



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

February 1, 2019

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Chief Medical Officer

A. ACCIDENT: WPR18FA091; Minden, NV

On February 19, 2018, about 1130 Pacific standard time, a Piper PA-34-200T airplane, N14GQ, collided with the ground northwest of the Minden-Tahoe Airport (MEV), Minden, Nevada. The commercial pilot was fatally injured. The airplane was destroyed. The airplane was registered to the Stunad, LLC, and operated by the pilot under the provisions of Title 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and a flight plan was not filed. The flight originated from Meadows Field Airport (BFL), Bakersfield, California, about 0900 with an intended destination of MEV.

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, autopsy reports, toxicology findings, and the investigator's reports were reviewed.

FAA Medical Case Review

According to the FAA medical case review, the 64 year old male pilot had reported 6,000 total hours of flight experience as of his last aviation medical exam, dated 12/15/2017. At that time, he was 71 inches tall and weighed 225 pounds. The pilot had reported a previous non-transportation conviction and previous surgical procedures. He reported no use of

medication and was issued a second class medical certificate limited by a requirement to wear corrective lenses.

Autopsy

According to the autopsy performed by the Washoe County Regional Medical Examiner's Office, the cause of death was multiple blunt force injuries and the manner of death was accident. The brain was not examined due to the extent of injury. The heart demonstrated moderate (50- 75%) calcific atherosclerotic stenosis of the proximal and mid segments of the left anterior descending coronary artery and mild (10-20%) calcific atherosclerotic stenosis of the right coronary artery. The remainder of the cardiac exam was unremarkable.

Toxicology

Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified diphenhydramine in cavity blood (0.305 ug/ml) and in liver tissue. In addition, amlodipine and atorvastatin were detected in cavity blood and kidney.

[Diphenhydramine is a sedating antihistamine used to treat allergy symptoms and as a sleep aid. It is available over the counter under the names Benadryl and Unisom. Diphenhydramine carries the following FDA warning: may impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery).¹ Compared to other antihistamines, diphenhydramine causes marked sedation; it is also classed as a CNS depressant and this is the rationale for its use as a sleep aid. Altered mood and impaired cognitive and psychomotor performance may also be observed. In fact, in a driving simulator study, a single dose of diphenhydramine impaired driving ability more than a blood alcohol concentration of 0.100%.²

The range of blood levels expected to cause effects in routine use are between 0.0250 and 0.1120 ug/ml.³ However, diphenhydramine undergoes postmortem redistribution which means after death it can move back into pooled blood from storage sites. For diphenhydramine, postmortem central blood levels may increase by about three times.⁴

¹ Federal Aviation Administration. Civil Aerospace Medical Institute. Toxicology Drug Information: Diphenhydramine. Available from: <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=50>. Accessed 03/18/2018.

² Weiler JM, B.J., Woodworth GG, Grant AR, Layton TA, Brown TL, McKenzie DR, Baker TW, Watson GS., Effects of fexofenadine, diphenhydramine, and alcohol on driving performance. A randomized, placebo-controlled trial in the Iowa Driving Simulator. Ann Intern Med 2000. 132(5): p. 354-63.

³ Federal Aviation Administration. Civil Aerospace Medical Institute. Toxicology Drug Information: Diphenhydramine. Available from: <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=50> Accessed 03/13/2018.

⁴ Han E, et. al., Evaluation of postmortem redistribution phenomena for commonly encountered drugs, Forensic Science International 2012;219: 265–271.

Amlodipine is a prescription blood pressure medication.⁵ Atorvastatin is a prescription cholesterol lowering medication.⁶ Neither are considered impairing.]

D. SUMMARY OF MEDICAL FINDINGS

The 64 year old male pilot had reported no chronic medical conditions and no use of medications to the FAA. According to the autopsy performed by the Washoe County Regional Medical Examiner's Office, the cause of death was multiple blunt force injuries and the manner of death was accident. The brain was not examined due to the extent of injury. The heart demonstrated moderate coronary artery disease with 50- 75% stenosis of the proximal and mid segments of the left anterior descending coronary artery and 10- 20% stenosis of the right coronary artery. The remainder of the cardiac exam was unremarkable.

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⁵ National Institutes of Health. US National Library of Medicine. DailyMed. Amlodipine. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=b52e2905-f906-4c46-bb24-2c7754c5d75b> Accessed 1/31/2019.

⁶ National Institutes of Health. US National Library of Medicine. DailyMed. Atorvastatin. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=4d7150a0-9593-46ab-b8a2-8f6fe0e483b6> Accessed 1/31/2019.