

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE LINE OF THE SOUTHERN PACIFIC COMPANY AT
ETIWA, CALIF., ON JANUARY 12, 1933.

March 14, 1933.

To the Commission:

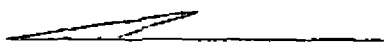
On January 12, 1933, there was a derailment of a mixed train on the line of the Southern Pacific Company at Etiwa, Calif., which resulted in the death of two employees. The investigation of this accident was made in conjunction with a representative of the Railroad Commission of California.

Location and method of operation

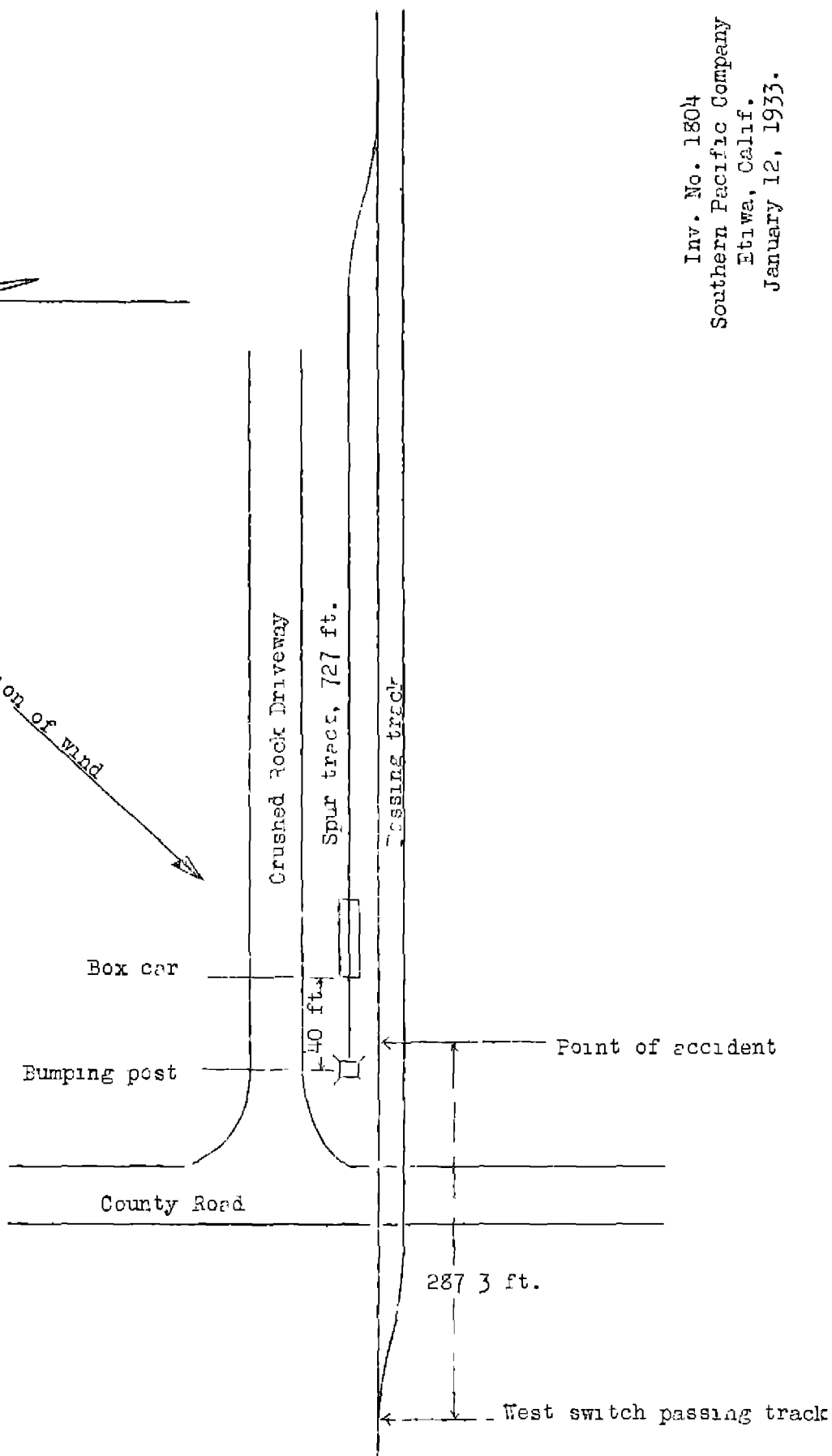
This accident occurred on the Pomona Subdivision of the Los Angeles Division, which extends between Los Angeles and Colton, Calif., a distance of 55.3 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders, and an automatic block-signal system. Etiwa is a blind station, at which point a passing track 4,109 feet in length parallels the main track on the south, and a spur team track 727 feet in length parallels the main track on the north. The accident occurred on the main track at a point 287.3 feet east of the west switch of the passing track, opposite the western end of the spur track. The track is tangent for more than 2 miles in either direction from the point of accident, and the grade for eastbound trains is 0.4 per cent ascending at the point of accident. A pumping post is located at the western end of the spur track and a box car was standing on this track about 40 feet from the bumping post at the time of the accident, having been set out on the morning of January 11.

The ground at Etiwa and the surrounding country within a radius of more than 2 miles is generally level. The top soil is mostly sand and when dry it moves readily with high wind. There is a large open field north of the tracks, a large section of which had been plowed on January 9, three days prior to the occurrence of the accident, thus loosening the soil, which was very dry, and increasing the tendency of the sand to be moved by the wind. The right-of-way through Etiwa is not fenced.

The weather was clear, it was moonlight, and the wind was blowing at the time of the accident, which occurred about 11.54 p.m.



Direction of wind



Inv. No. 1804
 Southern Pacific Company
 Etiwa, Calif.
 January 12, 1933.

Description

Eastbound first-class mixed train No. 820 consisted of 4 baggage cars, 1 mail car, 1 coach and 1 Pullman sleeping car, all of steel construction, hauled by engine 3121, and was in charge of Conductor Budinger and Engineman Courtney. This train departed from Ontario, the last open office, 7.3 miles from Etiwa, at 11.38 p.m., according to the train sheet, two minutes late, stopped at Guasti, 3.7 miles from Etiwa, to unload passengers and express, and was derailed at Etiwa while traveling at a speed estimated to have been between 30 and 35 miles per hour.

The engine stopped on its left side across the main track, headed south, at a point 830 feet beyond the initial point of derailment; the tender, headed north, was beside the engine. The first car and the front truck of the second car were derailed, but none of the remaining equipment was derailed or damaged. The employees killed were the engineman and fireman.

Summary of evidence

Conductor Budinger was riding in the front end of the coach and as it passed over the crossing at Etiwa he felt sand under the wheels, the air brakes were applied and there was a slight surge followed by a big surge and the train stopped; the train had been traveling at a speed of about 35 miles per hour. He immediately went to the head end of the train and after locating the engineman he went to the rear of the train to see what had occurred, at a point about 20 feet west of the box car on the spur track he found a sand drift extending across the main track, and concluded that it was the sand on the track that caused the derailment. He then went to the telephone booth, where he remained about 20 minutes, and when he returned he found that the ruts made by the wheels in passing through the drift had been filled in to some extent by more drifting sand, and some time later the marks had disappeared entirely and the top of the drift was smooth. He pushed his hand down into it and found that the sand was about 8 inches in depth above the top of the rail; it extended about 27 feet along the north rail and 21 feet on the south rail. The sand was very fine and was packed hard. Conductor Budinger stated that there was very little sand flying in the air, it appearing to be moving very close to the ground. The wind would come in gusts and then die down; at one time he thought the telephone wires would be blown down, and the telephone booth rocked and swayed while he was in it. The atmosphere was so clear, however, that he could see the headlight of an engine at Ontario. While waiting for assistance he watched the movement of the sand to determine the reason for its being concentrated in one spot. The wind was blowing from the northeast and the sand swirled around the corner of the box car on the spur track, forming an eddy and thus collecting beyond the car on the main track. There were no other drifts in that vicinity and just beyond

this drift of sand, which extended over the south rail of the spur track and the north rail of the passing track, the track was entirely clear of sand. When an engine arrived from the west about 3.30 a.m., in order to pull back the rear portion of the train, it was necessary to shovel out the sand to get the engine through to the train. Conductor Budinger further stated that while the application of the air brakes might have been due to a broken train line, he was of the opinion that the engineman made a gradual application of the brakes until the train came to a stop.

Brakeman Vacher stated that he noticed a little breeze when the train stopped at Guasti, but that it was blowing much harder at Etiwa. He assisted in getting the engineman into the baggage car and at that time the engineman told him that he had seen a clear track ahead and was just reaching up to give the engine more steam when it struck something near the crossing.

On the evening of January 10 a wind and sand storm started and continued until the morning of the 12th. Trackwalker Montijo stated that he went to Etiwa about 8 p.m. on the 10th and then telephoned for assistance, and the section foreman who came there to assist him brought the section gang with him. They worked almost continuously up to 2 a.m. January 12th, during which period the box car was set out on the spur track and the section foreman instructed him to watch for sand drifts at that point. Trackwalker Montijo returned to Etiwa about 7 a.m. to clean up the sand they had left around the switch, derail and frog, and worked about two hours at that time, finding a drift about 1½ to 2 feet in depth around the bumping post and extending over on the north rail of the main track. He again returned to Etiwa at 2.30 p.m. and cleaned the sand away from the bumping post, for fear the wind would come up again and blow it over on the track, the track was clear at that time, but the drift near the post was about as deep as it was in the morning. He went off duty at 4 p.m., but at 7 p.m. he followed two westbound freight trains down to Etiwa, he did not go as far as the west switch, however, only going to the east switch of the spur track, for under his instructions as he understood them this was all he was required to do, since there was no wind blowing and he could see that everything was clear. He then returned to South Fontana, 2.2 miles east of Etiwa, and went off duty at 9 p.m.

Section Foreman Leane stated that during October, 1932, his section was extended to include Etiwa, and since that time there had been three sandstorms in the vicinity of Etiwa, the last one started on the night of the 10th of January, and he went to Etiwa as soon as the trackwalker notified him. After the box car had been set out on the spur track he noticed that the sand swirled around it, forming a dune, and a man was kept there continuously until 2 a.m. on the 12th, about 2 hours after the sand had stopped drifting. The sand was drifting more in that immediate locality because the field just north of the tracks had been recently plowed. Section Foreman Leane did not again return to Etiwa after the early morning of January 12th, but wrote to the roadmaster suggesting that a scraper and team be

sent to Etiwa to take care of the sand north of the track; the trackwalker had instructions to call him if he needed assistance and the section foreman did not again hear from him. Section Foreman Leane further stated that he considered Trackwalker Montijo competent and very conscientious. The trackwalker had been on duty almost continuously from Tuesday night to Thursday morning, but did not complain of fatigue, and the section foreman did not think that he had been on duty too long to prevent him from performing his duties.

Roadmaster Starkey stated that on the night of January 10 he went to Etiwa to see if the section men were out; he returned to that point several times on the following day and again on the 12th, the last time before the occurrence of the accident being about 3.30 p.m., and at that time the storm appeared to have stopped, there was no wind and the track was clear. Storms of this nature occur frequently during the winter months and usually last one or two days, and inasmuch as the wind had stopped he thought the storm was over. Slow orders had been issued on the 10th, but had been lifted when he returned to Etiwa on the afternoon of the 11th. After storms of this nature he usually has teams scrape the sand back into the field and intended to do so on this occasion, although he had taken no action up to the time of the accident. Six men are employed on this section, three working the first three days and the others working the other three days; however, during stormy weather they all are available. His instructions to the section foreman are that trackwalkers shall patrol the track during wind and sand storms and their hours are not restricted. Sand boards are placed one-half mile in advance of points where sand is liable to foul track when carried by the wind, and are a warning to engineman when approaching sand territory during windstorms. The first eastbound sand board is located approximately 4.5 miles west of the point of accident, and the board located at the eastern end of that sand section is 2,853 feet east of the east switch at Etiwa.

The statements of the engine crews of four trains that passed through Etiwa between the hours of 6 p.m. and 11 p.m. on the night of the accident indicated that there was a little wind but there was no sand in the air, signals could be seen clearly, and no sand was observed on the track nor was it felt under the wheels of the engines.

The first mark of derailment was a flange mark on top of the south rail at a point 287.3 feet east of the west passing track switch. This mark extended from the inside diagonally across to the outside of the rail; from this point flange marks appeared on angle-bar bolts, outside the south rail, at nearly every joint for a distance of 629 feet to the spur-track switch, beyond which point the track was badly marked and torn up. The first mark of the derailment along the north rail of the main track was found 629 feet east of the point where the first marks on the south rail were found, this mark was on the end of the rigid wing rail of the frog of the spur track turn-out and was about 5 inches

inside the north rail. It was a deep flange scar and apparently was made by the flange of a wheel which had been carried suspended to that point. Beyond this mark the track was badly cut and torn up as far as the point where the engine stopped, 209 feet beyond.

Careful inspection was made of the engine and tender and no defects were found that could have caused or contributed to the cause of the accident. Examination of the engine-truck wheels did not reveal which wheels were the first to be derailed, one pair of engine-truck wheels bore flange scars which on one wheel corresponded to the flange marks on the joints outside of the south rail and on the other to the scarring on the end of the wing rail of the frog on the inside of the north rail. It could not be determined, however, whether this pair of wheels had been the leading or the rear wheels of the engine truck. The brake valve was in full release position, the throttle closed, and the reverse lever in forward motion approximately three notches from center.

The records of the Weather Bureau at Tontana Airport showed that between the hours of 2 p.m. and 12 midnight on January 12 the wind velocity ranged from 20 to 34 miles per hour, the prevailing direction being from the north. The velocity was at its lowest in the late afternoon, and increased moderately after 7 p.m.

Conclusions

This accident was caused by a drift of sand on the track.

The statements made by the surviving members of the crew of train No. 820 showed that sand had been blown on the track up to a depth of several inches above the tops of the rails, the sand extending along the track a distance of more than 20 feet. It was found that this drift had been formed by the sand swirling around a box car and the bumping post at the western end of the spur track, causing an eddy which resulted in accumulating the sand on the main track.

A bad wind and sand storm arose on the evening of the 10th, continuing until the early morning of the 12th, and during that time section men were working constantly at Etiwa to keep the track clear. The storm subsided and the men left about 2 a.m., but when Trackwalker Montijo returned to Etiwa later in the morning he found that the sand had formed a drift around the bumping post which extended upon the north rail of the main track, while in the afternoon he did some more shoveling around the bumping post with the idea that should the wind increase, there would not be any danger. As a matter of fact, the records of a nearby airport indicated that the wind was continuous and that it did increase after 7 p.m. Section Foreman Leane, however, did not again return to Etiwa. Rule 1069 of the Maintenance of Way rules of this company governing section foremen provides:

In case of heavy storm, rain or violent wind, they must have entire section patrolled, both day and night, especially watching the points where obstructions are likely to occur.

Ordinarily the right of the section foreman to depend on the trackwalker would not be questioned, but the conditions were such as to be unusually dangerous, and it was his duty to know that the movement of trains was properly protected against track obstruction liable to occur under such conditions. While he knew the trackwalker had been on duty an excessive number of hours, he did not relieve him or get in touch with the trackwalker for the purpose of keeping posted on developments but became engaged elsewhere in less important work. The wind conditions where he was working undoubtedly were similar to those at Etiva, and should have caused him some concern for the safe movement of trains. The least he could have done would have been to notify the dispatcher and have a warning issued to all trains concerned. Trackwalker Montijo should have examined conditions more closely when he went to Etiva shortly after 7 p.m. and should have remained on duty until relieved, or until all danger from the increasing wind had abated.

Respectfully submitted

W. P. BORLAND,

Director.