



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

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Medical Officer

A. ACCIDENT: ERA19LA197; Crisfield, Maryland

On June 15, 2019, about 0415 eastern daylight time, a Piper PA-32-260, N2750Q, impacted trees and terrain while on approach to Crisfield-Somerset County Airport (W41), Crisfield, Maryland. The private pilot sustained minor injuries. The airplane was operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed at the time and no flight plan was filed for the flight that originated about 5 minutes earlier from W41.

The pilot provided statements to both the Federal Aviation Administration (FAA) and Maryland State Police. He reported that he intended to perform one night landing in advance of a flight planned to depart W41 at 0430. Very light winds favored runway 32 which had an inoperative precision approach path indicator (PAPI). He departed and remained in the airport traffic pattern for runway 32. The crosswind and downwind legs of the airport traffic pattern were uneventful with the airport lights "crystal clear and fully illuminated." Shortly after turning onto the base leg of the airport traffic pattern, the airplane's altitude was between 550 and 600 ft above ground level. He announced turning onto the final leg of the airport traffic pattern for runway 32 and was lined up perfectly with the runway with the airplane landing lights on, and the runway in sight in front of him. While on the final approach leg of the airport traffic pattern at what appeared to be normal altitude, "...all [of a] sudden trees came through the cabin (unseen until the impact)." The pilot did not remember anything abnormal prior to the impact, which rendered him unconscious. He subsequently regained consciousness during daylight, climbed out of the wreckage and walked to his home.¹

B. GROUP IDENTIFICATION

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

¹ Please see the public docket for this accident for pilot statement.

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 FAA medical certification files and personal medical records were reviewed. Other pertinent scientific and regulatory issues were examined.

FAA Medical Certification Files

According to the FAA medical certification files, at the time of the accident, the 65-year-old male pilot held a third class medical certificate with the limitation that he must have lenses for distant vision and have glasses available for near vision. His most recent aviation medical exam had been performed on 10/5/17 and he reported 1,100 total flight hours. The pilot was 74 inches tall and weighed 227 pounds. On that exam, the pilot reported taking lisinopril and hydrochlorothiazide for high blood pressure and having seasonal allergies. These medications are not considered impairing. An electrocardiogram (EKG) administered at the 8/21/14 medical certification exam showed an ectopic atrial rhythm but was otherwise normal. Exams after 9/13/13, noted that the pilot held an FAA statement of demonstrated ability (SODA) for vision loss in his right eye due to non-arteritic anterior ischemic optic neuropathy (NAION); treatment with prednisone for NAION had temporarily induced diabetes. No other significant medical findings were reported on the pilot's medical certifications that dated back to 1/22/07 and between 4/28/77 and 11/15/83.

Personal medical records

Emergency room records were obtained for the pilot's post-accident visit on 6/15/19. He arrived at the emergency room 4 hours post-accident. The pilot stated that he lost consciousness for 90 minutes to 2 hours after hitting a tree while landing his airplane; he then walked one mile to his home. He complained of left flank, left elbow, and left ankle pain. X-rays of his pelvis, chest, left lower leg, and left elbow were negative; CT [computed tomography] scan of his head showed no acute injury. Complete blood count and metabolic panel were not concerning; no drug panel was ordered. The pilot had a bruised elbow, a couple of small lacerations, and multiple abrasions. He was discharged home that afternoon.

Post-accident medical records through 12/27/19 were obtained from the pilot's internist and cardiologist. On his first visit following the accident to the internist (7/29/19), which appeared to be his routine 6-month follow-up from an earlier exam, the pilot reported that he had been in an airplane crash. According to the physician records, he stated that he was unconscious after the crash, woke up and walked home. He was confused and his wife called an ambulance where he was taken to a local hospital. He denied falling asleep before the crash, and stated he still had some dizziness since the crash. An EKG at this visit showed a first degree heart block,² and the

² Heart block refers to slowed or interruption of electrical signals from the upper chambers to the lower chambers of the heart. First degree heart block is the mildest form and is rarely associated with symptoms. Third degree or complete heart block is the most severe and is a medical emergency. The heart chambers do not beat sequentially, preventing enough blood being pumped to the body which can result in fainting. [National Institute of Health (NIH)]

internist ordered a cardiac work-up that included a stress echocardiogram and a 24-hour halter monitor³ for the pilot. The pilot was advised not to fly until he was cleared.

The transthoracic echocardiogram performed on 8/5/19 was reported as normal heart function with an ejection fraction of 65%, mild tricuspid valve regurgitation, and bilateral atrial enlargement. The 24-hour halter monitor on 8/15/19 was reported to show first degree heart block and multiple episodes of complete heart block, notably at least one episode with a 3.5 second pause between heartbeats.

At the cardiologist referral visit on 8/22/19, the recommendation was made for pacemaker placement. In the history of the present illness, the pilot reported that in the plane crash, he had an abrupt loss of consciousness when coming in for a landing, with no prodromal symptoms. He denied previous syncopal (fainting) episodes. The cardiologist advised the pilot not to fly or drive until the pacemaker was placed. On 8/28/19, the pilot had a pacemaker and implantable cardioverter defibrillator implanted. There were subsequent surgical follow-ups with the cardiologist and device checks with an electrophysiologist.

An angiogram on 9/3/19 was described as the pilot having normal coronary arteries. He received a cardiac PET [positron emission tomography] scan on 12/18/19 which indicated cardiac sarcoidosis;⁴ on the follow-up office visit on 12/27/19, the pilot was referred to a specialist.

At the internist visits on 7/29/19 and 9/10/19, in addition to the cardiac findings, the pilot had a continuing diagnosis of impaired fasting glucose. His last hemoglobin A1C test in 1/23/19 was 6.1%,⁵ his condition was described as stable, and he was asymptomatic. In the problem list, the pilot had optic neuritis listed with the note that he had right eye optic neuropathy in 2012 treated with high dose steroids with improvement.

No toxicology test results were available for this accident. Neither a blood sample nor a urine sample were available for FAA Forensic Toxicology Laboratory testing and the emergency room did not perform a drug screen.

National Library of Medicine (NLM), MedlinePlus, Heart Block, updated 11/9/19.
<https://medlineplus.gov/ency/article/007658.htm>

³ A halter heart monitor is a device that a patient wears to record their heart's electrical activity, typically for 24-hours. Concurrently, the patient keeps a diary of their activities. Their health care provider analyzes the recording, correlating irregular heart activity. [NIH NLM, MedlinePlus, Halter heart monitor. Updated 5/16/18.
<https://medlineplus.gov/ency/imagepages/8810.htm>]

⁴ Sarcoidosis is a disease where small collections of immune cells form lumps (granulomas) in various organs of the body. Symptoms vary depending upon what organ is affected. As inflammation continues, permanent scarring may occur. Complications in the heart include arrhythmia (abnormal heart rate), heart failure, sudden cardiac arrest, and enlarged heart. [NIH. National Heart, Lung, and Blood Institute. Sarcoidosis. <https://www.nhlbi.nih.gov/health-topics/sarcoidosis> Accessed 2/7/20.]

⁵ Hemoglobin A1C is a measure of the percentage of hemoglobin molecules that have a glucose molecule attached to them. The test measures the average blood glucose over the past three months. Above 6.5% indicates diabetes. [NIH. NLM. MedlinePlus. A1C. Updated 11/26/19. <https://medlineplus.gov/a1c.html>]

D. SUMMARY OF MEDICAL FINDINGS

At the time of the accident, the 65-year-old male pilot held a third class medical certificate with the limitation that he must have lenses for distant vision and have glasses available for near vision. His last exam was on 10/5/17; he reported taking lisinopril and hydrochlorothiazide for high blood pressure and having seasonal allergies. Since January 2014 he held an FAA SODA for vision loss in his right eye secondary to an optic neuropathy; treatment with prednisone temporarily induced diabetes. An EKG administered at the 8/21/14 medical certification exam showed an ectopic atrial rhythm but was otherwise normal.

Emergency room records on 6/15/19 showed the pilot was treated for minor injuries and had negative X-rays and head CT scan. Post-accident medical records from his primary care doctor and cardiologist reported that the pilot had first degree heart block with intermittent complete heart block. He had a pacemaker and implantable cardioverter defibrillator implanted on 8/28/19. A cardiac PET scan on 12/18/19 showed cardiac sarcoidosis.

The pilot's hemoglobin A1C on 1/23/19 was 6.1%; his diagnosis was impaired fasting glucose. No toxicology test results were available for this accident.