



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

March 25, 2015

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Medical Officer

A. ACCIDENT: ANC13FA090 Sutton, Alaska

On August 29, 2013, about 1300 Alaska daylight time, a Champion 7ECA (Citabria) airplane, N9624S, sustained substantial damage following a collision with terrain about 7 miles north of Sutton, Alaska. The private pilot and one passenger were fatally injured. The airplane was registered to and operated by the pilot as a visual flight rules personal local flight under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and no flight plan was filed. The flight originated from the Wolf Lake Airport, Palmer, Alaska, around 1200.

According to a family member of the pilot, the purpose of the flight was to scout for locations to hunt moose and the pilot said that they would return later that afternoon.

When the airplane did not return to Wolf Lake, a family member of the passenger reported the airplane overdue to the 11th Air Force's Rescue Coordination Center (RCC) about 1930. The RCC initiated a search for the missing airplane along its supposed route of flight. In the early morning hours of August 30, an Air National Guard C-130 Hercules was able to locate the wreckage. Rescue personnel aboard a HH-60G helicopter were able to reach the site later that morning and confirmed the pilot and passenger were deceased.

B. GROUP IDENTIFICATION:

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

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.

Methods

The FAA medical case review, toxicology results, autopsy report, and the investigator's report were reviewed.

FAA Medical Case Review

According to the FAA medical case review, the private pilot was 30 years old, 69 inches tall, weighed 170 pounds, and had accrued a total of 82.4 flight hours as of his medical certification examination dated October 15, 2012. The pilot reported a remote history of a single arrest for driving under the influence at age 19 but no recent medical concerns. The Aviation Medical Examiner issued the pilot a third class medical certificate with the following limitation: Must wear corrective lenses.

Autopsy

The Alaska Medical Examiner determined the cause of death was multiple blunt force injuries and the manner of death was accident. The autopsy did not identify any significant natural disease.

Toxicology

Toxicology testing was performed by the FAA's Civil Aerospace Medical Institute. Tetrahydrocannabinol was detected in the blood (0.0094 ug/ml), lung (0.2044 ug/g) and liver (0.0871 ug/g). Tetrahydrocannabinol carboxylic acid was detected in blood (0.0120 ug/ml), lung (0.0055 ug/g), liver (0.2495 ug/g), and urine (0.0146 ug/ml).

Tetrahydrocannabinol (THC) is the psychoactive compound found in marijuana with therapeutic levels as low as 0.001 ug/ml.¹ THC has mood altering effects causing euphoria, relaxed inhibitions, sense of well-being, disorientation, image distortion, and psychosis. The ability to concentrate and maintain attention are decreased during marijuana use, and impairment of hand-eye coordination is dose-related over a wide range of dosages. Impairment in retention time and tracking, subjective sleepiness, distortion of time and distance, vigilance, and loss of coordination in divided attention tasks have all been reported. Users may be able to "pull themselves together" to concentrate on simple tasks for brief periods of time. Significant performance impairments are usually observed for at least one to two hours following marijuana use, and residual effects have been reported up to 24 hours.²

Tetrahydrocannabinol carboxylic acid is the inactive metabolite of tetrahydrocannabinol.³

D. SUMMARY OF FINDINGS

The FAA medical case review and the autopsy found no evidence of natural disease. FAA toxicology detected tetrahydrocannabinol in the central blood (0.0094 ug/ml), lung (0.2044 ug/g) and liver (0.0871 ug/g). Its metabolite tetrahydrocannabinol carboxylic acid was detected in central blood (0.0120 ug/ml), lung (0.0055 ug/g), liver (0.2495 ug/g), and urine (0.0146 ug/ml).

References

¹ Federal Aviation Administration. CAMI toxicology Drug Information for: Tetrahydrocannabinol <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=194> Accessed 2/19/2015

² National Highway Traffic Safety Administration. Drugs and Human Performance Fact Sheets. Marijuana. <http://www.nhtsa.gov/people/injury/research/job185drugs/cannabis.htm> Accessed 2/19/2015

³ Federal Aviation Administration. CAMI toxicology Drug Information for: Tetrahydrocannabinol Carboxylic Acid <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=195> Accessed 2/19/2015