

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



CEN21FA209

SECURITY CAMERA RECORDING - STUDY

STUDY

September 26, 2022

A. ACCIDENT

Location: Hattiesburg, MS
Date: May 4, 2021
Time: 2305 central daylight time (CDT)
Airplane: Mitsubishi MU2B; N322TA

B. DETAILS OF THE INVESTIGATION

The NTSB Vehicle Recorder Division received the following video file:

Image/Video File #1: CH09.mp4

In agreement with the Investigator-In-Charge, a group was not convened, and instead this summary report was prepared.

The purpose of this study is to attempt to determine if the flare of light was due to the aircraft descending out of a broken cloud layer, a rapid change in aircraft attitude, or due to some other influence

1.0 Image/Video File(s) Information

The accident recording was made at a resolution of 1916 x 1080 pixels at a frame rate of 23.98 frames per second (fps). The field of view is represented in figure 1 below, which is an exported frame from the provided video. The screen capture shows the accident aircraft represented as luminous pixels as annotated with the yellow arrow. The type of security camera system was not documented by the investigator-in-charge (IIC) or provided by the airport facility. No information was known about the system.



Figure 1. Image showing camera view at 21 seconds into the recording.

2.0 Summary of Recording Contents

The recording provided was approximately 3 minutes and 7 seconds in length. Starting around 18 seconds elapsed time into the recording, an illuminated region of pixels appeared near the horizon. For the next few seconds, the illuminated region changed in intensity. Around 24 seconds elapsed into the recording, the illuminated area of pixels disappeared behind a terrain line.

Figure 2 shows the relationship between the approximate camera location and the site of the accident aircraft wreckage. There are approximately 2.4 statute miles from the camera to the wreckage site.

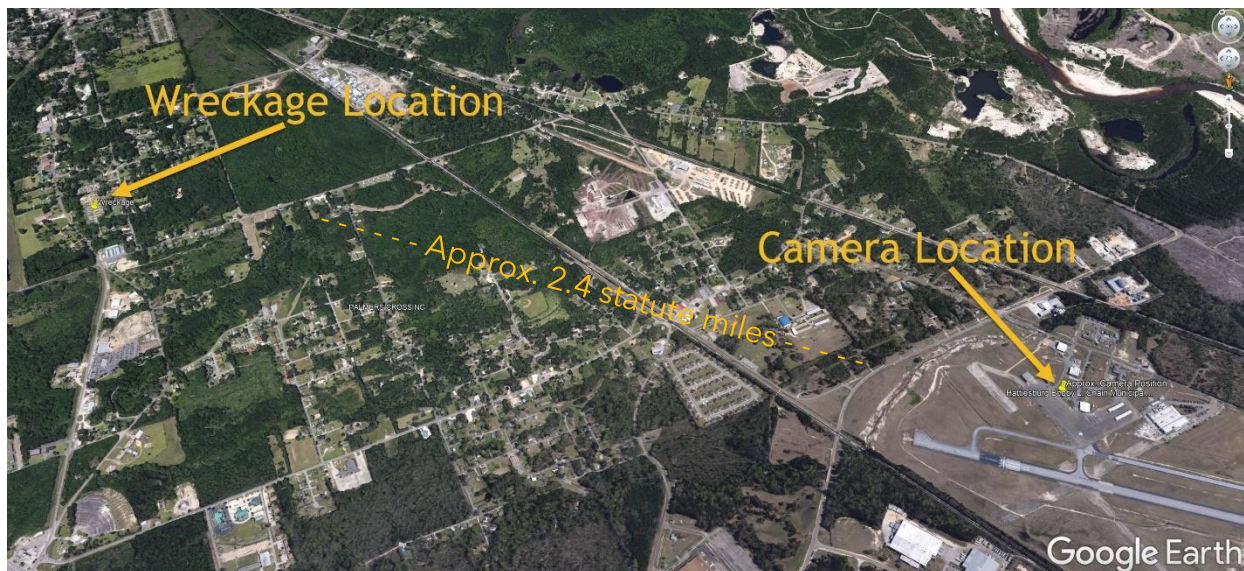


Figure 2. The camera location relative to the accident site.

Figure 3 is a series of screenshots that show an area of illuminated pixels apparent in the recording. The elapsed time of the recording is annotated. It is important to note that prior to 18 seconds elapsed the accident aircraft was not visible in the security camera recording. Between 21 and 23 seconds elapsed, the luminosity of the light in the recording changes rapidly.

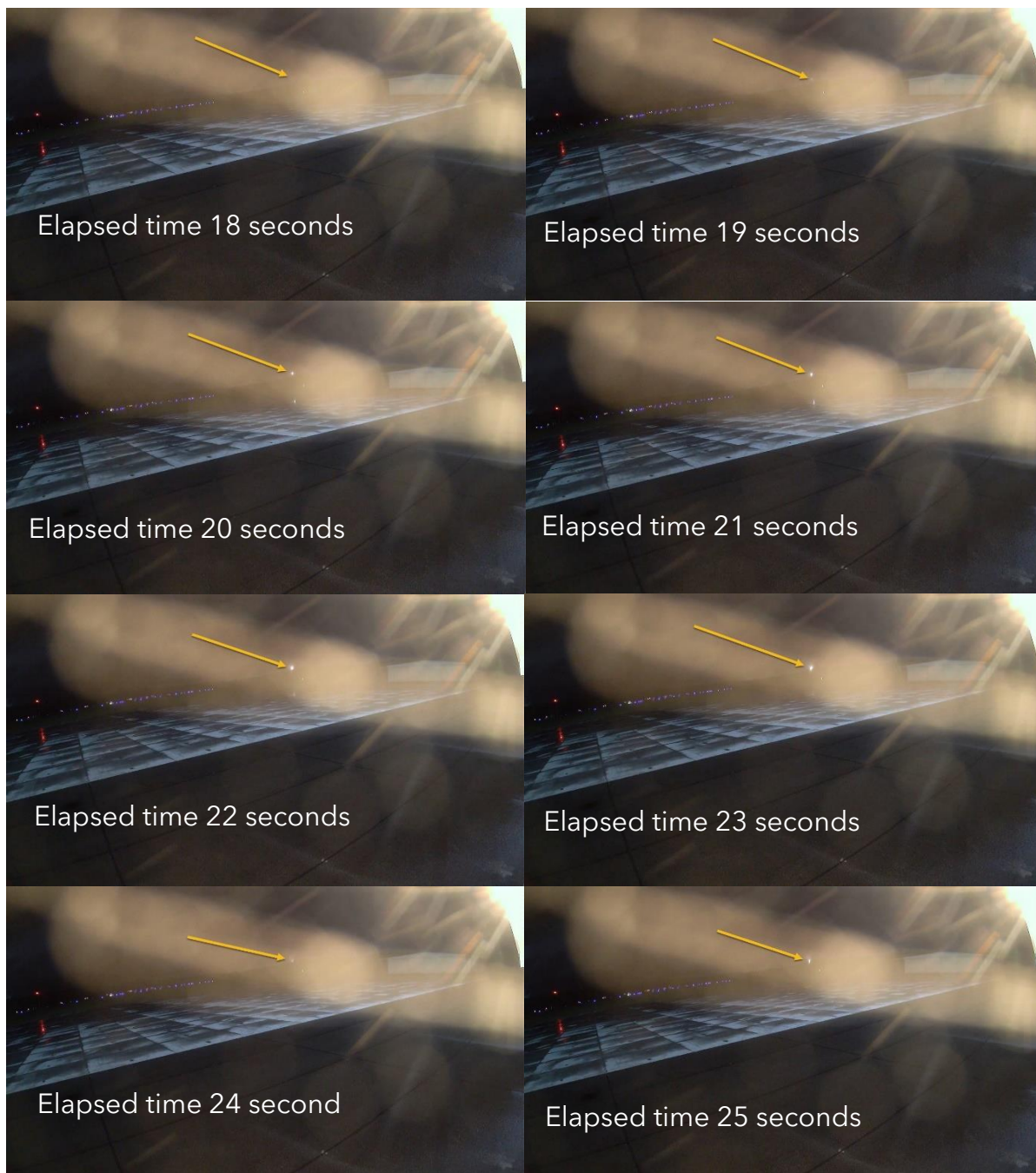


Figure 3. Images showing camera view when the airplane was visible from 18 seconds into the recording to 25 elapsed seconds. Between elapsed time of 21 seconds to the elapsed time of 23 seconds, the luminosity changes rapidly.

After elapsed time 25 seconds, the aircraft was no longer visible on the security recording.

3.0 Timing and Correlation

The exported security camera recording did not contain a timestamp. Furthermore, the download of the camera system was not conducted by NTSB personnel, and settings related to the timing of the camera system could not be ascertained.

ADS-B data provided by the IIC showed the last reported data point was taken at 23:01:28 CDT at a reported altitude of 500 feet MSL. Altitude data was only recorded to the nearest 100 feet, but the airplane was descending at a rate of 1,400 fpm for the final minute of flight (reference the Aircraft Performance Study which can be found in the public docket for this accident). The elevation of the wreckage location was reported as approximately 170 feet MSL. Figure 4 shows a tracklog created from the ADS-B data with the reported altitude shown in feet MSL.

Since the purpose of this study is to attempt to determine if the flare of light was due to the aircraft descending out of a broken cloud layer, a rapid change in pitch and roll, or due to some other influence, it was not possible to use meteorology data to verify the aircraft's altitude in relation to the provided ADS-B data to perform a time correlation. Using meteorological data to validate the timing information in this report would nullify the results of the study.

Due to lack of timing information from the security camera system, ambiguity in the ADS-B data and the rate of change of the aircraft's altitude versus the sample rate of the ADS-B data, no time correlation was possible.

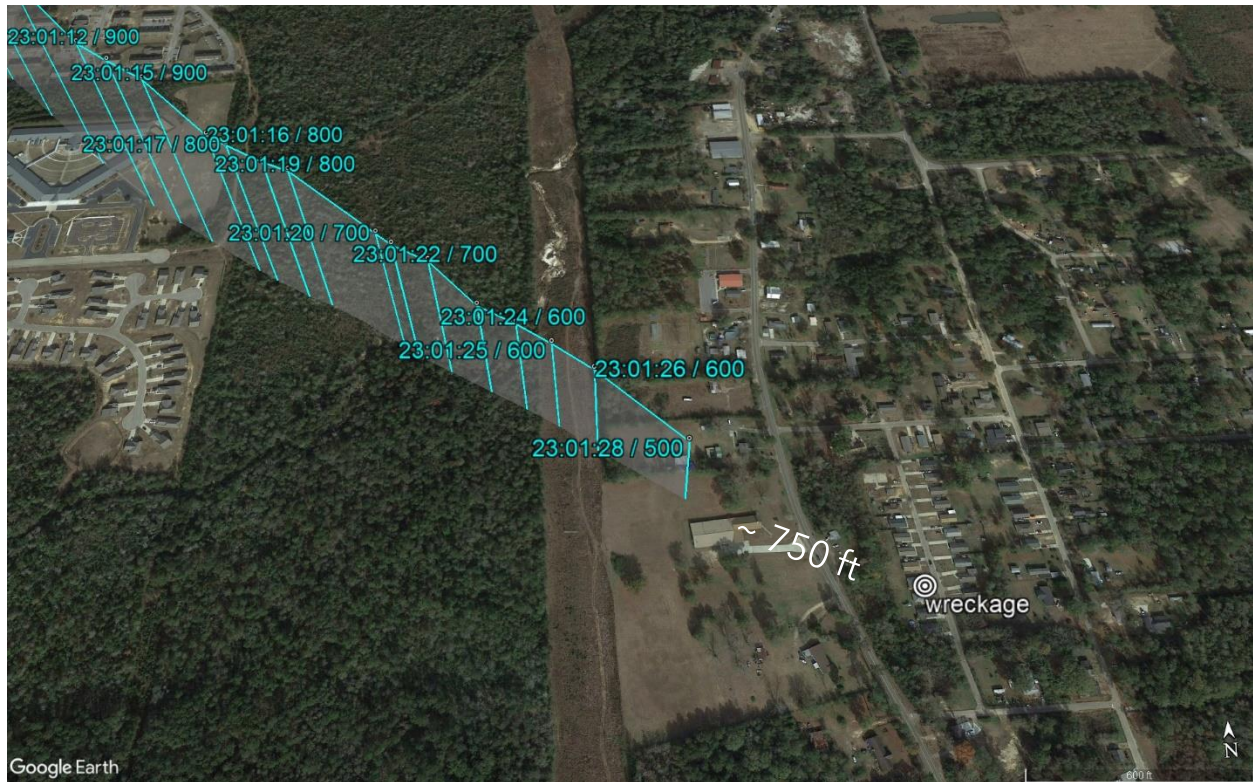


Figure 4. A tracklog created from ADS-B data showing the altitude in feet MSL.

4.0. Discussion

Related Meteorological Information

According to the Meteorology - Specialist's Factual Report, which can be found in the public docket for this accident, a METAR observation was issued at 2253 CDT, approximately 8 minutes prior to the accident and 2 NM to the southeast. The METAR was published as follows:

**[2253 CDT] METAR KHBG 050353Z AUTO 0000KT 10SM BKN007 OVC120
19/18 A2995 RMK AO2 LTG DSNT SE RAB0257E06 SLP138 P0000
T01940178=**

The METAR information reported a broken cloud layer (clouds covering more than half the sky) at 700 feet AGL, approximately 870 feet MSL in the area of the wreckage.

General

The purpose of this study was to determine if the flare of light in the security camera recording was due to the aircraft descending and illuminating a broken cloud layer, a rapid change in the pitch and roll of the aircraft, or due to some other influence, such

as a fire onboard the aircraft. Due to the inability to create an accurate time correlation, a validated conclusion could not be made.

Additionally, there are numerous sources of error in the data provided for this study. Some sources of error include a lack of timing correlation information, potential error in the ADS-B data¹, and a potential variance in the rate of change of the aircraft's vertical speed during the final descent.

The security video referenced in this study is included in the docket as Attachment 1 to this report.

Submitted by:

Sean Payne
Sr. Engineer

¹ The ADS-B information relies on reported information from the accident aircraft. This includes but is not limited to the sensitivity and calibration of the aircraft's altitude encoder, among other variables.