

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

September 25, 2019

Electronic Device and Video

Specialist's Factual Report By Deven Chen

1. EVENT SUMMARY

Location: Creswell, Oregon
Date: May 11, 2019
Aircraft: Top Dog Ultralights trike
Registration: Unregistered
Operator: Private
NTSB Number: WPR19FA143

On May 11, 2019, at 2030 Pacific daylight time, an unregistered light-sport aircraft (LSA) experimental weight-shift-control Top Dog Ultralights trike, collided with a tree while maneuvering near the Hobby Field Airport, Creswell, Oregon. The non-certified pilot was operating the personal flight under the provisions of Title 14 *Code of Federal Regulations* Part 91. The pilot sustained fatal injuries; the trike sustained substantial damage. The local flight departed at 2028. Visual meteorological conditions 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 devices and a video:

Recorder Manufacturer/Model: **Apple iPhone 6**
Recorder Serial Number: **IMEI 355393075815845**

Recorder Manufacturer/Model: **Vivitar DVR 786HD**
Recorder Serial Number: **N/A**

3.1. Apple iPhone 6 Description

Personal Electronic Devices (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. PEDs user and system data is typically stored on non-volatile memory (NVM)¹ and can be accessed through manufacturer-provided interfaces.

3.1.1. Apple iPhone 6 Recovery

Upon arrival at the Vehicle Recorder Division, an exterior examination revealed the device had no damage, as shown in Figure 1. The device powered on. The device was connected to a PC and read using forensic evidence recovery software for PEDs.



Figure 1. Front and back of Apple iPhone 6 as received

3.1.2. Apple iPhone 6 Data Description

Videos recorded on the accident date were stored in the iCloud account of the phone and were not stored on the physical device. However, one of the videos from the phone, which contained the accident flight was sent to the lab electronically. The details of this video are covered in section 3.3.

3.2. Vivitar DVR 786HD Description

The Vivitar DVR 786HD is a lightweight digital camera designed for recording video files. The camera comes with a ruggedized waterproof housing that allows the camera to be mounted in a variety of positions using an array of supported accessories. The camera

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

features touchscreen and can be set to record still images or a video stream at a resolution of up to 12.1 megapixels². The camera supports recording to micro SD³ cards and wireless control via a remote.

3.2.1. Vivitar DVR 786HD Recovery

Upon arrival at the Vehicle Recorder Division, an exterior examination revealed impact damage to the unit, as shown in Figure 2. The camera had broken screen and did not power up, but its micro SD card was undamaged. Video information was extracted from the associated micro SD card.



Figure 2. Camera kit as received (left), camera screen (right)

3.2.2. Vivitar DVR 786HD Data Description

The micro SD card contained five video recording files. Four files were playable, and one was corrupted and unplayable. The corrupted file was recovered using a lab software, however all five video files showed normal flights with normal landings.

A bit for bit image file of the entire micro SD card was made using a software to search for fragments of videos. The image file structure showed five recordings, matching the number of video files on the micro SD card, meaning the accident flight was not recorded on the device.

3.3. Ground Video

The ground video was recorded by a witness using the Apple iPhone 6 (detailed in section 3.1) on the ground. The video was provided in Quick Time Movie format.

3.3.1. Ground Video Description

The total length of the ground video was 4:23 (4 minutes and 23 seconds). The relevant portion of the ground video was extracted into still images from 4:06 to 4:12. These images

² Megapixel -- one million pixels

³ Secure Digital – SD – a standardized format for removable memory devices

are included in Attachment 1 to this report, each image labeled as snapshot (1) through snapshot (135). Attachment 1 is available as a shelf item. Information on how to request a shelf item is included in the attachment 1 PDF which is available on the public docket. Figure 3 shows an additional snapshot from about 2:15 elapsed of the ground video when the aircraft just took off. Figure 4 shows a clear snapshot (57) at about 4:08 elapsed of the ground video. The figure shows that the aircraft is in a steep left bank turn. As the accident sequence progresses, the aircraft went into a rapid descent and disappeared behind the trees.



Figure 3: snapshot at about 2:15 elapsed of the ground video



Figure 4: Snapshot (57) at about 4:08 elapsed of the ground video