

National Transportation Safety Board

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AIRPLANE PERFORMANCE STUDY

By

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A. ACCIDENT

Location: Anchor Point, Alaska
Date: December 8, 2023
Time: 1315 Alaska standard time (AKST)
Airplane: Piper PA-18-150, N1880P

B. SUMMARY

On December 8, 2023, about 1315 Alaska standard time (AKST), a Piper PA-18-150 airplane, N1880P was destroyed when it was involved in an accident near Anchor Point, Alaska. The pilot and passenger were fatally injured. The airplane was operated as a *Title 14 Code of Federal Regulations* Part 91 personal flight.

C. PERFORMANCE STUDY

1.0 Aircraft

The airplane involved was a PA-18-150, known as a Super Cub. It is a two-seat, single-engine airplane with a high-lift wing.



Figure 1. PA-18-150, N1880P.

2.0 Available Data

This performance study is based on data from an onboard Garmin Aera 500. The device recorded the airplane's GPS latitude, longitude, and altitude and groundspeed and track every three to four seconds. The data extended from 11:16:56 to 13:11:14.

3.0 Weather

Weather was recorded for 12:53 at Homer Airport (HOM), 14 nautical miles southeast of the wreckage location. The temperature was reported as 28°F (-2°C), the dew point was 19°F (-7°C), and the barometric setting was 29.74 inHg. Winds were 9 kts from 200°. There were scattered clouds at 2,000 ft above ground level (AGL) and there was a broken ceiling at 4,500 ft AGL. Visual meteorological conditions prevailed.

4.0 Flight Path

The airplane departed from a private airstrip near King Salmon, Alaska, at about 11:23 AKST. It was expected to fly northeast, cross the Cook Inlet to Anchor Point, Alaska and then turn southeast towards its intended destination of Homer, Alaska. Figure 2 shows the airplane's flight path and Figure 3 shows the altitude and speed profile. The airplane climbed to an altitude of 9,680 ft by 12:46:38 as it started to cross the Cook Inlet.

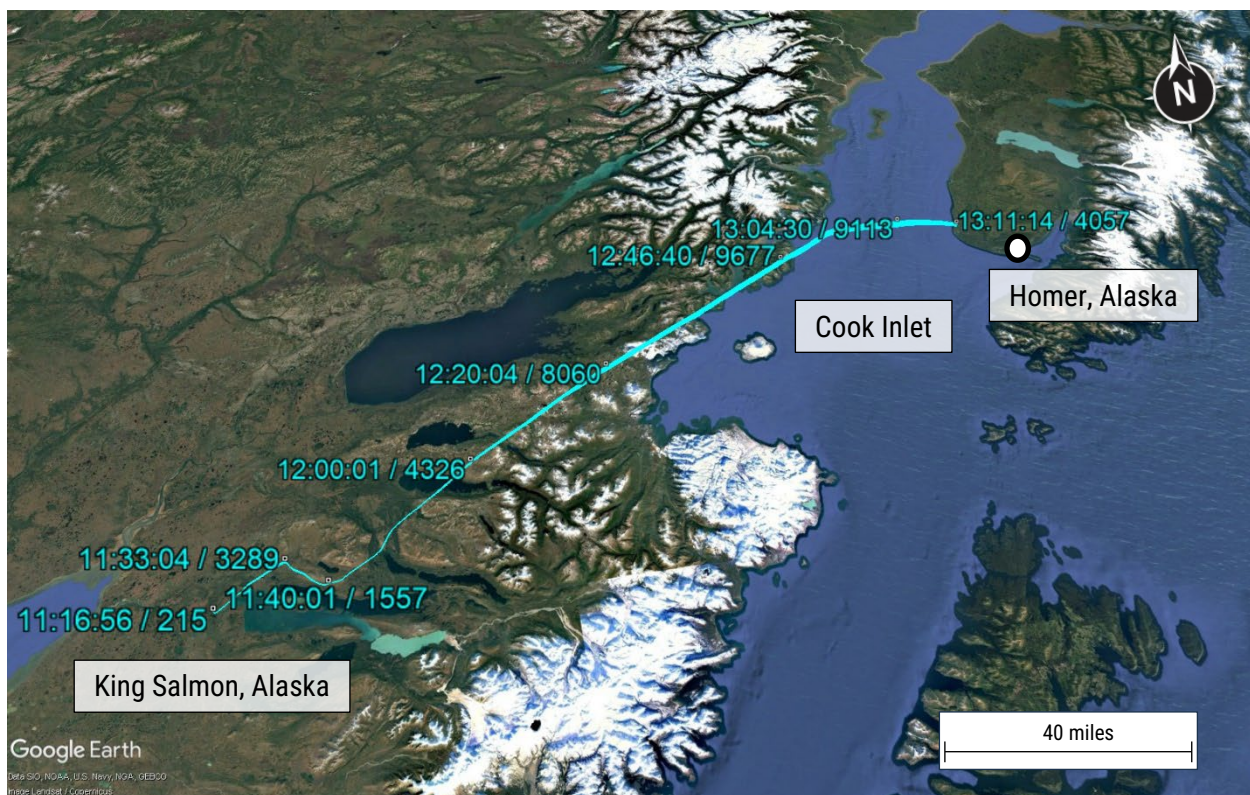


Figure 2. GPS flight path with selected times and altitudes notated.

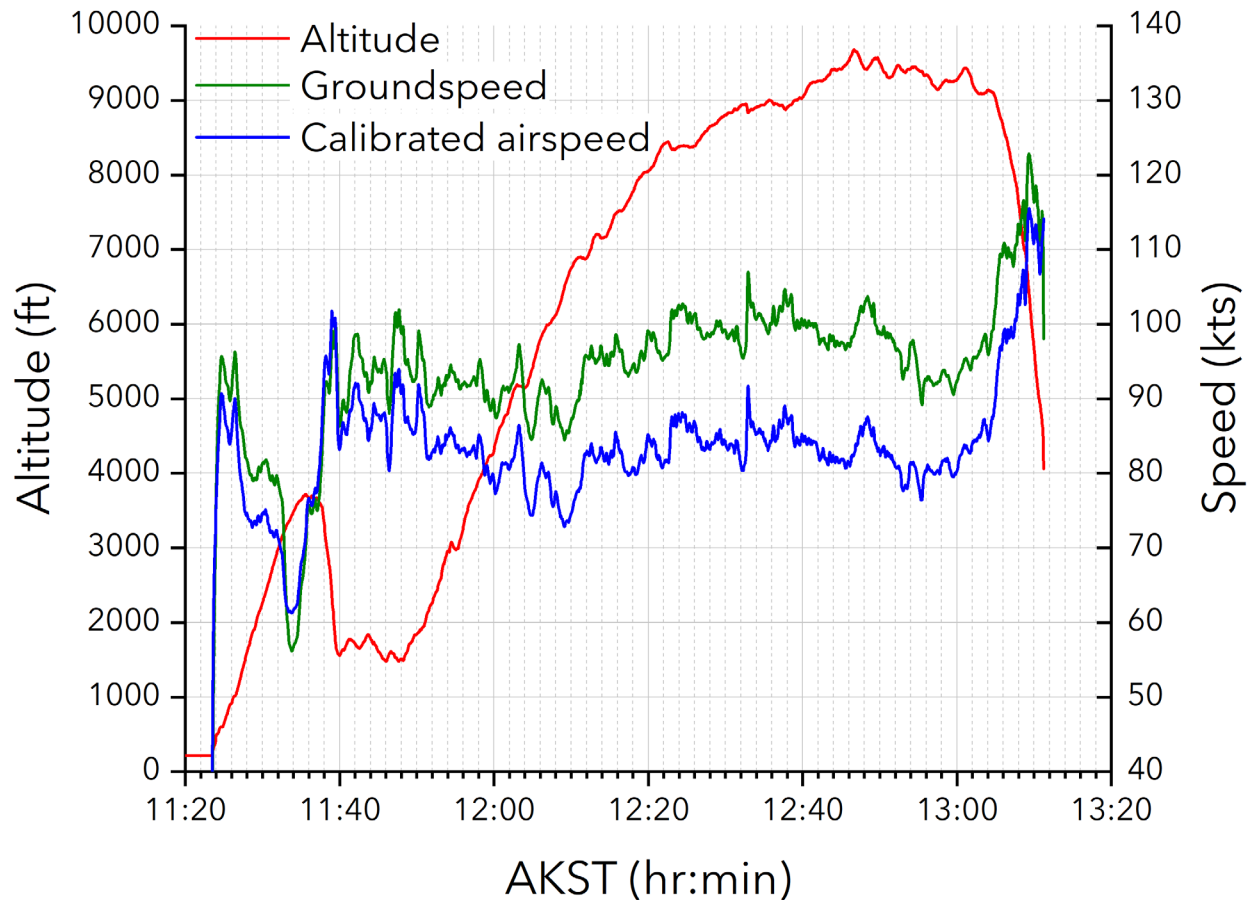


Figure 3. Corrected altitude with recorded groundspeed and calculated calibrated airspeed.

Beginning at 13:04:30, the airplane began to descend while still over the water. Figure 4 shows the end of flight and Figure 5 shows the airplane's descent rates and airspeed. The airplane's speed increased as it descended. Just after 13:11 the airplane was again over land and its descent rate increased to 4,000 fpm.



Figure 4. GPS flight path with selected times and altitudes notated.

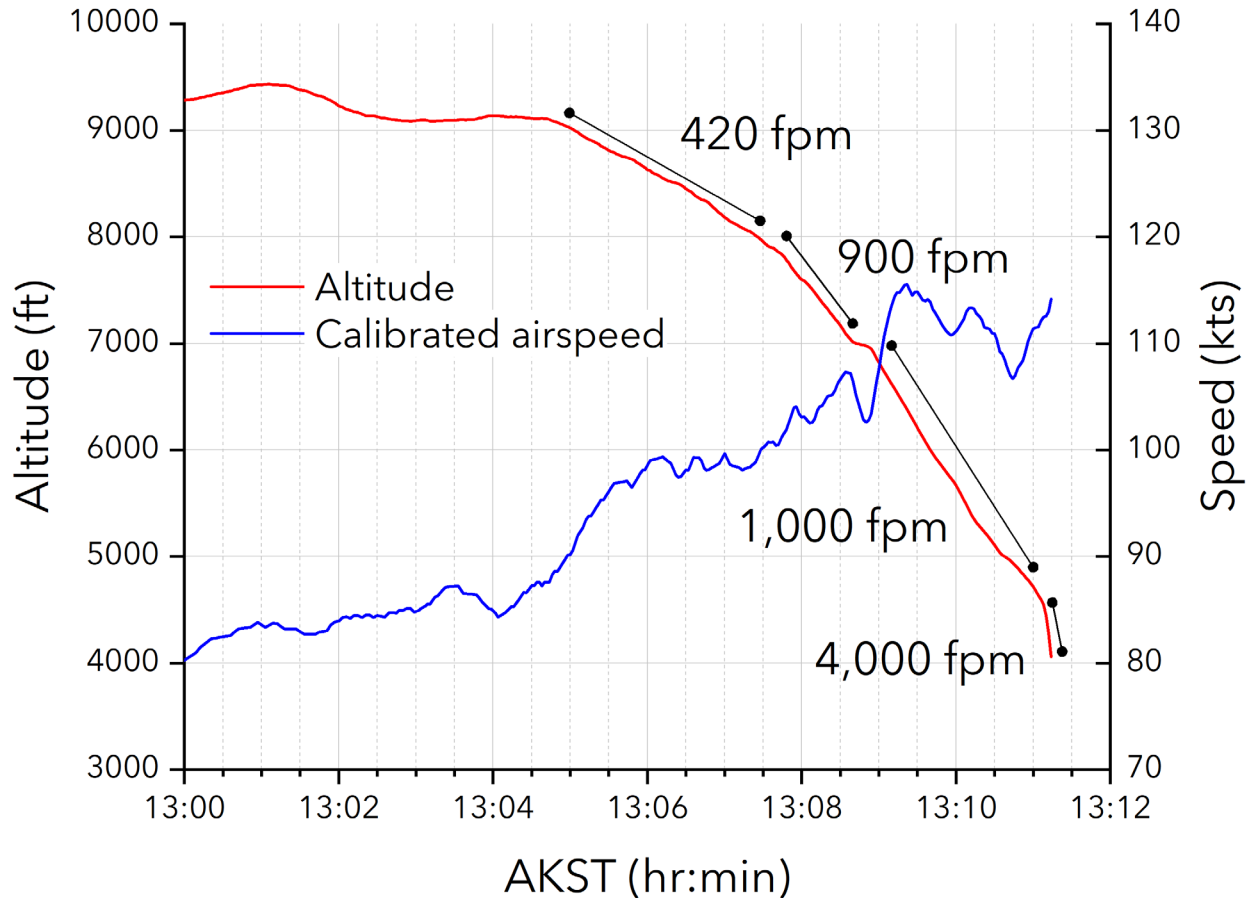


Figure 5. Corrected altitude with calculated calibrated airspeed.

GPS data ended at 13:11:14 when the airplane was at an altitude of 4,057 ft and a calibrated airspeed above 110 kts. The wreckage was located 900 ft from the final GPS location, but oriented in the opposite direction of the final flight track (Figure 6). The elevation in the area of the wreckage is 200 ft.

The listed maneuvering speed, V_a , for the PA-18 is listed as 83 kts, indicated airspeed¹. The maximum cruising speed is 106 kts and its never exceed speed, V_{ne} , is 133 kts [1]. During the descent over water, the airplane had been gaining airspeed above the maneuvering speed and maximum cruise speed. It remained below the never exceed speed, but the airspeed was increasing as the data ended.

¹ Indicated airspeed is usually within a few knots of the calculatable calibrated airspeed.

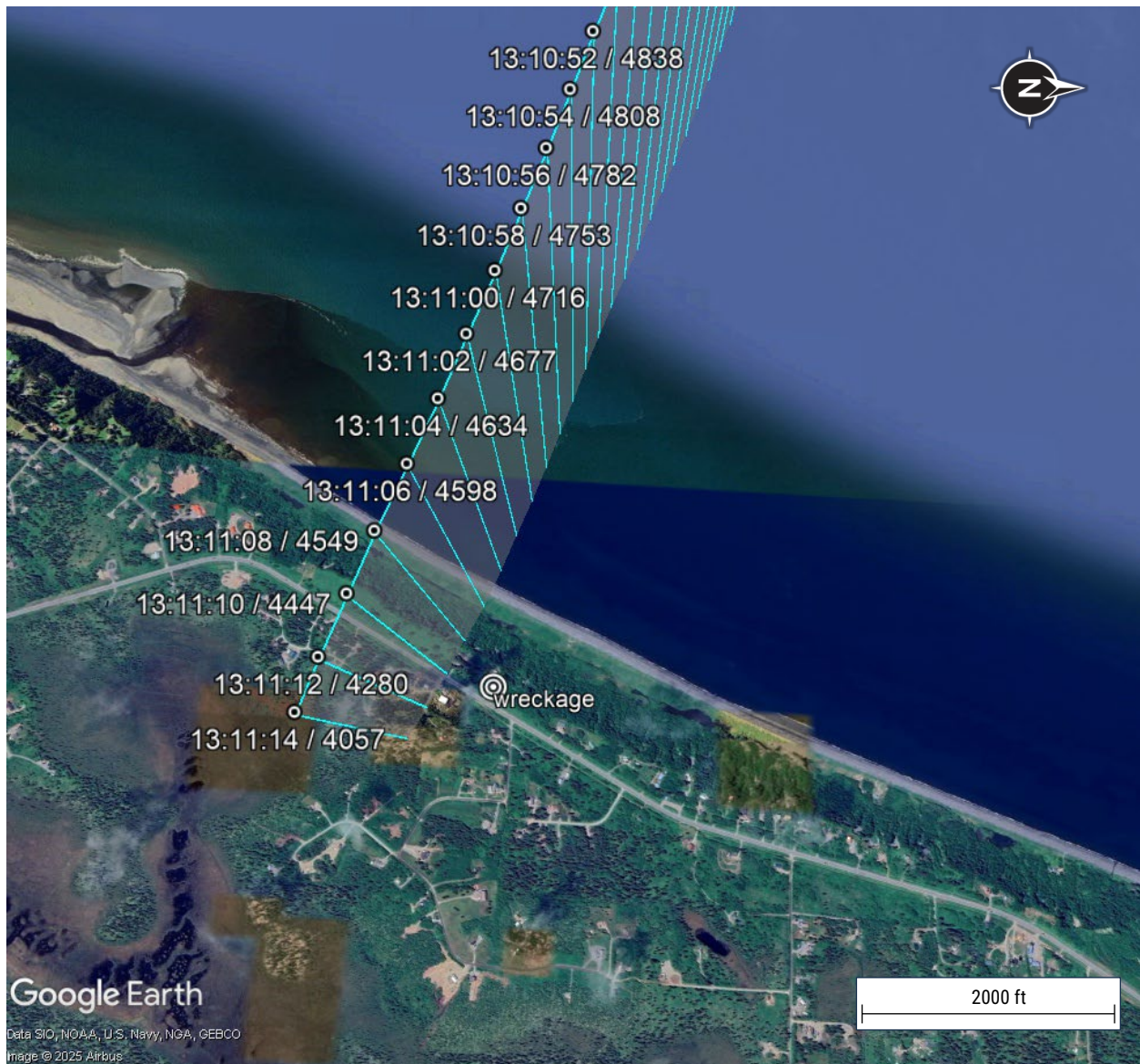


Figure 6. GPS flight path with selected times and altitudes notated and the wreckage located.

D. SUMMARY

The airplane departed from a private airstrip near King Salmon, Alaska, at about 11:23 AKST. It climbed to an altitude of 9,680 ft by 12:46:38 and crossed the Cook Inlet. The airplane began to descend while over the water, its descent rate and airspeed increasing. Just after 13:11 the airplane was again over land and its descent rate increased to 4,000 fpm and its calibrated airspeed to 110 kts as the data ended. The airplane's speed was above its listed maneuvering and maximum cruising speed so large control inputs made after the end of the data would have put it at risk of structural failure.

E. REFERENCES

1. Airplane Flight Manual – Piper Model PA-18 “150” and PA-18A “150” (1750 Pounds Gross Weight), Piper Aircraft Corporation, Lock Haven, Pennsylvania, 1954.