INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE DELAWARE, LACKAWANNA & WESTERN RAILROAD AT CRANBERRY LAKE, N.J., ON SEPTEMBER 15, 1927.

October 28, 1927.

To the Commission:

On September 15, 1927, there was a derailment of two helper engines, coupled, on the Delaware, Lackawanna & Western Railroad at Cranberry Lake, N.J., resulting in the death of one employee and the injury of one employee.

Location and method of operation

This accident occurred on that part of the Sussex Branch of the Morris and Essex Division extending between Port Morris and Branchville Junction, N.J., a distance of 16.7 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders and an automatic block-signal system. The accident occurred at a point approximately 650 feet east of the station at Cranberry Lake; approaching this point from the east the track is tangent for a distance of 1,666 feet, followed by a compound curve to the right 524 feet in length with a maximum curvature of 4° and then 141 feet of tangent and a 3° 30' curve to the left 379 feet in length, the accident occurring on the last-mentioned curve at a point 210 feet from its eastern end. The grade is level at the point of accident. The track is laid with 91-pound rails, 33 feet in length, with 20 or 21 treated hardwood ties to the rail-length, tie-plated, with cut spikes on the gauge side of the rail and screw spikes on the outside, and ballasted with cinders. The line and surface of the track are good and the track is well maintained. Engines running backwards are restricted to a speed of 25 miles per hour.

The weather was clear at the time of the accident, which occurred at about 10.10 a.m.

Description

Westbound extra 873 consisted of engines 873 and 895, coupled and headed eastward, in charge of Enginemen O'Neal and White, respectively. These engines left Port Morris, 6.2 miles east of Cranberry Lake, at 9.49 a.m., en route to Andover Junction, 3.1 miles west thereof, for the purpose of assisting eastbound trains, and they were approaching the station at Cranberry Lake when they were derailed while traveling at a speed estimated to have been between 18 and 25 miles per hour.

The tender of engine 873 was derailed to the right, followed by engine 873 and the tender of engine 895; engine 895 was not derailed. The tender of engine 873 remained upright and came to rest at right angles to the track at the foot of an embankment at a point 252 feet from the initial point of derailment. Engine 873 remained coupled to its tender and came to rest on the top of the embankment, being held in that position by the tender. The tender of engine 895 also remained upright. The employee killed was the fireman of engine 895, and the employee injured was the fireman of engine 873, both of whom were riding on top of the tender of engine 873 at the time of the derailment.

Summary of evidence

Engineman O'Neal, of engine 873, stated that before departing from Port Morris he examined his engine carefully, while oiling around it, but found nothing wrong; the tender was loaded with coal and there was a full tank of water, with the exception of about 4 inches. At Netcong, 1.4 miles west of Port Morris, a brief stop was made, the brakes working properly, as they did at other points, and he noticed nothing unusual prior to the accident, at which time the engines were working steam and moving at a speed of from 20 to 25 miles per hour. The tender of his engine was the first to derail and he immediately applied the air brakes in emergency. Engineman O'Neal further stated that he made a careful examination of the track following the accident but was unable to determine its cause. He saw where a wheel flange had mounted the high rail of the curve, the flange mark extending across the top of the rail; there was no indication of any obstruction having been on or near the track at this point and there appeared to be nothing wrong with the track as far as the riding of the engine was concerned. The statements of Engineman White, of engine 895, were similar to those of Engineman O'Neal as to the condition of engine 895, the supply of water and coal, and the track conditions and speed. Engineman White further stated that the first he knew of anything

wrong was on noticing the swaying of engine 873 and its tender; the air brakes had been applied by this time and he immediately closed the throttle on his own engine. Engineman White could advance no reason as to the cause of the accident.

Flagman Neuhouse, of extra 873, said he was riding in the cab of engine 873, on the left side, and that his first knowledge of anything wrong was when the tender seemed to shift toward the right and then drop down on the ties. He thought the speed was so low that he could easily have gotten off the engine without falling, estimating the speed to have been between 18 and 20 miles per hour, at the most not over 22 miles per hour, at the time of the accident; he had no idea as to its cause.

Fireman Crossman, of engine 873, when interviewed at the hospital, said the first intimation he had of anything wrong was on hearing a loud noise and the leading end of the tender seemed to jump up in the air and he then realized that the rear truck of the tender was derailed. He estimated the speed to have been about 25 miles per hour at the time of the accident, and said he had noticed nothing wrong with the track conditions.

Master Mechanic Root stated that to the best of his knowledge no changes had been made in the tenders of engines of the type of engine 873, that they are equipped with splash plates, and that this type of engine has not been subject to derailment any more than other types.

Examination of the track disclosed the first mark of derailment to be a flange mark on the running surface of the high rail of the curve; this mark extended diagonally across the rail for a distance of 12 feet to the point where it dropped off on the outside. This mark was followed by marks on spike heads and ties extending a distance of about 1½ rail lengths to the point where the marks ran off the ends of the ties. Beyond this point the track was badly torn up and damaged to where the equipment came to rest. Measurements of the track taken up to the point where it was destroyed disclosed it to be well maintained with uniform elevation and gauge; the maximum superelevation of the outside rail of the curve was 4 inches, while the gauge varied from 4 feet 8 5/8 inches to 4 feet 8 11/16 inches. There was no indication of dragging equipment, or that any object had been on the rail, in fact, nothing was found to indicate that track conditions had anything to do with the accident.

Careful inspection of engine 873 and its tender was made at the point of accident. The brake rigging on both tender trucks was found to be intact with the exception of the bottom connection on the rear tender truck; parts of it were found where the truck came to rest, however, and as the break was new it appeared that this condition was a result of the accident. The flanges of all the wheels of the engine and tender were gauged and measured and found to be in good condition. Further inspection of the equipment was made after it had been moved to the shops. The tender was inspectedfor evidence of loose or working center plates; the center pins were intact and there was nothing to indicate that the engine or tender had been riding the draw bar, that the tender had been riding on the truck side bearings or that there had been insufficient clearance on the radial buffers. All foundation brake gear on the tender was in place with the exception of the bottom connection previously mentioned. The left side bearing on the rear truck was broken off, but the break apparently was new and there was nothing to indicate that the tender had been top heavy when carrying a full load of coal and water. The general result of this inspection was that nothing was discovered about the engine or tender that would have caused or contributed to the accident.

Nothing could be developed in connection with the actual speed of extra 873 at the time of the accident beyond the estimates made by the members of the crew, these estimates ranging from 18 to not more than 25 miles per hour, while the position and condition of the equipment did not indicate an excessive rate of speed. A check of the train sheets for a period of two weeks disclosed no instance of helper engines exceeding the speed restrictions, according to the times shown on the train sheets.

Conclusions

The cause of this accident was not definitely ascertained.

Careful examination of the track indicated that the gauge and elevation were uniform, and adequate for the rate of speed allowed on the curve, while there was nothing about the construction or maintenance of the track which could have resulted in the occurrence of the accident.

Examination of engine 873 and its tender, which appeared to have been the first part of the equipment to be derailed, also failed to develop the presence of any defects which could have had a bearing on the accident, while nothing was discovered which would indicate that excessive speed was a factor.

All of the employees involved were experienced men; 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.