

National Transportation Safety Board

Office of Aviation Safety

Washington, DC 20594



CEN21FA195

FIELD EXAMINATION REPORT

April 19, 2021

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A. Accident

CEN21FA195
Tatum, TX
April 19, 2021
1346 CDT

B. Investigative Team

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National Transportation Safety Board
Denver, Colorado

Investigator: Baker Nase
Federal Aviation Administration
Irving, Texas

Investigator: Jennifer Barclay
Textron Aviation
Wichita, Kansas

C. Summary of Investigation

On April 19, 2021, about 1346 central daylight time, a Cessna 340A airplane, N801EC, was destroyed when it was involved in an accident near Tatum, Texas. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 flight test.

According to information provided by a fixed-based operator (FBO) at the East Texas Regional Airport (GGG), the intention of the flight was to perform a functional test of a newly upgraded autopilot system.

According to Air Traffic Control (ATC) information provided by the Federal Aviation Administration (FAA), the controller cleared the pilot to operate under visual flight rules (VFR) to the east of the airport and to remain in class C airspace. Communications between ground control, tower control, and the pilot were normal during the ground taxi, takeoff, and climb-out.

Automatic Dependent Surveillance – Broadcast (ADS-B) data showed that the airplane took off from runway 13 at GGG about 1340. After takeoff, ADS-B data showed the airplane in a steady climb to the east of GGG. The airplane climbed to an altitude of 2,750 ft mean sea level (msl) and then descended to 2,675 ft msl. The last recorded data point was at 1346. The airplane was at 2,675 ft heading east with a ground speed of 152 kts. The airplane impacted wooded terrain about 3/4 mile east

of the last recorded data point. Groundspeeds and headings were consistent throughout the climb, with no abrupt deviations. See Figures 1, 2, and 3.

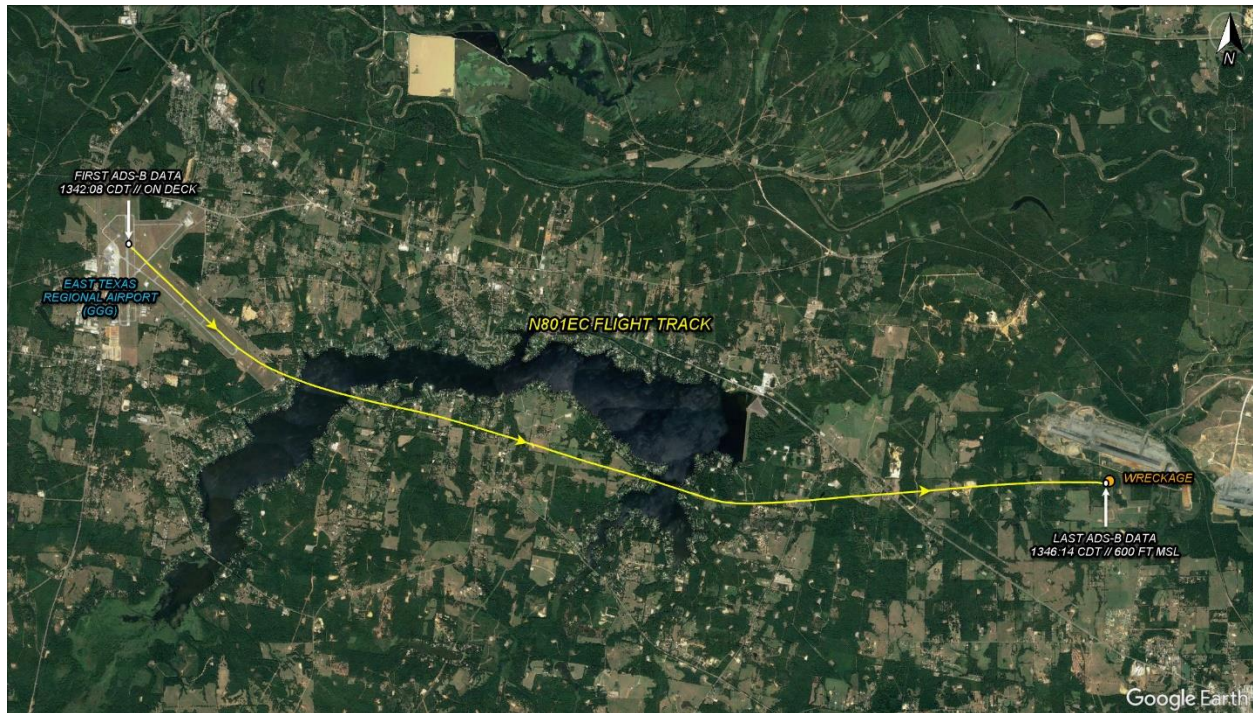


Figure 1. Flight Path (ADS-B Data)



Figure 2. Flight Path Elevation View (ADS-B Data)



Figure 3. Final Flight Track (ADS-B Data)

Six minutes after takeoff, radio and radar communications were lost and controllers initiated alert notice procedures. There were no radio distress calls heard from the pilot.

There were no eyewitnesses to the accident; however, a local resident located about 1 mile from the accident site reported that he was inside his residence when he heard and felt a “boom” that shook the windows. He immediately saw black smoke rising, found the wreckage, and called 911.

D. Airframe and Engine Examination

1.0 Accident Site

The accident site was located about 1430 at grid coordinates N 32.353332 W N -094.54103, at an elevation of 361 feet MSL. The aircraft impacted the vegetated terrain in a nose-down, vertical flight attitude.

2.0 Airframe Examination

The forward fuselage and cabin were embedded into the ground and were mostly consumed from a post-impact fire. The empennage and aft fuselage were folded forward over the cabin area and were charred and consumed by fire. Both left and right wings showed leading edge aft crushing along their respective spans. Portions of both wings were charred, melted, and consumed by fire. Flight control

continuity was confirmed. The elevator trim cables were found at their nose down stops indicating the elevator was trimmed full nose up. The airplane's instrument panel, avionics, autopilot, and engine controls were broken out, fragmented, melted and consumed by the post-impact fire. Avionics and instrument tubing and wiring that was behind the panel were melted and consumed by the fire. A functional test of the autopilot system could not be performed due damage that it sustained in the accident.

3.0 Engine Examination

Both the left and right engine nacelles were separated from the wings and the engine and propeller assemblies were embedded in 3-foot-deep craters forward of the main airplane wreckage. The engines sustained heavy impact damage and the crankshafts were fractured torsionally and separated immediately aft of the flanges. An examination of the engines revealed no preaccident failures or malfunctions that would have precluded normal operations.

4.0 Propeller Examination

Both propellers were fractured torsionally and separated at their crankshafts immediately aft of the flanges. All three blades on the left and right propellers were bent aft and showed leading edge polishing and chordwise rubs and scratches. The spinners were separated, and the hub pistons were broken out.

5.0 Aircraft and Owner/Operator Information

In March 2021, the pilot requested maintenance work for his airplane at a repair station, which included the installation of a new autopilot and a Garmin G5 Direct Gyro/Horizon Situation Indicator on the pilot side of the instrument panel.

On the day of the accident, a mechanic at the FBO reported that he pulled the airplane out of the hanger for the pilot, and the pilot went to get fuel and have the propellers balanced before his flight. The mechanic explained to the pilot that he should not engage the autopilot until he was at least 5,000 ft agl or higher in altitude, a standard procedure he gave all pilots testing an autopilot. The pilot started the engines and sat on the ramp for about 15 minutes and then attempted to call the maintenance shop about the autopilot. The pilot shutdown the engines and told the mechanic that he could not get the autopilot to work. The mechanic got in the airplane and showed the pilot where the main autopilot and trim master switches were located and showed him that the autopilot passed a self-test. He then told the pilot to try another autopilot self-test with engines running, and if it did not pass a self-test, to shut down. The pilot ran the engines for about 5 to 10 minutes and then departed.

6.0 Meteorological Information

The weather conditions at GGG at 1353 CDT were clear skies, 10 miles visibility, wind 310° at 7 knots, temperature 21°C, dew point 3°C, and altimeter 30.04 inches Hg.

Submitted by:

Alex Lemishko
Investigator-in-Charge