

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



Medical Factual Memorandum for Record

March 11, 2025

A. CASE

NTSB ID: WPR23FA153
Location: Cal-Nev-Ari, Nevada
Date: April 11, 2023

B. MEDICAL SPECIALIST

Specialist JE Tuttle MD MHA FACS
National Transportation Safety Board
Washington, DC

C. DETAILS

1.0 Description of Review

For purposes of evaluating the pilot for potentially impairing medical conditions and substances, the above Medical Specialist reviewed the following sources of medical information, along with selected relevant regulation, medical literature, and investigator reports.

- Federal Aviation Administration (FAA) final medical case review
- Pre-event personal medical records – pilot
- Autopsy report – pilot.
- Toxicology report – pilot

2.0 Summary of Medical Facts

According to the FAA medical case review, the 72-year-old male pilot's last aviation medical examination was April 3, 2009. At that time, he reported no active medical conditions or medication use. He was issued a second-class medical certificate with the limitation that he must wear corrective lenses. The pilot's medical certificate was expired at the time of the accident.

The pilot's personal medical records from the 3 years before the crash were reviewed, including notes from his primary care physician and cardiac testing results. According to notes from the primary care physician, the pilot presented in January 2023 with complaints of shortness of breath with minimal activity. He denied chest pain or other symptoms. The pilot had a smoking history and on examination was found to have a new heart murmur. An electrocardiogram (ECG) performed in the primary care physician's office was abnormal with a new right bundle-branch block (RBBB) and nonspecific changes.¹ An echocardiogram in January 2023 showed moderate-to-severe mitral valve regurgitation.² A pharmacological nuclear stress test was performed on February 6, 2023. The nuclear stress test showed a large reversible lateral wall perfusion defect in the heart, consistent with ischemia in the territory of the left circumflex coronary artery. The left ventricle of the heart dilated during the stress portion of the scan also consistent with ischemia. There were no diagnostic ECG changes or symptoms during the stress portion of the test. On February 22, 2023, the pilot was seen by his primary care physician. According to the medical records, the results of both the cardiac echocardiogram and nuclear stress test were reviewed with the pilot. The pilot was offered reassurance and was scheduled for a return visit in August 2023.

The Clark County Coroner's Office performed the pilot's autopsy. According to the pilot's autopsy report, the cause of death was blunt force injuries and the manner of death accident. Due to the extent of his injuries, examination of the brain, heart, and

¹ The finding of a RBBB on an ECG represents delay or a lack of electrical activity in part of the heart's electrical system. Often, the finding of a RBBB is an incidental finding; however, in some cases the RBBB can be a sign of cardiac ischemic disease. If cardiovascular disease is present, RBBB is associated with an increased risk of mortality.

Stein R, Nguyen P, Abella J, Olson H, Myers J, Froelicher V. Prevalence, and prognostic significance of exercise-induced right bundle branch block. *Am J Cardiol.* 2010; 105:677-680.

² Mitral valve regurgitation is the second most common form of cardiac valvular disease. The majority of mitral valve disease is as a result of degenerative disease of the valve (60%) however, 25% of mitral valve regurgitation is related to coronary artery disease and ischemia.

Izquierdo-Gomez M, Mari-Lopez B, Lacalzada-Almedia J. Ischaemic mitral valve regurgitation. *Eur Soc of Card.* 2018;16(12). <https://www.escardio.org/Journals/E-Journal-of-Cardiology-Practice/Volume-16/Ischaemic-mitral-valve-regurgitation>.

lung were limited. Within these limitations, the autopsy did not identify significant natural disease.

According to the autopsy report, urine and liver tissue toxicology screens were negative for common drugs-of-abuse and for ethanol.

The FAA Forensic Sciences Laboratory performed toxicological testing of postmortem urine from the pilot.³ No tested-for substances were detected. No blood was available for testing.

Submitted by:

JE Tuttle MD MHA FACS
Medical Officer

³ The FAA Forensic Sciences laboratory has the capability to test for around a thousand substances including toxins, prescription and over-the-counter medications, and illicit drugs.