

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



RRD23FR013

ONBOARD IMAGE RECORDER

Specialist's Factual Report

March 14, 2024

A. ACCIDENT

Location: Elliston, Virginia
Date: July 6, 2023
Time: 1942 eastern daylight time (EDT)
2342 coordinated universal time (UTC)
Train: Norfolk Southern (NS) 814V04

B. ONBOARD IMAGE RECORDER SPECIALIST

Specialist Michael Portman
Aerospace Engineer - Recorder Specialist
National Transportation Safety Board (NTSB)

C. DETAILS OF THE INVESTIGATION

In agreement with the Investigator-In-Charge (IIC), an Onboard Image Recorder group was not convened, and a summary was prepared.

The NTSB Vehicle Recorder Division received the following video files from the image recorder onboard locomotive NS1019:

File Name	Description	Duration (mm:ss)
RV6117H_07062023_153520.bin	Head-end video #1	27:23
RV6117F_07062023_153520.bin	In-cab video #1	27:21
RV6117H_07062023_180447.bin	Head-end video #2	10:03
RV6117F_07062023_180447.bin	In-cab video #2	10:00

1.1 Recording Description

The files consisted of two external forward-facing (head-end) videos, and two internal in-cab videos. One set of videos was taken during the train's operation beginning at 17:09, and the other set captured the derailment sequence, with the videos beginning at approximately 19:38. The videos were viewed through the recorder manufacturer's playback software, RailView. The resolution and framerate of the videos could not be determined due to the nature of the playback software. Each video was recorded in color, and the external videos were accompanied by an external audio track.

2.0 Timing and Correlation

The times used in this report are expressed as the approximate local eastern daylight time (EDT) of the accident. Timing of the summary was established by correlating video events to common events on the locomotive event data recorder.¹ Specifically, the locomotive's final stopping time was used to establish a time correlation.

D. SUMMARY OF EVENTS

The first set of recordings began at 17:09:05 (head-end) and 17:09:07 (in-cab) with the train traveling on a single main track. The crew appeared generally alert and attentive. At 17:29:12, the crew appeared to react to an unknown stimulus, and the engineer began slowing the train. As the train slowed, the crew continued to monitor train systems, looked over paperwork, and communicated over the radio. The train came to a stop at approximately 17:32:35. After the train stopped, the crew continued looking at paperwork and communicating over the radio. Both videos in the first set of recordings ended at 17:36:28.

The second set of recordings began at 19:38:30 (head-end) and 19:38:33 (in-cab) with the train again traveling on a single main track. The crew appeared generally alert and attentive. At approximately 19:44:06, the crew began reacting to an unknown stimulus, including the engineer manipulating several controls, as the train quickly slowed. The train stopped at 19:44:35. The train remained stationary for the remainder of the recordings. The crew conversed with one another, looked outside, and the engineer manipulated several controls. Both videos in the second set of recordings ended at 19:48:33.

Submitted by:

Michael Portman
Aerospace Engineer - Recorder Specialist

¹ For more information, see the Locomotive Event Recorder - Specialist's Factual Report in the docket.