

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

January 7, 2014

Electronic Devices Factual Report

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

1. EVENT

Location: Caledonia, Minnesota
Date: November 1, 2013
Aircraft: Piper PA-23-250
Registration: N6068Y
Operator: Private
NTSB Number: CEN14FA034

On November 1, 2013 around 1515 central daylight time (CDT), a Piper PA-23-250 airplane, N6068Y, impacted terrain near the Houston County Airport (KCHU), Caledonia, Minnesota. The private rated pilot and two passengers were fatally injured and one passenger received serious injury. The airplane was substantially damaged. The airplane was registered to Garlam Aviation, Troy, Michigan, and operated by a private individual. Visual meteorological conditions prevailed and an instrument flight plan was filed for the 14 *Code of Federal Regulations* Part 91 cross-country flight. The flight originated from the Oakland/Troy Airport (KVLL), Troy Michigan about 1100 CDT.

2. DETAILS OF DEVICE INVESTIGATION

The Safety Board's Vehicle Recorder Division received the following devices:

Devices with No Pertinent Investigative Information Recovered

Device 1: Kodak Easy Share
Device 1 Serial Number: KCGHR81014736
Device 2: LG Cell Phone
Device 2 Serial Number: 212KPXV2120402
Device 3: Samsung Galaxy S CellPhone
Device 3 Serial Number: A0000024652FBC
Device 4: HTC Cell Phone
Device 4 Serial Number: HT03ZHJ01799

Device with Pertinent Investigative Information Recovered

Device 5: Apple iPad 3
Device 5 Serial Number: DMRJ5DDJDJ8T

2.1. Devices with No Pertinent Investigative Information Recovered

The Kodak Easy Share camera, LG cell phone, and Samsung Galaxy S cell phone are shown in figures 1, 2, and 3, respectively. These devices were examined; however, they contained no information pertinent to the investigation.

Figure 4 shows the HTC cell phone. The device's microSD card did not contain any pertinent information. The device was password protected and in agreement with the IIC no efforts were made to bypass the password.

Figure 1. Kodak Easy Share camera.



Figure 2. LG cell phone.



Figure 3. Samsung Galaxy S cell phone.



Figure 4. HTC cell phone.



2.2. Apple iPad 3 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 for storage (depending on model). Some devices also support data connectivity via existing cell-phone networks. The iPad also includes front and back cameras. 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.

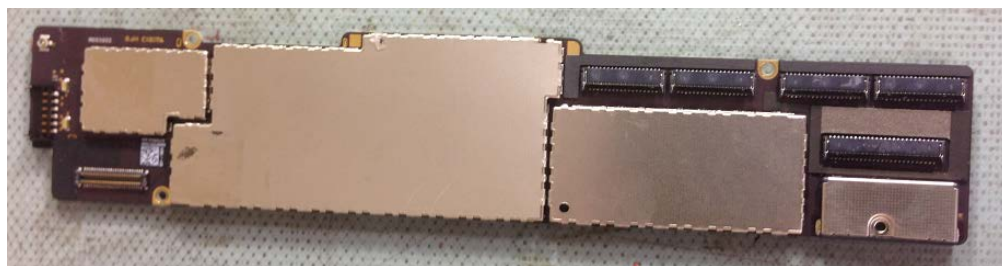
2.2.1. Apple iPad 3 Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed the unit had sustained significant structural damage, as shown in figure 5. The main processor and memory board was removed from the unit, as shown in figure 6. The board was installed in an NTSB surrogate unit and started normally. Screens and applications were examined for accident pertinent information.

Figure 5. Apple iPad 3 damage.



Figure 6. Apple iPad 3 main processor and memory board.



2.2.2. Apple iPad 3 Data Description

No internet browser history was discovered after June, 2013. There were no pertinent photos, messaging, or emails. The ForeFlight aviation application was installed with a current subscription.

The ForeFlight map page opened to the sectional chart view shown in figure 7. The upper right hand corner of the map contained a route “KVLL KMCD HILOT...” Figure 8 shows the ForeFlight “File & Brief” page with a planned flight from “KVLL” to “K CHU” on November 1, 2013 (note the ForeFlight destination airport contained a space between the “K” and “C.”).

Figure 7. ForeFlight map page with route.



Figure 8. ForeFlight File & Brief page.

