INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE CHICAGO, NORTH SHORE & MILWAUKEE RAILROAD NEAR KENOSHA, WIS., ON AUGUST 20, 1932.

September 21, 1932.

To the Commission:

On August 20, 1932, there was a derailment of a passenger train on the Chicago, North Shore and Milwaukee Railroad near Kenosha, Wis., which resulted in the death of 1 passenger and the injury of 34 passengers and 4 employees.

Location and method of operation

This accident occurred on the Milwaukee Division, which extends between Chicago, Ill., and Milwaukee, Wis., a distance of 98.84 miles. In the vicinity of the point of accident this is a double-track electric line over which trains are operated by time-table and train orders, during foggy or stormy weather a manual block-signal system is used. The derailment occurred 4.47 miles south of Kenosha, approaching this point from the south, the track is tangent for more than 5 miles and this tangent extends for a considerable distance beyond the point of derailment. The grade is practically level.

The track is laid with 100-pound rails, 33 feet in length, with an average of 18 hardwood ties to the rail-length, and is about 30 per cent tie-plated. The track is ballasted with slag to the depth of 6 inches over the original gravel ballast, and is well maintained. No speed limit is prescribed, the speed being governed by the characteristics of the motors.

The weather was clear at the time of the accident, which occurred about 3.15 p.m.

Description

Northbound passenger train No. 419 consisted of three motor cars, all of steel construction, and was in charge of Conductor Mead and Motorman Litchfield. This train departed from Zion, Ill., at 3.13 p.m., two minutes late, and had reached a point 3.23 miles north of that station when it was derailed while traveling at a speed estimated to have been between 50 and 60 miles per hour.

Motor car 765, the leading car, was derailed to the right and came to rest on its left side, heading in the opposite direction to which it had been running, about 450 feet north of the initial point of derailment, the front truck becoming detached from the car body. The second and third motor cars, numbers 756

and 751, respectively, passed car 765, car 756 was derailed to the left of the track and stopped in an upright position parallel with the track, while car 751 was across the northbound track with the north end of the car fouling the southbound track. With the exception of the front truck from car 765, the equipment was not badly damaged.

Summary of evidence

Motorman Litchfield stated that the first intimation he had of anything wrong was when he felt a slight motion in the front truck and a slight jar as if something was striking the rail. After feeling the jar the second time, he shut off the power and made an emergency application of the air brakes, the brakes had been tested, and prior to the accident both the motor and the brakes had worked properly. Motorman Litchfield was sure that the front truck of car 765 was derailed first, but had not formed any opinion as to which wheel was the first to be derailed. He estimated the speed of the train at the time of accident to have been between 50 and 60 miles per hour.

The statements of Conductor Mead, Trainmaster Ives and Collector Nowacke added nothing of importance to the information given by the motorman.

Engineer of Maintenance of Way Kramer inspected the track about one hour after the occurrence of the accident and found it to be in good condition from the initial mark of derailment to a point 348 feet north, the only repair work needed being that which was necessary in order to restore the alinement. North of this latter point the track was damaged to such an extent as to require rebuilding it for a distance of 275 feet.

Section Foreman Karpen had inspected the track in the vicinity of the point of accident about 20 minutes previously and found it to be in good condition, this inspection was made from a motor car.

General Manager Johnson of the Chicago Elevated Railways, who acts in an advisory capacity in engineering matters for the Chicago, North Shore and Milwaukee Railroad, arrived at the scene of the accident about four hours after it occurred and made an inspection of the track and equipment. He reached the conclusion that the rear wheels of the front truck were derailed first, basing his opinion on the fact that there was only one pair of flange marks on the ties and that there were heavy score marks on the throat side of the flanges of both front wheels, indicating that they had been binding on the rails. He also stated that the bottom rod and slack adjuster on the left side of the front truck was broken, and that the end of the broken rod had become wedged in such a manner as to hold the brake shoe against the left front wheel, which would have a tendency to

cause the truck to run out of alinement with the track. The left front wheel was warm seven hours after the accident, while the other three wheels in this truck were cold.

The statements of Master Mechanic Cordell corroborated those of Mr. Johnson, adding, however, that the defect in the bottom rod could not have been discovered without dismantling the unit.

Car 735 is of steel construction, 55 feet 3¼ inches long, with a total empty weight of 103,000 pounds, and is equipped with four Westinghouse motors, type 557-R-5, each rated at 140 horse-power. The weight of the trucks and motors comprise approximately 50 per cent of the total weight of the car. This car had been turned out of the shop on August 19, all wheels had been newly turned with the exception of one pair which had been taken from another car. Examination of the front truck of this car by the Commission's inspectors disclosed that the left front corner of the frame and the left front pedestal jaws were bent outward, while the right back corner of the truck frame was bent downward and inward. The truck equalizer bars on the left side were bent inward to a depth of approximately 3 inches, and the bottom brake rod on the left side was broken, there being a rod on each side of the truck, apparently the rod broke because of a flaw in the metal. The front pair of wheels had heavy score marks on the throat side of the flanges, and a brake shoe identified as coming from the left front hanger was badly burned. There were no marks on wheel or rail to indicate that anything had been run over.

Examination of the track disclosed that the first mark was where a wheel flange had climbed the east or right rail, continuing on the ball of the rail for several feet to the point where the wheel left the rail and dropped to the ties on the outside of the rail. The ties were marked on the outside of the east rail for one rail-length before a corresponding mark appeared on the inside of the west rail. The ties were then marked close to the rails for a distance of approximately 150 feet, where the marks grew wider and turned more abruptly to the right, evidently caused by the truck turning to one side and dragging the wheels across the ties. From this point the track was damaged to such extent that it required rebuilding. The only broken rail found was located 388 feet north of the initial mark of derailment, in the section of track that required rebuilding.

Conclusions

This accident was caused by the failure of some part of the leading truck of motor car 765, probably the bottom brake rod on the left side of the truck.

The mark made by the flange which climbed the right rail showed evidence of outward pressure, and this fact, coupled with

the burning of the left front brake shoe, the heating of the left front wheel, and the evidence of binding found on both front wheels, makes it apparent that something had occurred to interfere with the normal tracking of this truck, forcing the rear of the truck to the right, after the rear wheels were first derailed they followed the rails closely for a short distance and then were dragged across the ties at an angle with the rails. It is believed that the breaking of the bottom brake rod led to the derailment of this truck.

All of 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.