

April 23, 1913.

In re investigation of accident on the Pere Marquette Railroad, near Okemos, Mich., March 10, 1913.

On March 10, 1913, there was a derailment of freight train on the Pere Marquette Railroad, near Okemos, Mich., resulting in the death of two employees.

After an investigation of this accident, the Chief Inspector of Safety Appliances reports as follows:

The Detroit Division of the Pere Marquette Railroad on which this accident occurred is a single track line extending between Detroit and Grand Rapids, Mich. At the time of this accident trains were operated under the train order system, no block system being in use.

The derailed train was westbound extra No. 913, consisting of engine No. 913, 36 loaded freight cars and a caboose. Conductor Hart and Engineman Gorman were in charge of this train. On the date of the accident extra 913 left Plymouth, its initial terminal, at 7:10 am; it had proceeded about 55 miles toward Grand Rapids, its destination, when it was derailed at a point about 1.8 miles east of Okemos at 1:02 pm. The derailment occurred on straight track in a cut about 6 feet deep, on a grade slightly ascending toward the west, while the train was running at a speed of about 25 miles per hour. The engine, tender and 20 cars left the rails; the engine ran along for a distance of about 260 feet after being derailed and came to a stop in an upright position between the north track rail and the bank of the cut.

At the place where the derailment occurred the rails were 30 feet long, weighing 75 pounds per yard, and were laid on oak and cedar ties, there being about 20 ties under each rail. The ballast used was of gravel, from 6 to 8 inches deep.

After the derailment it was found that the tire on the left-hand forward driving wheel of the engine was loose and had slipped on the wheel center. The tire was in a cramped position, having worked off from the wheel center about two inches on one side and four and one-half inches on the other. At the point of derailment a rail on the south side of the track was broken.

East of the point where the derailment occurred rails weighing 80 pounds per yard were installed and west of that point rails weighing 75 pounds per yard were used. The broken rail found after the accident was the fourth rail weighing 75 pounds per yard west of the point of junction between the two sizes of rails. The three 75-pound rails east of the broken rail were badly kinked, and the first rail east of the broken

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rail was spread out from the gauge line of the track and partly overturned. Kinks were also discovered in the south track rail at intervals for a distance of about four miles east of the point of derailment.

The derailed train passed Williamston, approximately 6.1 miles east of the point of derailment, at 12:47 pm, covering the distance between this place and the point of derailment in 15 minutes, or at an average speed of about 25 miles per hour. Engineman Gorman stated that he did not notice anything wrong with the engine; he said it was running smoothly and there was nothing to indicate that a tire had slipped. The fireman and brakeman who were on the engine at the time of the accident were killed.

This derailment was caused by a loose tire on engine No. 913. The condition of the track after the derailment indicated that this tire slipped on the wheel center at least 4 miles from the point where the derailment occurred, but there was enough strength and rigidity in the track where 65 pound rails were used to resist the unusual strain placed on the track; when the engine left the 65 pound rails and got on the rails of 75 pound section, however, these lighter rails did not have enough rigidity or strength to withstand the strain, and one of these rails was broken, allowing the engine to leave the track.

Engine No. 913 was of the 2-6-0 type, built in July, 1911. It had a rigid driving wheel base of 17 feet, 6 inches, and a total wheel base of 26 feet, 5 inches. The weight of the locomotive on the drivers was 210,500 pounds, and on the front trucks, 26,000 pounds. The engine was taken to the shops for general repairs on December 1, 1912, and was again put into service on January 31, 1913. At the time of the accident the engine was in good condition throughout. The tires were the same as furnished on the engine by the builders, they were turned in the shops when the engine was given a general overhauling, and were 2-15/16 inches thick when the engine left the shops on January 31, 1913. The tires and flanges were in good condition.

On February 19, nineteen days before this derailment, the tire which caused this accident became loose in Plymouth yard and caused the derailment of the engine. In resetting this tire seven heavy shims were used. In the section of track on which the derailment occurred there were many poor ties and at some of the joints the spikes were loose and the ends of the ties were rotted away. Track shims were used to some extent in cuts on this section and are believed to have been in use under the rail which was broken in this accident. It is impossible to say whether the loosening of the tire resulted from the fact that it was not properly set on February 19th; from rough and uneven track; from a combination of these two causes, or from some other cause.

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Engineer Gorman had had less than one year's experience as an engineer. He was employed as a fireman on December 23, 1904, and was promoted to the position of engineer on April 30, 1912. His record was good. This was his first trip with engine No. 913. He had been on duty 8 hours and 43 minutes after a period off duty of 8 hours and 50 minutes.