

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

September 10, 2014

Electronic Device Factual Report

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

A. EVENT

Location: Brunswick, Georgia
Date: March 24, 2014
Aircraft: Piper PA-44-180
Registration: N923RS
Operator: ATP Aircraft 2, LLC
NTSB Number: ERA14FA168

B. GROUP - No Group

C. SUMMARY

On March 24, 2014, about 1745 eastern daylight time, a Piper PA-44-180, N923RS, was destroyed following an inflight breakup and subsequent impact in a waterway in a marsh area near Brunswick, Georgia. The two private pilots were fatally injured. The airplane was registered to and operated by ATP Aircraft 2, LLC and was operated under the provisions of Title 14 *Code of Federal Regulations* Part 91 as an instructional flight. Day visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan had been filed. The airplane had departed from the Concord Regional Airport (JQF), Concord, North Carolina, about 1551 EDT and had an intended destination of Jacksonville Executive Airport at Craig (CRG), Jacksonville, Florida.

D. DETAILS OF INVESTIGATION

The NTSB Vehicle Recorder Laboratory received the following device:

GPS Manufacturer/Model:	Apple iPad Mini
Serial Number:	F4KLQ28EFH13

Apple iPad Mini Device Description

The Apple iPad Mini 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 memory 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 Mini Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed the device had sustained extensive structural damage and been exposed to water and mud, as shown in figure 1. The unit was disassembled and the internal board was removed and cleaned, as shown in figure 2. Due to damage to various components on the internal board, further repairs were not possible.

The internal board was sent to a chip-level recovery service for further recovery. The recovery service confirmed that “the memory and power controller, which are key to regaining access to this device, had suffered irreparable failure. In this case, neither a forensic image or partial data recovery are possible.”

Figure 1. iPad Mini as received.



Figure 2. Internal board removed and cleaned.



Apple iPad Mini Data Description

No data was recovered from the device.