

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN21FA364

MEDICAL

Specialist's Factual Report

August 23, 2023

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A. ACCIDENT

Location: Melbourne, Arkansas
Date: August 9, 2021

B. MEDICAL SPECIALIST

Specialist Turan Kayagil, MD, FACEP
National Transportation Safety Board
Washington, DC

C. DETAILS OF THE INVESTIGATION

1.0 Purpose

This investigation was performed to evaluate the pilot for potentially impairing substances and potentially impairing medical conditions.

2.0 Methods

The Federal Aviation Administration (FAA) medical case review (plus an associated supplemental e-mail) and the pilot's autopsy and toxicology reports were reviewed. Selected investigator reports and relevant regulation and medical literature were also reviewed.

D. FACTUAL INFORMATION

1.0 FAA Medical Case Review

According to the FAA medical case review, the 56-year-old male pilot's last aviation medical examination was on March 10, 2020. At that time, he reported 642 total civilian flight hours. He was 74 inches tall and weighed 248 pounds. He reported no medication use. He reported a history of type 2 diabetes resolved without medication for 6 years. He had received a 2011 Special Issuance for diabetes requiring medication, and a 2014 letter advising that Special Issuance for diabetes was no longer needed. He had received a 2013 Special Issuance for a sleeve gastrectomy (surgical weight-loss procedure), and a 2015 letter advising that Special Issuance for the gastrectomy was no longer needed. No significant issues were identified at his last aviation medical examination, and he was issued a third-class medical certificate limited by a requirement to have glasses available for near vision.

According to a supplemental e-mail from the FAA physician who performed the medical case review, the pilot's urine dipstick testing was documented as normal

at his last aviation medical examination.¹ No current hemoglobin A1c (HbA1c) was documented at that examination.² The pilot reported prior visits to healthcare providers that included annual physical examinations. A 2018 aviation medical examination contained a comment from the examiner that the pilot's HbA1c had been normal for the preceding 4 years. According to the supplemental e-mail, a normal HbA1c of 5.6% was documented in the pilot's medical certification file in 2014.

2.0 Autopsy

The pilot's autopsy was performed on August 13, 2021, by the Arkansas State Crime Laboratory Medical Examiner Division, Little Rock, Arkansas. According to the pilot's autopsy report, his cause of death was multiple blunt force injuries and his manner of death was accident. The autopsy identified severe coronary artery disease involving the left anterior descending coronary artery, with up to 90% narrowing by plaque. The heart valves were described as nodular and thickened. No other abnormal findings were noted on visual examination of the heart. The remainder of the autopsy did not identify other significant natural disease.

3.0 Toxicology

The FAA Forensic Sciences Laboratory performed toxicological testing of postmortem specimens from the pilot and did not detect any tested-for drugs.³ Glucose was elevated to 144 mg/dL in vitreous fluid and 195 mg/dL in urine.⁴ Hemoglobin A1c (HbA1c) was measured to be 7.2%.²

E. SUMMARY OF MEDICAL FACTS

The 56-year-old male pilot's last aviation medical examination was on March 10, 2020. At that time, he reported no medication use. He reported a history of type 2 diabetes resolved without medication for 6 years. He had received a 2011 Special Issuance for diabetes requiring medication and had been released from the

¹ Urine dipstick testing includes testing for glucose (sugar) in the urine. A finding of sugar in the urine might be associated with elevated blood sugar due to diabetes. Urine sugar is raised by high blood sugar when the blood sugar surpasses a certain threshold. This threshold varies among individuals, but is typically above normal blood sugar levels.

² HbA1c is an indirect measure of a person's average blood sugar over approximately the preceding 3 months. Generally, HbA1c of 6.5% or higher indicates diabetes and HbA1c of less than 7% indicates control of diabetes.

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.

⁴ According to [its website](#), the FAA Forensic Sciences Laboratory considers glucose (sugar) levels in vitreous and urine to be abnormal if above 125 mg/dL and 100 mg/dL, respectively. The choice of these values is discussed in FAA Aerospace Medicine Technical Report [DOT/FAA/AM-00/22](#).

requirements of this Special Issuance in 2014. He had received a 2013 Special Issuance for a sleeve gastrectomy procedure and had been released from the requirements of this Special Issuance in 2015. At his last aviation medical examination he was issued a third-class medical certificate limited by a requirement to have glasses available for near vision. His urine dipstick testing at that examination was documented as normal.

According to the pilot's autopsy report, his cause of death was multiple blunt force injuries and his manner of death was accident. The autopsy identified severe coronary artery disease involving the left anterior descending coronary artery, with up to 90% narrowing by plaque. The heart valves were described as nodular and thickened. No other abnormal findings were noted on visual examination of the heart. The remainder of the autopsy did not identify other significant natural disease.

The pilot's postmortem toxicological testing did not identify any tested-for drugs. Glucose was elevated to 144 mg/dL in vitreous fluid and 195 mg/dL in urine. Hemoglobin A1c (HbA1c) was measured to be 7.2%.

Submitted by:

Turan Kayagil, MD, FACEP
Medical Officer