



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

August 14, 2014

Medical Factual

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Chief Medical Officer

A. ACCIDENT:

On January 19, 2013, about 1700 central standard time, a Beechcraft Baron 95-B55, airplane, N143E, impacted terrain near Mangum, Oklahoma. The commercial rated pilot and two passengers were fatally injured and the airplane was substantially damaged.

B. GROUP IDENTIFICATION:

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

C. DETAILS OF INVESTIGATION

1. Purpose of Study

The purpose of this study was to evaluate whether any medical conditions or medications may have contributed to the probable cause of the accident.

2. Methods

The FAA medical file, FAA medical case review, toxicology and autopsy reports, and the investigator's reports were reviewed. An attempt was made to contact the personal physician listed in the FAA medical file but the office had been permanently closed.

a. FAA medical file

The pilot's first FAA medical certificate was issued in January 1979, when he was 19 years old. He generally continued to maintain an unrestricted medical certificate through 2008 when his certificate became limited by the need to wear corrective lenses. He reported no medications and no visits to any medical providers until 2008 when he reported having had a DOT physical exam.

At his last aviation medical exam on 11/20/2012, for the first time the pilot reported having hypertension and using amlodipine, nadolol, and losartan to treat

it. His blood pressure was recorded as 139/89 on that exam and he was issued a third class medical certificate, limited by the need to wear corrective lenses.

b. Toxicology

Post accident toxicology results identified amitriptyline, nortriptyline, and nadolol in liver and amitriptyline(0.069 g/ml), nortriptyline, and nadolol in heart blood.

Amitriptyline is a tricyclic antidepressant that is also used to treat a variety of chronic pain syndromes.¹ Its therapeutic range is 0.005ug/ml to 0.200 ug/ml and it carries an FDA warning: “may impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery).”² Nortriptyline is the primary metabolite of amitriptyline.¹ Nadolol is a beta-blocker used to treat hypertension.

c. Autopsy

According to the Office of the Chief Medical Examiner in Oklahoma, the cause of the pilot’s death was multiple blunt force trauma and the manner of death was accident.

In addition to traumatic injuries, the autopsy identified natural disease in the heart which weighed 500 gm (normal for a 220 pound man is 391grams with a range of 296 to 516³). The cardiac walls were hypertrophied: the right ventricle measured 0.5 cm thick (normal <0.3cm); the left ventricle was 2.0 cm (normal <1.6cm); and the interventricular septum measured 2.0 cm (normal <1.6cm).³

E. SUMMARY OF FINDINGS

The pilot had a history of hypertension which was treated with medication. In addition, toxicology testing identified amitriptyline, a tricyclic antidepressant that the pilot had not reported to the FAA in the pilot’s blood and liver. At autopsy, the pilot’s heart was hypertrophied.

¹ Drugs.com. Amitriptyline – FDA prescribing information, uses, and side effects.
<http://www.drugs.com/pro/amitriptyline.html> Accessed 8/13/2014

² Federal Aviation Administration. Forensic Toxicology Drug Information. Amytriptyline.
<http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=9> Accessed 8/13/2014.

³ Kitzman DW, S.D., 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.