

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

January 8, 2014

Electronic Devices Factual Report

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

1. EVENT

Location: Fort Lauderdale, Florida
Date: November 19, 2013
Aircraft: Learjet 35
Registration: XA-USD
Operator: Aero JL SA de CV
NTSB Number: ERA14FA045

On November 19, 2013, at 1956 eastern standard time, a Learjet 35, Mexican registration XA-USD, operated by Aero JL SA de CV, was destroyed when it collided with the Atlantic Ocean after takeoff from Fort Lauderdale/Hollywood International Airport (FLL), Fort Lauderdale, Florida. The commercial pilot and a physician on board were lost and presumed fatally injured. The copilot and a flight nurse were fatally injured. Night visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the positioning flight from FLL to Cozumel, Mexico.

2. DETAILS OF DEVICE INVESTIGATION

The Safety Board's Vehicle Recorder Division received the following devices recovered from the aircraft off the coast of the Atlantic Ocean at a reported depth of 96 feet. The devices were recovered from the ocean on December 4, 2013 after 15 days of salt water exposure. The devices were transported in salt water to the NTSB and examined on December 5, 2013.

Devices with Unrecoverable Data

Device 1: Apple iPad
Device 1 Serial Number: GB1081K9A90

Device 2: Apple iPad
Device 2 Serial Number: GB1081U7A90

Device 3: Apple iPhone 4S
Device 3 Serial Number: Unknown

Device with Recoverable Data

Device 6: Sony Cybershot

Device 6 Serial Number: 5020506

2.1. Devices with Unrecoverable Data

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed both Apple iPads (figures 1 and 2) and the Apple iPhone 4S (figure 3) had sustained extensive structural and/or sea water damage. Each device was disassembled and rinsed with tap water. The internal component boards were rinsed with alcohol and scrubbed with a brush, then dried with compressed air. The boards were then placed in a heated vacuum oven at 40 degC at -0.05 MPa for about 12 hours. One of the dried iPad boards was placed in a surrogate unit, but would not start. The other iPad and iPhone boards were too damaged to attempt further repairs.

Figure 1. First Apple iPad.

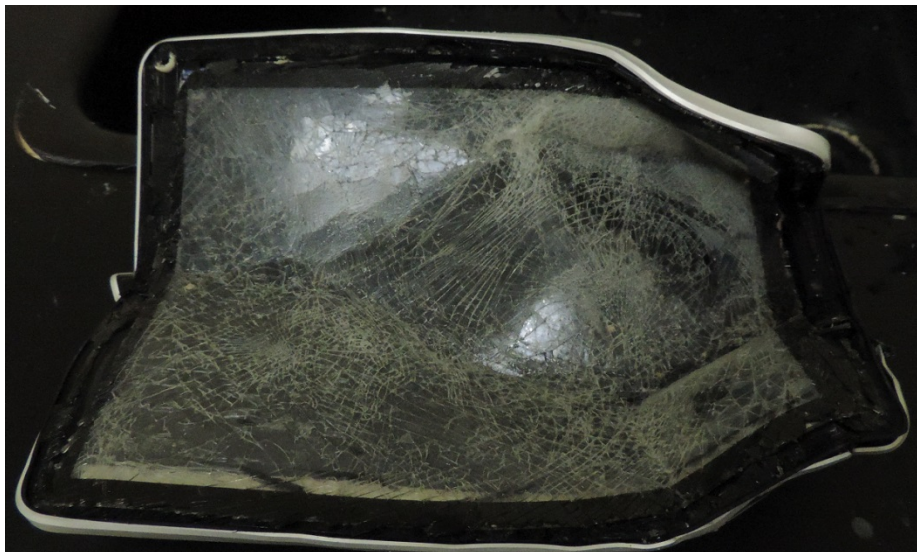
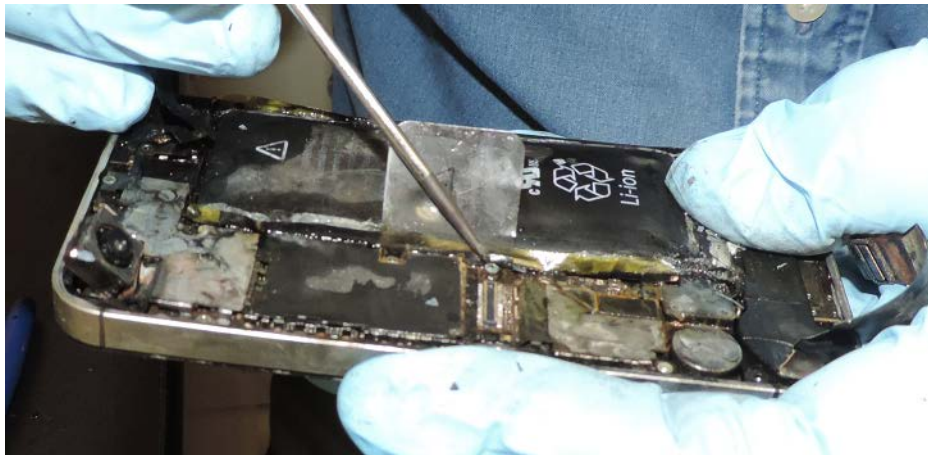


Figure 2. Second Apple iPad.



Figure 3. Apple iPhone 4S (screen removed).



2.2. Sony Cybershot Device Description

The Sony Cybershot is a digital camera. When an SD card is installed in the unit, images are recorded directly on the SD card. If an SD card is not installed, images are recorded to internal memory.

2.2.1. Sony Cybershot Device Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, an exterior examination revealed the Sony Cybershot had sustained significant impact and sea water damage. The internal microSD card and SD to microSD converter were removed from the unit, as shown in figure 4. The microSD card was cleaned with tap water and dried. The contents of the microSD card were read normally, without difficulty.

Figure 4. Sony Cybershot with microSD card and SD converter.



2.2.2. Sony Cybershot Data Description

None of the photos retrieved were pertinent to the accident investigation.