

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



ERA22LA312

ONBOARD VIDEO RECORDER

Specialist's Factual Report

December 6, 2022

A. ACCIDENT SUMMARY

Location: Russell, Pennsylvania
Date: July 14, 2022
Time: 19:40 eastern daylight time (EDT)
Airplane: Flightstar II-SC, N6116U

B. ONBOARD VIDEO RECORDER SPECIALIST

Specialist: W. Deven Chen
Electrical Engineer – Recorder Specialist
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

The NTSB Vehicle Recorder Division received the following three files electronically. The files were recorded from a GoPro camera mounted on the left wing of the event aircraft and faced the event aircraft.

File #1:	Crash - DASH_V(3).mp4
File #2:	Crash.mp4
File #3:	20220714-1938.kml

In agreement with the Investigator-In-Charge (IIC), a video group was not conducted, and a summary report was prepared.

1.0 Onboard Video Recorder Description

The GoPro camera 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 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

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 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.

megapixels.⁴ The camera includes a wide-angle aspherical f/2.8 glass lens that provides a maximum of 170 degrees viewing angle. 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. The camera includes a GPS receiver, and when enabled, the camera records GPS location data within the video recording files.

1.1 Recording Files Description

The three files were split from one single video file before sending to the NTSB. File #1- Crash - DASH_V(3).mp4 was the image file, which contained only image and no audio, while file #2 - Crash.mp4 was the audio file containing only audio and no image. File #3 - 20220714-1938.kml contained GPS location data.

The image file was 36 seconds in length, with 1280 x 720 pixels at a frame rate of 30 frame per second (fps). The summary of the image file is detailed in Section D, Summary of the Image File below.

The audio file with the engine sounds audible was 36 seconds in length and synced with the image file.

File #3 - 20220714-1938.kml contained GPS location data recorded from 19:37:55 to 19:38:36 EDT, on July 14, 2022, with sampling rate of 1 Hz, including geometric latitude and longitude, and altitude. However, the altitude data which were all below the local elevation were determined to be invalid. Figure 1 shows the Google Earth overlay of the event flight based on the GPS location data. The kml (Keyhole Markup Language) file was converted into comma-separated value (CSV) format and is provided as attachment 1 to this report. Note that the duration of the GPS location data recording was longer than the image and audio recordings.

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.



Figure 1. Google Earth overlay of the event flight based on the GPS location data.

1.2 Time Correlation

A time correlation of the image file to the local time was not conducted, instead, the times in the report are presented in image file elapsed time from the start of the recording.

D. SUMMARY OF THE IMAGE FILE

The image file showed the accident aircraft from takeoff to a point before the impact with trees. The image file began with the aircraft stationary on the grassy runway, with engine running. There were two people on board; the pilot who was sitting on the left seat, was closer to the camera, and the passenger was sitting on the right seat. At 00:08, the pilot released the brake, and the aircraft started moving forward and accelerating. At 00:21, the aircraft became airborne. The pilot was maneuvering the control stick as the aircraft ascended. At 00:36, the image file ended with some tree branches right in front of the accident aircraft; figure 2 shows a screenshot at this moment with the pilot and passenger redacted.



Figure 2. A screenshot of the image file right before the image file ended.

Submitted by:

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