



# NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering  
Washington, DC

## Medical Factual Report

March 28, 2016

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Medical Officer

### **A. ACCIDENT: CEN15MA290 Frisco, Colorado**

On July 3, 2015, about 1:39 p.m. mountain daylight time, an Airbus Helicopter Inc. (formerly American Eurocopter) AS350B3e helicopter, N390LG, impacted the upper west parking lot 360 feet southwest of the Summit Medical Center helipad (91CO), Frisco, Colorado. A post-impact fire ensued. Visual meteorological conditions prevailed at the time of the accident. The helicopter was registered to and operated by Air Methods Corp and the flight was conducted under the provisions of 14 *Code of Federal Regulations* Part 135 on a company flight plan. The airline transport pilot was fatally injured and two flight nurses were seriously injured.

### **B. GROUP IDENTIFICATION:**

No group was formed to evaluate the pilot medical issues.

### **C. DETAILS OF INVESTIGATION**

#### Purpose

The investigation evaluated the pilot for medical conditions, the use of medications/illicit drugs, and the presence of any toxins. Injuries to the pilot and crew are documented in Injury Factual report.<sup>a</sup>

#### Methods

The pilot's FAA medical certification records, FAA medical case review, toxicology results, autopsy report, hospital treatment records, and the investigator's report were reviewed.

#### FAA Medical Certification Record

According to the FAA medical certification records, the 64-year-old male pilot had medical certification examinations dating back to 1974. As of his most recent medical certification examination, dated January 12, 2015, he measured 68 inches tall, weighed 200 pounds, and reported he had accrued 13,000 total flight hours. On his most recent exam, the

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<sup>a</sup> The Injury Factual Report is available in the docket for this investigation.

pilot reported hypothyroidism treated with levothyroxine and was also using the medications allopurinol and atorvastatin. The pilot had prescription for all three of these medications. Levothyroxine is a replacement thyroid hormone marketed as Synthroid.<sup>1</sup> Allopurinol is used to treat gout and is marketed as Zyloprim.<sup>2</sup> Atorvastatin is a cholesterol lowering medication marketed as Lipitor.<sup>3</sup> The Aviation Medical Examiner (AME) identified no significant issues in his medical history or physical examination and issued the pilot a Second Class Medical Certificate with the following limitation: must wear corrective lenses, possess glasses for near / intermediate vision.

### Autopsy

The Jefferson County Coroner's Office determined the cause of death was blunt force trauma and fire, and the manner of death was accident. The pathologist noted the death was consistent with respiratory failure due to extensive injury to the musculoskeletal components compromising the mechanics of respiration. Additionally, the report noted that inhalation of the products of combustion compromised lung function.

The heart was enlarged. It weighed 500 grams; the left and right ventricle walls measured approximately 19 mm and 5 mm respectively. The average heart weight for a 200 pound man is 375 grams (range 284 to 495 grams) and the average left and right ventricular wall thickness is 12.3 mm (standard deviation 1.6 mm) and 3.8 mm (standard deviation 0.9 mm), respectively.<sup>4</sup> The heart muscle had no evidence of fibrosis or softening (scar tissue from damage to the heart muscle). The coronary arteries showed mild calcific atherosclerosis. No other significant natural disease was identified.

### Toxicology

Toxicology testing performed by the FAA's Civil Aerospace Medical Institute identified etomidate in cavity blood and urine. Etomidate is a hypnotic agent used for starting general anesthesia and during emergency procedures. Etomidate is marketed under the brand name Amidate.<sup>5</sup>

According to hospital treatment records, the patient received etomidate during his emergency room treatment.

## D. SUMMARY OF FINDINGS

The 64-year-old male pilot was prescribed levothyroxine to treat low thyroid hormone and was also prescribed allopurinol and atorvastatin to lower uric acid and lipids (high cholesterol), respectively. The pilot's autopsy identified a 500-gram heart and mild coronary artery disease. FAA toxicology detected etomidate in the cavity blood and urine, which was administered during emergency treatment.

## References

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<sup>1</sup> Drugs.com. Levothyroxine. FDA prescribing information, side effects, and uses. <http://www.drugs.com/pro/levothyroxine.html> Accessed 1/13/2016.

<sup>2</sup> Drugs.com. Allopurinol. FDA prescribing information, side effects, and uses. <http://www.drugs.com/allopurinol.html> Accessed 1/13/2016.

<sup>3</sup> Drugs.com. Atorvastatin. FDA prescribing information, side effects, and uses. <http://www.drugs.com/pro/atorvastatin.html> Accessed 1/13/2016.

<sup>4</sup> Kitzman DW, Scholz DG, Hagen PT, Ilstrup DM, Edwards WD. Age-related changes in normal human hearts during the first 10 decades of life. Part II (Maturity): A quantitative anatomic study of 765 specimens from subjects 20 to 99 years old. *Mayo Clinic Proc.*, 1988. 63(2): p. 137-46.

<sup>5</sup> Drugs.com. Etomidate. FDA prescribing information, side effects, and uses. <http://www.drugs.com/pro/etomidate.html> Accessed 1/13/2016.