

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

November 24, 2015

Personal Electronic Device (PED)

Specialist's Factual Report
By Sean Payne

1. EVENT SUMMARY

Location: Carey, Idaho
Date: July 2, 2015
Aircraft: Piper PA-22
Registration: N8195C
Operator: Private
NTSB Number: WPR15FA206

On July 2, 2015, at an undetermined time, a Piper PA22, N8195C, collided with terrain near Carey, Idaho. The pilot was operating the airplane under the provisions of Title 14 *Code of Federal Regulations* (CFR) Part 91. The commercial pilot sustained fatal injuries. The airplane was destroyed during the accident sequence. The cross-country personal flight departed Moab, Utah, at 1726 mountain daylight time with a planned destination of Stanley, Idaho. Visual meteorological conditions (VMC) prevailed, and no flight plan had been filed.

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

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

Recorder Manufacturer/Model: **iPhone 5c**
IMEI Number: **358537057027475**

3.1. iPhone 5c Description

The Apple iPhone is a touch-screen operated smart-phone 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 (WiFi¹) and other wireless devices supporting Bluetooth². Specialized functions are supported by additional user-installed

¹ WiFi – A local area wireless computer network technology that allows electronic devices to connect to a network.

² Bluetooth – A wireless technology standard for exchanging data over short distances.

program applications (Apps). Application data is stored in non-volatile memory³ and may include call logs, text messaging logs, image, video, and position location 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.

3.1.1. Data Recovery

The iPhone 5c was delivered to the lab and exhibited significant impact damage. The unit's touchscreen display was non-functional and is shown in figure 1. The device's screen was removed and the internal circuitry was examined (figure 2). The examination revealed the internal circuitry was slightly damaged but potentially recoverable. Figure 3 shows the device's main circuit board after cleaning and removal. The main circuit board was installed in a surrogate iPhone 5c and was able to successfully boot. Figure 4 shows the remnants of the destroyed iPhone 5c (left) next to the laboratory surrogate iPhone 5c functioning with the accident pilot's damaged circuit board (right).

The surrogate device functioning with the accident device's circuitry was then connected to a Macintosh computer running forensic examination software; its contents were downloaded and documented for this report.



Figure 1. Exterior of iPhone 5c.

³ Non-volatile memory – NVM – Semiconductor memory that does not need power applied to retain data.



Figure 2. The iPhone 5c with the screen removed.

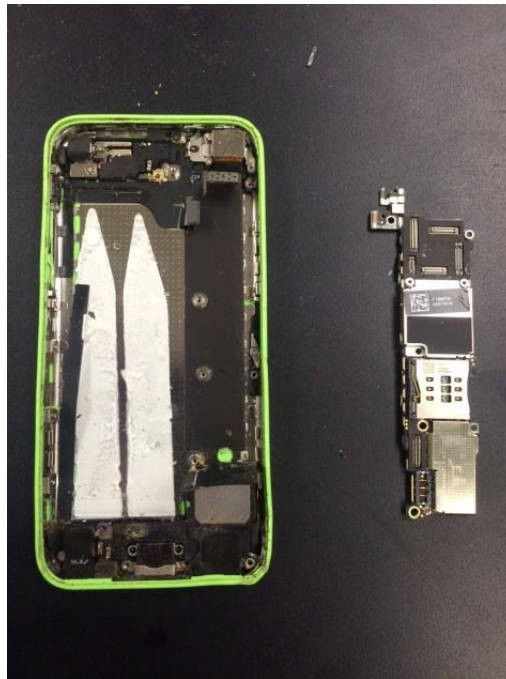


Figure 3. The iPhone 5c main circuit board after removal. The battery was also removed from the device.



Figure 4. The NTSB surrogate device (right) booting with the accident device's circuitry installed.

3.1.2. Data Description

Text Messages

Recovered text messages relevant to the accident investigation show the pilot had stated at 11:22:07 MDT on the accident day that he had a proposed ETA to his final destination of about plus two hours. No other text messages discovered on the device were deemed relevant to the investigation.

Images/Videos

The forensic examination also recovered 5 photos taken on the day of the accident between 16:58:18 MDT and 16:59:03 MDT. The photos show the accident aircraft in the vicinity of a self-service fuel pump at Malad City Airport (KMLD), Malad City, Idaho. In one photo, the aircraft is grounded, presumably in preparation for taking on fuel. The last photo shows a self-service payment station likely associated with the self-service fuel pump at KMLD.

72 Hour History

A table of the accident pilot's 72 hour history based on PED usage information recovered from the forensic examination software was created. Table 1 represents the pilot's PED activity for the previous approximate 72 hours.

Table 1. PED usage during 72 hours prior to the accident.

Date	First PED Activity of the Day	Type	Last PED Activity of the Day	Type
Monday, June 29, 2015	08:01:07 MDT	App Usage	21:19:01 MDT	App Usage
Tuesday, June 30, 2015	09:05:31 MDT	Received Call	23:20:06 MDT	App Usage
Wednesday, July 1, 2015	07:18:53 MDT	App Usage	22:23:26 MDT	Browser Usage ⁴
Thursday, July 2, 2015	06:08:20 MDT	Sent SMS	Not Applicable	Not Applicable

⁴ Last browser usage shows the pilot accessed a NOAA website, potentially through a software application. It was not determined which pages the pilot visited specifically.