

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



WPR21FA286

MEDICAL

Specialist's Factual Report

January 17, 2023

A. ACCIDENT

Location: Truckee, California
Date: 7/26/21
Time: 13:18 Local
Airplane: Bombardier Inc., CL-600-2B16; N605TR

B. MEDICAL SPECIALIST

Specialist Michelle Watters, MD, PhD, MPH
National Transportation Safety Board, RE-1
Washington, DC

C. DETAILS OF THE INVESTIGATION

Purpose

This investigation was performed to evaluate the captain and first officer for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

Methods

The Federal Aviation Administration (FAA) medical case review and the captain's and first officer's autopsy and FAA Forensic Sciences Laboratory toxicology reports¹ were reviewed. Other relevant medical and regulatory issues were reviewed.

D. FACTUAL INFORMATION

1.0 Captain

1.1 FAA Medical Case Review

According to the FAA medical case review, at the time of the accident, the 43-year-old male captain held a first class medical certificate without limitation. At his most recent FAA medical certification exam (6/2/21), the captain was 67 inches tall and weighed 202 pounds. He reported 5,700 total flight hours. He reported taking no medications and having no medical conditions. No significant medical concerns were identified.

¹ The FAA Forensic Sciences Laboratory has the capability to test for more than 1,300 substances including toxins, common prescription and over-the-counter medications, and illicit drugs.
<https://jag.cami.jccbi.gov/toxicology/>

1.2 Autopsy

According to the autopsy report from the Office of the Sheriff-Coroner - Nevada County, Nevada City, California, the cause of death of the captain was massive blunt force trauma and thermal injuries and the manner of death was accident. The examination was limited by extensive trauma; no brain or internal organs were available for examination.

1.3 Toxicology

Toxicology testing performed for the Office of the Sheriff-Coroner was negative for ethanol and tested-for drugs in the captain's muscle tissue. Toxicology testing performed by the FAA Forensic Sciences Laboratory was also negative for ethanol and tested-for drugs in the captain's muscle tissue.

2.0 First Officer

2.1 FAA Medical Case Review

According to the FAA medical case review, at the time of the accident, the 56-year-old male first officer held a first class medical certificate with the limitation that he must wear corrective lenses and possess glasses for near/intermediate vision. At his most recent FAA medical certification exam (1/27/21), the first officer was 70 inches tall and weighed 179 pounds. He reported 14,400 total flight hours. He reported taking no medications and having no medical conditions. No significant medical concerns were identified.

2.2 Autopsy

According to the autopsy report from the Office of the Sheriff-Coroner - Nevada County, Nevada City, California, the cause of death of the first officer was massive blunt force trauma and thermal injuries and the manner of death was accident. The examination was limited by extensive trauma; no brain, heart, or lungs were available for examination.

2.3 Toxicology

Toxicology testing performed for the Office of the Sheriff-Coroner was negative for ethanol and tested-for drugs in the first officer's muscle tissue. Toxicology testing performed by the FAA Forensic Sciences Laboratory detected ethanol in the first officer's muscle tissue at 0.059 grams per hectogram (gm/hg) ² and

² Grams per hectogram in tissue samples are directly comparable to grams per deciliter in liquid samples.

at 0.028 gm/hg in his kidney tissue. N-propanol was also detected in his muscle tissue.

Ethanol is a social drug commonly consumed by drinking beer, wine, or liquor. It acts as a central nervous system depressant; it impairs judgment, psychomotor functioning, and vigilance. Ethanol is water soluble, and after absorption it quickly and uniformly distributes throughout the body's tissues and fluids. The distribution pattern parallels water content and blood supply of the tissue. A small amount of ethanol can be produced after death by microbial activity, sometimes in conjunction with other alcohols such as *propanol*.³ Extensive trauma increases the spread of bacteria and raises the risk of ethanol production after death.⁴

E. SUMMARY OF MEDICAL FACTS

The 43-year-old male captain held a first class medical certificate without limitation. His most recent FAA medical certification examination was on 6/2/21, where he reported taking no medications and having no medical conditions. According to the autopsy report, the cause of death of the captain was massive blunt force trauma and thermal injuries and the manner of death was accident. The examination was limited by extensive trauma. Toxicology testing was negative for ethanol and tested-for drugs in the captain's muscle tissue.

The 56-year-old male first officer held a first class medical certificate with the limitation that he must wear corrective lenses and possess glasses for near/intermediate vision. His most recent FAA medical certification examination was on 1/27/21, where he reported taking no medications and having no medical conditions. According to the autopsy report, the cause of death of the first officer was massive blunt force trauma and thermal injuries and the manner of death was accident. The examination was limited by extensive trauma. Toxicology testing detected ethanol in the first officer's muscle tissue at 0.059 gm/hg and at 0.028 gm/hg in his kidney tissue; no ethanol was reported in his muscle tissue by a second laboratory. N-propanol was also detected in his muscle tissue.

Submitted by:

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Medical Officer, RE-1

³ Federal Aviation Administration. Updated 1/16/19. Forensic Toxicology Drug Information. Ethanol. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=60>

⁴ Kugelberg, FC and AW Jones. 2007. Interpreting results of ethanol analysis in postmortem specimens: a review of the literature. *Forensic Science International* 165(1):10-29.