

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

SOUTHERN PACIFIC RAILROAD

ELIOT, CALIF.

MARCH 18, 1937

INVESTIGATION NO. 2161

SUMMARY

Inv-2161

Railroad: Southern Pacific
Date: March 18, 1937
Location: Eliot, Calif.
Kind of accident: Side collision
Trains involved: Freight : Freight
Train numbers: Extra 2525 West : Extra 2384 West
Engine numbers: 2525 : 2384
Consist: 8 cars : 21 cars, caboose
Speed: 4-8 m.p.h. : 30-35 m.p.h.
Track: Tangent; automatic block signals
Weather: Clear
Time: 10:14 p.m.
Casualties: 2 killed; 1 injured.
Cause: Failure properly to protect movement
from siding to main track.

May 19, 1937.

To the Commission:

On March 18, 1937, there was a side collision between two freight trains on the Southern Pacific Railroad at Eliot, Calif., which resulted in the death of 2 employees and the injury of 1 employee.

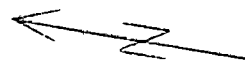
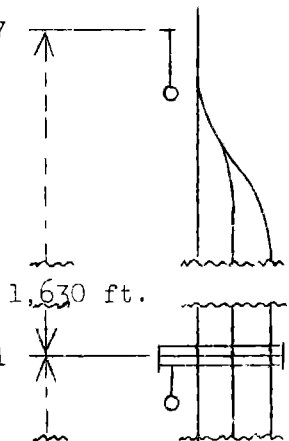
Location and method of operation

This accident occurred on that part of the Western Division extending between Tracy and Oakland Pier, Calif., a distance of 67.3 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred at the main track switch at the west end of the South Yard at Eliot; from either direction the main track is tangent for more than 1 mile. The grade in this vicinity is generally descending for west-bound trains, with a maximum gradient of 0.75 percent; however, the track is level at the point of accident.

The signals involved are of the color-light approach-lighted, search light type; the home signals display 3 indications, green, yellow, and red, for proceed, approach, and stop, respectively; the distant signal displays two indications, green and yellow for proceed and "proceed prepared to stop at next home signal", respectively. Home signal 427 is located 67 feet west of the switch involved; home signal 441 is located on a signal bridge 6,511 feet east of signal 427; distant signal 447 is located on a mast 1,630 feet east of signal 441. When a west-bound train reaches distant signal 447, signal 427 becomes lighted. The view of the signals is unobstructed.

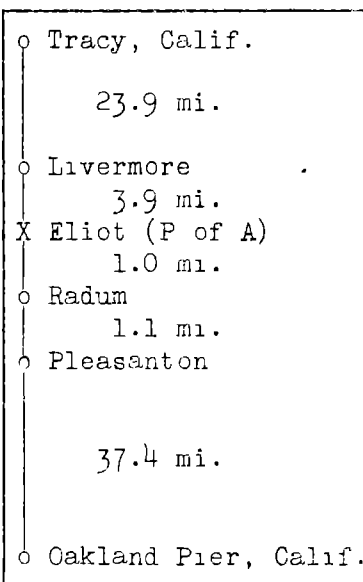
The South Yard at Eliot parallels the main track on the south and consists of 3 tracks; the center track is known as the middle track and another track is the scale track. The North Yard consists of 2 tracks paralleling the main track on the north opposite the South Yard, and the track in the North Yard adjacent to the main track is used as a passing track. The west switch of the North Yard is located 311 feet east of the west switch of the South Yard; the stands of these switches have targets, but are not equipped with switch lights. The yards extend for about 8,000 feet. The North Yard tracks are on a level with the main track, but the South Yard tracks are slightly below the level of the main track and the lead to the west switch ascends westward on a 0.705 percent grade for a distance of 220 feet to the main track. There are no yard limit boards at this station. Several tracks lead southward from the South Yard to rock and gravel pits and loaded cars are brought from the pits to Eliot, where they are weighed and picked up by main line trains. Eliot is a non-

Signal 447

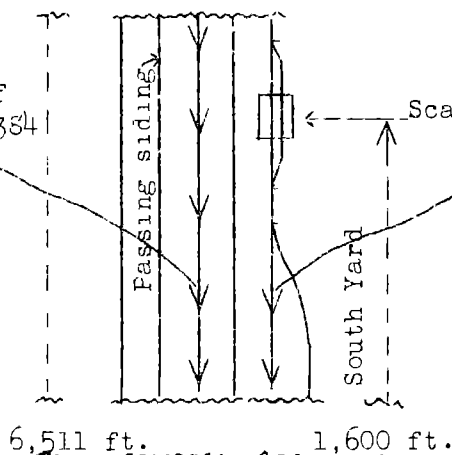


Signal 441

1,630 ft.



Route of Extra 2384



Scale house

Route of Engine 2525

South Yard

6,511 ft.

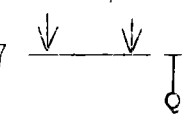
1,600 ft.

Station

Point of accident

67 ft.

Signal 427



Inv. No. 2161
 Southern Pacific R.R.
 Eliot, Calif.
 Mar. 18, 1937

telegraph office; the station is located south of the tracks 296 feet east of the switch involved. The scale house is located 1,600 feet east of the station. The maximum authorized speed for freight trains through Eliot is 35 miles per hour.

The weather was clear at the time of the accident, which occurred about 10:14 p.m.

Description

Extra 2525, a west-bound freight train, consisted of 3 cars and a caboose, hauled by engine 2525, and was in charge of Conductor Nops and Engineman Johnson. This train left Livermore, 3.9 miles east of Eliot, at 6 p.m., according to the train sheet, headed in on the passing track at Eliot about 6:15 p.m., and performed switching operations in both yards. At about 9:45 p.m., the engine crossed from the North to the South Yard where it coupled to 8 cars of gravel and started out upon the main track at the west end of the yard in order to cross over to the North Yard and place them in the train; after the engine and 4 cars were out upon the main track and while moving at a speed of from 4 to 8 miles per hour, the right side of the fifth car was struck by Extra 2384.

Extra 2384, a west-bound freight train, consisted of 21 cars and a caboose, hauled by engine 2384, and was in charge of Conductor Dunn and Engineman Truchard. This train left Livermore at 10:07 p.m., according to the train sheet, passed distant signal 447 and home signal 441, which were displaying proceed indications, and was approaching home signal 427, which also displayed a proceed indication until the train nearly reached the switch at the west end of Eliot yard, at which time the indication of home signal 427 changed from green to red; the engineman applied the air brakes in emergency, but before the train could be stopped, it collided with the side of the gravel cars, while traveling at a speed estimated to have been from 30 to 35 miles per hour.

Engine 2384 and its tender were derailed to the north and stopped on their right sides, with the front end of the engine 10 feet west of the west switch. Five of the gravel cars, and seven of the cars in Extra 2384 were derailed and damaged, stopping in various positions across and on both sides of the main track. The employees killed were the fireman and head brakeman of Extra 2384, and the employee injured was the engineman of that train.

Summary of evidence

Conductor Nops, of Extra 2525, stated that the trip involved ~~was the regular assigned run for his crew and includes the handling~~

of gravel from Eliot yard on westward trips. He was thoroughly familiar with conditions in Eliot yard and the signal arrangement. On this occasion he went on duty at Livermore at 5 p.m., and received several train orders, including one which authorized engine 2525 to work extra 5:01 p.m. until 3:01 a.m. between Livermore and Niles and required it to protect against westward extras after 9:01 p.m. On arrival at Eliot his train headed in on the passing track of the North Yard, following which the engine was cut off and three cars and caboose were left standing on the passing track; the engine moved across the main track to the South Yard, where cars of gravel were switched, weighed and assembled and then placed in the train on the passing track until the train consisted of 20 cars and caboose and the engine again returned to the South Yard. Conductor Nops telephoned from the scale house and obtained a line-up on trains from the operator at Radun, located 1 mile west of Eliot. The operator informed him that Extra 2384 West might remain at Livermore or might come to Eliot siding for eastbound Train First No. 402; also that a message had been sent to Extra 2384 West at Livermore reading "cars on Eliot siding but there will be room for you to head in there if necessary but you will have to back out." The conductor asked the operator whether the rest of his crew had this information and he was told that they did. Conductor Nops understood that Extra 2384 West was due at Eliot about 10:10 or 10:15 p.m., and he assumed that it would head in on the passing track; it did not occur to him that the train might continue beyond Eliot. It was his intention to have his own train closely follow Extra 2384 West from Eliot. He knew that his orders required him to protect against westward trains after 9:01 p.m., but he stated that he had no idea that his engine was going to head out on the main track at this particular time, although he did know that the gravel cars were to be doubled over at some time, and he felt certain that Brakeman Buck told him that the movement was going to be made before the arrival of east-bound Train First No. 402. When the 8 cars of gravel were switched and weighed he remained at the scale house waiting for the bills and he watched the engine and cars move to the west end of the station in the South Yard where he thought they stopped. At this time he noticed that the automatic block signals were not lighted, indicating that no train was approaching, and he was satisfied that everything was all right. The first knowledge he had of anything wrong was when Extra 2384 West stopped; he ran to see what the trouble was and found that the gravel cars had been sideswiped. He said that it was customary for the engine-man to whistle out a flag before fouling the main track; he also said that when his engine crossed over the main track at 9:45 p.m. he did not know that the flagman was not back. He was not in position to supervise the movement in question and said that it was made without his authority, and had he known it was going to be made at this particular time he would not have permitted

the movement to be made until a flag had been whistled out. He did not instruct the brakeman to afford main line protection, as the brakeman understood the rules. Had any whistle warning been given before the movement was made he would have arranged for proper protection. He did not have any understanding with his crew as to who would do the flagging, knew that his flagman was not back and that his train was standing on the passing track of the North Yard with the cabooses markers displaying green to the rear. Conductor Nops further stated that he thought Extra 2384 West was going to head in at Eliot, and that his brakemen also thought so, which was partly the reason that flag protection was not afforded.

Swing Brakeman Buck, of Extra 2525, stated that prior to cutting off the engine on the passing track, Conductor Wright, in charge of another crew switching in the yard, told him that he had listened in on the telephone and overheard the message pertaining to Extra 2384 West heading in behind Extra 2525 at Eliot and that it would have to back out. The work of switching was left in charge of the swing brakeman. While at the scale house, at about 10:05 p.m., and just before the 8 cars of gravel were moved westward, his conductor asked him what moves were going to be made, and he told the conductor that the cars were going to be doubled over to the passing track ahead of east-bound Train First No. 402. The caboose of his own train stood on the passing track almost opposite the scale house, but he did not know what indication the markers were displaying to the rear. As there were two other crews switching at Eliot, Head Brakeman Murphy was instructed to leave the switches lined toward the middle track and to remain there and attend to them if necessary for Train First No. 402. Swing Brakeman Buck gave the engine crew a proceed signal, boarded the engine and told them to double over to the North Yard and back into clear for Train First No. 402, and that Extra 2384 West was going to head in behind their own train. About this time he heard someone, who he thought was the fireman, say that there was a headlight on the main line, but on account of the bright reflection therefrom it was impossible to determine its exact location. Engine 2525 moved slowly westward on the middle track with the 8 gravel cars and then headed out upon the main track, at which time signal 427 was lighted up. When he got opposite the west switch of the passing track, at which time the speed of his engine was 6 or 8 miles per hour, he dropped off and lined that switch for his engine to back in; he then looked up and saw the headlight of Extra 2384 West as that engine was going by the scale house, and started running toward the approaching train, giving stop signals with a lighted white lantern until the engine was within about 200 feet from the gravel cars, but the train continued to approach and ran through the passing track switch and struck his train. His flag signals were

not answered, but it appeared as though the brakes were applied when the engine passed him. Swing Brakeman Buck knew that protection was required against westward extras after 9:01 p.m., and he assumed that such protection was being afforded; he did not know that the flagman was not back at the time his engine previously crossed over the main track at 9:45 p.m. He did not see the automatic block signals at the time they lighted up, but when he did see them they were lighted and at no time did he see them when they were out. Earlier in the evening, Flagman Adams told him that he had a headache and then got on the caboose, but he did not ask to be relieved from his duties, and the swing brakeman assumed that the flagman was flagging. He did not know whether the engineman whistled out a flag.

Engineman Johnson, Fireman New and Head Brakeman Murphy, of Extra 2525 West, stated that they were aware of the contents of their train orders and they were under the impression that proper flag protection was being afforded after 9:01 p.m. as required; they also understood that Extra 2384 West had a message to head in on the passing track behind their own train. Engineman Johnson stated that the fireman was operating the engine and whistled out a flag at about 9:50 p.m., and the flagman was not recalled after that time. Automatic signal 427 was displaying a green indication when Engineman Johnson first saw it; he did not see it light up nor did he know how long it was lighted before his engine pulled out with the 8 gravel cars. Head Brakeman Murphy said that automatic signal 427 was not lighted when he lined the inside switch, but after he lined it he looked at the signal and it was then displaying green, following which he lined the main track switch. When Fireman New first saw the reflection from the headlight of Extra 2384 West, which was after Swing Brakeman Buck had gotten off the engine at the west passing-track switch and given him a proceed signal, the headlight was a considerable distance away and his own engine had already fouled the main track; he thought that Extra 2384 West was preparing to head in at the east switch behind his own train, however, shortly afterwards he realized that train was approaching on the main track and was near the scale house; he fully opened the throttle, but it was then too late to avert the accident. Fireman New did not observe the indication of signal 427.

Flagman Adams, of Extra 2525, stated that about 8:15 p.m. he told Swing Brakeman Buck that he had a headache and was going into the caboose, and the swing brakeman told him that he hoped he would not need him until midnight. It was the intention of the flagman to stay there until time to perform more work, and he had no thought of going to sleep. He fully understood the contents of the train orders, and that his train required protection against westward extras after 9:01 p.m. but he assumed he would be informed by the swing brakeman when flag protection

was necessary, and was expecting to be so informed. He did not tell Conductor Nops about his illness. He remained in the caboose with his head resting on the desk, but was not asleep; he did not hear any flag whistled out and said that he "must have passed out." He said that he was physically able to have performed his duties. The caboose markers were displaying green to the rear.

Engineman Truchard, of Extra 2384, stated that the air brakes were tested and worked properly, the engine was all right in every respect and the headlight was burning brightly. He was in possession of a copy of the work order held by Extra 2525 and at Livermore he was given a message informing him that cars were occupying the passing siding at Eliot and that there was room for his train to head in behind them but that if this was done it would be necessary for his train to back out of the siding. Approaching Eliot the speed was about 35 miles per hour and the whistle was sounded for the station and a road crossing. Distant signal 447 was displaying a green indication and as his engine passed it, home signals 441 and 427 lighted up and displayed green indications and he saw the reflection from the headlight of one of the engines working in the yard. After passing home signal 441 he reduced speed to about 32 miles per hour, and then released the brakes; all lighted signals in advance were displaying green indications. When about 18 or 20 car lengths from the west switch he made another brake pipe reduction of about 10-pounds and then saw the switch target displaying red and in line with some man slowly giving stop signals with a white lantern; these signals he interpreted as working signals as they were given from one side of the track. Engineman Truchard moved the brake valve to emergency position, saw the gravel cars moving out upon the main track, and then the collision occurred. Signal 427 was green until just prior to the accident, when it changed to red. He was not flagged prior to the accident, and the markers of Extra 2525 West on the passing track were displaying green to the rear. Engineman Truchard said that his train had sufficient time to reach Pleasanton, 2.1 miles west of Eliot, for east-bound Train First No. 402, and that is where he intended going. Conductor Dunn and Flagman Michelson were in the caboose and were not aware of anything wrong until the accident occurred; they estimated the speed of their train to have been between 30 and 35 miles per hour at the time of the accident.

Discussion

Work of switching, weighing and assembling gravel cars was being performed by the crew of Extra 2525 West at Eliot, in the customary manner and the usual train orders were received, including requirements to protect against westward extras after 9:01 p.m., and were understood by all concerned. The swing

brakeman was in charge of the switching and the conductor was at the scale house. On this particular occasion, however, at about 8:15 p.m., the flagman told the swing brakeman that he was feeling ill and was going into the caboose. The flagman did not say anything to the conductor about his ailment nor did he ask to be relieved from duty, but on the contrary he said that he was physically able to have performed his duties; he was fully aware that his train was required to be protected against westward extras after 9:01 p.m., but assumed that he would be informed by the swing brakeman when flag protection was necessary and he was expecting to be so informed. Members of the crew who were doing the switching assumed that the flagman would be out protecting at all times after 9:01 p.m., as required. The flagman left the caboose markers displaying green to the rear as the made-up portion of the train stood on the passing track, and he remained in the caboose; he maintained that he was not asleep but that "he must have passed out." The crew of Extra 2525 were aware that a message had been sent to the crew of Extra 2384 at Livermore informing them that cars were occupying the passing siding at Eliot and that if their train cleared at that point it would be necessary to back out. Upon the strength of this information, the crew of Extra 2525 assumed that Extra 2384 would either remain at Livermore or pull into the siding behind their own train at Eliot for east-bound Train First No. 402; the possibility of Extra 2384 proceeding beyond Eliot for Train First No. 402 did not occur to them. It developed, however, that there was sufficient time for this movement to be made and the move was being undertaken by Extra 2384 when the accident occurred. When the fireman of Extra 2525 West, who was operating the engine, first saw the reflection from the headlight of Extra 2384 West he thought the train was preparing to head in behind his own train; it was not definitely realized by those at the head end of the gravel cars that Extra 2384 West was about to continue beyond Eliot until that engine was nearly opposite the scale house, and although the swing brakeman then ran toward the approaching train giving stop signals with a lighted white lantern it was too late to avert the accident. Just when automatic signal 427 lighted up was not determined; however, the fact remained that even though it was lighted before the inside switch was opened by the head brakeman of Extra 2525 or before his engine fouled the main track, the gravel crew undoubtedly would not have attached any significance to the light^{ing} of the signal, for so far as they were concerned it was understood that Extra 2384 West would head in at the east switch of the passing track behind their own train.

Conclusion

This accident was caused by failure properly to protect a movement from a siding to the main track.

Respectfully submitted,
W. J. PATTERSON,
Director.