Inv-235

January 13, 1915.

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE CHICAGO & ALTON RAILWAY NEAR CLARK, MO., ON NOVEMBER 27, 1914.

On November 27th, there was a derailment of a passenger train on the Chicago & Alton Railway, near Clark, Mo., which resulted in injury to eighteen passengers and nine employees. After an investigation into the nature and causes of this accident, the Chief of the Division of Safety reports as follows:

The train involved in this accident was eastbound train No. 22, consisting of one combination baggage-smoker, one chair car, one dining car and one Pullman parlor car, all of wooden construction, hauled by engine 607, and was in charge of Conductor Haywood and Engineman Callahan. It left Slater, Mo. at 12.25 p.m., five minutes late bound for St. Louis, Mo. It passed Clark, Mo. at 2.11 p.m., nine minutes late, and at about 2.18 p.m. was derailed at a point about 3 miles east of Clark, while running at a speed of about 30 miles per hour.

The engine remained on the rails and stopped about 700 feet east of the point where the first marks of the derailment appear. All of the wheels of the tender were derailed on the north side of the track. The train was derailed on the south side of the track, the combination car being separated from the tender about 120 feet and came to rest on its side with its forward end on the roadbed and the rear end partially down the bank. The three rear cars remained coupled and were separated from the combination car about 65 feet, and came to rest on their side at the bottom of the fill. The trucks of all cars were badly broken up.

This division of the Chicago & Alton Railway is a single

track line. Train movements are controlled by time-table, train orders and manual block signals. The track is laid with 80-pound rails, 33 feet in length, single spiked to hard wood ties with about 18 ties to the rail, no tie plates being used. The track is ballasted with eighteen inches of broken stone. The derailment occurred nearly in the middle of a section of straight track six miles in length, on a twelve foot fill, with a grade of .35% descending eastward.

Engineman Callahan states that at Slater, Mo., he received a train order restricting the speed of trains to 25 miles per hour between Clark and Larabee. The first indication he had of the derailment was the jumping up and down of the tender upon the ties, and he immediately made an emergency application of the air-brakes. He estimates his speed to have been about 30 miles per hour at the time of the derailment. It is his opinion that from the time he first noticed the jumping of the tender until his engine stopped, he ran only about half of the total distance which the train ran after derailment and this leads him to believe that the tender was not the first to leave the rails. After the accident he examined the engine and tender and the only thing wrong which he found was the top brace rod of the front trucks of the tender which was dragging. He examined the track, but was unable to find anything which would cause the derailment. He states that he had not recently noticed any soft spots in the track in the vicinity of the accident.

Fireman Hinton states that his attention was first called

to the derailment by the flopping up of the apron between the engine and tender. He immediately went to the left side and looked out of the cab window and saw the top of the combination car going over; he then got out on the running board of the engine, but by that time the engine had come to a stop, about half a minute having elapsed since he first noticed the derailment. He stated that the tender did not begin to sway until after he had gotten out upon the running board. He estimates the speed to have been 25 miles per hour at the time of the accident. He also made an examination of the engine, tender and track after the accident, but was unable to find any cause for the derailment.

Conductor Haywood states that he was riding near the center of the combination car. His attention was first called to the derailment by a rattling noise of an instant's duration, then the car which he was in left the rails. He estimates the speed to have been 25 or 30 miles per hour. He made an examination of the track, but found nothing which would cause the derailment. The first mark which he found was on a tie on the north side of the south rail. He thinks he felt a jar ahead just before the car which he was in left the track, and was of the opinion that the tender was the first to be derailed.

Roadmaster Kline states that he arrived at the scene of the accident at 1.30 a.m., and as soon as it was daylight, made an inspection of the track and found nothing which would cause a derailment. He also leveled and gauged it for some distance approaching that point, measurements being taken every 16½ feet.

It was found that the north rail varied from ¼ to ½ inch higher than the south rail and at no place was the gauge found to be more than 3/8 of an inch from standard. At a point 195 feet west of the derailment was a low joint which had one bad tie under it, however, this in his opinion had no bearing on the accident. He considers the truck good, and safe for a speed of 45 to 50 miles per hour, although it is limited by time table rule to 40. He states that on November 21st, a train order was issued, restricting the speed of passenger trains to 25 miles per hour between Clark and Larabee. This order was issued on account of the line not being absolutely correct through the sags, having in mind particularly four soft spots, three east of, and one west of the point of derailment, and in order to protect these the order covered the whole section from Clark to Larabee, a distance of 6.4 miles.

Master Mechanic Schmidt states that he arrived at the scene of the accident before anything had been disturbed. The tender was standing with the right wheels of the forward truck nearly in the center of the track, while the right wheels of the rear truck were nearer the south rail. He made an examination of the engine and tender and the only defects found were broken top brake rod on the front trucks of the tank and a broken right front side bearing which allowed the tank to lean about three inches. The left front flange was slightly worn but not below the limit. He also examined the track but was unable to find anything that would cause a derailment. The condition of the tender indicated that it had not been off the rails for any great distance and in his

opinion was not the first part of the train derailed.

Truck Foreman Doan states that the cistern of the tender of engine 607 is equipped with four longitudinal and ten lateral water walls and an examination showed that they were in their proper place and in good condition with the exception of two rivets missing.

Truck Supervisor Murphy examined the truck and found nothing that would cause a derailment.

Road Foreman of Engines Corbett, states that he made an inspection of the track and about one-half a rail length west of the first flange indentation on the ties, found a flange mark on the top of the north rail, about ten feet in length and leading off toward the north. Opposite the east end of this mark, a bolt had been sheered off on the inside of the south rail, then followed a flange mark on the ties on the north side of the south rail indicating a derailment to the north.

Engine 607 is of the 4-6-2 type, having a total weight of 243,200 pounds. The tender has a capacity of 14 tons of coal and 8,500 gallons of water; its loaded weight is 165,500 pounds. It is equipped with steel wheels and has a truck base of 5 feet 9 inches, and a total wheel base of 20 feet 9 inches.

After the accident, it was found that one right front side bearing was broken; one right back spring pocket was missing and one front top truck road was broken on the tender.

The track was not in a condition for a high rate of speed between Clark and Larabee, and the speed of trains had been restricted by train order on November 21st to 25 miles per hour,

which order was in effect at the time of the accident. The statement of both Engineman and Conductor was that the train at the time of derailment was running about 30 miles per hour. This as well as the distance that the train ran after it was derailed would seem to clearly indicate that at the time of the accident the speed of the train was faster than that permitted by the train order.

In view of the conflict in the evidence and, the fact that the track was badly torn up from a point a few feet east of the initial point of derailment, to the place where the train came to rest, it is impossible to determine the cause of this derailment or which part of the train was the first to be derailed.