

# NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division  
Washington, D.C. 20594

October 11, 2012

## 17 – Electronic Device Factual Report

Specialist's Factual Report  
by Bill Tuccio

### 1. EVENT

Location: Morgantown, West Virginia  
Date: June 22, 2012  
Aircraft: Raytheon Aircraft Company C90GT  
Registration: N508GT  
Operator: Oz Gas LLC  
NTSB Number: ERA12FA409

On June 22, 2012, at 1001 eastern daylight time, a Raytheon Aircraft Company C90GT, N508GT, operated by Oz Gas LLC, was substantially damaged when it struck a communications tower near Morgantown, West Virginia. The certificated airline transport pilot was fatally injured. No flight plan had been filed for the Title 14 Code of Federal Regulations Part 91 positioning flight, from Nemaocolin Airport (PA88), Farmington, Pennsylvania, to Morgantown Municipal Airport (MGW), Morgantown, West Virginia.

### 2. DETAILS OF DEVICE INVESTIGATION

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

Device 1: Apple iPad 2  
Device 1 Serial Number: DN6FN2GUDKNY  
Device 2: Apple iPad 3  
Device 2 Serial Number: DMPH9SNWDVGJ

#### 2.1. Apple iPad 2 Device Description

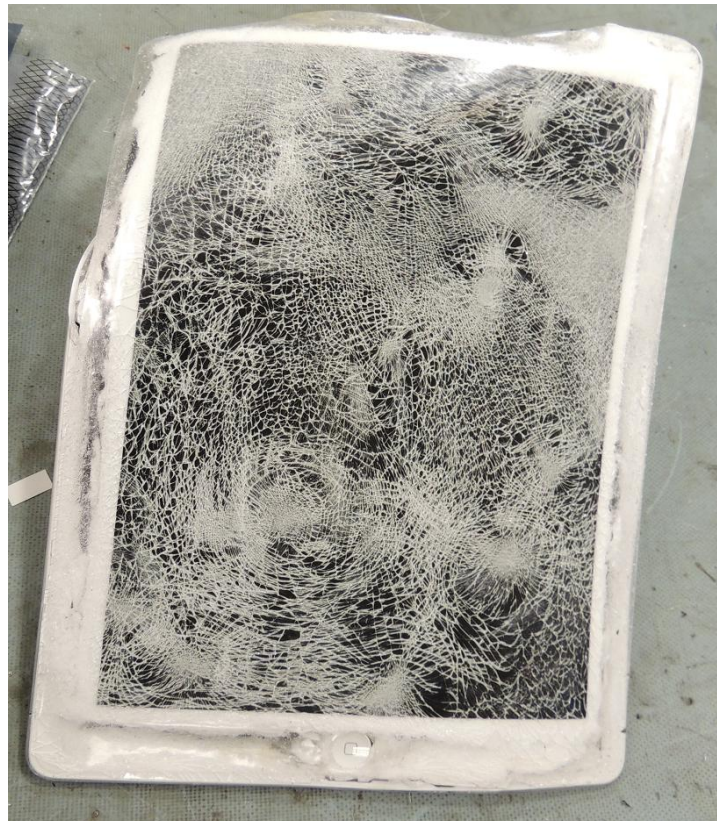
The Apple iPad is a tablet computer with a high-resolution color touch-screen interface. All iPad devices support WiFi and Bluetooth connectivity, and use either 16, 32, or 64 GB of non-volatile memory for storage (depending on model). Some devices also support data connectivity via existing cell-phone networks. The iPad 2 and later versions also include 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.

### **2.1.1. Apple iPad 2 Data Recovery**

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had sustained significant impact damage, as shown in figures 1 and 2. The unit was disassembled revealing the main circuit board, as shown in figure 3. The main circuit board was removed, as shown in figure 4. A microscopic examination revealed some electrical components were damaged, however the main board was installed in a functional surrogate iPad 2 and power was applied. No indications of operation were observed. No further recovery attempts were attempted.

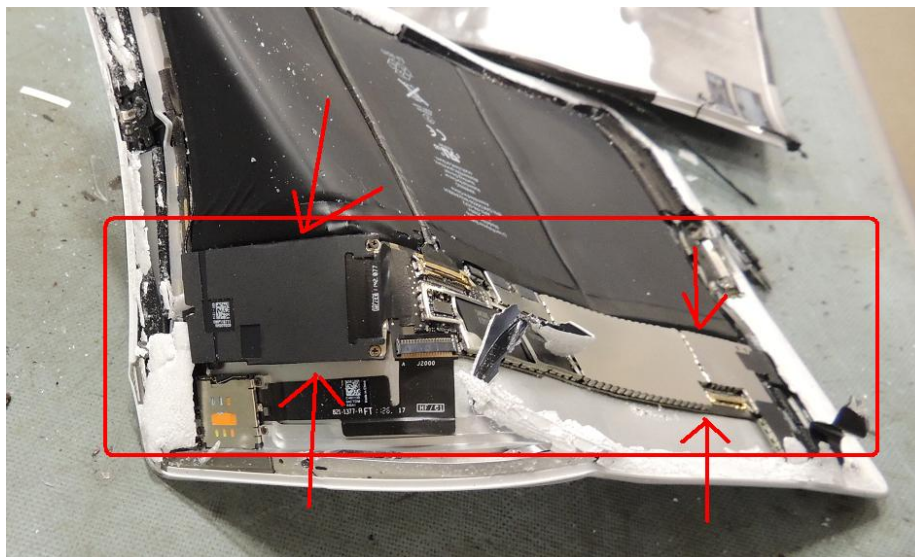
**Figure 1. Apple iPad 2 damage - front.**



**Figure 2. Apple iPad 2 damage – back.**



**Figure 3. Apple iPad2 main circuit board.**



**Figure 4. Apple iPad 2 main circuit board removed.**



### **2.1.2. Apple iPad 2 Data Description**

No data was recovered from the unit.

## **2.2. Apple iPad 3 Device Description**

For the purpose of this investigation, the Apple iPad 3 is as described in Section 2.1, "Apple iPad 2 Device Description."

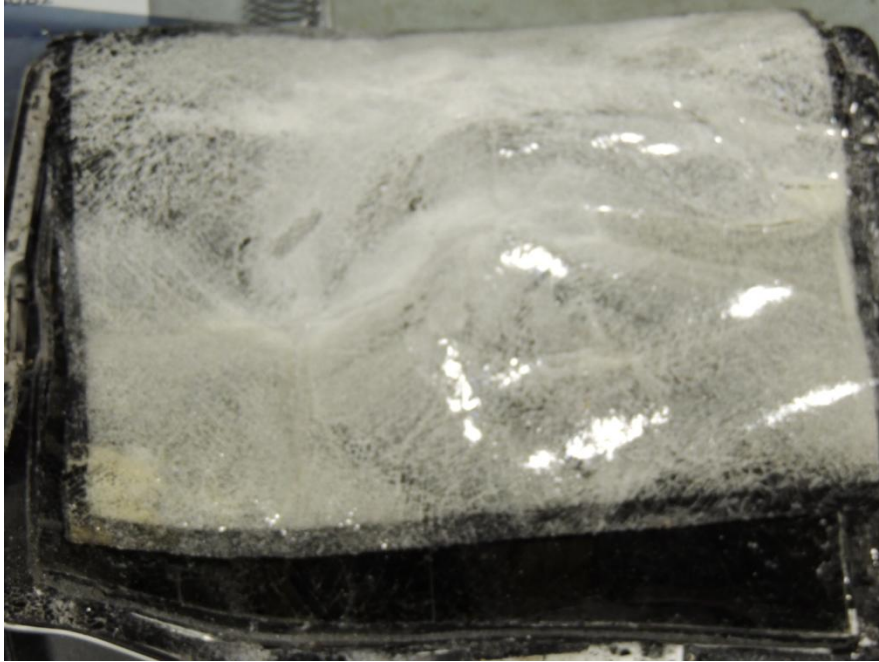
### **2.2.1. Apple iPad 3 Data Recovery**

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed that the unit had sustained significant impact damage, as shown in figures 5 and 6. The unit was disassembled revealing the main circuit board, as shown by the annotated photo in figure 7. The extent of the damage prevented the insertion of the main circuit board in a surrogate unit. No further recovery attempts were made.

### **2.2.2. Apple iPad 3 Data Description**

No data was recovered from the unit.

**Figure 5. Apple iPad 3 damage - front.**



**Figure 6. Apple iPad 3 damage - rear.**



Figure 7. Apple iPad 3 main circuit board with chip photo inset.

