

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, DC 20594

April 19, 2021

Onboard Image Recorder

Specialist's Factual Report

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1. EVENT

Location:	Morgan, Utah
Date:	September 4, 2019
Aircraft:	Cessna 210L Centurion
Registration:	N94262
Operator:	Hawkeye Helicopter LLC
NTSB Number:	WPR19FA250

2. GROUP

A group was not convened.

3. SUMMARY

On September 4, 2019, about 1521 mountain daylight time (MDT), a Cessna 210L airplane, N94262, collided with terrain about 4 miles west of Morgan, Utah. The commercial pilot and pilot rated passenger were fatally injured and the airplane was substantially damaged. The airplane was being operated by Hawkeye Helicopter LLC as a Title 14 *Code of Federal Regulations* Part 91 aerial observation flight. Visual meteorological conditions prevailed for the flight that originated at about 1451 MDT from the Evanston-Utica County Airport (EVW) in Evanston, Wyoming.

4. DETAILS OF INVESTIGATION

The National Transportation Safety Board Vehicle Recorder Division received the following imaging device:

Recorder Manufacturer/Model:	GoPro Hero 4 Session
Recorder Serial Number:	C313112453512

4.1. Recorder Description

The GoPro Hero 4 is a compact, lightweight, point of view (POV)¹ digital camera enclosed in a ruggedized housing that allows the camera to be mounted in a variety of positions using an array of supported accessories. The camera supports 4K Ultra high definition (UHD)² as well as other lower quality recording resolutions at higher frame rates. The camera can be set to record still images in lieu of a video stream at a resolution of up to 12 megapixels.³ The camera supports recording to micro Secure Digital (SD)⁴ cards up to 128 GB in size. Built in Wi-Fi⁵ connectivity allows users to connect to the camera either via an accessory remote control or via a smart phone app that permits camera control and image transfer.

4.2. Recorder Damage

Upon arrival at the NTSB Vehicle Recorder Division, it was evident that the GoPro Hero 4 Session and the associated mounting hardware had sustained minimal impact damage (figure 1). A 128 GB micro SD card was found intact and seated securely in the device's memory card slot (figure 2).

Figure 1. The GoPro Hero 4.



¹ POV – Point of View Shot – A photography technique that records the character's viewpoint from a singular camera location mounted in a manner that represents the character's field of view.

² UHD – Ultra High Definition – A resolution generally consisting of greater than 2160 lines of horizontal resolution.

³ Megapixel – (MP) – A count of a million pixels in an image or used to express the number of individual image sensor elements on a digital camera image sensor.

⁴ SD – Secure Digital – a standard for nonvolatile memory card used in portable devices.

⁵ Wi-Fi – A local area wireless technology that allows electronic devices to exchange data over a network.

Figure 2. The micro SD card seated properly in the device. The arrow denotes the location of the card.



4.3. Video Files

The micro SD was read on a PC using a write blocker⁶. The micro SD card revealed a file and folder structure consistent with a GoPro camera. The microSD card contained three .mp4⁷ video files of 1920 x 1080 pixels in resolution with a frame rate setting of 50 frames per second (fps). One mp4 file was dated September 5, 2019 and two were dated September 6, 2019. One of these video files contained views of the accident aircraft on the ground after the accident.

The micro SD card was searched forensically for traces of corrupted and unplayable video files⁸. The search produced 210 fragments of potential video data. Each fragment was reconstituted using file recovery software. The recovery software reconstituted 1004 individual video files. Not all of the video in these files were unique. These video files were reviewed. Eight of these files contained internal views of the cockpit with the aircraft under single-pilot operation. None of the reviewed video contained information directly linkable to the accident flight.

⁶ Write blocker – a hardware device that enables read only operations.

⁷ .mp4 – a file container associated with compressed video files.

⁸ Image recorders exposed to high impact scenarios have the potential to produce corrupted, missing or unplayable media files due to abrupt cessation of power to the recording device or the ejection of the device's removable media card. A standard laboratory procedure is used to examine the device's media for potentially missing video and image files from devices involved in high impact scenarios.