



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

MEDICAL FACTUAL REPORT

August 7, 2018

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Medical Officer

A. ACCIDENT: CEN17FA259 - Cash, Arkansas

On July 8, 2017, about 1456 central daylight time, an Air Tractor Inc. AT-602 airplane, N4257R, was destroyed after impact with terrain near Cash, Arkansas. The pilot was fatally injured. The airplane was registered to and operated by Quad Rabbit Inc. under the provisions of 14 *Code of Federal Regulations* Part 137 as an aerial spraying flight. Day visual meteorological conditions prevailed for the local flight, which departed from a private airstrip about 1431.

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, pilot's FAA medical certification file, FAA Bioaeronautical Sciences Research Laboratory toxicology report, and autopsy report were reviewed.

FAA Medical Case Review

According to the FAA medical case review, the 27-year-old male pilot was 73 inches tall and weighed 256 pounds. His most recent FAA medical certification exam was dated March 28, 2017. At that time, he reported 4,188 total flight hours. The pilot reported he had no health care visits, no known medical conditions, used no medications, and the physical examination did not identify any significant medical issues. The pilot was issued a second class medical certificate without limitations.

Autopsy

The Arkansas State Crime Laboratory Medical Examiner determined the cause of death was generalized blunt force injuries, contributing to the cause of death was coronary artery disease, and the manner was accident. On gross examination, the heart was found to be of normal size and anatomy but showed greater than 70 percent occlusion of the left anterior descending

(LAD) coronary artery and the myocardium was free of discrete lesions. However, microscopic examination of the LAD and heart muscle showed marked narrowing of the LAD lumen, mild myocyte hypertrophy with slightly increased perivascular and interstitial fibrosis. Finally, the examiner wrote in the comment/opinion section of the autopsy report "...one of the main arteries that supplies blood to the heart was almost completely blocked by calcified atheromatous (cholesterol) plaque. These plaques can lead to episodes of ischemia (decreased blood flow leading to cell death). When the heart muscle is destroyed due to ischemia, it is replaced by fibrous tissue. This fibrous tissue neither contracts nor transmits electrical impulses in a coordinated manner, predisposing an individual to the development of sudden cardiac dysrhythmias (abnormal heart rhythms). When prolonged, dysrhythmias may cause an individual's death as blood does not flow in an efficient manner to the body's internal organs."

The NTSB investigating medical officer contacted the Arkansas Medical Examiner (ME) and requested reexamination of the microscope slides to clarify the microscopic examination term "marked narrowing of the LAD lumen". The ME responded "In my opinion, the histologic section shows around 90 percent atherosclerotic narrowing. Sections of myocardium did show mild interstitial and perivascular fibrosis, and mild myocardial fiber hypertrophy."

Toxicology

FAA Bioaeronautical Sciences Research Laboratory toxicology testing did not detect ethanol, carbon monoxide, or tested-for-drugs.¹

Family Interview

The NTSB IIC interviewed the pilot's family who reported he was in good health and had no known medical concerns.

D. SUMMARY OF MEDICAL FINDINGS

The 27-year-old male pilot was issued a second class medical certificate on March 28, 2017. On that examination he denied any medical concerns or the use of medications. Further, the pilot's family knew of no medical concerns. The Arkansas State Medical Examiner determined the cause of death was generalized blunt force injuries, contributing to the cause of death was coronary artery disease, and the manner was accident. The pilot had severe coronary artery disease with about 90 percent narrowing of the left anterior descending coronary artery and mild interstitial and perivascular fibrosis (scar tissue in the heart muscle and tissue around the blood vessels). FAA Bioaeronautical Sciences Research Laboratory toxicology testing was negative for ethanol, carbon monoxide, and tested-for-drugs.

¹ The FAA Bioaeronautical Sciences Research laboratory tests for more than 1300 substances including toxins, common prescription and over-the-counter medications as well as illicit drugs. See: <http://jag.cami.jcabi.gov/toxicology/default.asp?offset=0> for a complete listing.