

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE LOUISVILLE & NASHVILLE RAILROAD NEAR CRAB ORCHARD, KY., ON OCTOBER 4, 1929.

April 8, 1930

To the Commission:

On October 4, 1929, there was a derailment of a passenger train on the Louisville & Nashville Railroad near Crab Orchard, Ky., which resulted in the injury of 18 passengers, 3 Pullman porters, and 2 employees.

Location and method of operation

This accident occurred on that part of the Louisville Division which extends between Lebanon Junction and Sinks, Ky., a distance of 107.2 miles, and is a single-track line over which trains are operated by time-table and train orders, no block signal system being in use. The point of accident was approximately 2 miles north of Crab Orchard; approaching this point from the south, there is a compound curve to the right 1,577.1 feet in length, the maximum curvature of which is $6^{\circ} 02'$, and then tangent track for a distance of 211.1 feet, the accident occurring on this tangent at a point 136.5 feet from its southern end. The grade at the point of accident is 1.25 per cent descending for northbound trains.

The track is laid with 100-pound rails, 39 feet in length, with an average of 25 ties to the rail-length, fully tie-plated, and is ballasted with limestone to a depth of about 18 inches, the track is well maintained. In the vicinity of the point of accident the track is constructed on a bench cut in a hillside on the east side of the track, the maximum depth of the embankment on the west side of the track being approximately 20 feet.

The weather was foggy at the time of the accident, which occurred about 5.15 a.m.

Description

Northbound passenger train No. 34 consisted of one express car, one combination baggage and express car, one postal car, three coaches, and three Pullman sleeping cars, all of steel construction except the first, seventh and eighth cars, which were of steel-underframe construction, hauled by engine 402, and was in charge of Conductor Thompson and Engineman Whitenead. This train left Sinks, 21.9 miles south of Crab Orchard, at 4.23 a.m., and departed from Crab Orchard at 5.09 a.m., one hour and two minutes late, being derailed shortly afterwards while traveling at an estimated speed of 25 miles per hour.

The fifth to the ninth cars, inclusive, were derailed to the left, the fifth, sixth and seventh cars being overturned and coming to rest at the foot of the embankment, while the remaining derailed cars were also on their sides but rested on top of the embankment. The first three derailed cars were quite badly damaged, and the other two were slightly damaged. The employees injured were the conductor and flagman.

Summary of evidence

Engineman Whitehead stated that after departing from Crab Orchard, the train attained a speed of about 45 miles per hour, but about one-half mile south of the point of accident he applied the brakes, releasing them when the speed had been reduced to about 25 miles per hour. A few seconds later the brakes went into emergency and he immediately placed the brake valve in the lap position, the forward portion of the train coming to a stop shortly afterwards. While oiling the engine at a station 7 miles south of Crab Orchard, he had inspected it and noticed nothing unusual, the engine rode smoothly en route, and there was no unusual motion of the engine when it passed over the point of derailment, his first intimation of anything wrong being when the brakes applied in emergency. After the accident, he inspected as much of the derailed equipment as possible, but found nothing that could have contributed to the cause of the accident. He also examined the track and found a broken rail which in his opinion was the cause of the accident. He continued with the forward portion of the train to Louisville and experienced no further trouble.

Fireman Boes stated that speed was reduced to about 20 or 25 miles per hour while the train was approaching the point of accident, and about 10 seconds after the brakes were released they went into emergency, whereupon he looked back and noticed the rear portion of the train as it left the track. He did not notice anything out of the ordinary when the engine passed over that part of the track where the derailment occurred, and was unaware that anything was wrong until the emergency application of the brakes.

Baggagemaster Stodghill, who was standing in the forward end of the second car, said he felt a very unusual movement and heard a peculiar noise under the car. He started towards the opposite end of the car for the purpose of opening the emergency valve, and at the same time he called to the express messenger, who was in that end of the car, to open the valve, but before either of them could reach it, the car came to a stop. After ascertaining what had occurred and learning that the flagman was injured, he procured flagging equipment and went back as far as Crab Orchard, where he reported the accident. He then returned to the scene of accident and observed a broken rail, but did not examine it to determine if it had been defective.

The statements of Conductor Thompson and Flagman Lawrence brought out no additional facts of importance, they were riding in the derailed cars and were rendered unconscious as a result of the accident.

Roadmaster Leeds stated that on October 3, the section crew passed over that portion of the track on which the accident subsequently occurred, and upon inquiry the section foreman advised that he noticed nothing wrong with the track in that vicinity, he also said that the supervisor passed through that territory on a motor car on the same date. It is the practice to have trackwalkers patrol their sections daily, and the trackwalker on the section on which the accident occurred had done so on the day preceding the accident, and advised that he saw no indication of a broken rail or anything else to cause him to make a report.

The rail involved was located on the west side of the track and was laid during August, 1927. This rail was broken in 10 pieces, ranging from $1\frac{1}{4}$ feet to 11 feet in length. The first break in the rail was 10 feet 1 inch from the receiving end, and showed a fresh break, with a transverse fissure in the ball which measured $2\frac{1}{4}$ inches wide by $1\frac{1}{8}$ inches high. The second break was 11 feet $6\frac{3}{4}$ inches from the receiving end, and this break showed an old transverse fissure that covered the entire ball of the rail, except $\frac{1}{2}$ inch on the outside, this fissure extended slightly into the web. The first mark of derailment was a flange mark on a spike-head on the outside of the rail, following the second break. Sixteen and one-half feet north of the second break, and 7 inches from the gauge side of the east rail, a flange mark appeared on a tie and continued on the ties northward. Measurements were taken of the gauge and cross-level of the track for some distance south of the point of accident and the track was found to be in perfect condition.

Conclusions

This accident was caused by a broken rail.

An examination of the track subsequent to the accident revealed a rail which had been broken in several pieces, and an inspection of these pieces of rail showed the presence of transverse fissures at two of the breaks, and from the marks found on the track it appeared that the initial derailment occurred at the second break, which was 11 feet $6\frac{3}{4}$ inches from the receiving end of the rail. The engineman and fireman did not notice anything wrong when their engine passed over this rail, and it is possible the rail broke either under the tender or the first car.

The employees involved were experienced men, and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND,

Director.