

## Factual Narrative

### HISTORY OF FLIGHT

On April 15, 2017, about 1523 eastern daylight time, a Cessna 170, N4244V, was destroyed when it impacted terrain shortly after departure from Williston Municipal Airport (X60), Williston, Florida. The commercial pilot and three passengers were fatally injured. The airplane was owned and operated by the pilot in accordance with the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the personal cross-country flight that was destined for Inverness Airport (INF), Inverness, Florida.

According to a Federal Aviation Administration (FAA) inspector, earlier on the day of the accident, the airplane departed from its base at Eagles Landing Airport (5GA3), Williamson, Georgia. Fueling records showed that the airplane stopped at Thomaston-Upson County Airport (OPN), Thomaston, Georgia, and was fueled there at 1131. The airplane then flew from OPN to X60, and an airport security video showed the airplane being fueled at X60 about 1448. The video then showed the airplane as it taxied onto runway 5 at intersection C and took off.

Video from another security camera at X60 showed the airplane immediately after takeoff as it climbed to about 280 ft above ground level and leveled off. The video then showed the airplane make a slight right turn followed by a sharp left turn and a steep descent as it rolled to an inverted position.

Flight data was downloaded from a Stratus ADS-B receiver that was recovered from the airplane and forwarded to the NTSB Vehicle Records Laboratory, Washington, DC. Review of the downloaded data revealed that the airplane's ground speed was about 48-47 knots just before it began to roll to the right.

### PERSONAL-PERSONNEL INFORMATION

According to FAA records, the pilot held a commercial pilot certificate with ratings for airplane single-engine land, airplane multi-engine land, glider, and instrument airplane. He held a flight instructor certificate with ratings for airplane single-engine, airplane multi-engine, and instrument airplane. He held an FAA second-class medical certificate, issued March 27, 2017. At the time of the medical examination for this medical certificate, the pilot reported 2,350 total hours of flight experience. The pilot's current log-books could not be located.

### AIRCRAFT INFORMATION

The four-seat, high-wing, tailwheel-equipped airplane was manufactured in 1948. It was powered by a 145-horsepower Continental C-145-2H engine and equipped with a two-blade McCauley propeller. The last annual inspection was completed on June 3, 2016. At the time of the accident, the airframe and engine each had a total time of 3,657.4 hours and 46 hours since the annual inspection. The engine had 194.3 hours since major overhaul.

The airplane owner's manual stated that the power-on stall speed with no flaps was 53 mph (46 knots).

## METEOROLOGICAL INFORMATION

At 1519, the recorded weather at X60 was wind from 080° at 8 knots gusting to 17 knots, visibility 10 statute miles, temperature 30°C, dew point temperature 14°C, and altimeter 30.23 inches of mercury.

## WRECKAGE AND IMPACT INFORMATION

The wreckage was examined at the accident site, which was located near the departure end of runway 5 about 543 ft left of the runway's centerline. The airplane was resting on its nose and displayed signatures consistent with a nose-down attitude at ground impact. The wing leading edges were crushed aft by impact forces, and the engine was buried about 2 ft in the dirt. The fuselage was crushed (accordioned) aft by impact forces. The airplane came to rest on a magnetic heading of about 050°.

The left-wing fabric was torn in several places. The fuel cap separated and was found next to the airplane. Aviation 100LL fuel was noted in the left tank, which appeared to be full of fuel. The left aileron and flap remained attached and intact.

The right wing exhibited more severe leading-edge damage than the left wing. The leading edge was crushed by impact forces, and the fabric was torn in several places. The two fuel tanks in the right wing contained aviation 100LL fuel. The right fuel cap had separated and was found next to the airplane. The right flap and the aileron remained attached and intact.

The tail of the airplane did not contact the ground; the rudder and elevator were intact and not damaged. Flight control continuity was confirmed to all primary flight controls. The elevator trim was in the neutral position. The cockpit was destroyed.

The propeller remained attached to the engine. The propeller blades were bent aft. The engine and propeller were pushed into the instrument panel and upwards at a 45° angle.

The engine remained attached to the airframe by the right rear engine mount only. The other three engine mounts were fractured by impact forces. The engine case was impact damaged, and several pieces of the case were fractured and missing in the front of the engine. All six cylinders remained attached to the engine case and displayed varying amounts of impact damage. Valve train continuity was established through the engine by visual confirmation during an engine teardown. There were no pre-impact anomalies noted during the teardown that would have prevented normal engine operation or production of rated horsepower.

## MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Medical Examiner, Gainesville, Florida, performed an autopsy of the pilot, and his cause of death was injuries sustained in the accident.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma performed forensic toxicology testing of specimens from the pilot; the tests were negative for carbon monoxide, drugs, and alcohol.

### Analysis Narrative

The commercial pilot and three passengers were making a personal cross-country flight in the airplane. After a refueling stop, the airplane taxied to the runway and departed. Security video and flight data showed that the airplane had just departed the airport and was about 280 ft above the ground when it stalled and spun to the left, impacting the ground in a nose-down attitude. Postaccident examination of the engine and airframe revealed no evidence of a mechanical anomaly or failure that would have precluded normal operation of the airplane. The recorded weather at the airport at the time of the accident included a right-quartering headwind at 8 knots gusting to 17 knots. The flight data revealed that the airplane slowed to ~~a groundspeed of 48~~ an estimated airspeed (ground speed with correction applied for reported wind conditions) of around 49 to 51 knots just before the stall occurred, which was ~~below~~ near the airplane's published power-on stall speed of ~~53~~ 46 knots; however, the gusting wind conditions likely resulted in a further decrease of the airplane's airspeed and increase of its ~~critical~~ angle-of-attack.