

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, D.C. 20594

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Global Positioning System Device

Specialist's Factual Report

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1. EVENT SUMMARY

Location: Okeechobee, Florida
Date: November 6, 2015
Aircraft: Zenith CH701
Registration: N56553
Operator: Private
NTSB Number: ERA16FA033

On November 6, 2015, about 1135 eastern standard time, an experimental, amateur-built, light-sport Zenith CH701 amphibian airplane, N56553, operated by a private individual, was destroyed when it impacted the ground in Okeechobee, Florida. The private pilot was fatally injured. Visual meteorological conditions prevailed and no flight plan had been filed for the flight that departed Homestead General Aviation Airport (X51), Homestead, Florida, destined for River Acres Airport (FD70), Okeechobee Florida. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following global positioning system (GPS) device:

Device Manufacturer/Model:	Garmin GPSMAP 276C
Serial Number:	109007188

3.1. Device Description

The Garmin GPSMAP 276 is a hand-portable GPS unit equipped with a detachable antenna and a 256 color TFT LCD display that is optimized for marine and automotive navigation. The unit employs a parallel 12 channel receiver and can be operated using external power, or alternatively by using an internal Li-Ion rechargeable battery. A

detailed track log – including latitude, longitude, date, and time for up to 10,000 points – is stored within the unit whenever the receiver has a lock on the GPS navigation signal. Once the current track log memory becomes full, new information either overwrites the oldest information or recording stops, depending on how the unit is configured. The current track log can be saved to long-term memory and 20 saved track logs can be maintained in addition to the current track log. Track log storage may be activated or de-activated at user discretion. All recorded data is stored in non-volatile memory. The unit contains hardware and software permitting the download of recorded waypoint, route, and track log information to a PC via a built-in serial port using the NMEA 0183 version 2.0 protocol. 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. Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had sustained significant damage from heat and fluid exposure (see figure 1). An internal inspection was performed. The main PC board was removed, cleaned, dried, and vacuum-baked for 5 hours. The board was then installed into a surrogate unit to support interface with a PC. Recorded waypoint, route, and track log data was successfully downloaded from the unit via the serial port.



Figure 1. Exterior view of damaged GPSMAP 276.

3.3. Data Description

The data extracted included 81 track logs spanning from September 4, 2007, through November 5, 2015. No track log was recorded on the day of the accident flight. The track logs recorded on November 5 were composed of 17 total points located near River Acres Airport in Florida – approximately 14 miles northwest of the accident location.