



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

April 29, 2020

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Medical Officer

A. ACCIDENT: ERA19LA247; Boone, North Carolina

On August 14, 2019, about 0841 eastern daylight time, a Fantasy Air Allegro 2000, N5020X, was destroyed by impact and postcrash fire when it was involved in an accident near Boone, North Carolina. The private pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

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

Methods

The Federal Aviation Administration (FAA) medical case review and the pilot's autopsy, personal medical records, and FAA Forensic Sciences toxicology reports¹ were reviewed. Other pertinent medical and regulatory issues were examined.

FAA Medical Case Review

According to the FAA medical case review, the 67-year-old male pilot had an expired third class medical certificate with the limitation that he must have available glasses for near vision. The pilot had not applied for BasicMed. His most recent FAA medical certification examination was on 3/27/14 and at that time he reported he had accrued 1,200 total flight hours. The pilot was 70 inches tall and weighed 213 pounds. He reported taking levothyroxine to treat hypothyroidism² and having had a few surgeries. No other medical concerns or issues were identified.

¹ The FAA Forensic Sciences Laboratory can test for more than 1,300 substances including toxins, common prescription and over-the-counter medications as well as illicit drugs. See: <http://jag.cami.jccbi.gov/toxicology/>

² National Institutes of Health (NIH). U.S. National Library of Medicine (NLM). DailyMed. Levothyroxine Sodium tablet. Updated 4/25/19. <https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a3845f91-e0fe-42aa-8043-aeaac43f8eef>

Autopsy

According to the autopsy performed by the Forsyth County Medical Examiner at the Wake Forest Medical Center, Department of Pathology, Winston-Salem, North Carolina, the cause of death in the pilot was thermal cutaneous and inhalational injuries and the manner of death was accident. The medical examiner also reported cardiovascular disease consisting of an enlarged heart (450 grams) and severe atherosclerosis in the left anterior descending (90%), right coronary (75%) and left circumflex (70%) arteries. Evidence of a remote microscopic stroke was noted in the pilot's brain.

Personal Medical Records

Pre-event medical records for three years prior to the accident were obtained for the pilot from his primary care physician. The pilot was treated for hypertension with irbesartan, hypothyroidism, high cholesterol, and hyperglycemia/type II diabetes. At his visit on 6/18/19, the pilot complained of "floaters in both eyes" and he agreed to get an eye exam. At the 7/16/19 office visit, the pilot complained of balance difficulties and dizziness. He stated that he had difficulty seeing his extreme right side since a dizziness episode about two months prior to that office visit. He was sent for brain imaging to evaluate his diagnosis of right homonymous hemianopsia.³ The imaging report from 8/1/19 showed that the pilot had a stroke in his left occipital region. At his office visit on 8/6/19, the pilot complained that he felt sluggish, his vision was bothersome, his balance was not great, and that he tended to get dizzy when standing upright. Carotid doppler testing on 8/9/19 showed mild atherosclerosis.

Post-event medical records from emergency transport and hospital were provided. The pilot received both fentanyl and lidocaine for pain management on the way to the hospital. He received additional fentanyl at the hospital. The pilot was alert and oriented and did not require respiratory assistance. The pilot reported to responders that "he was flying a single engine plane when he 'felt it stalled'" and stated that "he crash landed the plane in a ravine", which caused the plane to catch on fire. He self-extricated. He denied any loss of consciousness. The pilot died about 8 hours after the crash from extensive burns.

Toxicology

FAA Forensic Sciences Laboratory toxicology testing detected the opioid pain reliever fentanyl, its inactive metabolite norfentanyl, and the local anesthetic lidocaine in the pilot's blood and urine.^{4,5,6} The non-sedating high blood pressure medication irbesartan was also detected in blood

³ Hemianopsia is loss of vision in half of the visual field in one or both eyes; homonymous hemianopsia affects either the two right or two left halves of the visual fields of both eyes. The condition results from lesions on the visual pathways in the brain, with stroke being the most common cause. The condition causes distorted sight and difficulty with reading and visual scanning. [Cleveland Clinic. Health Library. Homonymous Hemianopsia. Last reviewed 4/17/15. <https://my.clevelandclinic.org/health/diseases/15766-homonymous-hemianopsia->]

⁴ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Fentanyl. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=64>

⁵ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Norfentanyl. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=362>

⁶ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Lidocaine. <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=148>

and urine.⁷ Toxicology testing performed by the County Medical Examiner and in the emergency room were negative for ethanol in blood.

D. SUMMARY OF MEDICAL FINDINGS

The 67-year-old male pilot had an expired third class medical certificate with the limitation that he must have available glasses for near vision. At his most recent exam (3/27/14), he reported taking levothyroxine for hypothyroidism. No other medical concerns were identified.

According to the autopsy, the cause of the pilot's death was thermal cutaneous and inhalational injuries and the manner of death was accident. Autopsy findings included cardiovascular disease consisting of an enlarged heart and severe atherosclerosis in three coronary arteries. Evidence of a remote microscopic stroke was noted in the pilot's brain.

Personal medical records revealed that the pilot was being treated for hypertension, hypothyroidism, high cholesterol and high blood sugar. A couple of months prior to the accident, the pilot complained of dizziness and vision problems. Imaging showed the pilot had a stroke which resulted in the loss of vision in his right visual fields (homonymous hemianopsia).

Post-event medical records showed the pilot was administered fentanyl for pain management on the way to and at the hospital. The pilot was alert on arrival and died about 8 hours after the crash from post-crash burns.

Toxicology testing found the opioid pain reliever fentanyl, its inactive metabolite norfentanyl, and the local anesthetic lidocaine in the pilot's blood and urine. The non-sedating high blood pressure medication irbesartan was detected in blood and urine.

⁷ FAA. Updated 1/16/19. Forensic Toxicology's WebDrugs. Irbesartan.
<http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=267>