind of balance stick if he were, but again I strongly encouraged him not..." A neurologic examination was not conducted during this visit but an exam 8 months earlier documented decreased light touch and absent vibratory sensation in both feet. Finally, the physician documented that the major depressive disorder was mild and controlled with fluoxetine.

The pilot's latest cardiologist evaluation was dated October 6, 2014 and documented that the pilot was stable from a cardiac standpoint and remained asymptomatic. The cardiologist documented that the pilot was not following a proper cardiac diet. The records did not document a recent exercise stress test or electrocardiogram.

Pilot's Recent Health - Wife's Statement

According to statements from the pilot's wife, the pilot had bypass surgery in September 2008. He had symptoms of chest pain and shortness of breath leading up to his quadruple bypass but had not really exhibited them in that week leading up to his death. He had been sick with upper respiratory issues and sinus infection in February and took a while to bounce back from that. He was just starting to feel really well and energetic the week he died.

Autopsy

According to the Chippewa County Coroner Death Report, the cause of death was blunt force trauma and the manner was accident. The autopsy estimated the pilot's weight at 260 pounds. The heart weighed 700 grams; the average for a man his weight is 425 grams (range 322-561 grams).¹⁰ The report documented that all coronary arteries showed severe calcific atherosclerosis with at least multifocal 80% stenosis. The right coronary artery showed evidence of prior thrombosis with recanalization. One channel within a recanalized segment of the right coronary artery also showed what appeared to be an acute thrombus that was non-obstructing (and bypassed with a vein graft). The patient had four bypass grafts with patent anastomoses in distal arteries. However, two of these grafts to branches to the left circumflex artery were completely occluded. Additionally, microscopic examination of the heart identified focal fibrosis of the intraventricular septum and multiple significant foci of lymphocytic myocarditis involving the anterolateral wall of the left ventricle.

The examining pathologist further stated "the most likely scenario to explain [the pilot's] death is that he suffered an arrhythmia secondary to myocarditis."

Toxicology

FAA Bioaeronautical Laboratory toxicology analysis did not identify carbon monoxide or ethanol in cavity blood. Testing detected atenolol in liver and cavity blood, atorvastatin in liver, fluoxetine in cavity blood (0.624 ug/ml) and liver, and its metabolite norfluoxetine in cavity blood and liver. These medications are described above.

D. SUMMARY OF FINDINGS

The pilot had a history of coronary artery disease treated with multi-vessel bypass surgery, high blood pressure and elevated cholesterol controlled with medications, and hypothyroidism controlled with medication. Additionally, he had diet controlled type 2 diabetes with peripheral

¹⁰ Kitzman DW, Scholz DG, Hagen PT, Ilstrup DM, Edwards WD. Age-related changes in normal human hearts during the first 10 decades of life. Part II (Maturity): A quantitative anatomic study of 765 specimens from subjects 20 to 99 years old. Mayo Clinic Proc., 1988. 63(2): p. 137-46.

neuropathy resulting in difficulty with balance and walking. Finally, he had major depressive disorder with mild symptoms controlled with fluoxetine.

The autopsy identified an enlarged heart, severe multi-vessel coronary artery disease (greater than 80 percent occlusion of all vessels) with coronary artery bypass grafts and complete occlusion of two bypass vessels, evidence of an old heart attack with scarring of the ventricular septum and active inflammation of heart muscle of the anterolateral wall of the left ventricle. Additionally, the pathologist wrote the most likely scenario to explain [the pilot's] death is that he suffered an arrhythmia secondary to myocarditis.”