

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, DC 20594

May 7, 2021

Onboard Image Recorder – Video Files

Specialist's Factual Report
By W. Deven Chen

1. EVENT

Location:	Silt, Colorado
Date:	January 31, 2021
Aircraft:	Cessna 172
Registration:	N4376Q
Operator:	Private
NTSB Number:	CEN21LA119

2. VIDEO FILES GROUP

A video files group was not convened.

3. DETAILS OF INVESTIGATION

On February 18, 2021, the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following video files electronically:

Video File #1:	20210131_140538.mp4
File Type:	MP4

Video File #2:	20210131_141000.mp4
File Type:	MP4

3.1. Video Files Description

The two video files were recorded with a cellphone held by a passenger sitting in the back seat of the accident aircraft. The camera was facing forward toward the front seats, the control panel and the front windscreen. At times the camera view was changed, and the left and right sides of the aircraft were visible as well as the terrain. The first video file (20210131_140538.mp4) was 4 minutes and 8 seconds in length and the second video file (20210131_141000.mp4) was 14 minutes and 20 seconds in length. Both videos were recorded at a resolution of 2288 x 1080 and 30 frames per second (fps). The video files contained a 48 kHz audio track that was captured from the cellphone's microphone, however, the conversations in the cockpit were not clear due to ambient engine noise from the aircraft.

3.2. Timing and Correlation

Timing of the summary is expressed as local time (mountain standard time) based on the video file names and the length of the video files. The derived recording time for the first video file is 14:05:38 to 14:09:46, and the derived recording time for the second video file is 14:10:00 to 14:24:20 on January 31, 2021.

3.3. Summary of Recording Contents

In agreement with the Investigator-In-Charge, a video group was convened, and the following summary was developed.

The first section of the summary, section 3.3.1., contains information obtained from the first video file. The second section of the summary, section 3.3.2, contains information obtained from the second video file. For a reference to the aircraft's altitude during the accident flight, refer to the *Electronic Recorder Devices - Specialist's Factual Report* in the public docket for this accident.

3.3.1. First Video File (20210131_140538.mp4)

The video began at 14:05:38, as the aircraft was taxiing on the runway. Figure 1 is a screenshot of the camera's view. The pilot was sitting in the left seat, and a minor was sitting in the right seat. The pilot and the minor are redacted in figure 1. There was another cellphone mounted on the glareshield near the pilot. The screen of the cellphone was projecting camera view of a GoPro camera mounted in the cockpit. The view on the screen of this cellphone indicated that the recording of the GoPro camera was not activated during the time of the cellphone recordings.

At 14:06:09, the aircraft became airborne and started climbing. At 14:07:41, the pilot set the trim control, and the aircraft was at a level flight. The pilot then explained the controls to the minor as he was flying. At 14:08:30, the pilot told the minor to pull back control yoke to initiate a climb. The minor manipulated the controls and the pilot remained controlling the Throttle. At 14:08:42, as the aircraft continued to climb, the pilot told the minor that they were going to reach a "free fall"¹ as he reduced the engine power to a point where the engine sound diminished momentarily. The minor screamed playfully as the aircraft became momentarily nose down. The pilot then told the minor to let go the control yoke and stated he had control of the aircraft. At 14:08:49, the aircraft recovered from the nose down pitch attitude and returned to level flight, and the pilot was the sole manipulator of the aircraft's controls. The video ended at 14:09:46.

¹ The pilot used the word "free fall" to describe the maneuver. The maneuver was consistent with a small negative G pushover.



Figure 1: Screenshot of the camera view at the beginning of the video to illustrate the field of view.

3.3.2. Second Video File (20210131_141000.mp4)

The video began at 14:10:00. The pilot was still the sole manipulator of the aircraft's controls. At 14:10:10, as the camera turned to the right, a mountain came into view. Figure 2 is a screenshot at this time. Electric power lines were visible on the top of the mountain. The figure shows that the aircraft was flying at an altitude lower than the power lines. At 14:10:12, the camera turned back toward the front of the aircraft. At 14:10:13, the aircraft experienced an abrupt slight right roll, then returned to level. At 14:10:14, the camera view turned to the floor of the aircraft. At 14:10:15, a sound of impact was audible, and the camera view was rotating. At 14:10:17, a sound of impact of the aircraft with terrain was audible. The video ended at 14:24:20.

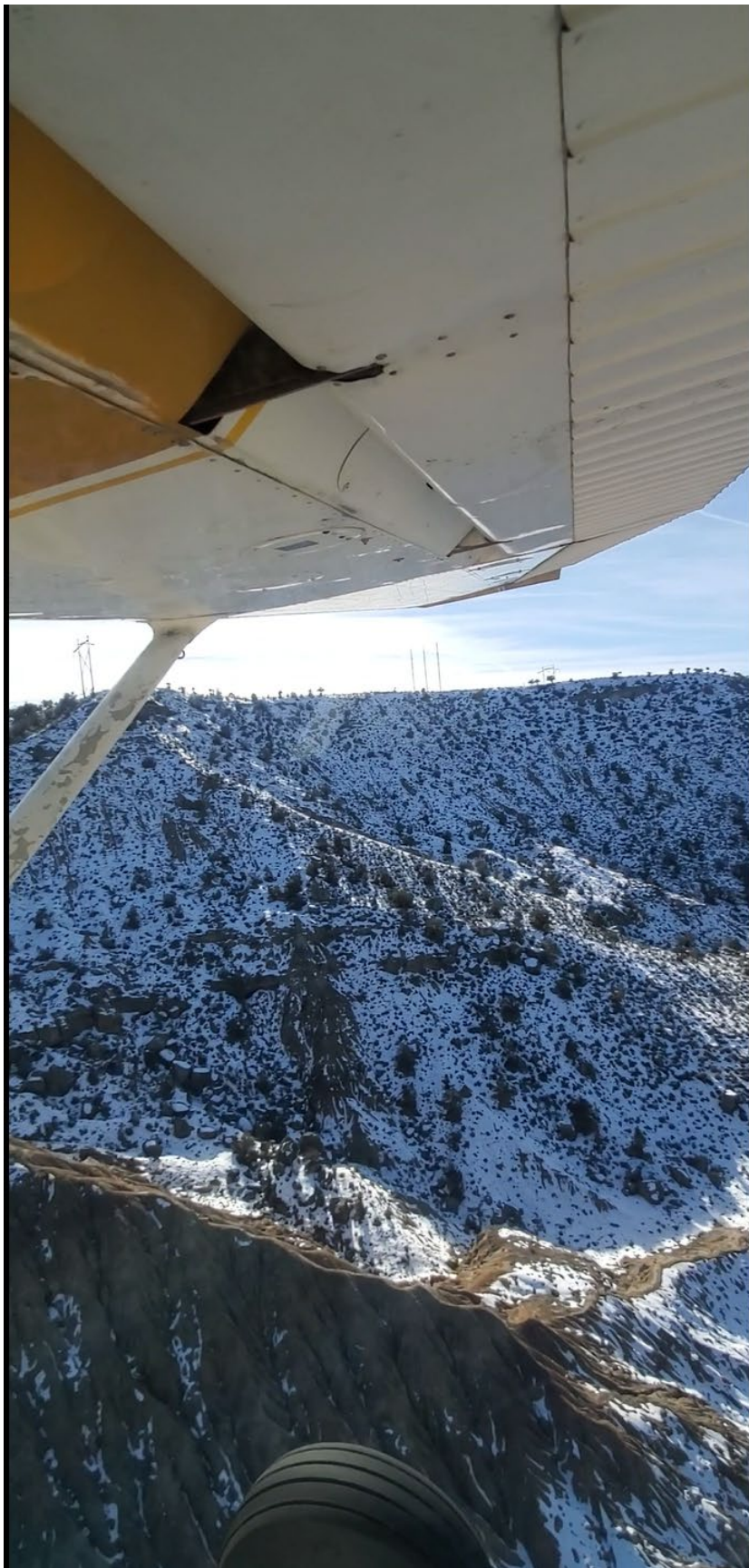


Figure 2: Screenshot at 14:10:10.