

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

December 10, 2014

Electronic Device Factual Report

Specialist's Factual Report
by Bill Tuccio, Ph.D.

A. EVENT

Location: Chester, South Carolina
Date: May 23, 2014
Aircraft: Grumman American AA1B
Registration: N8890L
Operator: Private
NTSB Number: ERA14FA260

B. GROUP

No Group was convened

C. SUMMARY

On May 23, 2014, about 1300 eastern daylight time, a Grumman American AA1B, N8890L, was substantially damaged when it impacted several trees and came to rest inverted in a heavily wooded area near Chester, South Carolina. The airplane was owned and operated by Soldiers Wings Aero Club and had departed from the Columbus County Municipal Airport (CPC), Whiteville, North Carolina, about 1130 with an intended destination of Heaven's Landing Airport (GE99), Clayton, Georgia. Day visual meteorological conditions prevailed and no flight plan had been filed. The commercial pilot and passenger were fatally injured. The personal flight was conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91.

D. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Laboratory received the following device:

Device Manufacturer/Model: Apple iPad
Serial Number: DMPK58XQF192

Apple iPad Device Description

The Apple iPad is a tablet computer with a high-resolution color touch-screen interface. All iPad devices support WiFi and Bluetooth connectivity, and use either 16, 32, or 64 GB of non-volatile memory¹ for storage (depending on model). Some devices also support data connectivity via existing cell-phone networks. The iPad implements its functionality by running programs called “Apps” capable of supporting web-browsing, email, audio/video playback, contact and calendar management, and numerous other specialized functions. User-installed Apps can be used to support functionality for electronic flight bags, flight planning and filing, aviation weather depiction, and electronic flight charts. Application data is stored in non-volatile memory and may include image, video, and position location information. Specialized application data may be stored in a proprietary file structure using numerous proprietary file formats. The amount and type of data stored varies based on the software version and configuration of the specific device.

Apple iPad Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed the device had sustained extensive structural damage, as shown in figure 1. The unit was disassembled and the internal board was removed, as shown in figure 2. The internal board was installed in a surrogate iPad; however, the surrogate unit would not start.

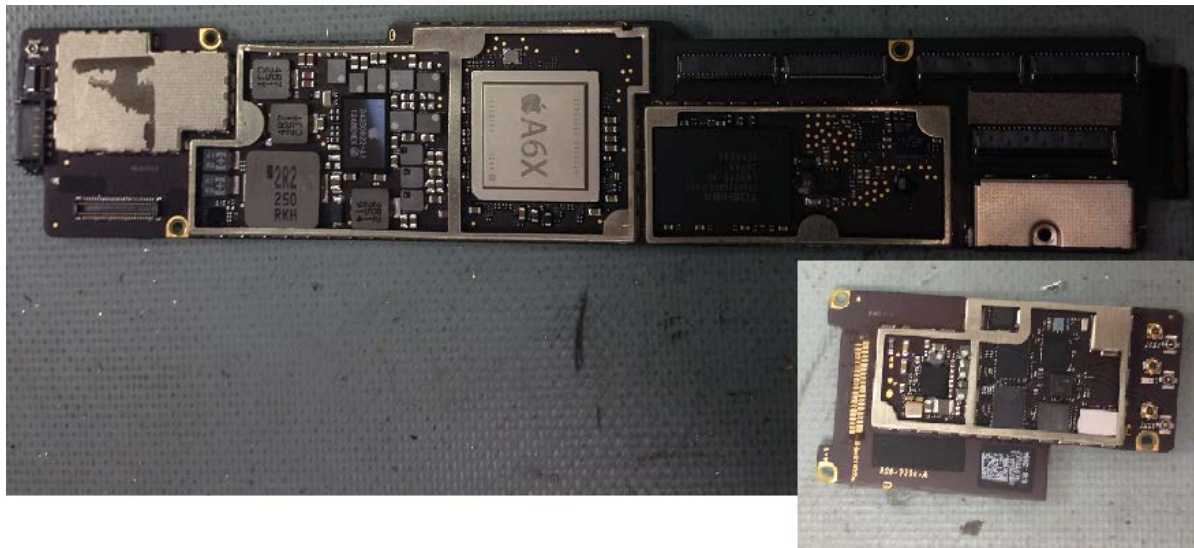
The internal board was sent to a chip-level recovery service for further recovery. The recovery service stated, “due of the severity and low-level nature of the failure in this case, no data was recoverable.”

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

Figure 1. iPad as received.



Figure 2. Internal board removed and cleaned.



Apple iPad Data Description

No data was recovered from the device.