



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

December 26, 2019

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Chief Medical Officer

A. ACCIDENT: ERA19FA155; Henderson, KY

On April 23, 2019 at an unknown time, a Bellanca 17-30A, N9693E, was substantially damaged after impacting terrain at the Henderson City-County airport (EHR) Henderson, Kentucky. The student pilot and passenger were fatally injured. Night visual meteorological conditions prevailed, and no flight plan was filed for the personal flight, which was conducted under the provisions of Title 14 Code of Federal Regulations Part 91. The flight departed from Mid Carolina Regional airport (RUQ), Salisbury, North Carolina.

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 medical conditions, the use of medications/illicit drugs, and the presence of toxins.

2. Methods

The FAA medical case review, autopsy report, toxicology findings, and the investigator's reports were reviewed. Relevant regulation and medical literature were reviewed as appropriate.

FAA Medical Case Review

According to the FAA medical case review, the 48 year old male student pilot had reported 0 total flight hours as of his last medical exam, dated 2/12/2018. At that time, he was 72 inches tall and weighed 248 pounds. He reported no chronic medical problems and no use of medications to the

FAA. No significant abnormalities were identified on the physical exam and he was issued a third class medical certificate without limitations.

Autopsy

According to the autopsy performed by the Justice and Public Safety Cabinet, Western Kentucky Regional Medical Examiner's Office, the cause of death was multiple blunt force trauma. No significant natural disease was identified.

Toxicology

Toxicology testing performed at the request of the medical examiner by Axis Forensic Toxicology identified 1257 ng/ml of methamphetamine and 216 ng/ml of its primary metabolite amphetamine in chest cavity blood. In addition, 148 ng/ml of the cocaine metabolite benzoylecgonine was identified. The pilot's urine was positive for all three substances as well.

Toxicology testing performed by the FAA's Forensic Science Laboratory identified 173 ng/ml of methamphetamine in femoral blood and 26,859 ng/ml in urine; 28 ng/ml of its primary metabolite amphetamine in femoral blood and 3073 ng/ml in urine; cocaine in femoral blood (unquantified) and its metabolites benzoylecgonine (200 ng/ml) and ecgonine methyl ester in femoral blood and urine (benzoylecgonine at 12,795 ng/ml); levamisole, an animal antiparasitic often used to cut street cocaine in cavity blood and urine; and tetrahydrozoline (the active ingredient in Visine and other ophthalmologic products), phenylpropanolamine (a sympathomimetic no longer available for use in humans in the US but often a contaminant in street methamphetamine), and another metabolite of cocaine, anhydroecgonine methyl ester in urine.

Drug Descriptions

Methamphetamine is a central nervous system stimulant that is available by prescription as a Schedule II drug intended for short term use in the treatment of obesity and narcolepsy. It is also produced for street sale. oral doses used to medically treat these illnesses typically produce blood levels in the range of 20 -50 ng/ml. Illicit users seeking the intense euphoria produced by higher levels snort, smoke, or inject the drug and may reach levels above 2.00 ug/ml.

Symptoms of illicit methamphetamine use follow a typical pattern: Binge use of methamphetamine can be broken down into the following phases:

“Rush – (5 minutes) intense euphoria, rapid flight of ideas, sexual stimulation, high energy, obsessive/compulsive activity, thought blending, dilated pupils;

Shoulder – (1 hour) less intense euphoria, hyperactivity, rapid flight of ideas, obsessive/compulsive activity, thought blending, dilated pupils;

Binge use – (1-5 days) the drug is frequently readministered in an attempt to regain or maintain euphoria;
Tweaking – (4-24 hours) dysphoria, scattered and disorganized thought, intense craving, paranoia, anxiety and irritability, hypervigilance, auditory and tactile hallucinations, delusions, and normal pupils.”¹

Cocaine is also a central nervous system stimulant; available topically as anesthetic for use in dental and nasal procedures. It too, is made and sold on the street for illicit use. There are typical symptoms of illicit use:

“Early phase – Psychological: Euphoria, excitement, feelings of well-being, general arousal, increased sexual excitement, dizziness, self-absorbed, increased focus and alertness, mental clarity, increased talkativeness, motor restlessness, offsets fatigue, improved performance in some simple tasks, and loss of appetite. Higher doses may exhibit a pattern of psychosis with confused and disoriented behavior, delusions, hallucinations, irritability, fear, paranoia, antisocial behavior, and aggressiveness.

Physiological: Increased heart rate and blood pressure, increased body temperature, dilated pupils, increased light sensitivity, constriction of peripheral blood vessels, rapid speech, dyskinesia, nausea, and vomiting.

Late phase - Psychological: Dysphoria, depression, agitation, nervousness, drug craving, general central nervous system depression, fatigue, insomnia. Physiological: Itching/picking/scratching, normal heart rate, normal pupils.”²

D. SUMMARY OF MEDICAL FINDINGS

The 48 year old male student had reported no chronic medical problems and no use of medications to the FAA.

According to the autopsy performed by the Justice and Public Safety Cabinet, Western Kentucky Regional Medical Examiner's Office, the cause of death was multiple blunt force trauma. No significant natural disease was identified.

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¹ National Highway Traffic Safety Administration. Drugs and Human Performance Fact Sheets. Methamphetamine.

https://www.wsp.wa.gov/breathtest/docs/webdms/DRE_Forms/Publications/drug/Human_Performance_Drug_Fact_Sheets-NHTSA.pdf Accessed 12/23/2019.

² National Highway Traffic Safety Administration. Drugs and Human Performance Fact Sheets. Cocaine. https://www.wsp.wa.gov/breathtest/docs/webdms/DRE_Forms/Publications/drug/Human_Performance_Drug_Fact_Sheets-NHTSA.pdf Accessed 12/23/2019.

metabolite benzoylecgonine was identified. The pilot's urine was positive for all three substances as well.

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