

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

October 22, 2020

Personal Electronic Device

Specialist's Factual Report
By W. Deven Chen

1. EVENT SUMMARY

Location: Sioux Falls, South Dakota
Date: June 7, 2020
Aircraft: Mitsubishi MU-2B
Registration: N44MX
Operator: McNeely Charter Service Inc.
NTSB Number: CEN20LA215

On June 7, 2020, about 0425 central daylight time, a Mitsubishi MU-2B airplane, N44MX, was destroyed when it was involved in an accident near Sioux Falls, South Dakota. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* (CFR) Part 135 cargo flight.

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

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

Device Manufacturer/Model:	Apple iPhone 6s
IMEI Number:	353269074554175

3.1. Device Description

PED is 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 (NVM) 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 6s

Upon arrival at the Vehicle Recorder Division, an exterior examination revealed the device had no damage, as shown in Figure 1. The device powered up normally and was not locked with a passcode. The device belonged to the pilot. The device was connected to a PC and read using forensic evidence recovery software for PEDs.



Figure 1: Front and back of Apple iPhone 6s (pilot) as received.

3.2.2. Usage History

The data were examined for indications of usage between June 4, 2020 and June 7, 2020. The accident occurred around 04:25 on June 7, 2020. All the timestamps in this report are in central daylight time (CDT). Figure 2 is a summary of the PED usage history of the pilot between June 4 and June 7, 2020, based on the phone call activity, text message activity and email activity. The phone also had two social media applications installed, Facebook and Facebook Messenger, however, no data were recovered from either application. The last updated post on Facebook was on May 30th; Facebook Messenger was not logged in and the forensic evidence recovery software did not recover any usage history from this application. The details of the phone call, text message and email activities are included in Appendix A, B and C, respectively.

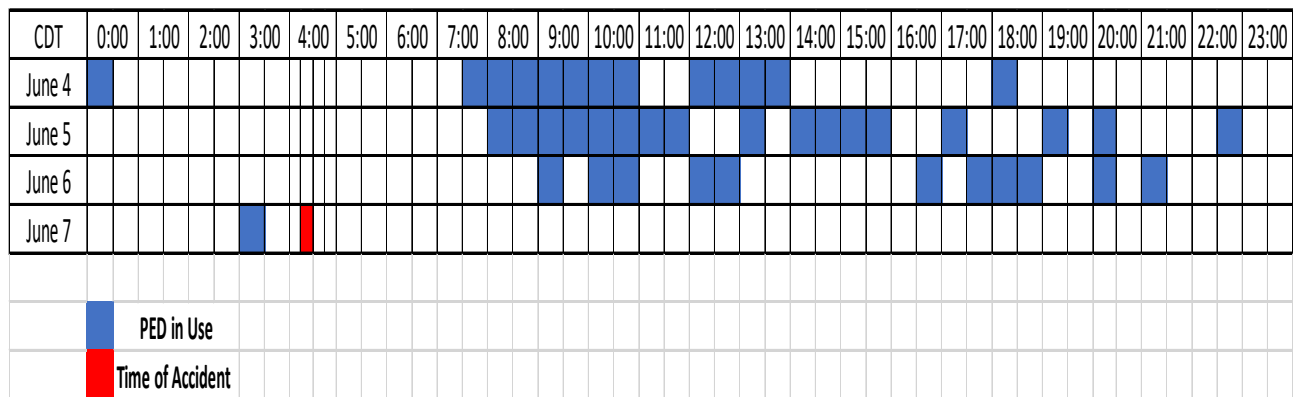


Figure 2: Pilot's PED usage history in June 4-7.

3.2.3. Electronic Flight Bag (ForeFlight)

The iPhone 6s contained the application ForeFlight which is an electronic charting and navigation program for pilots. ForeFlight is capable of logging flight data, however, the accident flight was not recorded on the account. The last flight recorded on the account was on 4/26/2020 with a different aircraft. The latest recorded flight of the accident aircraft (N44MX) was on 4/14/2020.

APPENDIX A: Phone Call Activity

This appendix describes the pilot's phone call activities between 6/4/2020 to 6/7/2020. A note of 'Not Answered' indicates the user rejected the call. A note of 'MISSED' indicates the user missed the call.

DATE TIME (CDT)	DURATION (hh:mm:ss)	DIRECTION	NOTE
6/4/2020 8:39:54	00:25:29	Incoming	Answered
6/4/2020 9:12:46	01:08:17	Outgoing	Answered
6/4/2020 10:33:26	00:00:06	Outgoing	Answered
6/4/2020 10:36:14	01:24:12	Incoming	Answered
6/4/2020 12:05:47	00:00:29	Incoming	Answered
6/4/2020 12:29:00	00:00:35	Incoming	Answered
6/4/2020 12:33:32	00:00:00	Incoming	Not answered
6/4/2020 12:50:17	00:00:00	Outgoing	Not answered
6/4/2020 12:52:01	00:00:49	Incoming	Answered
6/4/2020 12:57:39	00:02:10	Outgoing	Answered
6/4/2020 13:00:21	00:00:27	Outgoing	Answered
6/4/2020 13:47:29	00:00:36	Outgoing	Answered
6/4/2020 13:51:46	00:00:14	Outgoing	Answered
6/4/2020 13:52:11	00:00:00	Outgoing	Not answered
6/4/2020 13:52:31	00:00:00	Outgoing	Not answered
6/4/2020 13:52:59	00:00:15	Outgoing	Answered
6/4/2020 13:53:19	00:00:07	Outgoing	Answered
6/4/2020 13:53:42	00:00:51	Outgoing	Answered
6/4/2020 13:54:56	00:03:12	Outgoing	Answered
6/4/2020 13:58:29	00:00:00	Outgoing	Not answered
6/4/2020 18:00:39	00:00:30	Outgoing	Answered
6/4/2020 18:07:43	00:00:37	Outgoing	Answered
6/5/2020 8:48:31	00:01:20	Incoming	Answered
6/5/2020 9:04:44	00:00:03	Outgoing	Answered
6/5/2020 9:40:24	00:01:26	Outgoing	Answered
6/5/2020 9:49:01	00:05:27	Outgoing	Answered
6/5/2020 10:51:55	00:00:00	Incoming	Not answered
6/5/2020 10:54:34	00:00:00	Outgoing	Not answered
6/5/2020 11:22:26	00:00:51	Outgoing	Answered
6/5/2020 11:24:13	00:01:46	Outgoing	Answered
6/5/2020 11:27:05	00:01:55	Outgoing	Answered
6/5/2020 11:31:05	00:03:56	Outgoing	Answered
6/5/2020 11:38:49	00:14:06	Incoming	Answered
6/5/2020 11:54:18	00:02:20	Outgoing	Answered
6/5/2020 13:03:13	00:09:39	Incoming	Answered
6/5/2020 14:51:21	00:00:17	Outgoing	Answered
6/5/2020 14:53:46	00:00:01	Outgoing	Answered
6/5/2020 14:54:15	00:00:02	Outgoing	Answered

DATE TIME (CDT)	DURATION (hh:mm:ss)	DIRECTION	NOTE
6/5/2020 14:57:50	00:03:58	Incoming	Answered
6/5/2020 15:05:36	00:02:05	Outgoing	Answered
6/5/2020 15:11:05	00:00:04	Outgoing	Answered
6/5/2020 15:11:24	00:01:53	Outgoing	Answered
6/5/2020 15:26:01	00:00:46	Incoming	Answered
6/5/2020 15:28:06	00:00:29	Outgoing	Answered
6/5/2020 15:31:19	00:00:09	Outgoing	Answered
6/5/2020 15:32:05	00:00:12	Outgoing	Answered
6/5/2020 15:33:05	00:00:27	Outgoing	Answered
6/5/2020 15:45:55	00:00:22	Outgoing	Answered
6/5/2020 19:23:08	00:00:58	Outgoing	Answered
6/5/2020 19:25:02	00:00:27	Outgoing	Answered
6/6/2020 0:31:57	00:00:00	Incoming	MISSED
6/6/2020 11:02:39	00:00:00	Incoming	MISSED
6/6/2020 12:32:21	00:04:15	Outgoing	Answered
6/6/2020 18:15:21	00:00:51	Outgoing	Answered
6/6/2020 18:41:14	00:01:25	Outgoing	Answered
6/6/2020 21:03:40	00:00:37	Outgoing	Answered
6/6/2020 21:05:20	00:00:35	Outgoing	Answered
6/6/2020 21:10:02	00:00:11	Incoming	Answered
6/7/2020 3:05:39	00:00:00	Incoming	MISSED
6/7/2020 3:10:40	00:00:00	Incoming	MISSED
6/7/2020 3:22:44	00:00:00	Incoming	MISSED
6/7/2020 4:48:14	00:00:00	Incoming	MISSED
6/7/2020 6:04:04	00:00:00	Incoming	MISSED
6/7/2020 6:16:02	00:00:00	Incoming	MISSED
6/7/2020 19:57:27	00:00:00	Incoming	MISSED
6/7/2020 23:11:05	00:00:00	Incoming	MISSED

APPENDIX B: Text Message Activity

This appendix describes the pilot's text message activities between 6/4/2020 to 6/7/2020. On the table below, 'Active' under DIRECTION/STATUS indicates that there were both outgoing and incoming text message exchanges during the time period. 'READ' indicates the incoming text message was read; however, it was unknown when the text message was read. The participants of the text message exchange are noted under NOTE.

DATE TIME (CDT)	DIRECTION/STATUS	NOTE
6/4/2020 0:18	Incoming/READ	CONTACT LIST
6/4/2020 7:52	Incoming/READ	CONTACT LIST
6/4/2020 8:01	Outgoing	CONTACT LIST
6/4/2020 8:23	Outgoing	CONTACT LIST
6/4/2020 8:24 - 8:28	Active	CONTACT LIST
6/4/2020 9:25	Incoming/READ	CONTACT LIST
6/4/2020 10:21	Outgoing	CONTACT LIST
6/4/2020 10:19 - 10:36	Active	CONTACT LIST
6/4/2020 10:32	Incoming/READ	COMMERCIALS
6/4/2020 12:07 - 13:06	Active	CONTACT LIST
6/5/2020 8:10 - 8:15	Active	CONTACT LIST
6/5/2020 8:19 - 8:25	Active	CONTACT LIST
6/5/2020 9:09	Outgoing	CONTACT LIST
6/5/2020 9:22 - 9:29	Active	CONTACT LIST
6/5/2020 9:36	Outgoing	CONTACT LIST
6/5/2020 10:05 - 10:18	Active	CONTACT LIST
6/5/2020 10:06 - 10:42	Active	CONTACT LIST
6/5/2020 11:06 - 11:08	Active	CONTACT LIST
6/5/2020 11:38	Outgoing	CONTACT LIST
6/5/2020 11:54	Outgoing	CONTACT LIST
6/5/2020 14:03	Outgoing	CONTACT LIST
6/5/2020 14:57	Incoming/READ	CONTACT LIST
6/5/2020 15:49 - 15:53	Active	CONTACT LIST
6/5/2020 20:16	Outgoing	CONTACT LIST
6/5/2020 22:45	Incoming/READ	PHONE SERVICE CARRIER
6/6/2020 9:05 - 9:26	Active	CONTACT LIST
6/6/2020 10:26 - 10:44	Active	CONTACT LIST
6/6/2020 12:12 - 12:33	Active	CONTACT LIST
6/6/2020 12:22 - 12:40	Active	CONTACT LIST
6/6/2020 12:40 - 12:43	Active	CONTACT LIST
6/6/2020 16:40	Incoming/READ	COMMERCIALS
6/6/2020 16:44	Incoming/READ	COMMERCIALS
6/6/2020 17:45	Incoming/READ	CONTACT LIST
6/6/2020 20:23	Outgoing/	CONTACT LIST
6/6/2020 21:05	Incoming/READ	CONTACT LIST
6/7/2020 3:13	Incoming/READ	CONTACT LIST

DATE TIME (CDT)	DIRECTION/STATUS	NOTE
6/7/2020 5:54	Incoming/UNREAD	CONTACT LIST
6/7/2020 7:13	Incoming/UNREAD	CONTACT LIST
6/7/2020 13:29	Incoming/UNREAD	CONTACT LIST

APPENDIX C: Email Activity

This appendix describes the pilot's email activities between 6/4/2020 to 6/7/2020. Note that it was unknown when the incoming emails were read.

DATE TIME (CDT)	DIRECTION
6/4/2020 0:23	Incoming
6/4/2020 9:32	Outgoing
6/4/2020 10:16	Incoming
6/4/2020 10:32	Incoming
6/4/2020 12:55	Incoming
6/4/2020 12:56	Incoming
6/4/2020 13:29	Incoming
6/4/2020 15:39	Incoming
6/5/2020 2:14	Incoming
6/5/2020 3:25	Incoming
6/5/2020 7:04	Incoming
6/5/2020 11:50	Incoming
6/5/2020 12:36	Incoming
6/5/2020 12:37	Incoming
6/5/2020 15:09	Incoming
6/5/2020 15:49	Incoming
6/5/2020 17:01	Incoming
6/5/2020 17:22	Incoming
6/5/2020 19:21	Incoming
6/5/2020 22:15	Incoming
6/5/2020 22:19	Incoming
6/6/2020 2:09	Incoming
6/6/2020 7:36	Incoming
6/6/2020 9:06	Outgoing
6/6/2020 9:32	Incoming
6/6/2020 10:07	Incoming
6/6/2020 10:49	Incoming
6/6/2020 11:46	Incoming
6/6/2020 12:08	Incoming
6/6/2020 12:45	Incoming
6/6/2020 16:43	Incoming
6/6/2020 17:00	Incoming
6/6/2020 18:34	Incoming
6/6/2020 21:00	Outgoing