

National Transportation Safety Board

Office of Research and Engineering

Washington, D.C. 20594

Performance Study

Specialist Report

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A. ACCIDENT

Location: Cottage Grove, Minnesota
Date: September 13, 2020
Time: 14:32 Central daylight time (CDT)
Airplane: Cessna 172, N8488L
NTSB Number: CEN20LA392

B. SUMMARY

On September 13, 2020, at 14:32 central daylight time, a Cessna 172I airplane, N8488L was destroyed when it was involved in an accident near Cottage Grove, Minnesota. The pilot and two passengers were fatally injured. The airplane was operated as a Title 14 Code of Federal Regulations (CFR) Part 91 personal flight.

C. PERFORMANCE STUDY

This performance study is based on Automatic Dependent Surveillance-Broadcast (ADS-B) data provided by the Federal Aviation Administration (FAA). ADS-B broadcasts an airplane's Global Positioning System (GPS) position and other data to the ground where it is recorded. The GPS position has an accuracy of approximately 20 meters (m) in both the horizontal and vertical dimensions.

The airplane took off on a south-southeasterly heading from South St. Paul Airport (SGS) at about 14:28 (Figure 1). It climbed while at an airspeed of about 70 kts until it reached about 1,700 ft above mean sea level (msl) where it leveled and increased its airspeed to 90 kts (Figure 2). The airplane turned onto a southwesterly heading and resumed climbing until reaching about 2,000 ft msl. It maintained this altitude at a speed of about 90 kts for the final minute of flight.

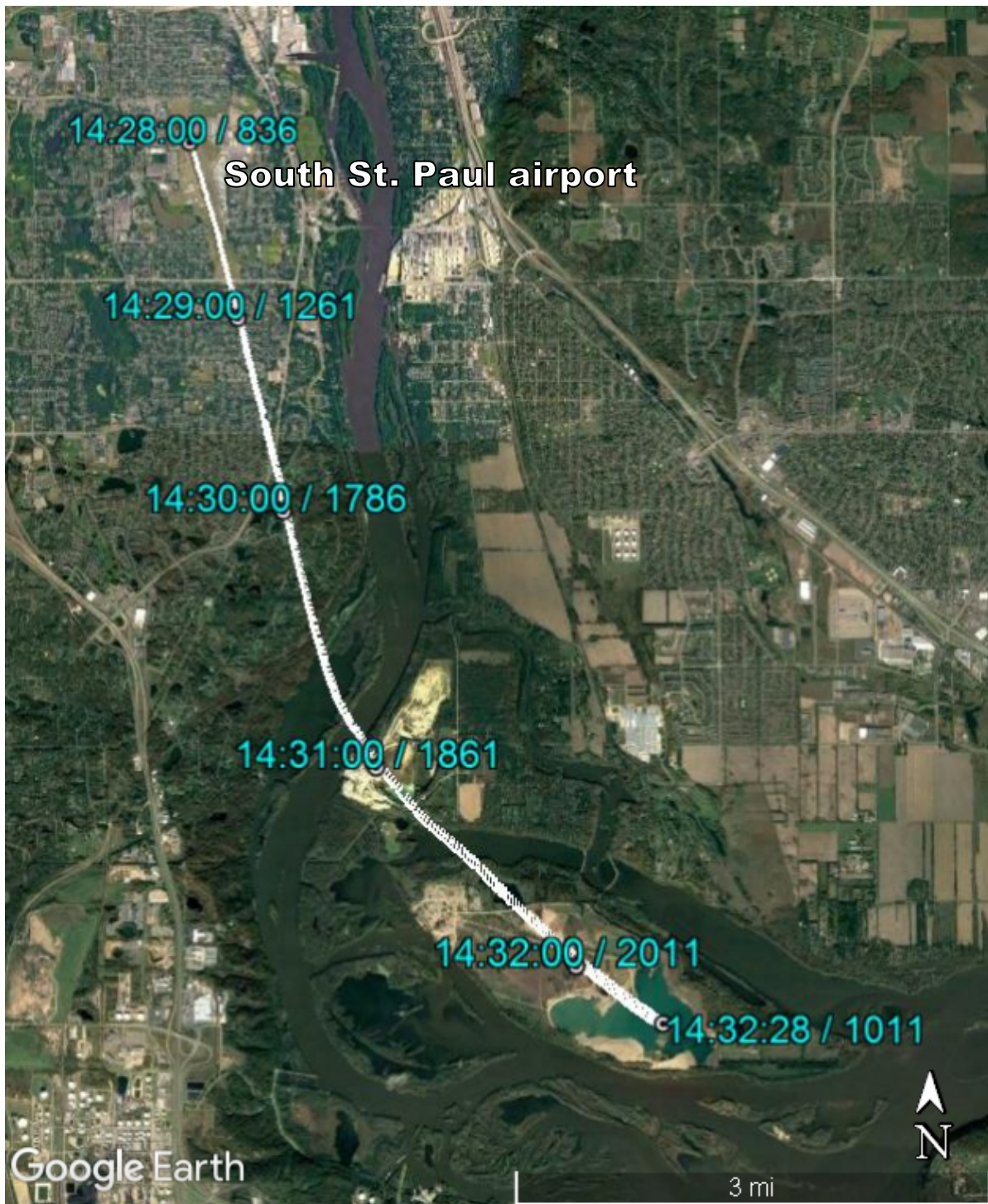


Figure 1. Accident flight in white with select times and altitudes (msl) annotated in blue.

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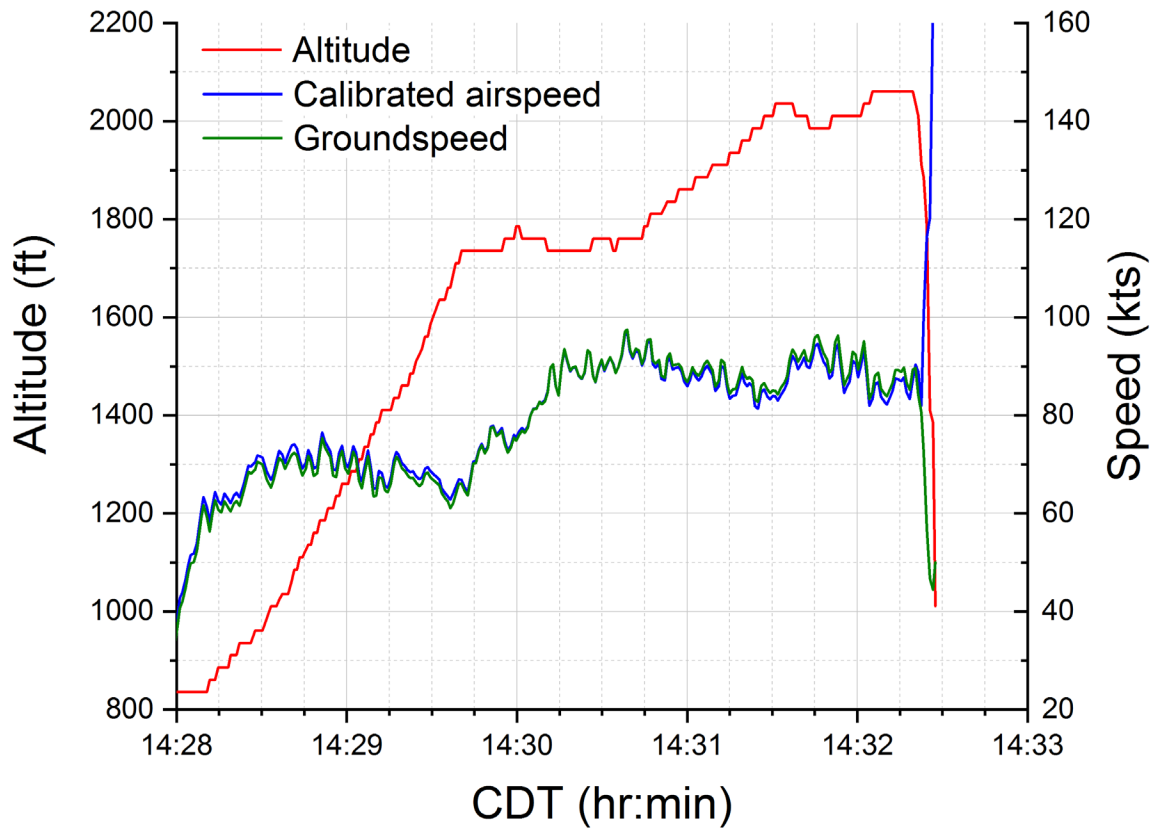


Figure 2. Altitude (msl) and calculated groundspeed and calibrated airspeed.

At 14:32:20, the airplane began to rapidly descend, losing over 1,000 ft of altitude in seven seconds for a descent rate over 8,000 fpm. The final ADS-B return at 14:32:28 was at about 1,000 ft msl, about 300 ft above the surface of the lake the airplane impacted (Figure 3). During the descent, the airplane's heading did not change. The FAA reported the impact coordinates as 44:46:45 North and 92:58:20 West.

The airplane's maximum maneuvering speed is listed as 122 mph or 106 kts [1]. Its wings-level, flaps up stall speed is 57 mph or 50 kts. The airplane's speed of 90 kts before the sudden loss of altitude was within normal flight and not close to any listed limitations.

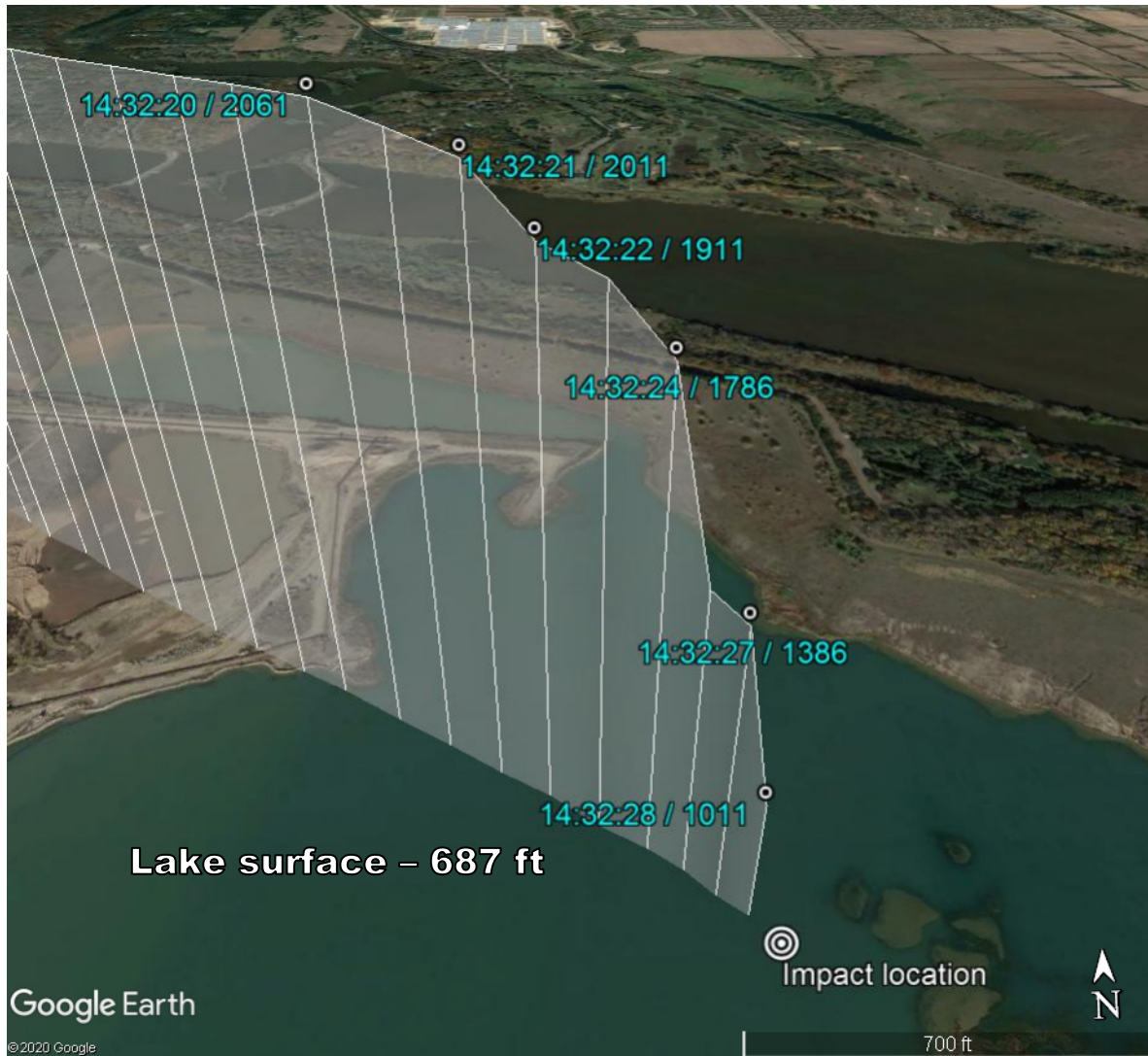


Figure 3. End of flight with selected times and altitudes (msl) in blue. The elevation of the lake surface was 687 ft.

D. CONCLUSIONS

The airplane's flight path and speed do not show any evidence of performance-related issues leading up to the sudden descent. The airplane began to descend at a rate greater than 8,000 fpm and the time from the beginning of the descent to the last ADS-B data point was a little more than seven seconds.

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E. REFERENCES

1. Cessna Model 172 and Skyhawk, Airplane Owner's Manual, Cessna Aircraft Company, 1968.