

National Transportation Safety Board

Office of Research and Engineering

Washington, DC 20594



RRD22MR007

AUDIO FILES

Specialist's Factual Report

September 8, 2022

A. ACCIDENT

Location: San Bruno, California
Date: March 10, 2022
Time: 1033 Pacific standard time (PST)
Train: Caltrain 506

B. AUDIO FILES SPECIALIST

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

C. DETAILS OF THE INVESTIGATION

An audio files group was not convened. The NTSB Vehicle Recorder Division received audio files pertaining to this accident via electronic file transfer.

1.1 Files Description

The files included recorded phone calls and radio transmissions between Caltrain dispatch, the accident train, and the on-site railway workers. A total of 159 audio files were received. The files were reviewed, and, in agreement with the Investigator-In-Charge, 54 were included in this report. Specifically, there are 14 audio files included, each containing phone call conversations between the railway worker in charge (RWIC, radio callsign MW-200) and Caltrain dispatch, and 40 radio transmission files included, containing several conversations between Caltrain control and multiple other individuals. The files received were in .wav format.

1.2 Timing and Correlation

The files received were titled with timestamps indicating the start time of each recording, approximately in local PST. Since there was no external timing source with which to perform a timing validation or correlation, the times are presented as received, approximately in local PST. One of the phone call files was received without a timestamp, only titled "first call," and thus the timing was indeterminate for that file.

D. AUDIO FILE DATA

Table 1 below details each of the received 35 recordings, including their start time, duration, end time, and data source. Entries in the observation column include brackets "[]" to indicate editorial notes, parentheses "(")" to indicate uncertain speech, and stars "*" to indicate unintelligible words.

Table 1. Summary of audio recordings received.

Start Time (PST)	Duration	End Time	Observation	Notes	Source
"First Call"	00:01:48	Unknown	Discussion between dispatch and Maintenance of Way [MW]-200 about which Track and Times [TTs] to set up, MW-200 was interested in Center Street from 0930 down to Sierra. Only Sierra to Scott had been pre-approved, but dispatch can get Sierra to Scott to hold, then north Scott to Center hold until called then drop it. The two agreed on the plan.	File name did not include timestamp, so specific timing could not be made.	Phone
09:29:35	00:00:13	09:29:48	N/A	No conversation, dialing noises only	Phone
09:29:53	00:00:37	09:30:30	Call from dispatch to MW-200 to set up TT for Control Point [CP] Scott until 1600.		Phone
09:30:36	00:01:35	09:32:11	Continued call from dispatch to MW-200, TT 209 at CP Scott main track 2, between CP Sierra and CP Scott until 1600 granted.		Phone
09:32:17	00:01:11	09:33:28	Continued call from dispatch to MW-200, TT 210 at CP Scott main track 2, between north CP Scott and CP Center with permission to shunt until called granted, MW-200 confirms they will get the crews on the tracks and release one of the TTs quickly.		Phone
09:42:55	00:00:27	09:43:22	Call from MW-200 to dispatch. Dispatch picked up and asked to hold.	Mostly dialing noises	Phone
09:43:40	00:00:05	09:43:45	Continued from call above. N/A	No conversation	Phone
09:43:47	00:00:31	09:44:18	Continued call from above. Overheard conversation between MW-200 and another individual. Radio call to another individual was overheard regarding another TT.		Phone
09:44:31	00:00:11	09:44:42	Continued from call above. Additional overheard radio calls.		Phone

Start Time (PST)	Duration	End Time	Observation	Notes	Source
09:44:45	00:00:48	09:45:33	Continued from call above. Dispatch took the call off hold; MW-200 informed dispatch he needs to "get one on the track" but can wait for another train to pass. It would take 5-7 mins for them to get on the tracks and can call back when ready to get a TT for CP Scott to CP Center.		Phone
09:47:37	00:00:13	09:47:50	N/A	No conversation, electronic dialing noises only	Phone
09:47:52	00:01:08	09:49:00	Call from dispatch to MW-200, TT 211 at CP Scott main track 1, between CP Scott and CP Center until called granted.		Phone
09:49:25	00:00:08	09:49:33	Train 112 called MW-200.		Radio
09:49:48	00:00:20	09:50:08	Continued from radio call above. MW-200 asked train 112 if they stop at Bayshore. Train 112 responded that they already left Bayshore and are going through CP Geneva. MW-200 responded to stand by, which train 112 confirmed.		Radio
09:50:36	00:01:06	09:51:42	Non-pertinent conversation between dispatch and other individuals. MW-200 called train 112, asking if they stopped at "south city". Train 112 responded "** south city, over." [overlapping radio transmissions] MW-200 advised train 112 that they were "using track bulletin Form B."		Radio
09:51:43	00:00:42	09:52:25	Continued from radio call above. MW-200 read instructions to train 112 for Form B 7493 restriction number 1 main track 1 between 8.3 to 9.8 authorized 112 past the red flag and proceed at maximum authorized speed without stopping, holding at South San Francisco until further instructions. Train 112 read back the instructions, which were largely unintelligible.		Radio

Start Time (PST)	Duration	End Time	Observation	Notes	Source
09:52:26	00:00:39	09:53:05	Continued from radio call above. Train 112 continued to read back the instructions, including that they would stop at South San Francisco and await further instructions. MW-200 confirmed readback was correct.		Radio
09:54:46	00:00:48	09:55:34	Call from MW-200 to dispatch, TT 211 between CP Scott and CP Center main track 1 released, MW-200 again mentioned they will get the other TT released soon.		Phone
09:56:52	00:00:14	09:57:06	MW-200 called train 112 and mentioned he would keep the train rolling.		Radio
09:57:07	00:00:14	09:57:21	The subgroup coordinator called MW-200 for a radio check.		Radio
09:57:24	00:01:02	09:58:26	Train 112 called MW-200 for permission to proceed. MW-200 issued the train permission to proceed through limits of Form B 7493 as per previous instructions max speed authorized. Train 112 read back. MW-200 confirmed read back was correct and mentioned that he had to drop TT ahead of them. Train 112 again confirmed they had authority from previous instructions to continue on, max speed on main track 1.		Radio
09:58:05	00:01:18	09:59:23	Call from MW-200 to dispatch, TT 210 between north CP Scott and CP Center main track 2 released.		Phone
09:58:36	00:00:13	09:58:49	Train 112 reported they were delayed in block.		Radio
10:00:00	00:00:05	10:00:05	The subgroup coordinator called MW-200.		Radio

Start Time (PST)	Duration	End Time	Observation	Notes	Source
10:00:13	00:00:55	10:01:08	Continued from radio call above. MW-200 responded and asked for the subgroup coordinator's location. The subgroup coordinator responded that they were at 11.6, San Bruno Yards and that the crew was picking up their materials. MW-200 confirmed the location as 11.6, then issued instructions to afterward proceed north onto main track 2 to South San Francisco, to then pick up a watchman. The subgroup coordinator read back, then confirmed they would proceed to the work spot after finishing at the yard.		Radio
10:09:33	00:00:30	10:10:03	MW-200 authorized train 111 into Form B 7493 restriction number 1 main track 1 between 9.8 to 8.3 authorize 111 to pass the red flag at 9.8, proceed at maximum authorized speed without stopping. Train 111 read back the clearance.		Radio
10:10:11	00:00:10	10:10:21	Continued from radio call above. MW-200 confirmed readback was correct.		Radio
10:24:17	00:00:08	10:24:25	Train 506 announced that they had an approach limited and were going to be crossing over at Sierra.		Radio
10:25:07	00:00:16	10:25:23	A track inspector called control, having just cleared Junction; (Train 506) called MW-200.		Radio
10:25:27	00:00:44	10:26:11	Continued from radio call above. MW-200 called train 506, track work in Form B, 7493 restriction number 1, main track number 1, between 11th avenue 8.3 to 9.8, authorized train 506 past the red flag located at 8.3 max (authorized) speed without stopping. Train 506 read back the clearance.		Radio
10:27:01	00:00:06	10:27:07	Largely unintelligible transmission with train 506 (slow clear at Sierra)		Radio
10:28:38	00:00:09	10:28:47	Unknown/Unintelligible		Radio

Start Time (PST)	Duration	End Time	Observation	Notes	Source
10:30:09	00:00:53	10:31:02	Control called train 112 and informed them that they need to wait for a train at Dumbarton after northbound. Control then called train 506. Control mentioned that train 506 was next and had a slow order after Millbrae near CP Mary. Train 506 then called with approach limited clear at CP Scott.		Radio
10:31:16	00:00:06	10:31:22	Unknown source, called San Jose Control North.		Radio
10:32:04	00:00:15	10:32:19	Largely unintelligible side conversation including (We have an approach *). UP Switcher called San Jose Control North [overlapping transmissions].		Radio
10:32:20	00:01:50	10:34:10	Discussion about a San Jose switch over [overlapping transmissions, largely unintelligible]. Began hearing the subgroup coordinator [mic squelch at 10:32:34, heard voice at 10:32:44, intelligible at 10:33:00] to San Jose North. Subgroup coordinator asked for control to call police and 911, located at 11.7 main track 2, and reported that the train "hit everybody". Control copied, then called train 503 [subgroup coordinator responded] and instructed 503 to Millbrae and hold. 503 copied.	Multiple overlapping transmissions, subgroup coordinator initial calls are unintelligible until the preceding conversation ends	Radio
10:34:13	00:00:07	10:34:20	Short, mostly unintelligible call from control to/regarding train 506.		Radio
10:34:20	00:00:42	10:35:02	Subgroup coordinator repeated previous messages. Control copied and repeated assurances that the area is protected. Subgroup coordinator repeated previous messages again. MW-200 then called and reported that they were headed to subgroup coordinator.		Radio
10:35:04	00:00:29	10:35:33	Control called train 506, repeated call [overlapping transmissions]		Radio

Start Time (PST)	Duration	End Time	Observation	Notes	Source
10:35:35	00:00:20	10:35:55	Control called train 506 again [background discussion about doors and windows not open, source unknown], repeated call, [another unrelated/unintelligible call took place]		Radio
10:36:06	00:00:39	10:36:45	Unknown background conversation, subgroup coordinator repeated request to send help. Control responded affirmative, then instructed train 503 to change to CP Center.		Radio
10:36:51	00:00:07	10:36:58	Unknown/Unintelligible (unlimited clear Dumbarton)		Radio
10:37:04	00:00:07	10:37:11	Advanced approach (03)		Radio
10:37:27	00:00:16	10:37:43	Communication between control and UP switcher, needing to delay activities.		Radio
10:37:45	00:00:05	10:37:50	Silent	No conversation	Radio
10:37:56	00:00:07	10:38:03	Control called train 506.		Radio
10:38:07	00:00:05	10:38:12	Silent	No conversation	Radio
10:38:20	00:00:10	10:38:30	Unknown/Unintelligible		Radio
10:39:02	00:00:18	10:39:20	Unknown source, conversation about being delayed according to a message *, control copied.		Radio
10:39:25	00:00:05	10:39:30	Silent	No conversation	Radio
10:39:31	00:00:09	10:39:40	Control called any member of train 506 crew.		Radio
10:39:41	00:00:27	10:40:08	Control called the subgroup coordinator, asking if they see train 506 or have communication with train 506.		Radio
10:40:10	00:00:55	10:41:05	The subgroup coordinator responded that they need fire department/paramedics. Control repeated that they need to get in touch with the train crew. The subgroup coordinator responded that he needs to go look, that the crew is good and they're evacuating the train, but he can't reach the engineer. The subgroup coordinator then repeated that the train is on fire and repeated his request to send assistance.		Radio

Start Time (PST)	Duration	End Time	Observation	Notes	Source
10:41:21	00:00:05	10:41:26	Silent	No conversation	Radio

Submitted by:

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