



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

December 13, 2018

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Chief Medical Officer

A. ACCIDENT: CEN18FA126; Pierce, NE

On March 21, 2018, about 1845 central daylight time, a Nannarone Rans Inc S-16 Shekari, N741WT, impacted terrain about ¼ mile from the approach end of runway 11 at a private airstrip, owned by the pilot, near Pierce, Nebraska. The airplane sustained substantial damage. The private pilot was fatally injured. The airplane was registered to and operated by the pilot under 14 Code of Federal Regulations Part 91 as a personal flight, which was not operating on a flight plan. Visual meteorological conditions prevailed at the time of the accident. The flight departed Norfolk Regional Airport/Karl Stefan Memorial Field, Norfolk, Nebraska, after obtaining fuel, and was returning to the private airstrip.

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.

FAA Medical Case Review

According to the FAA medical case review, the 69 year old male pilot reported 2,000 total flight hours as of his last aviation medical exam, dated 9/6/2017. At that time, he was 68 inches tall and weighed 176 pounds. The pilot had reported significant coronary artery disease that required stenting

procedures twice in 1997 (the first for a large antero-septal heart attack, the second for persistent angina). After providing details to the FAA, he received his first special issuance medical certificate in 2000. In 2015, he developed further symptoms and underwent a coronary artery bypass operation in October 2015. The pilot had also reported hypertension to the FAA. In September 2017 the pilot's cardiology report noted he was doing well without symptoms following his surgery but had mildly elevated blood glucose levels for which he had been referred to his primary care physician. At his last exam, the pilot reported using aspirin and clopidogrel as anti-platelet agents to help prevent further ischemia, atorvastatin to control his cholesterol, allopurinol (usually used to prevent gout), and carvedilol, chlorthalidone, spironolactone, and losartan to control his blood pressure.^{1,2,3,4,5,6,7,8} None of these medications are considered impairing. He was issued a special issuance third class medical certificate limited by a requirement that he wear corrective lenses for near and distant vision and labeled, "Not valid for any class after 09/30/2018."

Autopsy

According to the autopsy performed by Pathology Medical Services of Siouxland, P.C., the cause of death was multiple acute blunt force traumatic injuries and the manner of death was accident. The heart was enlarged; it weighed 510 grams and the right and left ventricular walls measured 0.4 cm and 1.7 cm in thickness respectively. (Average heart

¹ National Institutes of Health. US National Library of Medicine. DailyMed. Aspirin.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=9829f56f-723c-473f-89ee-4cb2efb3b8bc>
Accessed 12/13/2018.

² National Institutes of Health. US National Library of Medicine. DailyMed. Clopidogrel.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=edae8df1-caf9-ff72-1304-5ae8b355f8e7>
Accessed 12/13/2018.

³ National Institutes of Health. US National Library of Medicine. DailyMed. Atorvastatin.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=cda119f2-54c8-4a08-b266-a0dbd214d2ce>
Accessed 12/13/2018.

⁴ National Institutes of Health. US National Library of Medicine. DailyMed. Allopurinol.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=682dd8b8-fc6e-47c5-95b7-82d7ad96b750>
Accessed 12/13/2018.

⁵ National Institutes of Health. US National Library of Medicine. DailyMed. Carvedilol.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=7d485d38-5d43-4a54-bc63-82734035c66a>
Accessed 12/13/2018.

⁶ National Institutes of Health. US National Library of Medicine. DailyMed. Chlorthalidone.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=58c51c6a-5d8c-4205-a71e-e16da049332a>
Accessed 12/13/2018.

⁷ National Institutes of Health. US National Library of Medicine. DailyMed. Spironolactone.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=a7510768-8a52-4230-6aa0-b0d92d82588f>
Accessed 12/13/2018.

⁸ National Institutes of Health. US National Library of Medicine. DailyMed. Losartan.
<https://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?setid=3cdcf8cc-4964-4c53-e054-00144ff88e88>
Accessed 12/13/2018.

weight for a 176 pound man is 349 grams with a range of 265 to 461 grams and average thicknesses are 1.3 and 0.3 cm respectively.⁹⁾

The autopsy identified severe coronary artery disease in the native arteries with stents in the proximal left anterior descending and left coronary artery distribution. Distal to the stents in the distal left anterior descending and left coronary, there were areas of significant high grade occlusion with atherosclerotic plaque. In some areas there were pin-hole sized lumens and in others there appeared to be complete occlusion of the distal arteries. The right coronary artery showed variable amounts of high grade atherosclerotic plaque from proximal to distal. There were three patent grafts which were described as extending to the vasculature of the presumed left anterior descending angular artery. In addition, there was an extensive intramural scar from a previous heart attack in the anterior apical septum of the left ventricle which measured from 0.6 cm. to 1.0 cm. in thickness and approximately 2.6 cm in maximum dimension.

Toxicology

Toxicology testing performed by the FAA's Bioaeronautical Sciences Research Laboratory identified carvedilol and chlorthalidone in cavity blood. Both of these as well as losartan and atorvastatin were found in urine. These medications are described above.

D. SUMMARY OF MEDICAL FINDINGS

The 69 year old male pilot had reported having hypertension and severe coronary artery disease that included a heart attack, multiple stent placements, and most recently a coronary artery bypass graft procedure in 2015. At his last exam, the pilot reported using aspirin and clopidogrel as anti-platelet agents to help prevent further ischemia, atorvastatin to control his cholesterol, allopurinol, and carvedilol, chlorthalidone, spironolactone, and losartan to control his blood pressure. None of these medications are considered impairing. His cardiology reports were favorable and he held a special issuance third class certificate at the time of the accident.

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⁹ 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): 137-46.

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