



# **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Research and Engineering  
Washington, DC

## **Medical Factual Report**

**June 4, 2018**

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Chief Medical Officer

### **A. ACCIDENT: ERA17LA269; Tower City, PA**

On August 9, 2017, at 0926 eastern daylight time, an experimental amateur-built Pietenpol Air Camper, N709HR, was substantially damaged following a loss of airplane control during takeoff at Bendigo Airport (74N), Tower City, Pennsylvania. The private pilot was seriously injured. The airplane was registered to and operated by the pilot under the provisions of 14 Code of Federal Regulations (CFR) part 91 as a local, flight test flight. Day, visual meteorological conditions prevailed at the time, and no flight plan was filed.

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

#### **2. Methods**

The pilot's post accident personal medical records and the investigator's reports including the interview with the surviving pilot were reviewed.

#### **FAA Records**

FAA records were not obtained as the pilot survived. In addition, he reported in an interview with the investigator in charge that he had allowed his medical, last issued in 2010, to lapse because he had been treated for thyroid cancer. At the time of the accident, he was flying a light sport aircraft that required him only to maintain a driver's license.

#### Personal Medical Records

The pilot's post accident medical treatment records were obtained and reviewed. At the time of the accident, the pilot was 60 years old. His injuries included a fracture of the occipital condyle with dissociation of the atlanto-occipital joint associated with epidural hematoma of the spinal cord, a traumatic brain injury, pulmonary contusions bilaterally, damage to the left retina, a mediastinal hematoma, a large laceration of the chin including arterial damage and bleeding that required embolization, multiple broken teeth, fracture of the thyroid cartilage, a laceration of the right hand, a clavicle fracture, and fractures of the left scaphoid and radial styloid.

The pilot was intubated before being flown to the trauma center for emergent care. Once extubated, he reported having a history of hypertension, hypothyroidism resulting from a thyroidectomy to remove a thyroid cancer in 2009, and migraine headaches. In addition, he immediately reported that he believed he had fainted during takeoff which had caused his crash (sudden unexplained fainting is known as syncope). An extensive evaluation for the source of the pilot's syncope was performed and he was eventually diagnosed with severe aortic regurgitation.<sup>1</sup> The condition was so severe he underwent an aortic valve replacement several months after the accident. Although no arrhythmias were identified during the pilot's hospitalization and aortic regurgitation does not commonly cause syncope, two cardiologists documented in hospital notes or letters to the NTSB that the severity of the aortic regurgitation was enough to put him at risk of syncope from poor cardiac output or as result of an arrhythmia.

#### **D. SUMMARY OF MEDICAL FINDINGS**

The male pilot, who was 60 at the time of the accident, reported to his physicians that he had fainted during the takeoff sequence, causing the accident. An extensive evaluation identified severe aortic regurgitation which can cause heart failure and increases the risk of arrhythmias. Several months after the accident, the pilot underwent an aortic valve replacement combined with a repair of the aortic root.

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<sup>1</sup> This means that the cusps on his aortic heart valve did not close completely and blood leaked back into the left ventricle with every heartbeat.