



RRD22LR007

Caltrain collision with on track equipment and
derailment

March 10, 2022

San Bruno,
California

National Transportation Safety Board

Operations Factual Report

Accident

NTSB Accident Number: RRD22LR007

Date of Accident: March 10, 2022

Time of Accident: 10:33 a.m.

Type of Train and No: Passenger train 506

Railroad Owner: Caltrain

Train Operator: Transit American Services - Herzog

Train Crew Members: Engineer, Conductor, Assistant Conductor

Location of Accident: San Bruno, California

Group

Ryan Frigo
Operations Group Chairperson
National Transportation Safety Board

Dr. Stephen Jenner
Human Performance Group Chairperson
National Transportation Safety Board

Frank Simmons
Operating Practices Inspector
Federal Railroad Administration

Robert Stabler
Operating Practice Inspector
California Public Utilities Commission

Ron Stahl
Deputy General Manager of Operations
Transit America Services, Inc.

Jim Maynard
Safety Task Force Investigator
BLET

Louie Costa
National Safety Team
SMART-Transportation Division

Accident Summary

On March 10, at approximately 10:33 am local time, Southbound Caltrain Train No. 506 struck three on-track hi-rail style trucks at Mile Post 11.6 on Main Track No. 2 near San Bruno, CA. Train No. 506 consisted of a lead locomotive and 5 passenger cars. One struck vehicle was a Ford F350 pick-up truck, and two were large flatbed vehicles equipped with boom cranes and trailers for installing overhead catenary poles. All three were equipped with rubber tires for highway travel and steel wheels for railroad travel. They were rail bound and stopped for loading equipment from the side of the track onto the trucks at the time of the accident. The struck vehicles were working with a TASI subgroup coordinator who was working directly with a TASI roadway worker in-charge (RWIC) who was not on scene at the location. The RWIC was using track and time authority to protect the work group and their vehicles. At the time of the accident there was not a current track and time authorization for the work group and their vehicles at the accident location. Prior to the collision, train no. 506 had just completed a station stop at 22nd St. Station and was expressing to Millbrae Station. After colliding with the on-track hi-rail equipment, a diesel fuel induced fire ball encircled the locomotive and lead section of the first passenger car. Train crew members immediately began evacuating passengers through the rail cars towards the rear of the train.



Figure 1: Photograph of accident scene taken on 3/11/22.

The locomotive engineer, one construction contractor, and 3 passengers were transported to local hospitals. There are no fatalities reported at this time.

Caltrain is using contractor forces to complete an ongoing major multi-year construction project (the project is in 4 segments, all at different levels of completion) to electrify the railroad with an overhead centenary system and changing over track circuits (includes grade crossings) to be compatible with electrified upgrades that are being installed between San Francisco and San Jose while replacing traditional diesel electric locomotives and coach cars with electric multiple unit trainsets.

Operating Crews

Caltrain Train No. 506

Locomotive Engineer:

On duty 03/10/22, 0354 – Deadhead to Away from Home Terminal by 0454

- Original Hire Date 07/12/21
- Most recent certification 9/20/21

Conductor:

On duty 03/10/22, 0454

- Original Hire Date 12/01/92
- Most recent certification 5/5/21

Assistant Conductor:

On duty 03/10/22, 0454

- Original Hire Date 12/13/21

Train Dispatcher:

On duty 03/10/22, 0500

- Original Hire Date 12/06/14

Train Consist

- Passenger Train
- 1 Locomotive, 5 Cars

Method of Operation

Signal indication CTC with PTC overlay.

Interviews:

Operations and Human Performance Group Interviews¹

Locomotive Engineer

- Hired out Caltrain July 12, 2021. Completed training trips over territory. Familiar with territory approx. 60 trips on the territory. Good rest night before and nap day of.
- 03/09/22 (Day before Incident) he worked Trains 405/114. On duty at 0522 and tied up at 1403.
- 03/10/22 he was on duty at 0354 to deadhead to San Francisco by 0454 to work trains 104/305/506/119. He had a job briefing with conductor and assistant conductor regarding the stops to be made and all restrictions
- Air brake test and running air test, PTC online and working as intended. First two legs uneventful. Normal conditions same form B for last couple days. Contractors doing regular work.
- Normal practice for crew crossing around MOW. Engineer got clearance thru Form B by MW200, then called by dispatcher for a slow order while running and blowing crossings. Engineer ran in his normal routine.
- After Form B he got an *approach limited* signal, relayed signal to Conductor. Then got a *limited Clear* which was also relayed to the Conductor (50mph thru crossover) going from main track 1 to main track 2. Normal operation.
- The train was traveling about 65 mph when it crested the grade. The engineer saw MOW equipment on the track ahead couldn't immediately determine which track it was occupying.
- The engineer stated that a couple seconds later he determined that the equipment was on Track 2, and immediately applied emergency braking. He braced himself, and seconds later felt the impact of the train striking the first truck
- Simultaneously, he could hear Subgroup Coordinator calling out "emergency, emergency, emergency!"
- With flames at the nose of the engine, he escaped out the conductor's side door and started running south away from the flames. He then moved south and moments later was picked up by officer and taken back to the rally point where passengers and his crew were located. He believed that people were fatally injured or seriously injured until he spoke with the Conductor. This is when he was notified that there were to known fatalities.

Conductor Interview

- The conductor has 29 years of service. Hired out with AMTRAK in 1992 as an Assistant Conductor. Became a Conductor in 1994. Remained with Caltrain when TASI took over.

¹ All interviews were conducted on March 12, 2022

- On duty on 3/10/22 at 0454 for train 506. This train would make two round trips from San Francisco to San Jose and back.
- Conductor arrived early because he knew that he would have an Extra board engineer on this shift. Met engineer in the crew room with assistant conductor to job brief and review paperwork for the days trip, Track Warrants, form A, B's, and C's.
- Went out to train to ready train for the trip.
- Job Briefed with Asst. Conductor as to when they would board passengers because of another train with a close departure time on the same platform.
- Instructed engineer that he would remind him at 22nd Street to call RWIC MW200 for form B on Main Track 1 & 2 at MP 8.3 to MP 9.8 and of their next stop at Millbrae.
- Acknowledge that engineer had obtained permission from MW 200 to proceed though the limits of the Form B.
- Heard dispatch inform that they would need to copy a Form A speed restriction after stopping at Millbrae.
- Heard engineer call out Limited Clear at CP Scott. Knew that they were traversing back from main track 1 to main track 2 at CP Scott.
- The conductor heard the air dump which was an emergency application of the train brakes and braced himself for the emergency stop. He then heard emergency, emergency, emergency over the radio. He was in first car when the emergency brakes were applied
- After train stopped conductor, who was in the vestibule area, saw flames outside the train. He did not see any smoke-related issues inside the car. Conductor sensed panic from passengers in the 1st car and instructed passengers to calmly walk to the rear of the train. Conductor was guiding all passengers towards the rear of the train. Conductor realized that the fire was not from the train but from what the train had struck.
- Conductor continued walking towards the rear of the train instructing all passengers to walk to the rear of the train.
- At the third car conductor noticed that an emergency window had been opened and that a passenger was possibly attempting to exit the train through this window. Conductor instructed the passenger to not go out the window, but to head to the rear of the train with him.
- As Conductor was moving passengers to the rear of the train, he noticed that at the fourth car the doors had been opened, possibly by a passenger.
- Conductor met the assistant conductor in the fifth (last car) with passengers and they proceeded to evacuate all passengers to a safe location.
- After all passengers were thought to be clear of the train, conductor went back into the train to verify that there were no passengers still on the train. Conductor walked all the way from the rear car to the first car of the train to verify that all passengers had been evacuated. Conductor encountered smoke in the first car but continued to verify that no passengers were still on the train. Conductor then walked back through the train to the rear to confirm that no passengers were on the train.

- Conductor then verified that all passengers were safe. After verifying that they were safe with Police that had arrived on the scene, the conductor headed north outside the fence to try to find the engineer and account for his safety. When the conductor made it to the location of head locomotive, he saw a police car approach and saw that the engineer was in the back seat of the police car and safe.
- Conductor then returned to where the passengers had been evacuated and to the assistant conductor to provide any aide that he could.
- Conductor told investigators there were 75 passengers on the train, 15 bikes, and no PNA's (Passengers Needing Assistance).

Assistant Conductor Interview

- The Assistant Conductor hired out on 12/13/21.
- One- and one-half months of classroom training, one month of On-the-Job training. 25 days marked up as an Assistant Conductor.
- On duty on 3/10/22 at 0454 for train 104/305/506/119. This train would make two round trips from San Francisco to San Jose and back.
- Arrives early to review the paperwork himself (track warrants, form B's, Form A's form C's) prior to participating in the pre-trip job safety briefing with the conductor and the engineer.
- Noted that the crew would be facing a Form B during the third leg of their trip.
- Heard the engineer acknowledge that they had been cleared through the Form B at MP 8.3 to 9.8.
- Heard the engineer call out a limited Clear at CP Scott, which he knew meant that they would be crossing over from Main Track 1 to Main Track 2.
- Assistant Conductor was in the last car when he heard the train go into emergency. Emergency brake application or impact knocked him to the ground.
- After recovering he called conductor for instructions on what conductor wanted him to do.
- Conductor instructed him to stay there as he was coming his way. Assistant conductor then immediately began to check on passengers. After opening doors on the last car with the conductor, assistant conductor checked the last car and fourth car for any passengers that may still be aboard.
- Assistant conductor then remained with passengers to secure their safety until emergency personal arrived and while conductor re-entered the train to check for any possible remaining passengers and when conductor departed to try to find the engineer.

Caltrain Train Dispatcher

- The train dispatcher has worked for Caltrain for seven (7) years, solely as a train dispatcher.

- During the seven (7) years the train dispatcher primarily worked the extra board and worked several different shifts.
- The train dispatcher was recently awarded or bid and has worked a regular schedule as the morning north end train dispatcher for the past two months, working Monday thru Friday 0500 – 1300.
- The train dispatcher stated that he regularly heads to bed between 1930-2000 PST to be prepared for work at 0500 PST. He has a short commute and arrives approximately 0425 PST and begins to perform turn over with the night shift dispatcher.
- Once the train dispatcher had completed his turnover with the night shift dispatcher, he begins to login to his profile to go through and review Form A, Form B, and Form C track bulletin's.
- After reviewing track bulletin's that are in effect the train dispatcher said he logs in to the workstation and reviews the approved work areas that will require Form B protection and track and time protection that is given to the train dispatchers by the liaison who works with the contractors performing work on the track to coordinate planned work that will require protection of roadway workers.
- The train dispatcher stated on Tuesday and Wednesday he coordinated with the same roadway worker in charge (RWIC), but on Thursday a new RWIC was running the form B between MP 8.3 – MP 9.8 and who would also be providing track and time protection for a subgroup working south of his Form B location until they traveled north into the RWIC Form B work limits.
- The train dispatcher sensed some confusion from the RWIC of how the work was done previously on Tuesday and Wednesday during the job briefing on the phone.
- The train dispatcher briefed with the RWIC MW 200 about the work to be done that morning, he mentioned to the RWIC that the working limits were not approved by the liaison like they were on Tuesday and Wednesday, and that he would have to issue track and time protection in two pieces for main track # 2
- The train dispatcher granted RWIC MW 200 track and time #210 on main track #2 from CP Scott to CP Center Track until called and was given an okay time of 0932 PST this track and time was for the on-track equipment to travel to the work location of MW 200.
- The train dispatcher stated the crew would have to wait for one northbound train to pass before he could give them track and time on main track # 1. After the northbound train passed the Center Street grade crossing MP 12.63 the train dispatcher granted RWIC MW 200 track and time #210 on main track #2 from CP Scott to CP Center until called and was given an okay time of 0932 PST this track and time was for the ontrack equipment to travel to the work location of MW 200.
- The train dispatcher granted RWIC MW 200 track and time #211 on main track #1 from CP Scott to CP Center until 0948 PST track and time # 211 was okayed at 0948 PST and released at 0954 PST (this is the track they could possibly foul while putting equipment on the track main track # 2).

- Additionally, the train dispatcher granted RWIC MW 200 track and time # 209 on main track #2 from CP Sierra to CP Scott which was inside of RWIC MW 200 form B location.
- RWIC MW 200 asked for permission to shunt the track, which was granted by the train dispatcher. The train dispatcher stated that when equipment sets on the track at grade crossings is when he will see a track indication from a shunt.
- Once a shunt / track indication goes away within track and time limits it is considered normal. However, if the RWIC attempts to release any track and time and a track indication is present the train dispatcher will not allow the RWIC to release his limits until the track indication is resolved.
- The train dispatcher said the employee in charge (EIC) of subgroups rarely or at all personally brief with the train dispatchers, the RWIC provides the train dispatchers with all of the communication for the EIC of the subgroups.
- When RWIC MW 200 released track and time # 210 at 0958 PST, it left the on-track equipment unprotected on main track # 2 between CP Scott and CP Center. The train dispatcher stated that Caltrain train # 112 was leaving South San Francisco and he decided against crossing the train from main track #1 to main track # 2 the “normal” southbound track. In hindsight the train dispatcher felt if he would have crossed train #112 back to the “normal” southbound track the train would of stopped at San Bruno Station and would of departed “delayed in block” to the next intermediate signal which was just north of the work group that was struck by train # 506. If train # 112 had been operating delayed in block the train dispatcher conveyed in our interview that the crew might have been able to stop short of the on-track equipment when they became aware they were on the track. His thought process of keeping train 112 on MT-1 was due to passenger signs were already displayed and if he changed the arrival track the passengers would have been on the wrong side.
- Instead, the train passed the work group on the adjacent track, the following southbound train # 506 was crossed over from main track #1 to main track # 2 at CP Center into the on-track equipment located at MP 11.7.
- The train dispatcher said after the RWIC MW 200 released track and time #210 he never saw any track indications on his dispatcher board which might have alerted him of the on-track equipment still on main track # 2.
- The train dispatcher said when he finished his radio job briefing with the Union Pacific South San Francisco job, he heard “emergency, emergency, emergency!” being called out on the radio. The train dispatcher said he was unable to contact the crew of train # 506. The train dispatcher spoke to the EIC of the subgroup to let him know he had notified everyone: fire, police, medics and they were enroute.
- The train dispatcher protected the adjacent track (#1) and main track # 2 with blocks, the train dispatcher contacted transit police twice to report the collision.

CAD System Display Screens

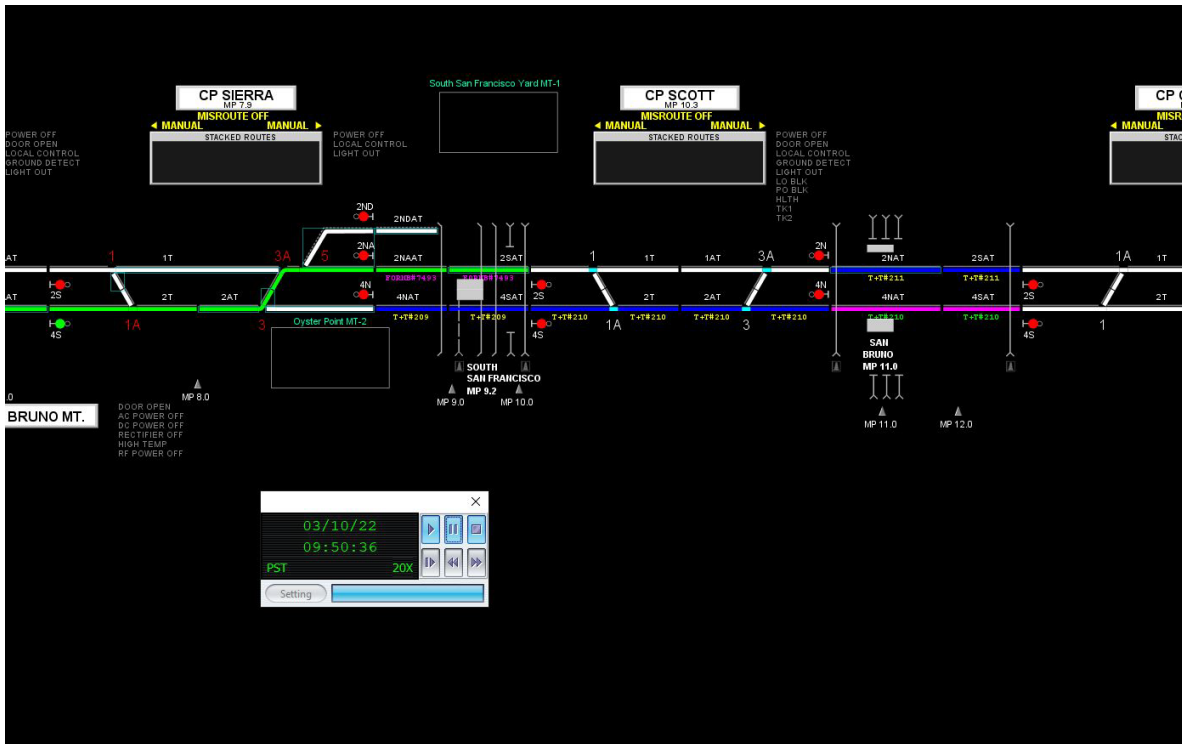


Figure 2: Screenshot from the train dispatchers CAD system when T&T Authority 209, 210, and 211 are all active. The blue line indicates the location of the T&T

authority. The magenta line is a shunt occurring in the field in a block that is protected by T&T authority.

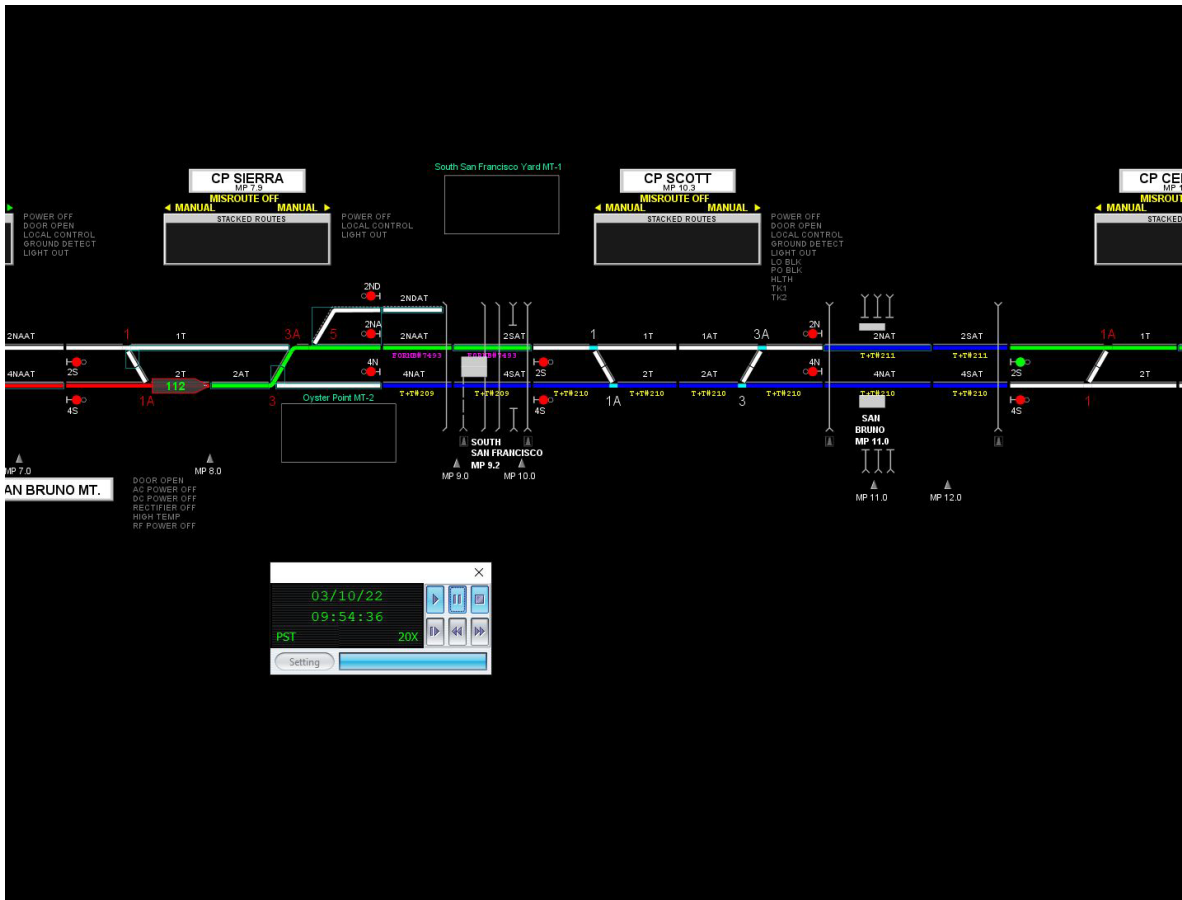


Figure 3: Screenshot from the train dispatchers CAD system when T&T Authority 209, 210, and 211 are all active. The 112 Icon is SB Caltrain #112. The red line indicates the block occupied by train #112. The green line is the set route for train #112.

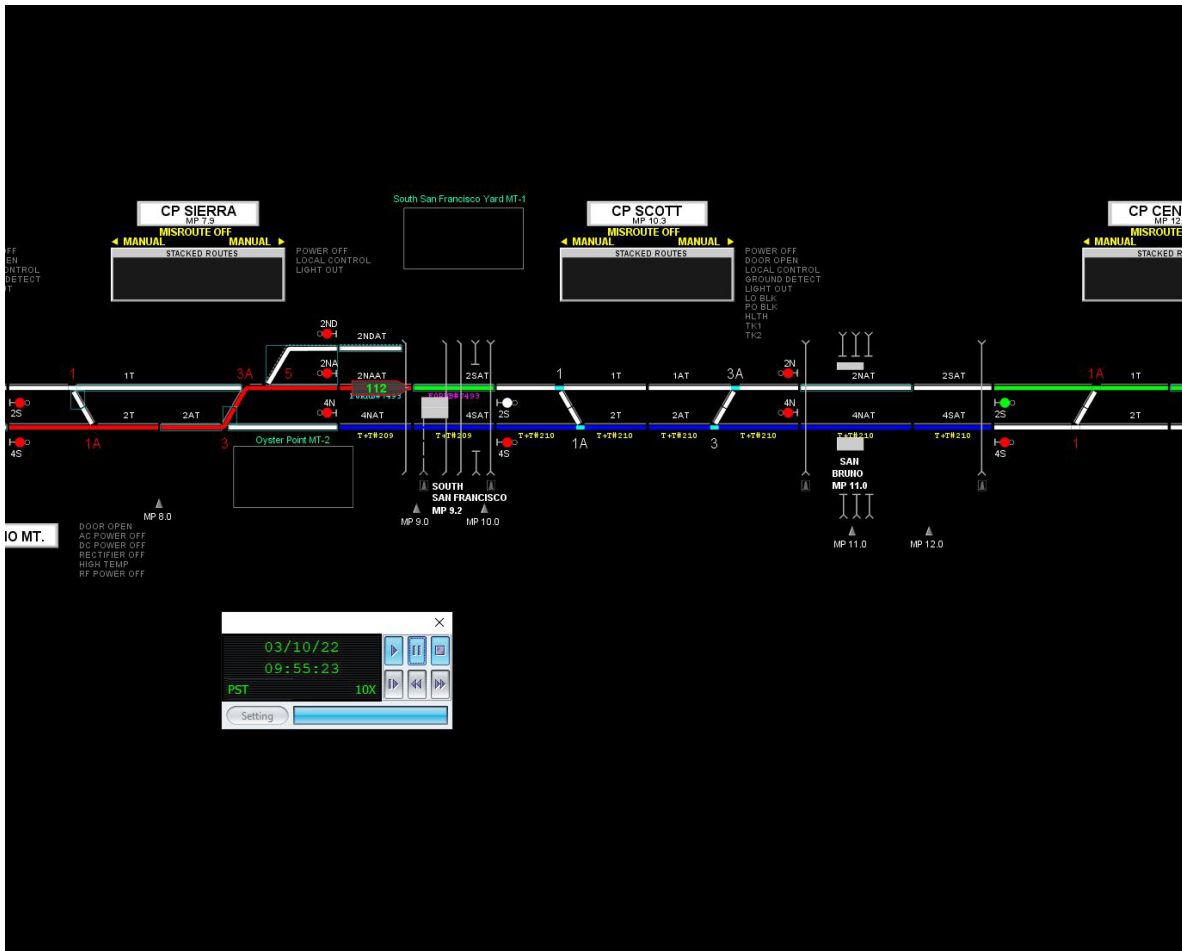


Figure 4: Screenshot from the train dispatchers CAD system when T&T Authority 209 and 210 are active. T&T authority 211 was released at this time. The 112 Icon is SB Caltrain #112. The red line indicates the block occupied by train #112. The green line is the set route for train #112.

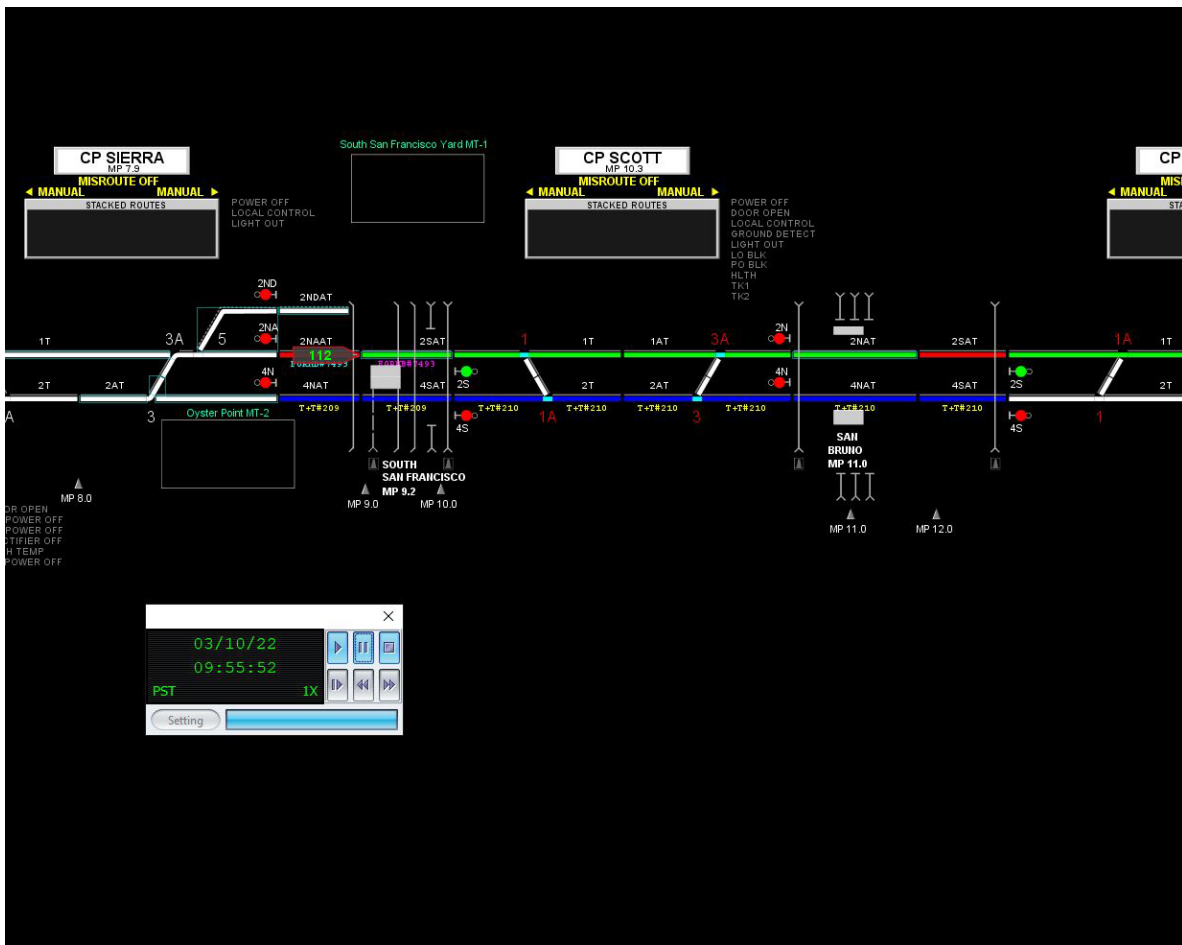


Figure 5: Screenshot from the train dispatchers CAD system when T&T Authority 209 and 210 are active. The 112 Icon is SB Caltrain #112. The red line indicates the block occupied by train #112. The green line is the set route for train #112.

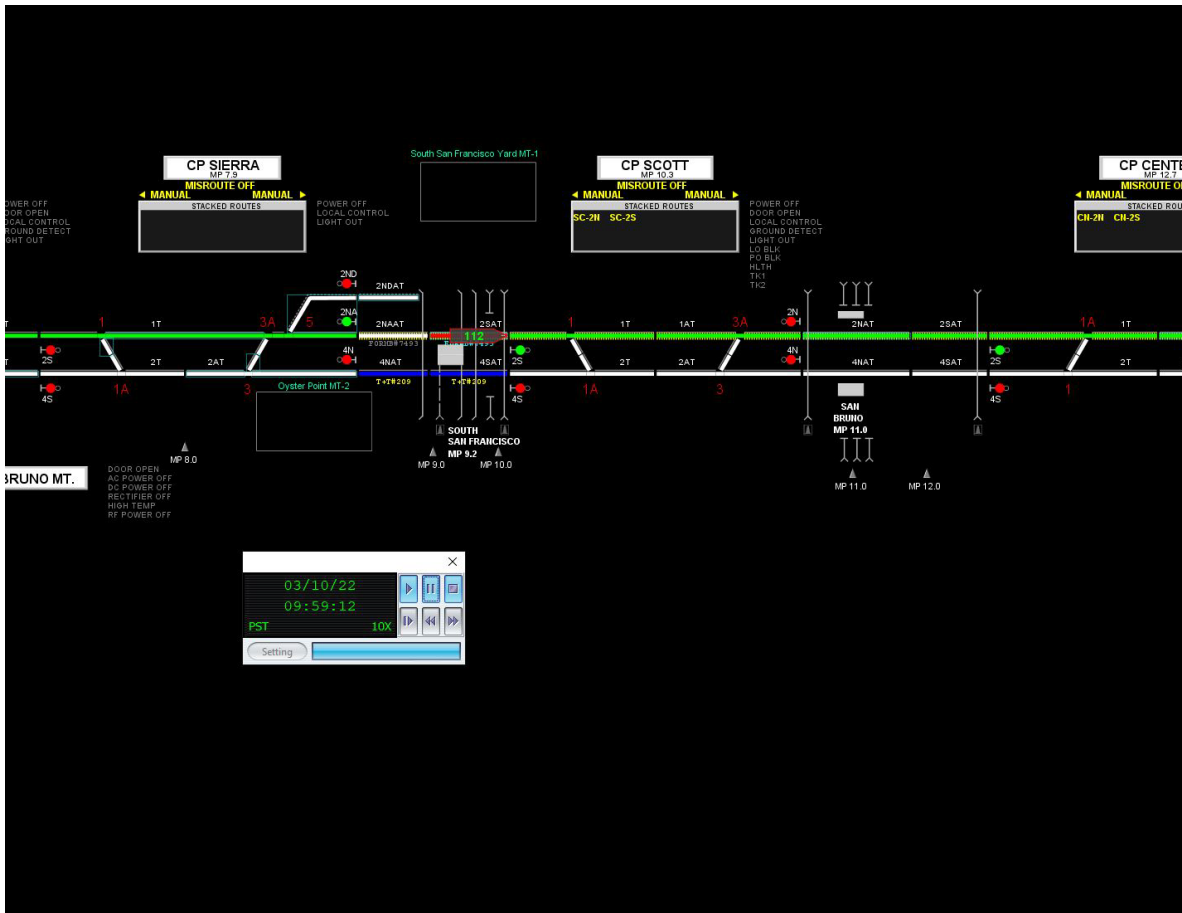


Figure 6: Screenshot from the train dispatchers CAD system when T&T Authority 209 is active. T&T authority 210 has been released at this time. The 112 Icon is SB Caltrain #112. The green line is the set route for train #112.

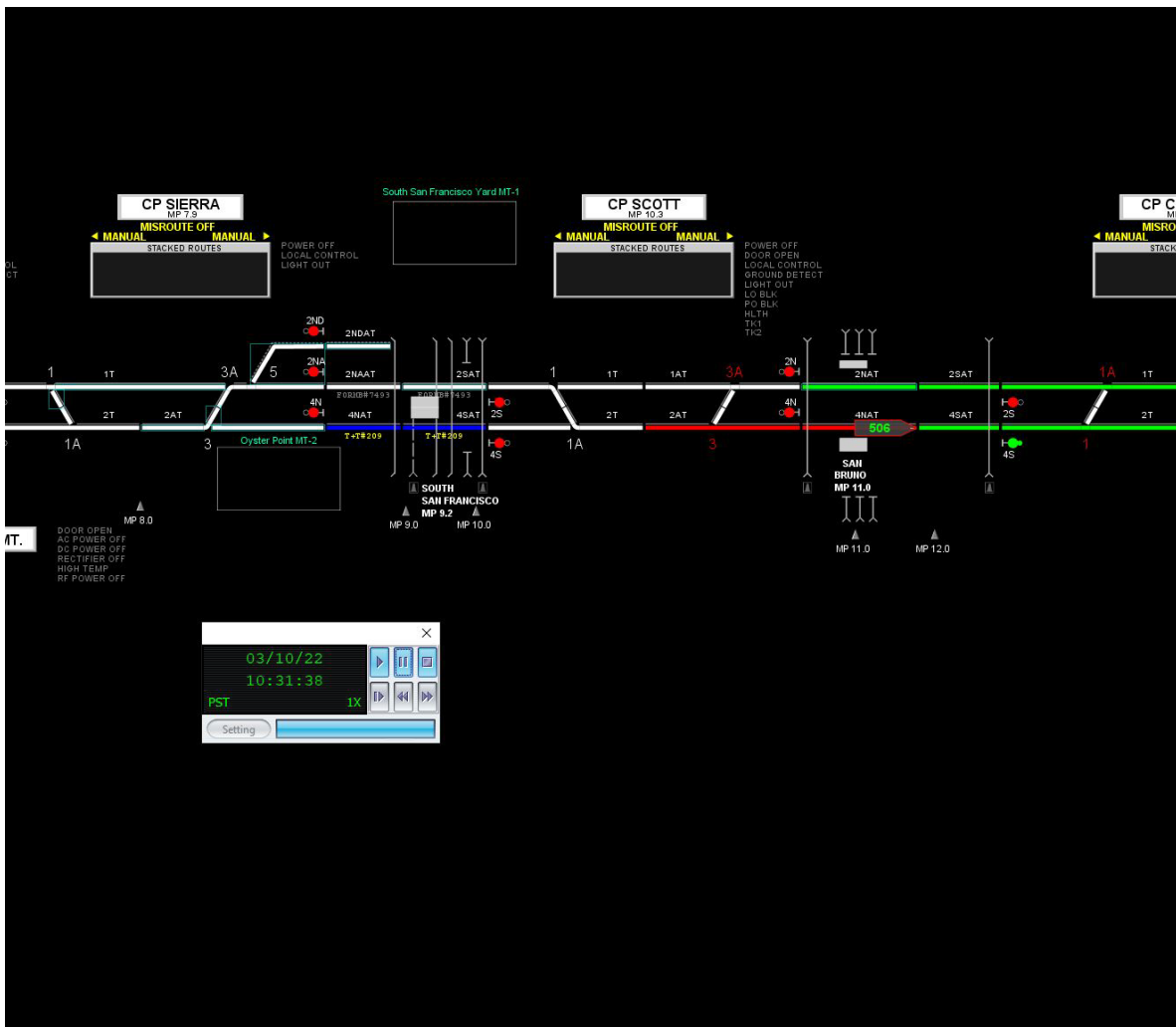


Figure 7: Screenshot from the train dispatchers CAD system when T&T Authority 209 is active. The 506 Icon is SB Caltrain #506. The green line is the set route for train #506. The red line indicates the block that occupied by train #506. In this image, train #506 is in the block where the collision occurred.

Group Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____
 Employees Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____
 Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____
 Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____
 Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____

Have all personnel working in your limits been cleared? Yes No Release (Time) 16:14

Track and Time Authority (Rule 10.3) * Retain this document for 7 days after use*

AUTHORITY NO. 209 DATE: 3/10/22
 TO: 200 AT: SCOTT

2. Track and Time limits granted on Main Track # 2 between SIERRA
 and SCOTT until 16:08

3. Joint with _____ Make all movements at restricted speed
 prepared to stop short of men and equipment fouling track.

4. Behind _____ Will work shunt signals/circuits within Control Points? Yes No
 OK (Time) 0931 Dispatcher: JDM

Permission to take the dual control switch into the hand position. Yes No

5. Made Joint With: _____ OK (Time): _____ Dispatcher (Initials): _____

6. Extended until: _____ OK (Time): _____ Dispatcher (Initials): _____

Job briefing must be held with each work group in accordance with OTS Rule 6.3.1 E

Multiple Authority No. 209 Name: TIM HILDRAY Ack Rec'd 0932 Limits Cleared _____
 Work Authority No. 209 Name: GORTALS Ack Rec'd 1201 Limits Cleared _____
 Group Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____
 Employees Authority No. _____ Name: _____ Ack Rec'd _____ Limits Cleared _____

Have all personnel working in your limits been cleared? Yes No Release (Time) 11:30 12:40

ENG FORM-0012

Figure 8: Image of RWIC's T&T logbook entry for T&T authority 209

TransitAmerica Services INC.

TRACK AND TIME AUTHORITY

Track and Time Authority (Rule 10.3)

* Retain this document for 7 days after use*

AUTHORITY NO. 210
TO: M/W 200

DATE: 3/10/22
AT: SCOTT

2. Track and Time limits granted on Main Track # 2 between N.L CP SCOTT
and CREATED until CALLED.

3. Joint with _____ Make all movements at restricted speed
prepared to stop short of men and equipment fouling track.

4. Behind _____ Will work shunt signals circuits within Control Points? Yes No

OK (Time) 0932 Dispatcher: JDM

Permission to take the dual control switch into the hand position. Yes No

5. Made Joint With: _____ OK (Time): _____ Dispatcher (Initials): _____

6. Extended until: _____ OK (Time): _____ Dispatcher (Initials): _____

Job briefing must be held with each work group in accordance with OTS Rule 6.3.1 E

Multiple	Authority No. <u>210</u>	Name: <u>T. HODGSON</u>	Ack Rec'd <u>0934</u>	Limits Cleared _____
Work	Authority No. _____	Name: _____	Ack Rec'd _____	Limits Cleared _____
Group	Authority No. _____	Name: _____	Ack Rec'd _____	Limits Cleared _____
Employees	Authority No. _____	Name: _____	Ack Rec'd _____	Limits Cleared _____

Have all personnel working in your limits been cleared? Yes No Release (Time) 0958

Figure 9: Image of RWIC's T&T logbook entry for T&T authority 210

Track and Time Authority (Rule 10.3) * Retain this document for 7 days after use*

AUTHORITY NO. 211 DATE: 3/10/22
 TO: MR/W 200 AT: 30077

Track and Time limits granted on Main Track # 1 between 500
 and CENTEL until CALLED

3. Joint with _____ Make all movements at restricted speed
 prepared to stop short of men and equipment fouling track.

4. Behind _____ Will work shunt signals circuits within Control Points? Yes No
 OK (Time) 0948 Dispatcher: SDM

Permission to take the dual control switch into the hand position. Yes No

5. Made Joint With: _____ OK (Time): _____ Dispatcher (Initials): _____
 6. Extended until: _____ OK (Time): _____ Dispatcher (Initials): _____

Job briefing must be held with each work group in accordance with OTS Rule 6.3.1 E

	Authority No.	Name:	Ack Rec'd	Limits Cleared
Multiple	_____	_____	_____	_____
Work	_____	_____	_____	_____
Group	_____	_____	_____	_____
Employees	_____	_____	_____	_____

Have all personnel working in your limits been cleared? Yes No Release (Time) 0958

ENG-FORM-0012
 Track and Time Authority
 February 1, 2016

Figure 10: Image of RWIC's T&T logbook entry for T&T authority 211

CPUC OP Inspector Oversight at Caltrain*

The following dates operating practice inspections for the CPUC of Caltrain / TASI operations: 03/4/2021 operating practice inspection for the following activity codes: 217O, 218T, 220C, 222O, 229X, 232X, 238O, CERT, RADX. On 06/15/2021 operating practice inspection for the following activity codes: RWLC, 222O, 229X, RADX, RTAW. On 08/24/2021 operating practice inspection for the following activity codes: 217T with Caltrain and Altamont Corridor Express. However, **due to COVID-19 restrictions instituted by the CPUC for their employees, the operating practice inspector was not allowed to ride the body of the train or controlling locomotive from the beginning of the

pandemic, those restrictions were still in effect on the day of the accident. Provided by CPUC OPS working group member.

Parties to the Investigation - Acknowledgment Signatures

The undersigned designated *Party to the Investigation* representatives attest that the information contained in this Operations and System Safety Group Factual Report is a factually accurate representation of the information collected during the on-scene investigation, to the extent of their best knowledge and contribution in this investigation.

//s//
Ryan J. Frigo, NTSB

Date 8/23/22

N/A
Frank Simmons, FRA

Date N/A

//s//
Robert Stabler, CPUC

Date 9/27/22

//s//
Ron Stahl, TASI

Date 9/27/22

//s//
Jim Maynard, BLET

Date 9/27/22

//s//
Louie Costa, SMART

Date 9/27/22

Appendix A: Form B 7493



TRACK BULLETIN FORM B

No. 7493 On: 03/09/22 District: Peninsula Caltrain

To: All Trains

BE GOVERNED BY RULE 15.2 WITHIN THE FOLLOWING LIMITS:

Rest. Void	Rest. No.	Limits: MP To MP		From	Until	Track	Foreman or Gang No.	Yellow-Red Flags for	
								SWD Trains	NWD Trains
	1	8.3000	9.8000	03/10/2022 09:00	03/10/2022 16:30	MT 1	MW 200		
	2	8.3000	9.8000	03/10/2022 09:00	03/10/2022 16:30	MT 2	MW 200		

FLAGS LOCATED FIELD SIDE OF THE OUTERMOST RAIL APPLY TO MT-1 AND MT-2

No. Of Restrictions: 2

OK 03/09/22 14:07

SCO: KCS

Appendix B: CPUC Post Accident Notes

Field Observation Notes

03/10/22 – 03/11/22

Submitted by CPUC OP Inspector Robert Stabler

NTSB Accident # RRD22LR007

FRA Accident # HQ-2022-1548

Collision of Caltrain Train #506 and On Track Work Equipment

On March 10th at 1033 pacific standard time (PST) Caltrain Train #506 collided with on track work equipment on main track number 2 at MP 11.7. At approximately 1128 PST I was notified of the accident by my supervisor in charge of the coast region of the CPUC. I happened to be in Oakland Ca conducting an operating practice inspection of the Union Pacific Railroad approximately 22 miles away. After being notified of the accident I drove approximately 27 minutes to the accident location and arrived on scene and checked in to the command post at approximately 1210 PST.

Upon arrival at the accident scene at MP 11.7 I made the following observations in the field:

- All passengers and crew members of the train had been evacuated from the scene by the time I arrived.
- The fire department had extinguished the fire that had engulfed the front of the lead locomotive JPBX 919 and the first passenger car JPBX 3819, both axles of in the front truck of the locomotive had derailed at some point during the derailment.
- The locomotive appeared to have been shut down by using the emergency fuel cut off button on the exterior frame of the locomotive. The locomotive isolation switch was still in the “run” position, the throttle was in the idle position, the automatic brake valve handle was in the emergency application position, the independent brake valve handle was also in the apply position.
- The cab of the JPBX 919 where the engineer operates the locomotive was intact, the front window on the conductor side of the cab was struck by an object during the collision. However, the window stayed in place and did not shatter. There was an

intrusion of the short hood of the locomotive from an object piercing the short hood and entering the bathroom area of the short hood.

- Besides the fire damage to the exterior and interior of the first car, and the emergency windows being removed on passenger cars 1-4 there was no visible damage to the five passenger cars.
- Upon speaking to Caltrain employees at the scene I learned there were three pieces of on track equipment involved. However, the damage to the third vehicle was so extensive it was hard to find it in the wreckage.
- I walked northward to have a view from the crown of the grade separation towards the accident site and noted the engineer would have approximately 1/2-3/4 mile view before striking the on track equipment. Additionally, I noted that the accident happened approximately 500-600' beyond a left hand curve.
- Damage to the track looked minimal, the number 1 track had an area of "rolled" rail.
- From the estimated location of the first impact with the first piece of on track equipment the train travelled approximately 500 feet before stopping.