

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE TEXAS AND NEW ORLEANS RAILROAD, SOUTHERN PACIFIC SYSTEM, NEAR LORINE, TEXAS, ON JUNE 6, 1927.

July 19, 1927.

To the Commission:

On June 6, 1927, there was a derailment of a freight train on the Texas and New Orleans Railroad, Southern Pacific System, near Loline, Texas, which resulted in the death of one employee.

Location and method of operation

This accident occurred on the La Grange Sub-Division of the Houston Division, which extends between La Grange and Glidden, Texas, a distance of 25.1 miles, and is a single-track line over which trains are operated by timetable and train orders, no block-signal system being in use. The maximum speed permitted for freight trains is 25 miles per hour; road engines when backing up, and yard engines, are restricted to 15 miles per hour.

The point of accident was about 3.05 miles east of Lorine; approaching this point from the west the track is tangent for a distance of about 2 miles, while the grade is 0.828 per cent descending for eastbound trains for a distance of 3,200 feet, extending to within 100 feet of the point of accident, from which point the track is level.

The track is laid with 80-pound rails, 30-feet in length, with an average of 16 ties to the rail-length, single-spiked, and is ballasted with gravel to a depth of about 6 inches; the track is maintained in fair condition.

The weather was cloudy and a light mist was falling at the time of the accident, which occurred at about 2.45 p.m.

Description

Four trains are scheduled to operate over the La Grange Sub-Division daily, except Sunday, all of which are manned by the same crew. The first movement is from La Grange to Glidden as second-class mixed train No. 208. From the latter point a turn-around movement is made to Lorine, 7.6 miles west of Glidden, as third-class freight trains Nos. 207 and 210. A movement then is made from

Glidden to La Grange as second-class mixed train No. 209. On account of the fact that the turn-around movement to Lorine requires heavier power than the mixed trains, due to handling gravel at the pit at Lorine, it is the practice to change engines at Glidden for this particular movement. It was on the return trip from the gravel pit as eastbound train No. 210 that this accident occurred. The train then consisted of seven cars, a caboose and a water car, hauled by GH&SA engine 121, and was in charge of Conductor Nutter and Engineman Miles. This train departed from Lorine at 2.30 p.m., on time, and shortly afterwards was derailed while traveling at a speed estimated to have been about 15 miles per hour.

The engine, tender and the first six cars were derailed to the right, the engine coming to rest on its left side at right angles to the track and approximately 250 feet from the first mark on the track; the tender and the first car were also overturned, while the remaining derailed cars remained in an upright position. The employee killed was the fireman.

#### Summary of evidence.

Engineman Miles stated that after performing some switching at Lorine his train was lined up and the air coupled for the return trip to Glidden. He then received a release signal from the rear of the train, waited until 2.30 p.m., the scheduled time for the departure of his train, and then proceeded. Shortly after departing from Lorine he made a light running test of the air brakes, which worked properly. His train was traveling at a speed of 15 miles per hour when it started to descend the grade just west of the point of accident; he closed the throttle and made a brake-pipe reduction to reduce the speed of his train to 10 miles per hour to comply with slow signals located alongside of the track indicating the track was undergoing repairs. As his train passed the second yellow flag he released the brakes and his train had again attained a speed of about 15 miles per hour when the derailment occurred. On account of the jolting of the engine after it became derailed he said he was not certain whether he applied the brakes. Engineman Miles further stated that he did not notice any nosing of the engine approaching the point of accident; in fact, there was nothing wrong with the engine or the brakes. He was of the opinion that the accident was caused by spread track due to poor ties as after examining the wreckage he could find no other cause.

The statements of Conductor Nutter, Head Brakeman Michna and Flagman Stanbury were almost identical with those of the engineman, although the conductor did state that he personally opened the conductor's valve in the caboose when he saw that the engine was derailed. The conductor apparently did not remember whether he fell out of the caboose or jumped out, and did not even remember which end of the caboose he used, but he was positive that within 10 seconds after the train had stopped he had run forward, met the engineman, inquired if he was hurt and then compared time with him, although he did not then know whether the other members of the crew were alive or dead. It further appeared that all four of these employees met the next morning at the home of Conductor Nutter for the purpose of making out their personal injury accident reports, and while there was more or less discussion concerning the derailment yet each of them said that he made out his own report according to his own ideas; the conclusions reached, however, appeared to have been unanimous that the speed was 15 miles per hour and that the accident was due to spread track. The time at which the conductor compared watches with the engineman, 10 seconds after the occurrence of the accident, was at 2.45 p.m., which would indicate an average speed between Lorine and the point of accident of less than 15 miles per hour.

Division Engineer Staples stated that he arrived at the scene of the accident before the wreckage had been moved or the track repaired. He made a detailed inspection of the track, and found where a spike head had been pulled off while three rail anchors attached to the right rail showed evidence of having received severe blows; and there were also flange marks on the base and web of this rail, which was partly overturned to the right; all of these marks were on the gauge side of the rail. He continued eastward for a distance of about 60 feet and found a broken joint in the left rail, while opposite this point there was a flange mark on the ties on the outside of the right rail, about 4 inches from its base; these marks led off toward the right until they left the ends of the ties, and from this point the track was torn up for a distance of about 150 feet. Mr. Staples also examined the ties for a short distance west of the point of derailment and from the figures obtained by him as a result of this examination, it appeared that more than half of the ties could be classified as practically new ties, the balance being divided about equally between ties which were good for one or two years' additional service and ties which should be changed during the ordinary course of work. Beginning about at the first indication of derailment the right rail had pushed the spikes outward from  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches, while the left rail started to spread at a point about 40 feet before reaching the location of the broken joint, the spikes having been

moved outward continuously until the joint was reached, and it was at this joint that he thought the engine was derailed. His opinion was that the derailment was caused by the track giving way due to an unusual strain, the reason for which he was unable to determine, and that the marks west of the broken joint were made subsequent to the derailment of the engine at the joint.

Roadmaster Reiss stated that he arrived at the point of accident at 7 p.m., on the day of its occurrence and that he, together with the division engineer and section foreman, made an examination of the track, which was found to be fairly maintained. Measurements taken immediately west of the point of derailment showed there were only slight variations in the gauge and level. His idea as to the cause of the accident was that the train was running pretty fast, causing the engine to rock to such an extent that the right front driving wheel left the rail, and that the rails were spread by the cars after they had become derailed. About two years ago his attention was called to the speed of trains being operated on this branch by a former section foreman and about a month prior to the accident he was again informed of excessive speed by the section foreman in charge of the track at the time of the accident, but in neither case was any action taken except to make a personal check. He said that whenever a motor car was in that vicinity train crews were alert and trains were not generally operated very fast, and that it was impossible to judge their speed while standing along-side the track.

Section Foreman Beck, in charge of the track on which the accident occurred, stated that on several occasions he had observed the speed of this gravel train, especially when it was being hauled by a yard engine, and two of his men had remarked that if the train was not operated slower it would turn over. He instructed his men that when this train passed the point at which they were working they should get some distance from the track for their own safety. He had called Roadmaster Reiss' attention to excessive speed and had also conferred with Conductor Nutter on the same subject, but did not know what action had been taken.

Assistant Superintendent of Motive Power Carson stated that engine 121 had been turned out of the shop on April 19, 1927, after undergoing class 3 repairs. After the accident he inspected it but found no defects that existed prior to the occurrence of the accident. He also inspected the air brake equipment and found it had been cut through

the entire train; the connections between the tender and first car had been broken, however, and he did not see the angle cock at the rear of the tender. He was of the opinion the accident was caused by excessive speed with a short coupled engine.

Engine 121 is of the 0-6-0 type and weighs loaded, 145,000 pounds. It has a wheel base of 11 feet and has an overall length of 32 feet 7 9/16 inches. Examination of the engine and tender by the Commission's inspectors disclosed no defects that could have contributed to the occurrence of the accident; in fact, the engine appeared to have been in exceptionally good mechanical condition at the time it was derailed.

The examination made by the Commission's inspectors of the track west of the broken joint in the left rail confirmed the statements made by the division engineer as to the marks on the track and the condition of the ties. It further appeared that the outside surface of the left front driving wheel bore evidence of having chafed on the inside of a rail, and that the bolts had been sheared off the angle bar on the gauge side of the broken joint. The leaving end of the rail immediately west of the broken joint had been pushed outward, apparently at the time the joint was broken, and the flanges of the wheels had battered the receiving end of the rail immediately east of the joint. The trucks of the last car to be derailed had stopped between the rails, and these trucks were thought to have made the marks found west of the broken joint, the idea being that had the engine dropped between the rails at this point it would have crowded the right rail toward the ends of the ties and there would have been chafed marks on the outer edges of the three wheels on the right side of the engine.

#### Conclusions

This accident is believed to have been due to a rate of speed which was excessive in view of the type of motive power in use.

The statements of the members of the crew are such that they are of no value in determining the cause of the accident. The marks on the track and on the left front driving wheel, as found by the Commission's inspectors, support the statements of the division engineer, and it is believed that the train was being operated at a speed considerably in excess of 15 miles per hour, and that this rate of speed with this type of engine resulted in the right front driving wheel being rocked off the rail, allowing the left wheel to drop down on the inside of the left rail, shearing off

the angle-bar bolts and causing the complete derailment of the engine and following equipment. The condition of the equipment after the accident lends support to the idea that the speed was excessive at the time the accident occurred.

The employees involved were experienced men, and at the time of the accident they had been on duty less than  $3\frac{1}{2}$  hours after more than 39 hours off duty.

Respectfully submitted,

W. P. BORLAND,

Director.