

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

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Global Positioning System Device

Specialist's Factual Report Marie Moler

1. EVENT

Location: Rhine, Georgia
Date: September 20, 2017
Aircraft/ID: Cessna 150G – N3875J
Operator: Private
NTSB Number: ERA17FA330

2. ACCIDENT 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.

3. DETAILS OF DEVICE INVESTIGATION

The National Transportation Safety Board's Vehicle Recorder Division received the following device:

Device: Garmin GPSMAP 396
Device Serial Number: 125002690

The Garmin GPSMAP 396 was found slightly damaged (Figure 1). Power was applied to the unit using NTSB laboratory equipment. Device startup was consistent with normal operation. GPS data was downloaded using normal methods and Garmin's Mapsource software.

3.1. Garmin GPSMAP 396 Device Description

The Garmin GPSMAP 396 is a portable GPS receiver capable of storing date, route-of-flight, and flight-time information for up to 50 flights. A detailed tracklog – including latitude, longitude, date, time, and groundspeed information – is stored within the unit whenever the receiver has a lock on the GPS navigation signal. All recorded data is

stored in non-volatile¹ memory. An internal button-battery is used to back-up power to the internal memory and real-time clock during those periods when main power is removed.

3.2. GPS Data Description

The data extracted included 71 sessions from September 1, 2017² through September 20, 2017. The last recorded session on September 20, 2017 was determined to be related to the accident and is included in this report. The recording began at 9:53:28 UTC and ended at 10:01:33 and included the airplane's taxi, take-off, and flight.

3.3. GPS Parameters Provided

Table 1 describes data parameters provided by the GPS device. Date, Time, Latitude, Longitude, and GPS Altitude are recorded by the device. Groundspeed, Course, and Distance are derived from the recorded parameters.

Table 1: GPS Data Parameters

Parameter Name	Parameter Description
Date	Date for recorded data point (MM/DD/YYYY)
Time	Time (UTC) for recorded data point (HH:MM:SS)
Latitude	Recorded Latitude (degrees)
Longitude	Recorded Longitude (degrees)
GPS Alt	Recorded Altitude (feet)
Groundspeed	Average groundspeed between current and previous data point (knots)
Track	Average course between current and previous data point (degrees)

4. OVERLAYS AND TABULAR DATA

Graphical overlays were generated using Google Earth for the accident flight.

Figure 3 is a Google Earth overlay of the entire last recorded session. The map imagery shown in Google Earth is from 2014 and shows a field with trees. This imagery does not accurately reflect that the area, as of 2017, was a private airfield.

Figure 4 is a 3D detail view of the end of the last recorded session.

The tabular data used to create Figures 3 and 4 are included as Attachment 1. This attachment is provided in electronic comma separated value (CSV) format.

¹ Non-volatile memory is semiconductor memory that does not require external power for data retention.

² All dates and times are referenced to Coordinated Universal Time (UTC).



Figure 1: Garmin GPSMAP 396 (S/N 125002690)



Figure 2: Garmin GPSMAP 396 (S/N 125002690)



Figure 3: Google Earth overlay of last recorded session on September 1, 2017. Points are labeled in UTC time, GPS altitude, and groundspeed. The recording began at 9:53:28 UTC and ended at 10:01:33.

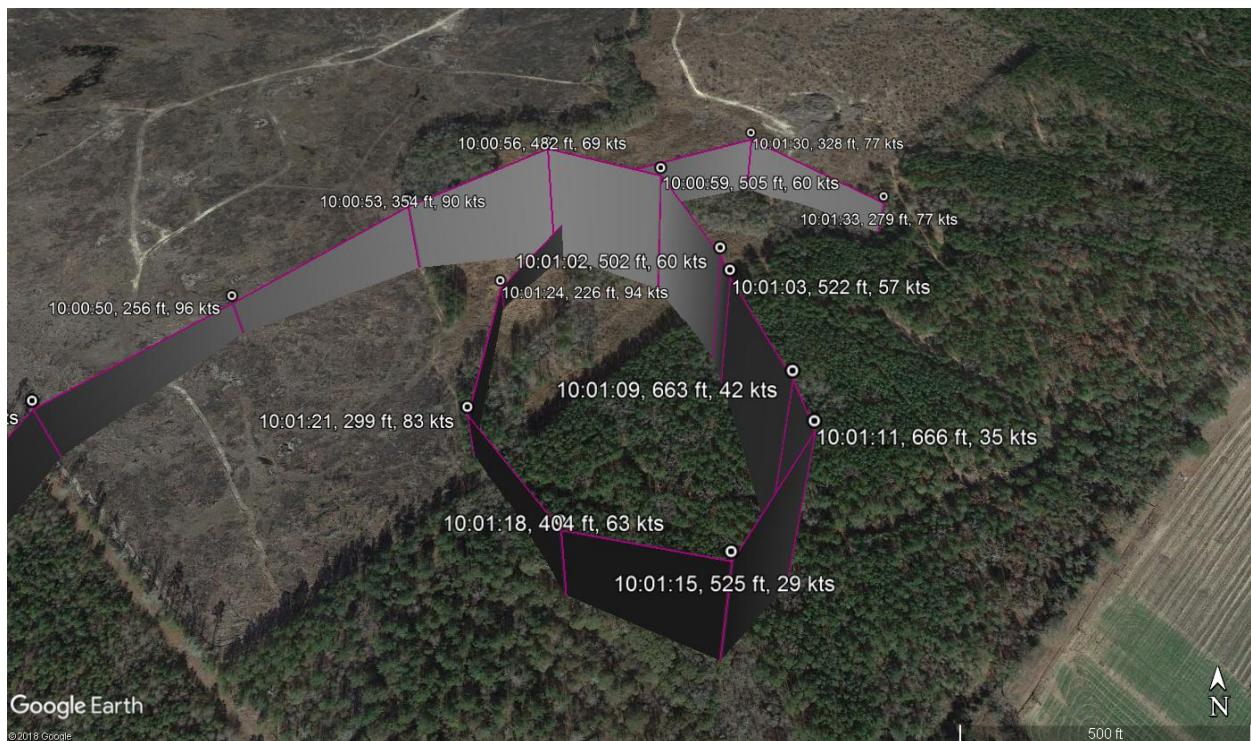


Figure 4: 3D detail view of end of last recorded session on September 1, 2017. Points are labeled in UTC time, GPS altitude, and groundspeed.