INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NEW YORK, CHICAGO & ST. LOUIS RAILROAD NEAR ERIE, PA., ON NOVEMBER 1, 1925.

March 20, 1926.

To the Commission

On November 1, 1925, there was a derailment of a freight train on the New York, Chicago & St. Louis Railroad near Erie, Pa., resulting in the death of one employee and the injury of one employee.

Location and method of operation

This accident occurred on the Buffalo Division, extending between Buffalo, N. Y., and Kingsville, Ohio, a distance of 116.8 miles, in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The accident occurred at a point about 1,500 feet west of the east switch of a passing track known as Dean Siding; approaching this point from the east the track is tangent a distance of more than 2 miles, followed by a 3° curve to the left about 900 feet in length, the accident occurring on this curve at a point about 610 feet from its eastern end. The grade for westbound trains is descending, varying from 0.30 to 0.44 per cent being at its maximum at the point of derailment.

The track in the vicinity is laid with 90-pound rails, 33 feet in length, with an average of about 20 oak and pine ties to the rail-length, single-spiked, and ballasted with cinders. Some tie plates are used, but no rail anchors. Under the rules the speed of freight trains is limited to 40 miles an hour.

The weather was clear at the time of the accident, which occurred at about 11.45 p.m.

Description

Westbound freight train extra 500 consisted of seven cars and a caboose, hauled by engine 500, and was in charge of Conductor Campbell and Engineman Lynch. At North East, 14.4 miles east of Erie, orders were received giving extra 500 until 11.55 p.m. to reach Erie for train first No. 46. A stop was made at a point about ¾ mile distant to set out one car on the New York Central interchange track, and the train then proceeded, according to the train sheet, at 11.28 p.m., being derailed near Erie while traveling at a speed estimated by members of the crew to have been between 35 and 40 miles an hour.

The entire train was derailed with the exception of the caboose, the engine coming to rest on its right side on the outside of the curve, 561 feet beyond the point of derailment. The first five cars were derailed and overturned on the inside of the curve, while the sixth car although derailed remained practically upright. The employee killed was the engineman.

Summary of evidence

Fireman Stuckey said the engineman had been using a light throttle and that he himself had been shaking down coal; after partly rounding the curve on which the accident occurred he got up on his seat box, and at about this time he saw that Engineman Lynch had the independent engine brake applied and on looking ahead he saw sparks flying from under the left front driving wheel. The engine then started to sway heavily from one side to the other, finally giving a lurch and turning over. He said everything happened within about two or three seconds from the time he got on his seat box and that he could not estimate the speed at the time of the derailment, although it had been a little higher than usual and probably was as high as 35 miles an hour at some points between North East and the point of accident. Fireman Stuckey did not think the driving wheels were the first to be derailed, saying the fire might have come from the pony-truck wheels. Fireman Stuckey further stated that while he had not examined the engine closely, it appeared to be in good condition and that Engineman Lynch had commented about it.

Conductor Campbell stated that it lacked a few seconds of being 11.26 p.m. when his train departed from North East, while the accident occurred at 11.45 p.m., he having looked at his watch immediately

after its occurrence, and he estimated the speed at the time to have been about 35 miles an hour; he had not noticed any application of the air brakes and said he had been on freight trains which had run faster than his own train ran on this occasion. He made an examination of the track shortly afterwards and found it to be out of line from the beginning of the curve to where the derailment occurred; he was of the opinion that when the engine encountered the curve to the left the engine had a tendency to bear to the north and then to rebound to the south, and that when the rebound occurred the track was thrown out of line, causing the engine to sway, each sway increasing in force until the derailment occurred. Conductor Campbell further stated that when the train orders were received at North East, one order giving them until 11.55 p.m., to reach Erie for train first No. 46, while another order gave them until 4.19 a.m. to reach Girard, 29.4 miles west of North East, for train first No. 54, Engineman Lynch remarked "We ought to be home in bed by 4.19". The only stop made was to set off the one car at the New York Central interchange track. Engineman Lynch had worked with him on a number of trips, continuously since the first of October; he noticed nothing wrong with him physically on the night of the accident, and said that he had had no occasion to caution him about fast running, the engineman using good judgment in all cases.

Brakemen Prescott, McShay and Moore were riding in the caboose and were unaware of anything wrong until the accident occurred. Their estimates as to the speed of the train just prior to the derailment was between 35 and 40 miles an hour. None of them noticed an air-brake application just prior to the accident, but Brakeman McShay said that he noticed the air brakes apply on the caboose at about the time it started riding roughly and swaying from one side to the other.

Supervisor of Track Case stated that he was in charge of the section of track where the accident occurred, that the rails were laid new in January, 1921, and that the curve was fully tie-plated in April of the same year. During the last week in October a few joints were raised on the low rail of the curve on which the accident occurred. The track was inspected twice a day, and he had received no report of track irregularities in this immediate vicinity within a month prior to the derailment. He took measurements of the superelevation of the outside rail and the gauge of the track east of the initial point of derailment, on the morning following the accident. The superelevation intended to be

maintained was 3 inches, 1 inch for each degree of curvature; the maximum superelevation was 3¼ inches and the minimum 3 inches, while the gauge was ½ inch wide. He said it was the practice on curves to allow the gauge to be ¼ inch wide, and he thought the other ¼ inch of wide gauge could be accounted for by wear on the rails. East of the initial point of derailment there was no indication of the track being out of alinement, indicating that the engine or train had not been swaying up to this point, but west of the initial point of derailment the track was out of alinement, being moved to the north, apparently a result of the accident.

Inspection of the track disclosed the first mark of derailment to be on angle-bar bolts on the gauge side of the low rail, at a point about 610 feet west of the eastern end of the curve. At this point the bolt heads were sheared partly off, and then for a distance of 330 feet there were numerous marks on angle bars and bolts, and flange marks on the ties, on the gauge side of the low rail, while there were similar marks on the outside of the high rail of the curve, apparently made by wheel flanges. There were no marks to indicate that the derailed wheels had climbed the rail, or had run along on the top of the rail, the wheel on the outer rail evidently having jumped this rail and dropped down on the outside. Beginning 330 feet west of the first marks of derailment the track was badly torn up and destroyed for a distance of 231 feet, to where the engine came to rest. In this vicinity there were found numerous spike heads broken off, corroded, or loose in the ties, having lost their holding qualities. All of the ties were not equipped with tie plates, and some of the tie plates had cut into the ties ½ inch and showed indications of shifting. At several points there were indications of track pumping, the ballast having worked out to quite an extent from under the ends and sides of the ties, showing a wet spongy condition. The superelevation of the outside rail at the initial point of derailment was 3 inches, and the gauge 4 feet 9 inches. Prior to the accident the rain fall in this vicinity had been unusually heavy for some time, and the shoulder of the road bed at some points had been washed away to a considerable extent.

Engine 500 is of the 2-8-2 type, having a total weight, engine and tender, loaded, of 445,000 pounds; its driving-wheel base is 16 feet 6 inches, and total wheel base, engine and tender, 67 feet 8½ inches. This engine received class 3 repairs on September 21, 1925, and had made 13 trips, or approximately 2,000 miles, between that

time and the time of the accident. Careful examination of the work reports covering this engine for a period of 10 days prior to the accident, and an examination of the engine subsequent to the accident, failed to disclose any defect which would have caused or contributed to the accident, the only irregularity being disclosed was that the back driving wheels, back to back, gauged from 52 31/32 to 52 7/8 inches, the minimum limit required being 53 inches, this condition, however, might have been a result of the derailment. There were two deep indentations on the outside of the rim of the tire of the left front driving wheel, and the outside edge of the tire had the appearance of having rubbed heavily against the low rail; on the inside of the flange of the right front driving wheel there were indications of it having rubbed against the outside of the high rail, these marks evidently having been made at the time of the derailment.

Conclusions

This accident is believed to have been due to failure to maintain the track in proper condition for the operation of trains at the maximum rates of speed allowed.

The speed limit for freight trains is 40 miles an hour, and the evidence indicated that this was the approximate average speed of extra 500 between North East and the point of accident. The examination of the track on the curve, however, raised a doubt as to whether it was safe for the operation of heavy power at such a rate of speed. The gauge and elevation were well maintained, but the track appeared to be soft, the ballast having worked out from under the ties to a considerable extent, while at some points the shoulder of the road bed had been washed away as a result of the heavy rains which had been experienced in that locality. The spiking was not maintained in the best of condition, while some of the tie plates had cut into the ties for a distance of about 1/2 inch. These conditions could not do otherwise than weaken the track structure, and it is thought that this weakened condition was responsible for its apparent failure to hold up under the weight of this train, moving at the maximum rate of speed allowed for freight trains.

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.