NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, D.C. 20594

October 25, 2012

17 - GPS Factual Report

by Bill Tuccio

A. EVENT

Location:	Fredericksburg, Virginia
Date:	September 29, 2012
Aircraft:	Cessna 150M
Registration:	N66246
Operator:	Private
NTSB Number:	ERA12FA583

B. GROUP - No Group

C. SUMMARY

On September 29, 2012, about 1715 eastern daylight time, a Cessna 150M, N66246, operated by a private individual, was substantially damaged during impact with terrain, following an in-flight loss of control during initial climb from Shannon Airport (EZF), Fredericksburg, Virginia. The commercial pilot and passenger were fatally injured. Visual meteorological conditions prevailed and no flight plan was filed for the planned local flight. The personal flight was conducted under the provisions of 14 Code of Federal Regulations Part 91.

D. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Laboratory received the following device:

GPS Manufacturer/Model:	Garmin GPS V
Serial Number:	unknown

Garmin GPS V Device Description

The Garmin GPS V is a battery operated, portable 12-channel GPS receiver equipped with a 4-gray level LCD display and built in antenna. The GPS V is capable of

storing position and altitude information in volatile memory[1]. Routes and custom waypoints may also be stored in memory. A detailed tracklog composed of latitude, longitude, date, time, and altitude information, sampled at user configurable intervals while the unit is powered up and receiving satellite signals, can also be stored. The unit contains hardware and software permitting the download of recorded waypoint, route, and track log information via a Garmin proprietary interface. The unit communicates with other electronic devices via a serial port employing the NMEA 0183 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.

GPS Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had sustained impact damage (see figure 1). An internal inspection was performed and no damage was discovered. Power was applied to the accident unit and recorded waypoint, route, and tracklog data was successfully downloaded from the unit via the proprietary interface connected to a PC serial port.

Figure 1. Photo of damaged device.

[1] Volatile memory requires a constant application of power to retain data. The instant power is removed from a volatile memory device, all stored data is lost.

GPS Data Description

Only 3 sets of points were in the track history on dates April 17, May 16, and September 20, 2012. The accident flight was not captured.