

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

November 28, 2018

Electronic Devices

Specialist's Factual Report by Sean Payne

1. EVENT

Location: Swainsboro, Georgia
Date: August 24, 2018
Aircraft: Cessna 182A
Registration: N4785D
Operator: Tjp@Jax Inc
NTSB Number: ERA18FA231

On August 25, 2018, about 1400 eastern daylight time (EDT), a Cessna 182A, N4785D, was destroyed after a collision with terrain at East Georgia Regional Airport (SBO), Swainsboro, Georgia. The commercial pilot and three passengers were fatally injured, while one passenger was seriously injured. The airplane was operated by The Jumping Place Skydiving Center as a skydiving flight conducted under the provisions of Title 14 *Code of Federal Regulations* Part 91. Visual meteorological conditions prevailed, and no flight plan was filed for the flight. The flight was originating at the time of the accident.

2. DETAILS OF INVESTIGATION

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

Device 1: Sony FDR-X3000 Camera
Device 1 Serial Number: 3113831
Device 2: Garmin GPSmap 195
Device 2 Serial Number: 61032207

2.1. Sony FDR-X3000 Device Description

The Sony FDR-X3000 is a 4K resolution Point of View (POV) waterproof action camera. The camera can be mounted to a structure, or an individual's body using a variety of different mounting options. The camera can also be operated handheld. The camera has the ability to interface with a smart phone via an app. The camera can be configured to record GPS logs in NMEA 0183 format.

2.1.1. Sony FDR-X3000 Data Recovery

Upon arrival at the Vehicle Recorder Division, an exterior examination revealed the unit had sustained light impact damage. The camera's associated microSD memory card was found seated in the device. Figure 1 shows the device's condition.



Figure 1. The recovered Sony FDR-X3000 and associated microSD card

The camera's microSD card contained the following:

- An empty folder that was in the format necessary to capture video recordings from the device
- A "Stream" folder containing 9 video recordings, possibly from a differently formatted imaging device.
- A folder containing 29 GPS log files
- Other folders supporting use of the camera with a smartphone application and support for other miscellaneous features

In investigations of digital imaging devices involved in high impact scenarios, the NTSB has found that video recordings can become either corrupted or lost in the device's file system. This means that an accident recording may be available, but will not display obviously in a Windows file system. A forensic search method for imagery and audio associated with the accident flight was conducted on this device's memory card. The forensic search resulted in the recovery of several video recordings which were not found in the card's file system. Section 2.1.2 below covers these recovered videos.

2.1.2. Sony FDR-X3000 Data Description

No video was determined to be from the accident flight. Previous recordings in the “stream” folder, show the user of the camera activating the camera just prior to exiting a different jump aircraft. Previous recordings, and recovered deleted recordings, did not show the climb portion of any skydive flights.

Some of the forensically recovered recordings showed flights (at jump altitude) in a piston powered Cessna aircraft. These recordings were likely deleted by the user. In this device, the deletion of a video does not also concurrently delete any GPS files that may have been associated with those recordings. The absence of video files that are associated with the GPS files described in section 2.1.1 could mean that the user deleted the video files, but did not delete the GPS files which are contained in a separate folder. The last GPS file was only a few data points and ended around 1 PM local time, approximately 1 hour prior to the accident. Due to the absence of any GPS files that were created around the time of the accident, and based on video in other recordings that showed the user activated the camera just prior to exit from the skydiving aircraft, it is unlikely the user was recording during the accident sequence.

None of the forensically recovered data showed imagery or audio consistent with the accident flight.

2.2. Garmin GPSmap 195 Device Description

The Garmin GPSmap 195 is an aviation-oriented GPS. The device has the ability to store tracklog data in volatile memory via the use of a back-up battery.

2.2.1. Garmin GPSmap 195 Data Recovery

The device’s internal backup battery was found to be corroded. The backup battery voltage was measured and was found to be 0.27 volts. The backup battery was disposed. No data could be recovered from the device.