

NATIONAL TRANSPORTATION SAFETY BOARD
Vehicle Recorder Division
Washington, DC 20594

November 25, 2019

Onboard Image Recorder

Specialist's Factual Report By Charles Cates

1. EVENT

Location: Estill, South Carolina
Date: November 30, 2018
Vehicle: Trailing Locomotive
Operator: CSX Railroad
NTSB Number: RRD19FR002
Summary: Refer to Accident Summary Report, within this docket.

2. GROUP

A group was not convened.

3. DETAILS OF INVESTIGATION

On December 7, 2018 the National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following locomotive outward facing video recorder:

Recorder Manufacturer/Model: **GE LocoCAM**
Recorder Serial Number: **1073844R2**

3.1. Recorder Description

The GE LocoCAM on-board image recorder is an outward facing video recording system that records to external storage. It records video at a resolution of 720x480 pixels and 15 frames per second (fps) in color with external audio. The system also captures limited parametric data, such as speed and throttle position.

3.2. Recorder Damage

Upon arrival at the NTSB Vehicle Recorder Division, it was evident that the recorder had not sustained any heat or structural damage and the video and audio information was extracted from the device hard drive using the manufacturer's normal software and procedures.

3.3. Video Files

The recorder was installed on the trailing locomotive in the consist and was facing to the rear at the time of the accident. Visible in the image was the front of the first car in the train and a view of the sky and passing treetops at the two o'clock position in the frame. The horn was audible in the audio track of the recording.

3.4. Timing and Correlation

The times used in this report are expressed as local time of the accident, eastern standard time (EST).

Timing of the transcript was established by correlating the video events to common events on the event recorder from the lead locomotive. Specifically, the times when the throttle position changed and the time when the train came to a stop were used to synchronize the video time with the event recorder time. This relationship provides timing accuracy to +/- 1 second. For additional details on the lead locomotive event recorder, see the Locomotive Event Recorder Specialist's Factual Report, available in this docket.

3.5. Summary of Recording Contents

In agreement with the Investigator-In-Charge, a video group did not convene, and a summary report was prepared. The purpose was to document when the horn was audible during the time leading up to the accident.

Table 1 provides the times that the horn was active during the two minutes leading up to the accident as well as the events that were used for timing the video with the lead locomotive event recorder.

Table 1. Times that the horn was active in two minutes leading up to accident.

Time Range (EST)	Event
10:15:18 - 10:15:21	Horn, long blast
10:15:27 - 10:15:31	Horn, long blast
10:15:33	Horn, short blast
10:15:35 - 10:15:36	Horn, long blast
10:15:37	Throttle to T7
10:15:48 - 10:15:52	Horn, long blast
10:15:53	Throttle to T6
10:15:57 - 10:16:01	Horn, long blast
10:16:05	Horn, short blast
10:16:07 - 10:16:09	Horn, long blast
10:16:13 - 10:16:16	Horn, long blast
10:16:18	Horn, short blast
10:16:20	Horn, short blast
10:16:27 - 10:16:30	Horn, long blast
10:16:32 - 10:16:35	Horn, long blast
10:16:38 - 10:16:40	Horn, long blast
10:16:43	Horn, short blast
10:16:45 - 10:16:47	Horn, long blast
10:16:48 - 10:16:50	Horn, long blast
10:16:53 - 10:16:55	Horn, long blast
10:16:56 - 10:17:00	Horn, long blast
10:17:03 - 10:17:06	Horn, long blast
10:17:08 - 10:17:16	Horn, long blast
10:17:11	Throttle to T5
10:17:12	Throttle to T2
10:17:25	Throttle to Idle
10:19:19	Train came to a stop