

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

November 6, 2014

## Personal Electronic Device

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

### 1. EVENT

Location: Erie, Colorado  
Date: August 31, 2014  
Aircraft: Piper Malibu PA-46  
Registration: N228LL  
Operator: The Real Estate School, LLC  
NTSB Number: CEN14FA467

### 2. GROUP

No group was convened.

### 3. SUMMARY

On August 31, 2014 about 1150 mountain daylight time, a Piper Malibu PA-46, N228LL, was substantially damaged when the airplane impacted terrain near Erie Municipal Airport (EIK), Erie. The airplane was owned and operated by The Real Estate School, LLC, Erie, Colorado. The private pilot and four passengers on board were fatally injured. Visual meteorological conditions prevailed and no flight plan had been filed. The personal flight was conducted under the provisions of 14 *Code of Federal Regulations* Part 91.

### 4. DETAILS OF INVESTIGATION

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

Device Manufacturer/Model: Apple iPad  
Serial Number: DLXGK173DJHH

#### 4.1. 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 memory<sup>1</sup> 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.

#### **4.2. 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 and successfully powered on. The unit was protected by a 4-digit passcode.

The surviving family supplied about 15 possible passcodes. After the 11th passcode was unsuccessfully tried, the device reported “iPad is disabled.” No further recovery attempts were made.

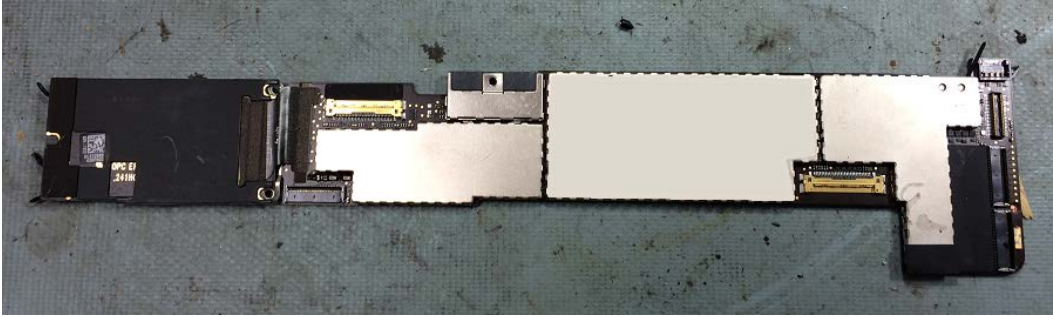
**Figure 1. iPad as received.**



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

**Figure 2. Internal board removed and cleaned.**



### **4.3. Apple iPad Data Description**

No data was recovered from the device.