

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

March 10, 2016

Personal Electronic Devices

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

1. EVENT SUMMARY

Location: Morrisville, New York
Date: September 20, 2015
Aircraft: Cessna 150H
Registration: N22721
Operator: Private
NTSB Number: ERA15FA362

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

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

Device Manufacturer/Model: **Apple iPhone 6**
Serial Number: **Unknown**

Device Manufacturer/Model: **Apple iPhone 5**
Serial Number: **Unknown**

3.1. Device Description

The Apple iPhone is a touch-screen operated smartphone capable of voice calling, text messaging, email, photo/video recording, audio (music) playback, and numerous other specialized functions depending on configuration. The unit is capable of accessing wireless networks using the IEEE 801.11n protocol (wifi) and other wireless devices supporting Bluetooth¹. Specialized functions are supported by additional user-installed program applications (Apps). Application data is stored in non-volatile memory² and may include call logs, text messaging logs, image, video, and position location

¹ A short-range, low bandwidth wireless protocol used in consumer electronics used mostly for low-overhead functions.

² Non-volatile memory is semiconductor memory that does not require external power for data retention.

information. In addition, specialized application data may be stored in a proprietary file structure using numerous file formats including: binary, ASCII, HTML, SQL, etc. The amount and type of data stored varies based on the software version and configuration of the specific device.

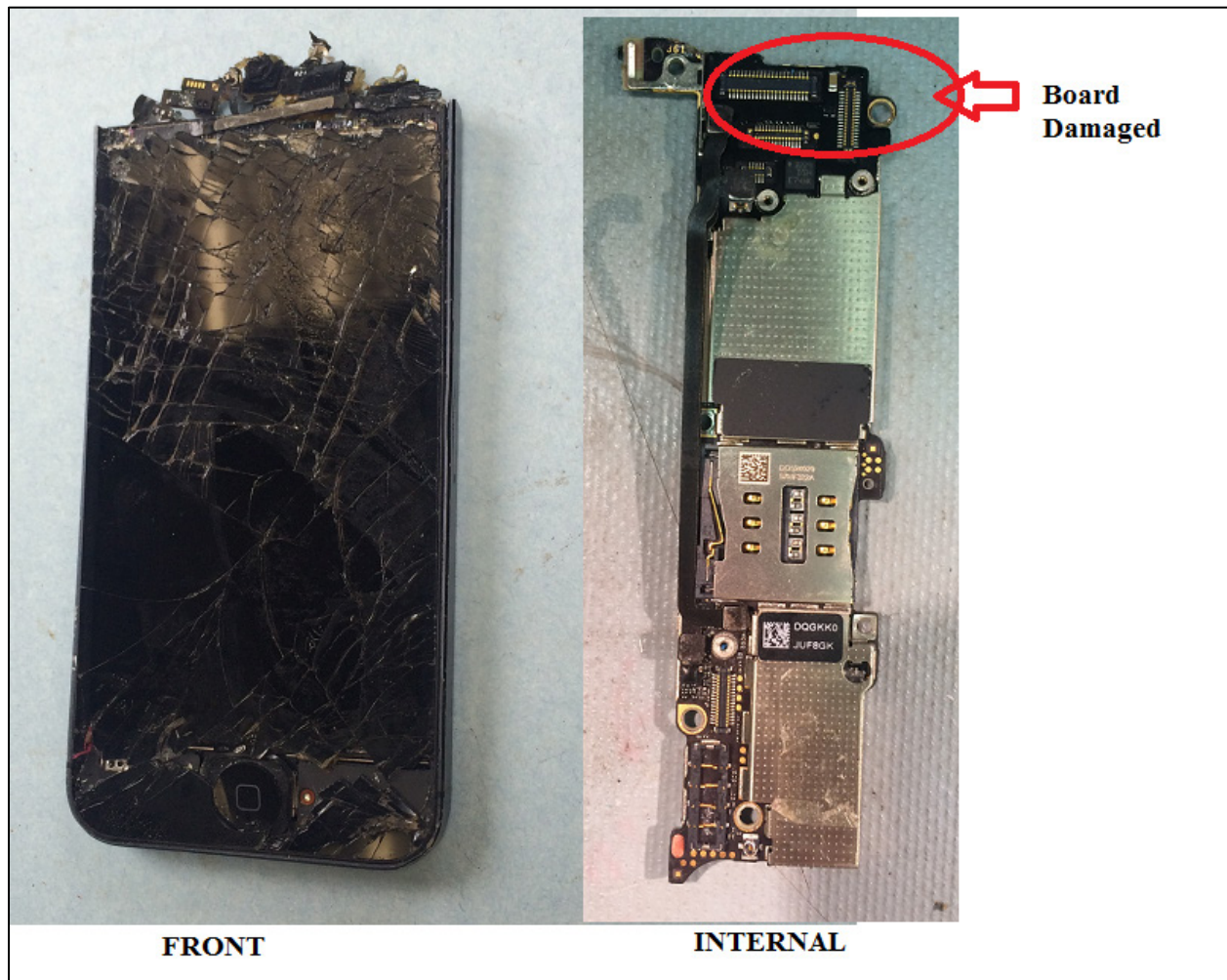
3.2. Device Condition

Upon arrival at the Vehicle Recorder Laboratory, an examination revealed both phones had sustained significant impact damage, as shown in figures 1 and 2. Figure 2 highlights a missing part of the iPhone 5 internal component board.

Figure 1. iPhone 6, front and internal photos.



Figure 2. iPhone 5, front and internal.



3.3. Data Description

The devices were capable of storing data in non-volatile memory. The iPhone 6 was sent to an independent data recovery service who were unsuccessful at repairing the phone. The iPhone 5's internal board damage precluded repair and recovery. Therefore, no data pertinent to the event were recovered.