

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division

Washington, D.C. 20594

April 30, 2020

Onboard Image Recorder

Specialist's Factual Report

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1. EVENT SUMMARY

Location: Big Spring, TX
Date: August 23, 2019
Aircraft: Meyers Midget 0100
Registration: N881MM
Operator: Private
NTSB Number: WPR19FA235

2. SUMMARY

On August 23, 2019, about 2015 central daylight time, an experimental Meyers Midget 0100 airplane, N881MM, impacted terrain about 5 miles southwest of the Big Spring McMahon-Wrinkle Airport (BPG), Big Spring, Texas. The airplane was registered to Montrex Racing, Inc and operated by the pilot as a Title 14 *Code of Federal Regulations* Part 91 personal flight. Visual meteorological conditions prevailed and no flight plan was filed for the local flight that originated from BGP about 2000.

3. DETAILS OF INVESTIGATION

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

Device Manufacturer/Model:	GoPro Hero
Serial Number:	N/A

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3.1. Device Description

The GoPro HERO is a compact, lightweight, POV¹ digital camera enclosed in a ruggedized housing that allows the camera to be mounted in a variety of positions using

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.

an array of supported accessories. Depending on the model, the camera supports 4K² HD³ at 60 frames per second (fps) as well as other lower quality recording resolutions at higher frame rates. The camera can be set to record still images simultaneously or independently of a video stream at a resolution of up to 12 megapixels.⁴ The camera supports recording to micro SD⁵ cards. A built in Wi-Fi⁶ module 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.

3.2. Device Condition

Upon arrival at the NTSB Vehicle Recorder Division, it was evident that the GoPro has sustained only light impact damage. Both cameras were still functional. MicroSD memory cards were removed from each device and the video and audio information was extracted from the memory card normally, without difficulty. Figure 1 is a photo of both units.



Figure 1. Photo of both GoPros recovered from the accident.

3.3. Data Description

Both devices' memory cards contained a number of video recordings. One camera appeared to have no recordings consistent with the accident flight. The other camera had recordings consistent with the accident flight when compared to the GPS data⁷, however, the recordings terminated early while the aircraft was inflight and did not capture the accident.

In high impact scenarios, GoPro cameras have been found to be susceptible to data loss. When the battery is ejected, the memory card is ejected, or the camera is disturbed in some other way by a high impact, the GoPro does not have the ability to close video files normally. When this happens, some amount of data from the recording is lost. Conversely, it is also possible that the pilot had terminated the recording using a Wi-Fi

² 4K – A resolution format of 3840 x 2160 pixels.

³ HD – High Definition – A resolution generally consisting of greater than 480 lines of horizontal resolution.

⁴ 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.

⁵ SD – Secure Digital – a standard for nonvolatile memory card used in portable devices.

⁶ Wi-Fi – A local area wireless technology that allows electronic devices to exchange data over a network.

⁷ See Global Positioning System (GPS) Factual Report which can be found in the public docket for this accident.

control method available through the GoPro's smart phone interface app. It could not be determined if the pilot ended the recording normally via the Wi-Fi control method during the flight or if data was lost due to impact.

The NTSB laboratory has developed a method to search for and potentially recapture this missing data in cases of high impact scenarios. This method was used on both microSD cards from the cameras involved and no extra data was returned. The accident portion of the flight was either not recorded due to user termination via the app or was lost due to the digital implications of a high impact.