

National Transportation Safety Board
Office of Research and Engineering
Washington, D.C. 20594

Performance Study

Specialist Report
Marie Moler

A. ACCIDENT

Location:	Rhine, Georgia
Date:	September 20, 2017
Time:	0605 EDT
Airplane:	Cessna 150G, N3875J
NTSB Number:	ERA17FA330

B. SUMMARY

On September 20, 2017, about 0605 eastern daylight time, a Cessna 150G, N3875J, was substantially damaged when it collided with terrain shortly after takeoff from a private airstrip near Rhine, Georgia. The student pilot, who was also the registered owner of the airplane was fatally injured. Night visual meteorological conditions prevailed for the personal flight conducted under the provisions of 14 *Code of Federal Regulations* Part 91. No flight plan was filed for the flight that was destined for Turner County Airport (75J), Ashburn, Georgia.

C. PERFORMANCE STUDY

The airplane was equipped with a Garmin GPSMAP 396. The device recorded the date, time, latitude, longitude, GPS altitude, and an averaged groundspeed and track. The last recording on the device was the accident flight.

Weather was reported at 06:35 at Fitzgerald Airport (FZG), Fitzgerald, Georgia, which was located about 16 nautical miles southwest of the accident site. The report was winds calm, visibility three miles, mist, clear skies, temperature 22°F, dew point 22°F, and an altimeter setting of 30.02 inches of mercury.

Figure 1 shows the accident flight path. The aircraft took off from the private airfield at approximately 05:59:47. It climbed while turning right to an altitude of 407 ft at 06:00:40. It then descended to 256 ft while continuing the right turn. The airplane then climbed in a tightening right turn to a maximum altitude of 666 ft at 06:01:11, before quickly losing altitude while rolling right. By 06:01:24 the airplane had descended to 226 ft. The last GPS data point was at 06:01:33 at an altitude of 279 ft.

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Figure 1. Aircraft flight path shown with times and recorded altitude. The Google Earth imagery is from 2014 and does not reflect the current airfield at the location.

Figure 2 shows the recorded altitude and calculated calibrated airspeed and groundspeed for the flight path. The Garmin device also recorded an averaged groundspeed and the numbers were very similar to those calculated in this Study. The airplane's maximum calibrated airspeed was 95 kts and occurred at 06:00:50, when it had descended to 256 ft after the initial climb. The airplane then began to climb while losing airspeed, culminating in a minimum calibrated airspeed of 32 kts at a maximum altitude of 666 ft. The airplane then rolled right and lost 440 ft of altitude in 13 seconds. Figure 3 shows the airspeed and calculated bank angle from the flight path. After 06:01:02, the bank angle was increasingly right wing down as the airspeed decreased.

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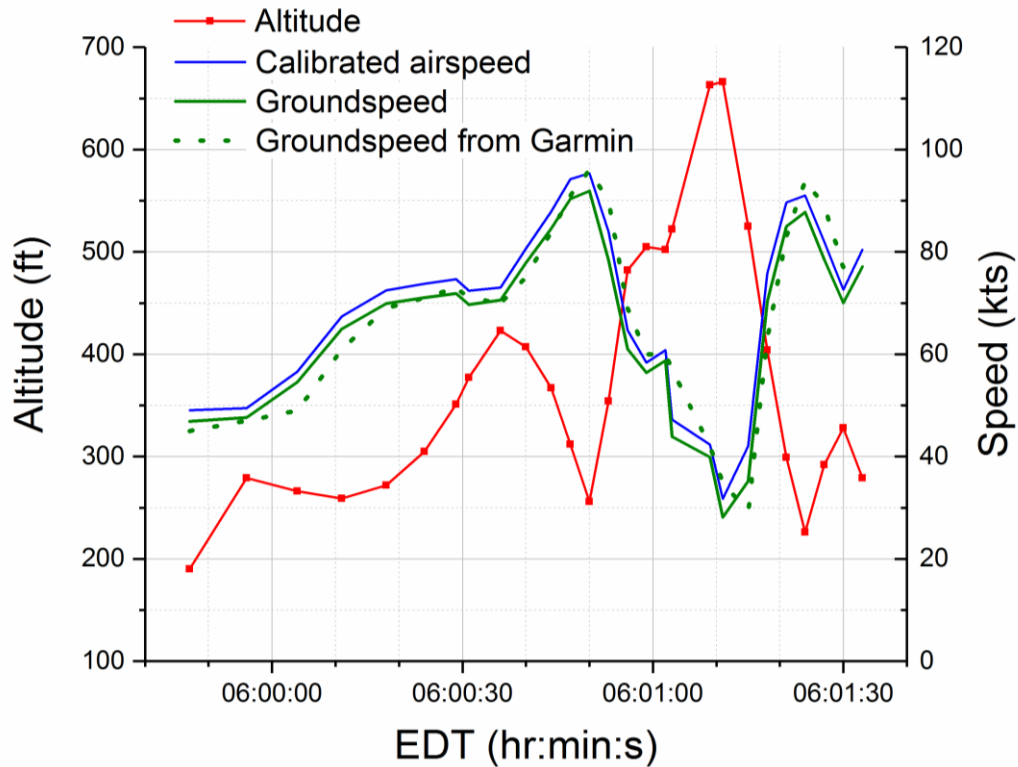


Figure 2. Aircraft flight altitude and calculated calibrated airspeed and groundspeed.

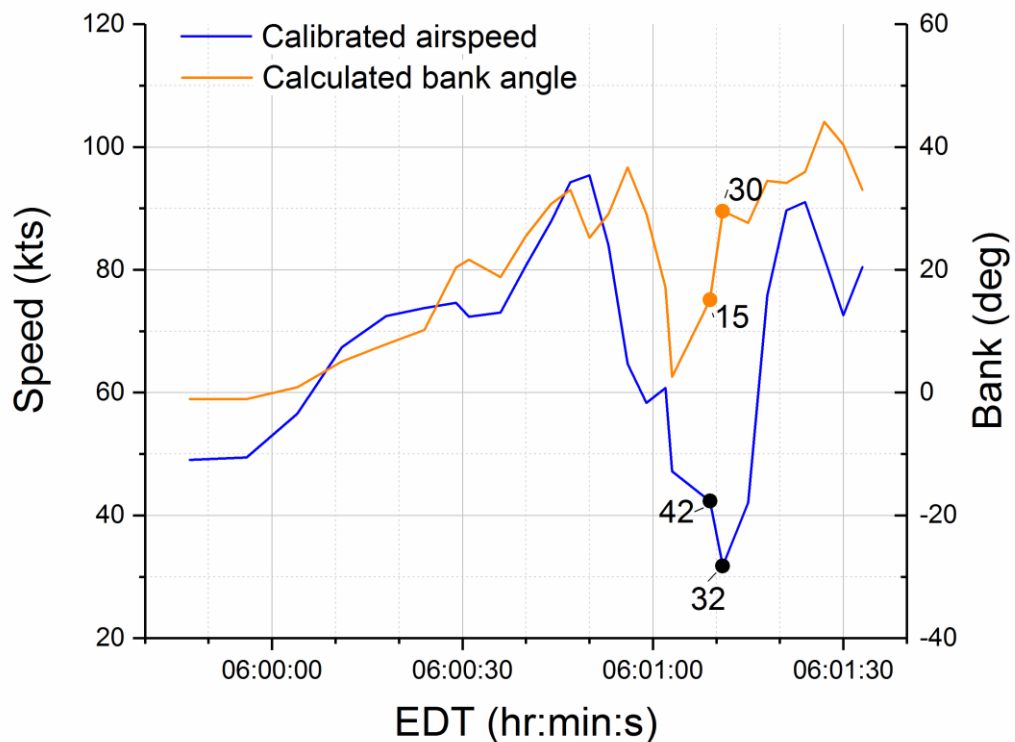


Figure 3. Calculated calibrated airspeed and bank angle. The two lowest airspeeds and their corresponding bank angles are noted.

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Increased bank angle raises the stall speed, as shown in Table 1. The flight path data resulted in a minimum calculated calibrated airspeed of 32 kts while at a calculated bank angle of 30° right wing down, which was below the minimum power-off stall speed for all configurations and bank angles. The prior calculated airspeed was 42 kts at a bank angle of 15° right wing down, which was also below the reported power-off stall speed values.

Table 1. Stall speeds for power off, gross weight of 1600 lbs [1].

Bank angle	Calibrated airspeed, kts			
	0°	20°	40°	60°
Flaps up	48	50	55	68
Flaps 20°	43	44	49	61
Flaps 40°	42	43	47	58

D. CONCLUSIONS

At 06:00:50 the airplane began to climb while losing airspeed in a banked right turn. During the climb, the airplane slowed below all reported power-off stall speed values before rapidly losing altitude while rolling right. This behavior was consistent with aerodynamic stall.

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E. REFERENCES

1. Owner's Manual for Cessna 150G. Cessna, 1967.