

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division

May 10, 2022

Operator's Compartment & Station Video

Specialist's Factual Report By Kyle Garner

1. EVENT

Location:	San Francisco, California
Date:	September 13, 2021
Time:	1515 Pacific daylight time (PDT)
Train Operator:	Bay Area Rapid Transit (BART)
NTSB Number:	RRD21LR015

For a summary of this event, refer to the public docket for this investigation.

2. GROUP

A video group was not convened.

3. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received a multitude of video files related to the event, which included video from security cameras at Powell Street station and the operator and passenger compartment of the train involved. The video files were downloaded by non-NTSB personnel and forwarded via a file share service to the NTSB.

3.1. Video File Information

3.1.1. *Powell Street Station Security Video*

Video from 9 security cameras on the BART platform at Powell Street station on the day of the event from 1500 to 1600 PDT was provided to the NTSB for review. The video was provided in a proprietary Ocularis Exported Video Database (OML) format and viewed using the Ocularis Viewer software, which included a date and timestamp in *MM/DD/YYYY* and *hh:mm:ss.000* formats, respectively. The timestamp on the video appeared to be consistent with the time on the platform level display screens shown in the video. Metadata from the file indicating the video resolution and frame rate was not available. No audio was recorded.

3.1.2. Operator Compartment Video

Video and audio from the operator's compartment on the train involved in the event was provided in a proprietary digital video recorder (DVR) format for review. The file included video and audio from 1449 to 1540 PDT on the day of the event. The file was opened using a proprietary video player provided by the operator and then exported in Audio Video Interleave (AVI) format for playback and analysis in a forensic video player. Metadata from the file indicating the video resolution and frame rate was not available.

Each frame of the video included an overlaid timestamp that displayed the date, in YYYY/MM/DD format, and time, in hh:mm:ss format. A screenshot of the operator's compartment video showing the vantage point of the camera¹ is shown in Figure 1.

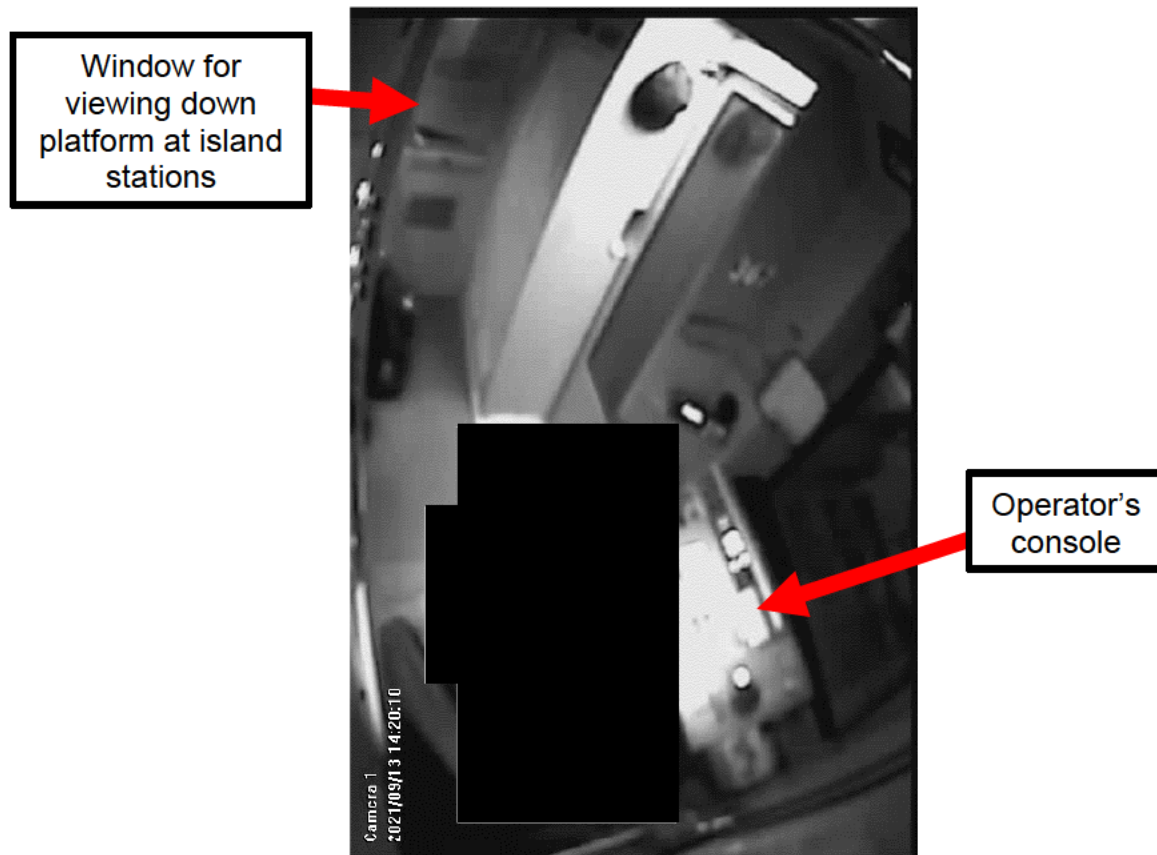


Figure 1. View of operator compartment video.

3.1.3. Passenger Compartment Video

Video from the passenger compartment on the train car involved in the event was provided in a proprietary format for review. The file included video from 1510 to 1520 PDT on the day of the event. No audio was recorded.

¹ Note the video, as displayed and exported from the proprietary video player provided by the operator, was oriented incorrectly. The video was rotated -90 degrees to the correct orientation.

The files were opened using a proprietary video player provided by the operator. The contents of the video were deemed not pertinent to the investigation and are not discussed in the summary.

3.2. Time Correlation

The operator compartment (OC) video was correlated to the timestamp in the Powell Street station security video using common events on the two video sources. Specifically, the moment when the train involved in the event came to a stop on platform 2 was used as an anchor point for synchronization. An offset, shown below, was then applied to the OC video to reflect the timestamp, in PDT, of the station security video.

$$OC\ PDT = OC\ timestamp + 00:49:06\ (hh:mm:ss)$$

For the remainder of this report, all times are referenced as PDT.

4. Summary of Recorded Events

In agreement with the Investigator-in-Charge, a video group was not convened. Instead, video pertinent to the event was reviewed and summarized. For a list of the video files used to create this summary report, see Table A-1 in Appendix A.

4.1.1. Powell Street Station Security Video Summary

The Powell Street station security video began at 1500. Events before 15:09:41, when the woman involved in the event arrived on the platform, were not pertinent and are not summarized below.

At 15:09:41, the doors to the elevator on the northeastern end of the BART platform at Powell Street station opened. A woman and a large dog stepped off the elevator. The woman was wearing a hat and a backpack. The dog was wearing a harness and a leash was attached to the back of the harness. The other end of the leash was secured to the woman's waist². The woman and dog began to walk toward the opposite (southwestern) end of the BART station platform.

At 15:12:24, the train involved in the event approached platform 2 at Powell Street station. Platform level display screens indicated the approaching train was a Dublin/Pleasanton bound, 10-car, 2-door train³. The lead car was a C1-class car.

² It wasn't clear from the video if the leash was tied around the woman's waist or attached to a point on the right-side of the woman's waist.

³ '2-door' indicates to the passengers that the approaching train consists of legacy BART cars, each with 2 usable doors for boarding.

At 15:12:47, the woman and dog were located on the platform 2 side of the station, away from the platform edge, adjacent to the rear-most⁴ door on the 9th car in the consist. The train was still slowing to a stop on platform 2.

At 15:12:49, the train stopped, and the doors opened.

At 15:12:53, the dog, with the leash still secured to the woman's waist, entered the 9th car in the consist. The woman straddled the doorway with her left foot on the platform edge detection strip and her right foot inside the car. The woman was looking up the platform toward the lead car.

At 15:12:59, the woman, who was still straddling the doorway and looking up the platform toward the lead car, began to wave with her left hand⁵. The dog remained inside the car.

At 15:13:03, the woman stepped inside the car with the dog and went out of view of the station security camera.

At 15:13:10, the woman reappeared and leaned out the car's doorway and looked up the platform toward the lead car. One second later, at 15:13:11, the car doors started to close. As the doors closed, the woman stepped off the car and back onto the platform. The dog remained in the car. The leash, still secured to the woman's waist, was visible passing through the gap between the car doors (Figure 2).

⁴ In this report, the terms *forward* or *rear* refer to the position in reference to the direction of travel of the train.

⁵ It could not be determined from the video who or what the woman was waving at.



Figure 2. Leash in 9th car, rear-most doors⁶.

At 15:13:13, the doors were fully closed. The woman turned around and noted that the dog was still inside the car and the leash was still secured to her waist. The woman unsuccessfully attempted to pry open the car doors.

At 15:13:17, the woman began to bang on the car doors and look up the platform toward the lead car. The woman was standing in the black-painted portion of the platform edge detection strip.

At 15:13:20, the train began to depart the Powell Street station. The woman, with the leash still secured to her waist, continued to bang on the car doors. As the train began to depart, the woman began to walk alongside the train.

At 15:13:25, as the train continued to accelerate and depart the station, the woman fell on her side and was dragged alongside the train.

At 15:13:37, the woman, still lying on her side, impacted the access gate on the northeastern end of platform 2 and went out of view of the platform security cameras.

⁶ Image was cropped and enlarged for readability.

At 15:19:45, another BART train approached the Powell Street station on platform 2. The train came to a stop about one car length from the southwestern end of platform 2.

At 15:23:30, BART personnel arrived at the northeastern end of platform 2 near the access gate and began to speak to witnesses. First responders arrived shortly thereafter.

Events after 15:23:30 were not pertinent to the investigation.

4.1.2. Operator Compartment Video Summary

The operator compartment video began at 1449. Events before 1512 were not pertinent and are not summarized below. For the duration of the recording, the operator was wearing personal protective equipment that covered both ears. A placard noting the car number, 367, was also visible in the recording. Radio transmissions from the train controller and other train operators were audible throughout the recording. The train's callsign was 511.

At 15:12:48, the train stopped on platform 2 at Powell Street station.

At 15:12:55, the operator got up from his console seat and walked toward the window on the opposite side of the car. The operator opened the window and looked down the platform toward the last car in the consist.

At 15:13:20, the train began to depart the Powell Street station. The operator continued to lean out the window and look down the platform toward the last car in the consist.

At 15:13:29, the operator closed the window and returned to his console seat.

At 15:14:22, the train stopped on platform 2 at Montgomery Street station.

At 15:14:28, another train operator reported on the radio that there was a commotion on platform 2 at Powell Street station.

At 15:16:05, the train stopped on platform 2 at Embarcadero station.

At 15:16:34, the train controller indicated that they had reports that someone had been dragged by a train on platform 2 at Powell Street station.

At 15:22:37, the train controller instructed train 511 to hold at West Oakland station.

At 15:23:06, train 511 stopped at West Oakland station and offloaded passengers. Shortly thereafter, train 511 went out of service.

Events after 15:23:06 were not pertinent to the investigation.

APPENDIX A

Table A-1. List of video files used in the report.

Report Section	Video File Name
4.1.1	2109_0682_PPS_J406.oml
4.1.2	2021_9_13_14_0_0.dvr