

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

February 2, 2022

Personal Electronic Devices

**Specialist's Factual Report
by Gerald Kawamoto**

1. EVENT

Location: Ketchikan, Alaska
Date: August 5, 2021
Aircraft: DeHavilland DHC-2
Registration: N1249K
Operator: Southeast Aviation LLC
NTSB Number: ANC21FA069

2. DETAILS OF INVESTIGATION

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

Device 1:	Apple iPhone 11
Device 1 IMEI:	352899114832438
Device 2:	Apple iPhone XR
Device 2 IMEI:	353069108510197
Device 3:	Apple iPhone 8 Plus
Device 3 IMEI:	356717082926949
Device 4:	Apple iPad Mini 5
Device 4 Serial Number:	DLXYD2S3LM93
Device 5:	Apple iPad Pro
Device 5 Serial Number:	DMPT302HGXQ9

2.1. Personal Electronic Device (PED) Description

PEDs are a category of devices comprised primarily of portable computing devices and mobile phones. Portable computing devices are typically capable of taking photos and videos, internet access, email, messaging services, and can run user-installed applications to perform specific tasks. PED user and system data is typically stored on non-volatile memory and can be accessed through manufacturer-provided interfaces.¹

2.2. PED Data Recovery

Upon arrival at the Vehicle Recorder Laboratory, exterior examinations of the devices revealed:

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

- The iPhone 11 and iPhone XR were undamaged, as shown in Figures 1 and 2, and powered on normally.
- The iPhone 8 Plus, iPad Mini 5, and iPad Pro sustained impact damage, as shown in Figures 3 through 5, rendering the devices inoperable. Due to the damage sustained, the batteries from the iPhone 8 Plus, iPad Mini 5 and iPad Pro were removed prior to being shipped to the laboratory. The iPhone 8 Plus powered on normally using surrogate parts. Both iPads were unable to power on due to the damage sustained to the internal components, thus no data were recovered from these two devices.



Figure 1. iPhone 11 as received.



Figure 2. iPhone XR as received.



Figure 3. iPhone 8 Plus as received.



Figure 4. iPad Mini 5 as received.



Figure 5. iPad Pro as received.

2.3. PED Data Description

The iPhones were accessed using passcodes provided to the investigation team and the contained data were reviewed for relevant content.

The iPhone 11 contained 40 photos captured between 9:50:19 and 10:47:11 Alaska Daylight Time (AKDT). GPS location information was contained in the photo metadata. Figure 6 is a Google Earth overlay of the position data and the wreckage location. The weather and lighting conditions in Google Earth are not necessarily the weather and lighting conditions present at the time of the accident.

The iPhone XR contained 31 photos captured between 9:48:53 and 10:47:05 AKDT.

The iPhone 8 Plus contained 14 photos and 66 Live Photos captured between 9:33:38 and 10:48:27 AKDT. Live Photos are a feature that captures 1.5 seconds before and after a picture is taken. The result is an approximately 3 second file in .MOV format. Still frame images can be extracted from the .MOV file. The number of still images depends on the frame rate.

Select photos captured on each device during the accident flight were determined to be relevant to the investigation. These still images are included in the Meteorology Factual Report in the public docket.



Figure 6. Google Earth overlay of the position data recovered from the iPhone 11 photos.