



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

April 13, 2018

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Chief Medical Officer

A. ACCIDENT: CEN17FA209; Dimmitt, TX

On June 3, 2017, about 1750 central daylight time, a Robinson R44 II single-engine helicopter, N7091F, impacted terrain while maneuvering near Dimmitt, Texas. The private pilot, who was the sole occupant, sustained fatal injuries, and the helicopter sustained substantial damage. The helicopter was registered to Don Oppliger Trucking, Inc, Clovis, New Mexico, and operated by a private individual under Title 14 Code of Federal Regulations Part 91 as a business flight. Visual meteorological conditions prevailed at the time of the accident, and a flight plan was not filed for the local flight. The flight departed a private helipad near Farwell, Texas, about 1300.

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

FAA Medical Files

According to the FAA files, the 68 year old male pilot did not report his flight experience on his last aviation medical exam, dated 3/29/2017. However, he had reported it as 4,225 hours in the previous exam dated 1/27/2016. At the time of his last exam the pilot was 72 inches tall and weighed 261 pounds. He had reported having had a 4 vessel coronary

artery bypass graft procedure in 2008, followed by a stent in his right coronary in 2009. The data regarding his heart condition was extensively reviewed by the FAA who granted him his first special issuance medical certificate in 2010 and he had provided annual updates to obtain special issuance certificates thereafter.

At the time of his last exam he reported using aspirin and clopidogrel as blood thinners, losartan for blood pressure control, and a combination of ezetimibe and simvastatin to control his cholesterol. None of these are considered impairing. A stress echo cardiogram, dated 1/6/2017, demonstrated the pilot reached 16 mets, more than 150% of the target heart rate, and had no ischemic findings on his EKG or echocardiogram. The aviation medical examiner found no abnormalities and the pilot received a special issuance third class medical certificate limited by a requirement for corrective lenses and marked, "Not valid for any class after March 31, 2018."

Autopsy

According to the autopsy performed by South Plains Forensic Pathology, P.A., the cause of death was blood loss due to visceral injuries due to blunt force injuries and the manner of death was accident. Significant heart disease was also described. The heart weighed 610 gm and both the ventricles were dilated; the left ventricle was described as having severe hypertrophy, but no measurements were given. Average heart weight for a 260 pound man is 425 gm with a range of 322-561 gm.¹ There was very severe coronary artery disease in the native arteries but the grafts were all described as patent. The stent was identified but not further described. Sections of the myocardium revealed scarring from old heart attacks in the left ventricle. Microscopy of the heart showed myocyte hypertrophy with interstitial and perivascular fibrosis. There were areas where adipose and fibrotic tissue replaced normal cells.

Toxicology

Toxicology testing performed by NMS labs at the request of the pathologist identified 0.034 gm/dl of ethanol in the pilot's cavity blood.

Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified no ethanol in the vitreous. In addition, salicylate (a metabolite of aspirin) was found in urine, losartan was found in cavity blood and liver, and clopidogrel was identified in liver tissue. These medications are described above.

¹ Kitzman DW, S.D., 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):137-46.

Ethanol is the intoxicant commonly found in beer, wine, and liquor. It acts as a central nervous system depressant. After ingestion, at low doses, it impairs judgment, psychomotor functioning, and vigilance; at higher doses it can cause coma and death. The effects of ethanol on aviators are generally well understood; it significantly impairs pilots' performance, even at very low levels.² Federal Aviation Regulations, Section 91.17 (a) prohibits any person from acting or attempting to act as a crewmember of a civil aircraft while having 0.040 gm/dl or more ethanol in the blood.³ Because ingested alcohol is distributed throughout the body, levels from different post mortem tissues are usually similar. Ethanol may also be produced in body tissues by microbial activity after death; this typically produces levels that vary significantly.⁴

D. SUMMARY OF MEDICAL FINDINGS

The 68 year old male pilot had reported having had a 4 vessel coronary artery bypass graft procedure in 2008, followed by a stent in his right coronary in 2009 to the FAA. After reviewing the data related to these events, the FAA granted the pilot special issuance medical certificates. At the time of his last exam, dated 3/29/2017, he reported using aspirin and clopidogrel as blood thinners, losartan for blood pressure control, and a combination of ezetimibe and simvastatin to control his cholesterol. None of these are considered impairing. A stress echo cardiogram, dated 1/6/2017, demonstrated the pilot reached 16 mets, more than 150% of the target heart rate, and had no ischemic findings on his EKG or echocardiogram. The aviation medical examiner found no abnormalities and the pilot received a special issuance third class medical certificate limited by a requirement for corrective lenses and marked, "Not valid for any class after March 31, 2018."

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² Cook, C.C., Alcohol and aviation. *Addiction* (Abingdon, England), 1997. 92(5): 539-555.

³ US Government Printing Office .eCFR- Code of Federal Regulations. 91.17. <http://www.ecfr.gov/cgi-bin/text-idx?rgn=div8&node=14:2.0.1.3.10.1.4.9>. Accessed 6/16/2016.

⁴ Federal Aviation Administration. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60> Accessed 12/02/2016.

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