

National Transportation Safety Board

Office of Research and Engineering

Washington, D.C. 20594

Performance Study

Specialist Report

Marie Moler

A. ACCIDENT

Location:	Hatboro, Pennsylvania
Date:	August 8, 2019
Time:	06:15 EDT
Airplane:	Beech F33A, N4082S
NTSB Number:	ERA19FA240

B. SUMMARY

On August 8, 2019, about 06:15 eastern daylight time, a Beech F33A, N4082S, was destroyed when it impacted a residential area in Hatboro, Pennsylvania. The private pilot and two passengers were fatally injured. The personal flight was operated by the pilot under the provisions of Title 14 *Code of Federal Regulations* Part 91. Instrument meteorological conditions prevailed and an instrument flight rules flight plan was filed for the flight, which originated from Northeast Philadelphia Airport (PNE), Philadelphia, Pennsylvania, about 06:12, and was destined for Ohio State University (OSU) Airport, Columbus, Ohio.

C. PERFORMANCE STUDY

The aircraft was equipped with automatic dependent surveillance – broadcast (ADS-B) which recorded latitude and longitude from GPS and pressure and geometric altitude every one second.

Weather Observations

The 05:54 recorded weather observation at PNE, which was located about 6 miles southeast of the accident site, included an overcast ceiling at 800 ft, visibility five statute miles, haze, and calm wind. The temperature was 22°C (72°F), the dew point was 19°C (66°F); and the altimeter setting was 29.77 inHg.

Flight Path

Figure 1 shows the accident flight path. The flight was approximately six nautical miles long and lasted about two and a half minutes. Figure 2 shows the altitude profile and calculated ground and

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airspeeds of the flight and Figure 3 shows calculated pitch and roll attitudes of the airplane based on a basic aerodynamic model. The airplane took off from PNE, elevation 119 ft, and climbed while gaining airspeed. By 06:13:20, the airplane had reached an airspeed of 140 kts. At 06:13:30, the airplane banked right to about 15° right wing down and turned from a heading of 325° to a heading of 350°. During the climb, the airplane's pitch did not exceed 10° nose up. At 06:13:57, the airplane reached a maximum altitude of 1,186 ft and just after 06:14 it began to descend. The airplane descended at a rate of 2,000 ft/min while gaining airspeed. It banked left to approximately 20° left wing down at 06:13:55, then banked right to approximately 30° right wing down at 06:14:15, before coming back to wings level just before the end of the data. The final calculated airspeed was 180 kts and last recorded altitude, at 06:14:20, was 586 ft. Terrain elevation in the area of the impact was about 230 ft.

The airplane was equipped with a Garmin G5 with Electronic Stability Protection. This system automatically adjusts flight controls if the airplane exceeds attitude or airspeed limits. The system was configured to activate if roll exceeded 45°, pitch exceeded 20° nose up or -15° nose down, or the airspeed was less than 70 kts or greater than 198 kts. During this accident flight, none of these parameters were exceeded, even during the final descent.

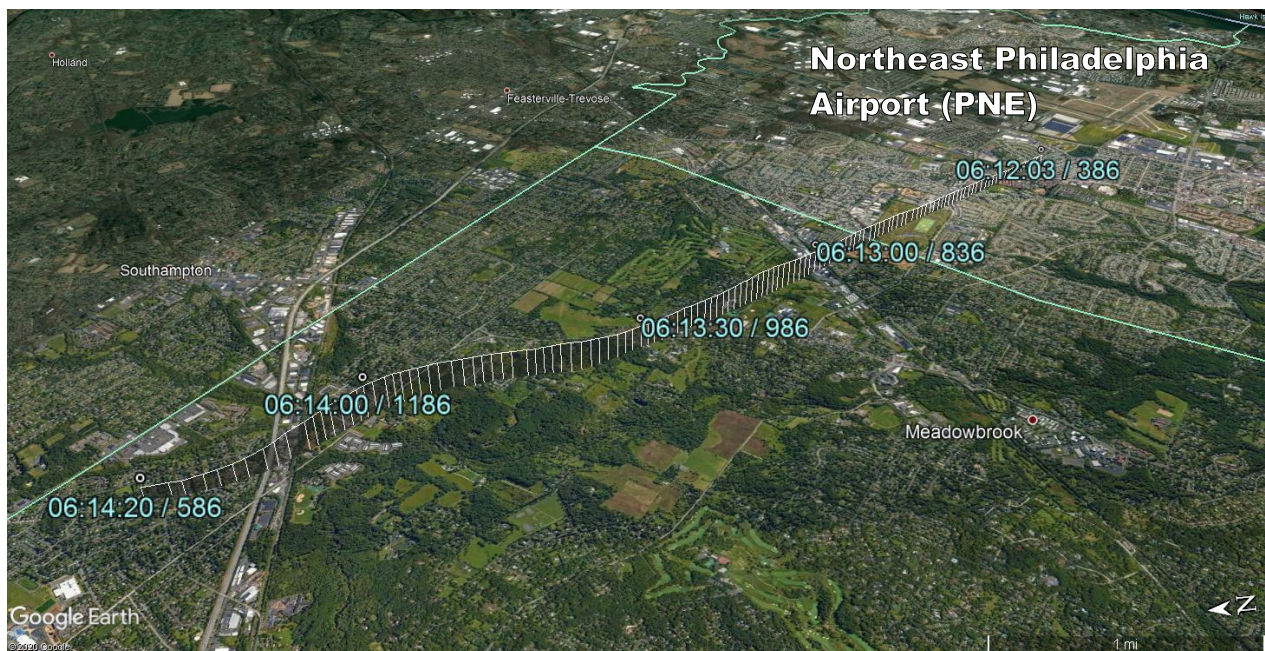


Figure 1. Accident flight. Annotations indicate time and altitude.

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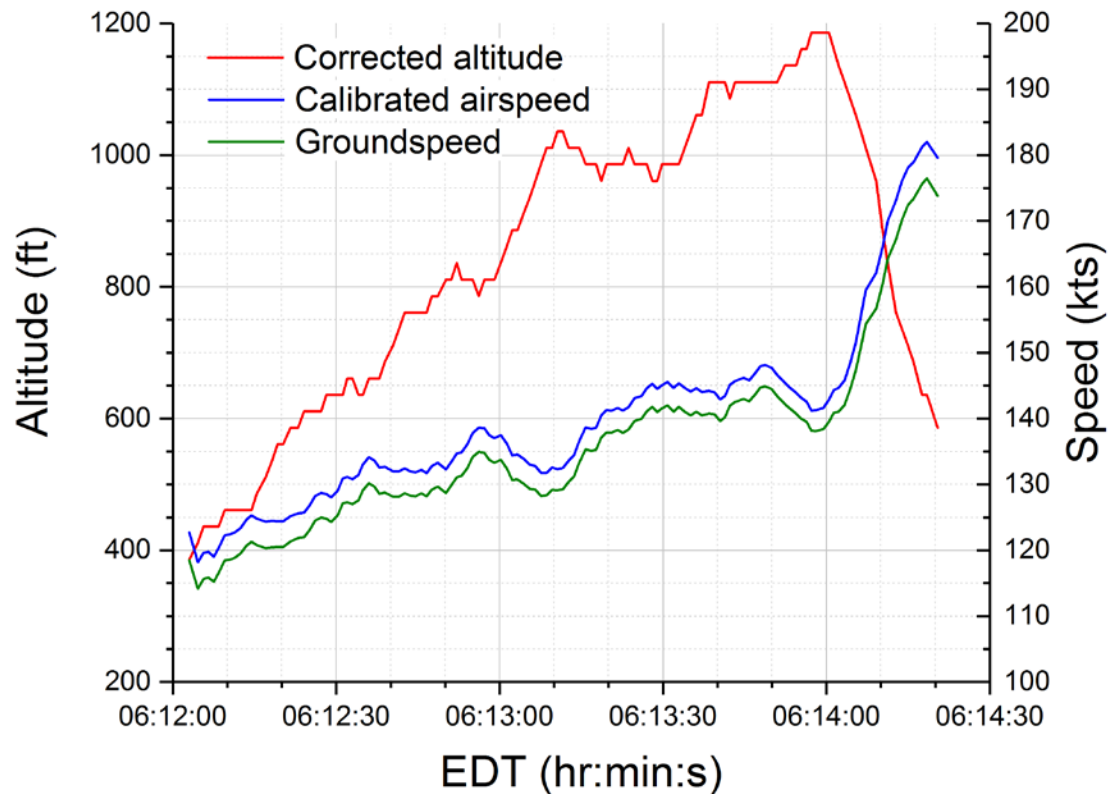


Figure 2. Accident flight altitude and calculated ground and airspeeds.

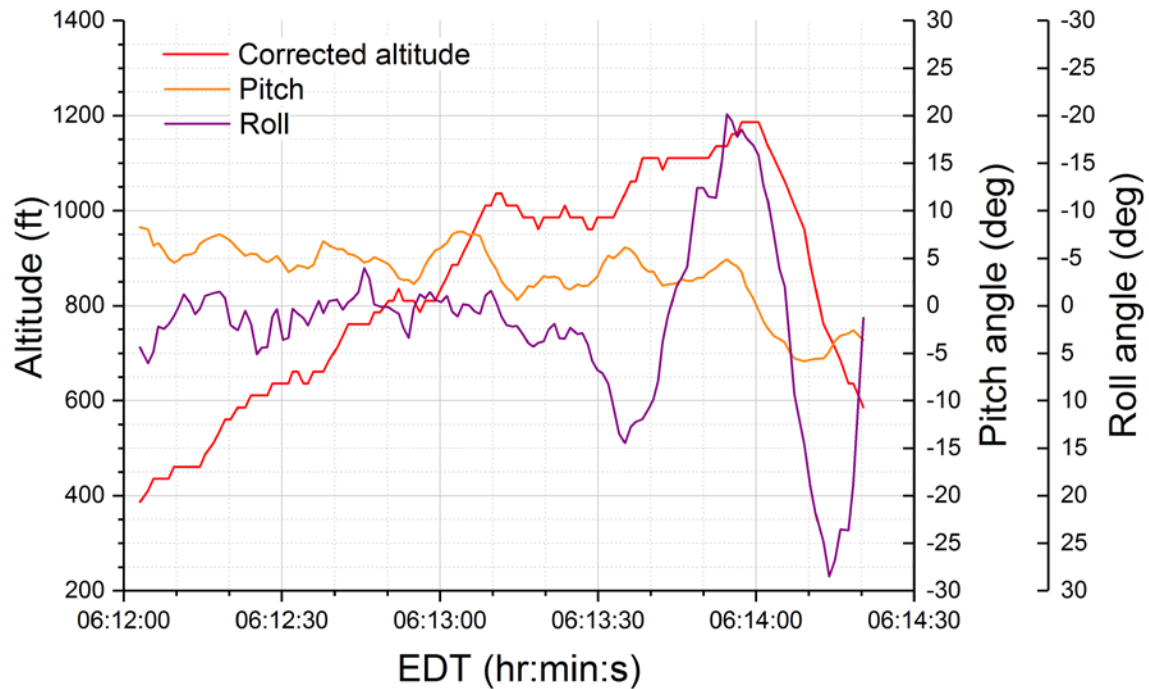


Figure 3. Accident flight altitude and calculated pitch and roll.

D. CONCLUSIONS

The airplane took off from PNE airport and climbed to 1,186 ft while at an airspeed of about 140 kts. It then descended at a rate of about 2,000 ft/min. The airplane's calculated airspeed, pitch, and roll did not exceed the settings for the Garmin G5 Electronic Stability Protection system.

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