

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

November 19, 2021

Personal Electronic Devices

Specialist's Factual Report
By W. Deven Chen

1. EVENT SUMMARY

Location: Janesville, Wisconsin
Date: February 16, 2021
Aircraft: Velocity Vtwin
Registration: N13VT
Operator: Private
NTSB Number: CEN21FA130

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

On February 22, 2021, the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following personal electronic devices (PEDs):

Device Manufacturer/Model: **Apple iPhone 12 Pro**
IMEI Number: **358522140678567**

Device Manufacturer/Model: **Apple iPad mini 4**
Serial Number: **DLXQ80PPGHMM**

Device Manufacturer/Model: **Apple iPad mini 5**
Serial Number: **DMPDTC7LM93**

3.1. Device Description

PEDs are a category of devices comprised primarily of portable computing devices and mobile phones. Portable computing devices are typically capable of internet access, email, messaging services, and can run user-installed applications to perform specific tasks. Depending on the model, mobile phones can perform many of the same tasks as portable computing devices, plus have voice call and text messaging capabilities. PED user and system data is typically stored on non-volatile memory¹ and can be accessed through manufacturer-provided interfaces.

¹ Non-volatile memory is semiconductor memory that does not require external power for data retention.

3.2. Data Recovery

3.2.1. Apple iPhone 12 Pro

The device was submerged in water upon arrival at the Vehicle Recorder Division. An exterior examination revealed that the device had no impact damage, as shown in Figure 1. The device was carefully disassembled, ultrasonic cleaned and vacuum dried. The device powered on normally after being reassembled, and it was locked with a 4-digit passcode. There were three possible passcodes provided to the NTSB, however, none of them unlocked the device. Thus, there were no data recovered from the device.



Figure 1: Front and Back of the Apple iPhone 12 Pro as received.

3.2.2. Apple iPad mini 4

The device was submerged in water upon arrival at the Vehicle Recorder Division. An exterior examination revealed that the device had no impact damage, as shown in Figure 2. The motherboard was removed from the device and found to have corrosion from water intrusion. After being ultrasonic cleaned and vacuum dried, the motherboard was placed into a surrogate device, however, it went into a boot loop and did not power up. The extent of the damage precluded normal and advanced recovery procedures and additional attempts were unsuccessful in yielding usable data. Thus, there were no data recovered from this device.



Figure 2: Front and Back of the Apple iPad mini 4 as received.

3.2.3. Apple iPad mini 5

The device was submerged in water upon arrival at the Vehicle Recorder Division. An exterior examination revealed that the device had sustained severe impact damage, as shown in Figure 3. The motherboard was removed from the device and found to have severe corrosion from water intrusion. After being ultrasonic cleaned and vacuum dried, the motherboard was placed into a surrogate device, however, it did not power up. The extent of the damage precluded normal and advanced recovery procedures and additional attempts were unsuccessful in yielding usable data. Thus, there were no data recovered from this device.



Figure 3: Front and Back of the Apple iPad mini 5 as received.