COMMISSIONER

CIRCULATED

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE OHIO ELECTRIC RAILWAY AT LONDON, OHIO, JANUARY 13, 1919.

March 7, 1919.

On January 13, 1919, there was a derailment of a passenger motor car on the Ohio Electric Railway at London, Ohio, which resulted in the death of 5 passengers and injury to 9 passengers and 2 employees. After investigation, the Chief of the Bureau of Safety reports as follows:

The Dayton & Columbus Division of the Ohio Electric Railway extends from Dayton, O. to Columbus, O., a distance of 74.84 miles, and is a single-track line, over which trains are operated by time-table and train orders transmitted by telephone, no block signal system being in use. Approaching the point of accident from the north, the direction from which eastbound trains approach, there is about 2,480 feet of tangent track, followed by a curve to the left at Main and High Streets, on which the derailment occurred. The track for 900 feet is on a descending grade of 1.72%, followed by 75 feet of level grade, then 225 feet of 2.15% ascending grade, 400 feet of 1.4% ascending grade, and 350 feet of .76% ascending grade to the point of accident. Main and High Streets intersect at right angles. The track at this point is laid with 91 pound rails, laid on wooden ties, set in concrete and paved with brick. The curve has a radius of 70 feet and an elevation of the outer rail of 2½ inches, the inner rail of the curve being what is known as guard-rail section. After the accident the track was found to be in good condition.

The weather was hazy and misty.

Train No. 22 consisted of passenger motor car No. 263 and was en route from Dayton, O. to Columbus, O. It left Dayton at 8.30 p.m. and at 9.50 p.m. arrived at Springfield, where the crew was relieved. The train departed from Springfield at 10.00 p.m. in charge of Conductor Willard and Motorman Lahrmer. The train left Summerford, a registering station 43.51 miles east of Dayton, at 10.40 p.m. Approaching the station on Main Street, London, O., 3.92 miles from Summerford, a slippery rail was encountered and the train passed the station and was derailed at a point about 150 feet east of it while rounding the curve from Main Street to High Street while traveling at a speed believed to have been at least 15 miles an hour. As nearly as can be determined the wheels were sliding at the time the car entered the curve and continued to slide part way around the curve. The momentum threw the car over on its right side on the south side of High Street, where the roof encountered a steel trolley wire pole, which sheared through the superstructure from a point about 12 feet from the rear end of the roof to a point about 2 feet above the floor at the center of the rear vestibule.

Examination showed that there were no marks on the rails or on the pavement indicating the point at which any of the wheels left the track, but there were flat spots 1½ inches long on the wheel treads, and grooves about 1/8 inch deep cut in the flange of the right front wheel just ahead of

the flat spot and in the flange of the right No. 2 wheel just behind the flat spot and also lighter grooves on the flanges of the right wheels of the rear truck at points corresponding with those on the front truck, all of which indicated that the car kept the track around the curve until turned over by its momentum.

Motorman Lahrmer stated that Car 863 was turned over to him at Springfield by Motorman McClarg, with the comment that it was not braking evenly and on that account to be on the lookout. He inspected the car, found that the piston travel was excessive and adjusted the brakes to his satisfaction by taking up the slack by means of the slack adjuster, setting it with his hands. He did not notice the condition of the brake shoes, except to see that they had clearance from the wheels and after making his adjustments did not try the air or notice the amount of piston travel, neither did he try the sander or look in the sand box. His recollection was that while he was making the adjustment of the brakes, the regular inspector came around and said he was not doing it right, that the brake shoes were too far away from the wheels, but the motorman said that as he had spent four years in adjusting brakes and had never had any trouble, he considered himself competent to do the work. He said his train line pressure was 70 pounds and reservoir pressure 95 pounds. Between Springfield and Summerford, several stops were made, no trouble with the air brakes being experienced.

After leaving Summerford, which is 4 miles from London, he made no stops and from that point down to 5th Street, two blocks from High Street, he handled the car in his customary manner. He estimated the speed in crossing 5th Street to have been 10 miles an hour and at this point began to use his brakes for the station stop at London. He first made the usual reduction of about 5 pounds, then a slightly heavier application and the wheels started to slide. He released the air, but was positive that after throwing his brake lever in the release position the brakes did not release and he then applied power, thinking that the brakes would release and the wheels start turning; by this time the car was nearly up to the curve. Until he got on the curve he thought he could get the wheels to turning, but they were still sliding, so he then threw off power and applied the emergency and then reversed, thinking the brakes might release when in backward motion. When he reversed, the car was nearly on the curve, and it continued at about 7 miles an hour to the point where it left the track. He said the wheels were sliding from the time he applied the brakes at 5th Street until he got to the curve and was gaining in speed. He said he did not use his hand brake, but after passing 5th Street turned on the sand, but could not remember whether or not he turned it off before applying the brakes. He thought he could have stopped at the station had it not been for the slippery rail.

it seemed to him as if the air applied in a jerky manner and would not release quickly, causing the car to skid some around curves. After going off duty, he deadheaded on Car 263 from Springfield to London. At Willis Avenue, which is about 900 feet from 5th Street, he felt the brakes being applied and thought that the wheels were sliding. He was talking with Conductor Willard, and just before it reached 5th Street, they both went back to the rear platform; the speed was then between 12 and 15 miles an hour. When they were between 5th and 4th Streets he became alarmed at the speed of the car and did not think it would take the curve and Conductor Willard remarked that he didn't believe they were going to get stopped. He had noticed the car sliding a little before it reached 5th Street and he was positive it was sliding by the time it reached 4th Street. He was then alarmed at its speed and got off in front of the station, from the right side of the car and Conductor Willard got off on the left side, both being thrown. This station is about 200 feet from the curve.

Motorman McClurg stated that he operated Car 263 on the day of the accident and he thought the brakes were applying unevenly; there seemed to be certain shoes which took hold tighter than others. He encountered several places where the rail was slippery and the car would slide so that he would have to check its speed, but had no serious trouble in controlling it. He looked at the sander, which seemed to be in good condition and he used sand once. When he

turned the car over to Motorman Lahrmer at Springfield the sand box was two-thirds full. He told Motorman Lahrmer that the brakes were a little uneven and the latter asked him if he had done anything with the slack adjuster, to which he replied in the negative, and Motorman Lahrmer said he would adjust it. He considered the grade from the Corporation Line down to 5th Street in London a bad grade if a slippery rail was encountered and said he would not want to descend the grade at a speed of more than 8 or 10 miles an hour. He said he usually begins braking for the station stop about half way between Park and 5th Streets, and had never had any difficulty in making that stop.

Motorman Halderman stated that he operated Car 263 during the day of the accident a distance of 180 miles. The rail was a trifle slippery, but ~~that~~ the brakes worked very well. He said he left the car in good condition when he turned it over to Motorman McClurg.

Track Inspectors Green and Johnson, at Newark car barns, stated that on January 11th, Car 263 was given an inspection which embraced trucks, wheels, journals, boxes, brake rigging and brake shoes, tightening of stud bolts, application and release of air to test piston travel, and taking up of slack on hand brake, after which the car was reported to the foreman as being in good condition.

Car Inspector Turner at Columbus stated that about 3.30 p.m. on the day of the accident he inspected Car 263,

adjusted the air pressure and air brakes, tested out the sander and put in a new trolley stand. Previous to his inspection the car had run 331 miles on that day.

Inspector Morris, stationed at Springfield, said that on the day of the accident Car 263 was brought into the barn at 9.50 p.m. by Motorman McClurg, who said that the brakes were not working just right and did not apply evenly. Before leaving with the car at 10.00 p.m., Motorman Lahrmer worked on the slack adjuster, saying that he would not ask any barn man to adjust his brakes, that he could always adjust them better himself.

Master Mechanic Foote stated that he inspected Car 263 at 3.00 a.m. on the morning of Jan. 12th. After the accident he found the braking apparatus in good condition except a broken brake rod, which he thought had been broken by the car overturning, as it was a new break. His examination of the sand box showed it to be over half full of dry sand. His records showed that Car 263 had been overhauled March 22, 1918, was put in service March 25, 1918, and had been running in service continually since that time. On January 11th the car was given the regular inspection, which consisted of: inspection of brakes, brake shoes, and replacement of worn brake shoes; adjustment of brakes to right amount of piston travel: inspection of motorman's brake valve and indicator gauge, of air compressor and governor, and of the sander. He considered Motorman Lahrmer careful and efficient and one

Conductor Millard of Car 263 stated that they left Summerford on time and estimated the speed down hill approaching 5th Street at 14 or 15 miles an hour. He said the motorman usually shuts off power at Garfield Avenue, or a little before reaching there, and applies his air at 5th Street, preparatory to making the station stop at London and did so on this occasion, reducing speed shortly after passing Garfield Avenue. Approaching 5th Street, the car was coasting down grade and when it crossed 5th Street the wheels were sliding, but he thought the speed would be checked before they reached 4th Street and he stepped out on the rear platform in order to get off at the station. About the time they crossed 4th Street, going up the grade, he noticed the speed was still excessive, it being then about 14 or 15 miles an hour; the car was then sliding and continued to slide until it reached the curve. He became convinced that the car would not take the curve, so got down on the step and jumped off in front of the station, about 70 or 80 feet from the curve, being thrown, and before getting to his feet observed the car hit the curve at a speed of from 15 to 18 miles an hour and turn over. He made no effort to apply the air by means of his conductor's valve, as he thought it would be futile to apply the air when the wheels were already sliding.

Conductor McCord stated that with Motorman McClurg he had the car on the run previous to the accident, from Columbus to Dayton and return to Springfield, and on that trip

of their best posted men as to the condition a car should be in; he said he took very good care of equipment and was particular as to the condition of brakes on cars he operated.

The testimony of trainmen who were riding on the car as to its speed at the time of the accident was conflicting. The motorman stated that when he made his first brake application for the station stop at London the car was traveling at a speed of 10 miles an hour, but that the locked wheels and slippery rail caused the car to slide all the way up the grade from 5th Street, and that by the time the car entered the curve he had succeeded in reducing speed to 7 miles an hour. Both conductors corroborated the motorman's statement concerning the distance the car slid, but the conductor in charge estimated its speed approaching 5th Street at 14 or 15 miles an hour and said the car entered the curve at a speed of from 15 to 18 miles an hour, while the conductor who was [illegible] stated that approaching 5th Street the speed was between 12 and 15 miles an hour and that the car entered the curve at a speed of 10 miles an hour or more. While all the trainmen agreed as to the distance the car slid on the ascending grade, yet if these statements be accepted, it is evident that the car must have been traveling through London at a rate of speed much in excess of any of the estimates given in the testimony.

Car 263 was originally built in 1900, but had since been rebuilt. It was a wooden car, 62 feet, 3 inches long, weighing 80,000 pounds and equipped with four-wheel trucks. The wheels showed about 1/8-inch tread wear and from 1/16-inch

to 3/16-inch flange wear. The car was provided with four General Electric motors of 75 horse-power each and the braking equipment was Westinghouse automatic, with modern air sanders and a Peacock emergency hand brake. The car was fitted with a conductor's emergency brake valve, located overhead in the rear vestibule.

This accident was caused by Motorman Lahrmer failing to observe the speed restrictions of 10 miles an hour while passing through the town of London and in failing to have his car under control approaching the station. Under rule No. 234 of the transportation department of the Ohio Electric Railway, Conductor Willard contributed to the accident in that he allowed Motorman Lahrmer to operate the car at a speed which he knew to be in excess of that permitted by rule. Rule 234 reads as follows:

> 234. **Motormen and Conductors Equally Responsible.**
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> Motormen and Conductors will be held equally responsible for the violation of any rules governing the safety of their trains, and must take every precaution for their protection, even if not provided for in the rules. IN CASE OF DOUBT OR UNCERTAINTY, TAKE THE SAFE COURSE AND RUN NO RISKS.

Motorman Lahrmer had been employed as a motorman since 1907, having previously spent 4 years as mechanic on brakes and trucks. His record was good. Both members of the car crew were experienced men on the division on which the accident occurred. They had been on duty 7 hours and 50 minutes, after a period off duty of 14 hours and 30 minutes.

Subsequent to this accident, a general order was issued by the operating officials of this road designating 5th Street, London, as a safety stop for all eastbound trains.

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