

# National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



DCA23LA109

## **SECURITY VIDEO**

Specialist's Factual Report

December 17, 2024

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## **A. ACCIDENT**

Location: Montgomery, Alabama  
Date: December 31, 2022  
Time: 15:39 central standard time (CST)  
Airplane: Embraer ERJ 170-200 LR, American Eagle, N264NN

## **B. SECURITY VIDEO SPECIALIST**

Specialist: Kyle Garner  
Sr. Aerospace Engineer – Recorder Specialist  
National Transportation Safety Board (NTSB)

## **C. DETAILS OF THE INVESTIGATION**

A security video group was not convened.

The NTSB Vehicle Recorder Division received the following file:

Filename: 18\_20221231\_150000.exe

The file was downloaded by non-NTSB personnel and forwarded via a file share service to the NTSB for review.

### **1.0 Video File Information**

The file, provided in an executable format, contained security camera footage of the terminal ramp and gate 4 at Montgomery Regional Airport (MGM) from 15:03 CST to 16:03 CST on the day of the accident.

The file was opened using forensic video analysis software and determined to be encoded using the H.264 standard. Metadata in the video file indicated it had a resolution of 704 x 480 pixels and a frame rate of approximately 10 frames per second. The video was in color and the file did not contain any audio.

### **2.0 Video File Timing**

Each frame of the video file, when opened in the executable format, included an overlaid timestamp that displayed the date and the time in GMT<sup>1</sup> to the nearest millisecond; however, the overlaid timestamp in the video was inconsistent with the timing of events on the flight data recorder (FDR).

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<sup>1</sup> GMT = Greenwich Mean Time.

Thus, a timing correction was established by correlating events on the video to three common events on the FDR: (1) the aircraft stopping at the gate, (2) the forward cargo door being opened, and (3) the engine ingestion event.

Once a correlation between events in the video and FDR was established, a reference to Coordinated Universal Time (UTC) time was determined using the Time UTC Hours, Time UTC Minutes, and Time UTC Seconds parameters on the FDR. UTC was then converted to local time, CST, by subtracting 6 hours. The relationship between the overlaid timestamp and local time is as follows:

$$\text{Video local time (CST)} = \text{Video overlaid timestamp} + 00:03:08.000$$

The timing of events in the summary is in local time, CST.

#### **D. SUMMARY OF EVENTS**

The recording began at about 15:03 CST on the day of the accident and its duration was approximately 1 hour. The video was not continuous, and the overlaid timestamp displayed 20-second gaps between successive frames at times. The video before the accident aircraft landing was uneventful and is not discussed in the summary.

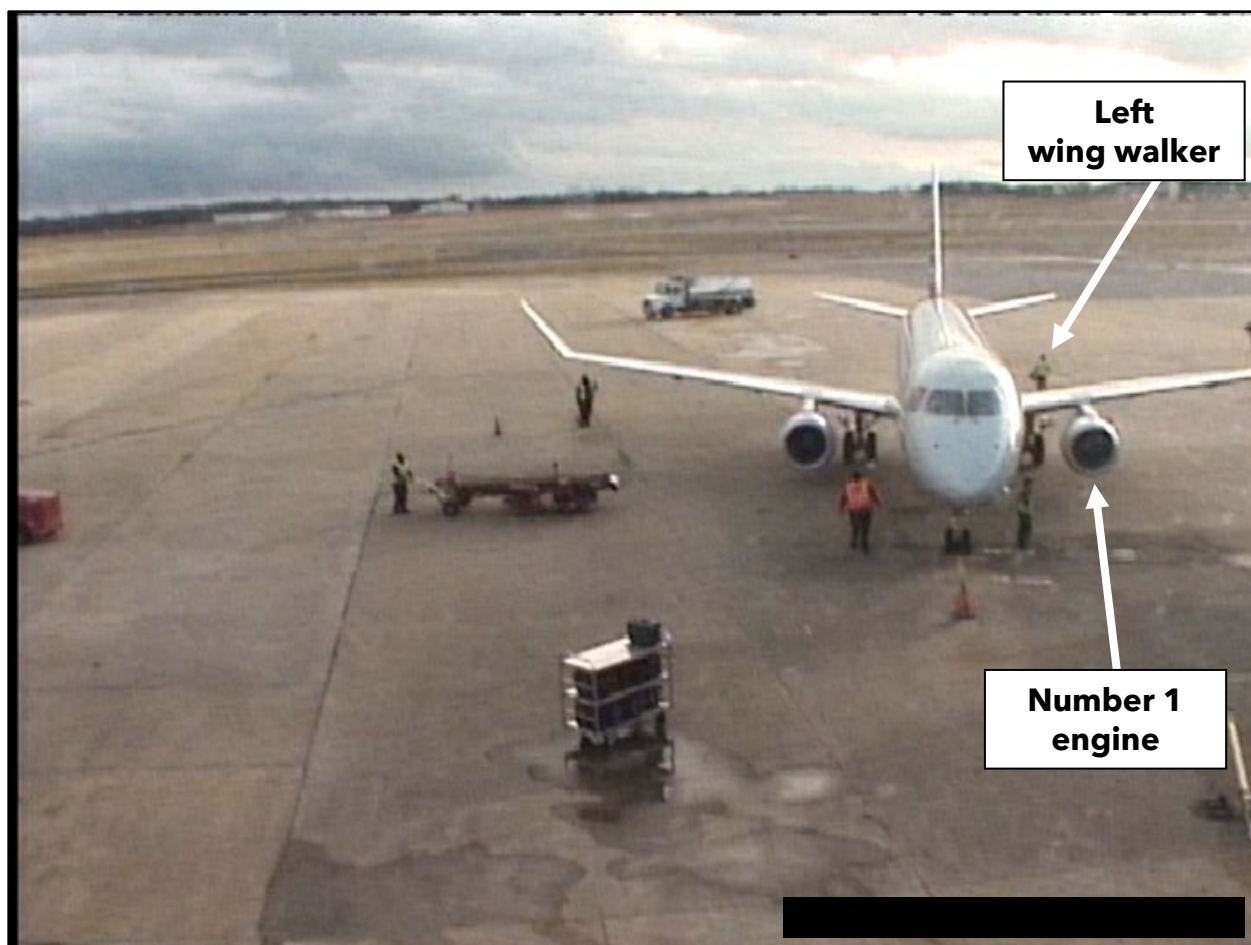
At 15:35:14, the accident aircraft was visible in a landing rollout in the distance. Four ground crew members wearing safety vests were visible having a discussion on the ramp.

At 15:37:38, the accident aircraft was visible taxiing on the ramp towards the gate. About 1 minute later, at 15:38:33, the aircraft stopped at the gate and a ground crew member installed chocks on the nose landing gear. The aircraft's beacon, which indicates one or more of the engines are operating, was flashing and remained flashing through the accident.

At 15:39:01, the ground crew member involved in the accident, hereafter referred to as left wing walker (LLW), was visible carrying a traffic cone to the tail of the aircraft. As the LLW walked towards the tail of the aircraft, the LLW stumbled from the jet blast of the still-operating number 1 engine (see Figure 1)<sup>2</sup>. After witnessing the LLW stumbling, the right wing walker motioned to the LLW with their left hand to move away from the aircraft. The jet bridge began maneuvering towards the forward entry door.

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<sup>2</sup> The number 1 engine is also referred to as the left engine, as seen by the pilot facing forward.



**Figure 1.** Security camera frame at about 15:39:01, showing the LLW in the path of the jet blast from the operating number 1 engine.

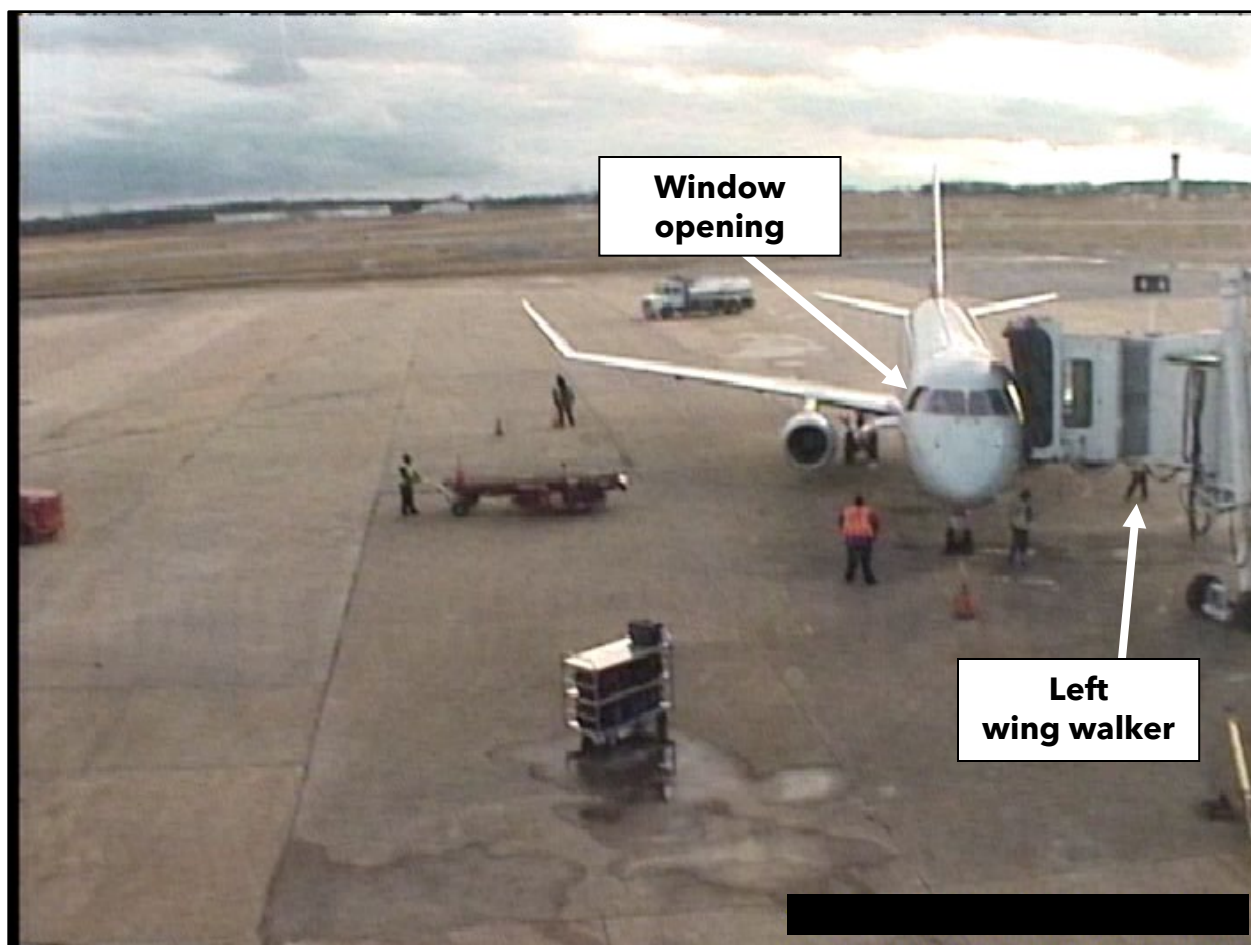
At 15:39:14, the LLW walked from the tail of the aircraft back towards the left wingtip. At the midspan of the wing, the LLW was no longer visible as the jet bridge maneuvered closer to the forward entry door and blocked the camera view.

At 15:39:15, a ground crew member opened the forward cargo door.

No video footage was available for 20 seconds, from 15:39:22 to 15:39:42.

At 15:39:44, the legs and feet of the LLW were visible walking towards the aircraft fuselage parallel to the leading edge of the left wing just outboard of the number 1 engine. The upper body of the LLW was not visible due to the jet bridge obstructing the view.

At 15:39:45, the copilot's sliding cockpit window opened, as shown in Figure 2. The aircraft's beacon was still flashing.



**Figure 2.** Security camera frame at about 15:39:45, showing the LLW walking towards the operating number 1 engine.

At 15:39:46, the LLW's legs were just forward of the number 1 engine on the outboard side. The LLW continued to walk parallel to the leading edge of the wing towards the fuselage.

One second later, at 15:39:47, the LLW appeared to stop in front of the number 1 engine and turn to the left (facing the camera). Next, the LLW's left leg stepped backward toward the operating number 1 engine. As the LLW's left foot contacted the ground, the LLW's right leg became airborne and lifted upwards into the engine inlet. Immediately thereafter, the LLW's left leg was also lifted off the ground and into the engine inlet.

At 15:39:50, smoke was visible emanating from the rear of the number 1 engine. A large mass then fell from the inlet of the number 1 engine onto the ramp.

At 15:46:11, an ambulance arrived on the scene. Additional emergency vehicles arrived shortly thereafter.

At 16:03:06, the video ended.

Submitted by:

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