

In Re. Investigation of an Accident which
Occurred on the Chicago, Milwaukee & St.
Paul Railway, near Hornick, Ia., on
November 9, 1916.

December 14, 1916.

On November 9, 1916, there was a derailment of a passenger train on the Chicago, Milwaukee & St. Paul Railway, near Hornick, Iowa, which resulted in the death of 2 employees and 1 trespasser, and the injury of 1 passenger and 1 employee. After investigation of this accident the Chief of the Division of Safety reports as follows:

The Eastern Division of the Sioux City and Dakota Division, on which this accident occurred, is a single-track line, over which train movements are governed by time-table, train orders and manual block signal system. The track approaching the point of accident from both directions is straight for miles, while the grade is slightly descending for eastbound trains. The weather at the time was cloudy.

On the date of this accident eastbound passenger train No. 20, en route from Sioux Falls, S. D., to Manilla, Iowa, consisted of locomotive No. 2867, 1 combination mail and express car, 2 combination mail and baggage cars, 2 coaches, 1 sleeping car and 1 observation car, and was in charge of Conductor Jackson and Engineman Murphy. This train left Sioux City, Iowa, at 6.50 p. m., 10 minutes late, the crew having received slow order No. 680, reading as follows:

"Bad spot in track about $\frac{1}{2}$ mile west of
bridge 172, between Hornick and Grant Center.
Reduce speed to 4 miles an hour over this."

The train passed Hornick, Iowa, the last telegraph office, at 7.38 p. m., 8 minutes late, and at about 7.45 p. m. was derailed at a point 3.9 miles east of Hornick when it ran onto the bad spot in the track at a speed estimated from 25 to 35 miles an hour.

The engine came to rest on its right side, to the south of the track, about 290 feet from the initial point of derailment. The coupling between the engine and tender was not broken, and the tender lay on its side with its rear end swung around so that it was at right angles with the track. The first four cars in the train were also derailed, but all remained upright. The track was torn up for a distance

of 210 feet.

The track in the vicinity of the accident is laid with 75-pound rails, 30 feet in length, which were placed in their present position in January, 1900. About 50 per cent. of the ties were oak, the others, with the exception of a few pine ties, being cedar; tie-plates had at one time been applied to the cedar ties, but had become so badly rusted out as to be for the most part useless. There are about 18 or 19 ties to the rail and about 3 feet of cinder and gravel ballast. The oak and pine ties were in good condition, but about one-half of the cedar ties were rail-out from 3/4 to 1 inch. Except in the immediate vicinity of the accident, the gauge and alignment of the track were good and the surface fair. Several joints were found with loose bolts and in one instance two bolts were missing. The track is built on what is known as bottom land, and the soil at places is of a boggy nature. On this account, especially after heavy rains, considerable trouble has been experienced in keeping track in safe condition in the vicinity of the point where this derailment occurred.

The investigation disclosed that on November 4, Assistant Roadmaster Murphy went over this line and directed section foreman Miller to repair a bad spot in the track near the point where the derailment occurred. Section Foreman Miller stated that he raised two rails that were about 1 1/2 inches low, although the bad spot which he repaired was not on his section but on the adjoining section to the west. The track near the scene of this accident was next inspected at about 3.00 p. m., November 7, when acting section foreman Francis Murphy and a track laborer passed over it; they reported that track conditions were fair at that time. A heavy rain fell on November 7, and it was still raining at the time this inspection was made. This piece of track was not inspected again before the derailment occurred on the evening of November 9.

On November 8, at about 10.00 p. m., a bad spot in the track one-fourth of a mile west of bridge 172, between Hornick and Grant Center, was reported by a conductor, and slow order No. 680 was issued to cover this bad spot, which order read as follows:

"Bad spot in track about 1/4 mile west of bridge 172."

On November 9, at about 6.00 p. m., this bad spot was again reported by the conductor of eastbound train No. 8, together with the information that the track was not safe for any speed in excess of 4 miles per hour. The dispatcher then added a speed restriction of 4 miles per hour to order No. 680. This bad spot was variously estimated to have been from 60 to 150

feet in length, and by measurements taken later it was found that the west end was 2,070 feet west of bridge 172.

Conductor Jenkins and Engineman Thompson, of train No. 6, who passed over the track at the point of derailment at about 6.0 p. m., stated that they held slow order No. 680, as originally issued, but that on account of its being dark, and there not being many landmarks in the vicinity, it was difficult to locate the bad spot covered by the order. The speed of their train had been reduced to 15 or 20 miles an hour when it struck the soft spot, and it was noticeable to them that the track was quite low and out of line. They did not, however, consider the condition serious enough to stop the train for the purpose of placing flags or lights out for the protection of following trains, but waited until they reached Grant Center and then wired the dispatcher at Sioux City to place a speed restriction of 4 miles an hour on bad spot about one-fourth mile west of bridge 172.

Conductor Jackson, of train No. 20, stated that when he delivered his orders to Engineman Murphy before leaving Sioux City, he specifically called his attention to slow order No. 680, which contained instructions to reduce speed to 4 miles an hour over the bad spot about one-fourth mile west of bridge 172, and he was satisfied that the engineman understood the order perfectly. Conductor Jackson stated that the first intimation of the derailment came to him when he felt the brakes being applied just previous to the derailment. He said that he thought they were running between 25 and 30 miles an hour just before the train was derailed and that the speed had been reduced somewhat by the application of the brakes.

Baggage Master Rowley, of train No. 20, estimated the speed at the time of derailment at 30 or 35 miles an hour.

Chief Train Dispatcher Corcoran, located at Sioux City, stated that on November 8 a bad spot in the track was reported to him by Conductor Schonck, about one-fourth mile west of bridge 172, and at 10.00 a. m. on that date he issued slow order No. 680 calling attention to it. He stated that the trackmen repaired the track on November 8. On November 9 this same spot was reported to him by Conductor Jenkins and Engineman Thompson of train No. 6, with instructions to place a 4-miles-an-hour slow order over it. The chief dispatcher stated that he then added a sentence to order No. 680 restricting the speed over the spot to 4 miles an hour, and that on the night of the accident the crew of train No. 20 had a copy of this order as last issued. He also stated that it is a rule for his office to notify section foremen of bad track, and that upon receipt of the second report of the bad track Dispatcher Shaft immediately instructed Operator Goodell at Hornick to notify the section foreman.

Dispatcher Shaft at Sioux City, stated that on the night of November 8, when Conductor Schenck reported the badspot in the track one-fourth of a mile west of bridge 172, he thought he notified the section foreman in regard to it, but was not positive. There was no record of these instructions in his office, however, but he stated that oftentimes he does not keep a record of such instructions. He stated that on the next evening, November 9, when the conductor of train No. 6 reported the place as not being safe for more than 4 miles an hour, he immediately called the operator at Hornick and started to give him a message for the section foreman, but the operator interrupted him and told him that the section foreman had already received the message about the bad track and was planning to repair it the next morning. Dispatcher Shaft stated that he did not make any further request that the sectionmen go out and look at the track that night, as he took it for granted that 4 miles an hour would be a perfectly safe rate of speed. He also stated that when he delivered order No. 680 to the conductor of train No. 20 he called particular attention to the 4-miles-an-hour speed restriction, and the conductor was to caution his engineer.

Operator Goodell at Hornick stated that at about 6.20 p. m. on November 9 he received a message from Conductor Jenkins from Grant Center which placed a speed restriction of 4 miles an hour over track one-fourth of a mile west of bridge 172. He placed this message in the section foreman's mail box, and at about 6.55 p. m. section laborer O'Connell came into the station, and upon calling his attention to this message the section laborer said that they would go down the first thing in the morning and repair the bad track. Operator Goodell stated that the section foreman's house was about 700 feet from his office, but that he did not take the message to the section foreman's house, as the section foreman was sick, and section laborer O'Connell was the only one who could repair the track. Operator Goodell also stated that he did not remember Dispatcher Shaft's having called him regarding a message for the section foreman about the bad track, and that he did not tell the dispatcher that the section foreman had such a message. He said the only message he received was from Conductor Jenkins from Grant Center.

Section Laborer O'Connell stated that it was not until after 8.00 p. m. that he went to the station at Hornick and was told about the message which had been sent to the operator by Conductor Jenkins concerning the bad track, this being the first knowledge he had of it. He told the operator that he and the section foreman would go over that section of the track in the morning, and he then started out to find Francis Murphy, the acting section foreman, for the purpose of delivering the message. About 20 minutes later he found the acting section foreman, who told him that train No. 20

had been derailed. Section Laborer O'Connell further stated that he and Acting Section Foreman Murphy were over the place where the derailment occurred at about 3.00 p. m., two days previous to the accident, at which time it was raining, and that they had not been over this piece of track again before the derailment took place.

Section Foreman D. D. Murphy stated that he was taken sick on about November 6, and he placed his son Francis in charge of the section until such time as the roadmaster could send a man to relieve him. He said that the particular piece of track in the vicinity where the derailment occurred has caused more or less trouble on account of soft track, and is harder to maintain than other portions of his section. In regard to the manner of track inspection on his section, Mr. Murphy said that when he could arrange it he would go over one-half of his section during the forenoon and the other half in the afternoon, but if the work required on either end of his section took a whole day or two days, they would not have time to inspect the track on the other end until the work was completed. He stated further that it has always been customary when bad track conditions on his section are reported to the dispatcher, for the dispatcher to notify him as soon as possible, sometimes by the first train that came along and sometimes by wire, but he said that he did not receive any instructions from the dispatcher about the bad spot one-quarter of a mile west of bridge 172, reported by Conductor Schenck to the dispatcher at about 10.00 p. m. on November 8, and that he did not receive the message sent by Conductor Jenkins, placing the 4-miles-an-hour speed restriction on this place, until noon of the day following the derailment, this message then being brought to him by his son Francis. He said that he was allowed one laborer besides himself on this section at this time.

Acting Section Foreman Francis Murphy stated that he was 18 years of age, and that when his father was taken ill on November 6 his father told him to take charge of the section temporarily, and to confer with him about the work. He said that he himself was taken sick on November 8 and did not work either on that day or on November 9, but that his younger brother and section laborer O'Connell worked together. He first heard of the accident at about 9.00 p. m., November 9, when the brakeman came to Hornick and reported it. He stated that the track at the point of accident was last inspected on November 7, at which time it was in fair condition, and that the first he heard of the bad track was after the derailment had been reported.

Section Foreman Miller at Grant Center stated that after the derailment occurred he was called to assist in repairing the track, and that he found the track at its lowest place to be about $1\frac{1}{2}$ inches low.

Trainmaster Lollis stated that after the derailment he examined the track and found that the gauge was good, but that the surface was a little rough, and he thought the derailment was caused by high speed over rough track.

Roadmaster Carlson stated that he arrived at the scene of the accident at 1.30 a. m., November 10, and made a careful inspection of the track to determine the cause of the derailment; he concluded that it was caused by a combination of high speed and bad track. He judged that the train must have been running at a speed of 35 or possibly 40 miles an hour. Mr. Carlson stated that his foremen were instructed to inspect the track during and after heavy rains, whether day or night, and said that at other times they should try to go over the track once a day, although it was not always possible to do so.

The direct cause of this accident was the bad condition of the track at the point of derailment, together with the high rate of speed at which the derailed train was run, and the failure of Engineman Murphy to reduce speed to four miles per hour, as required by order No. 680. As both Engineman Murphy and Fireman Otis were killed in the derailment it is impossible to ascertain why the the slow order was not observed.

Contributing causes of this accident were the failure of the dispatcher to notify the section foreman of the dangerous track conditions prevailing and to direct him to detect it properly, as well as the neglect of necessary track inspection and maintenance.

The condition of the track at the place of derailment was such that it was not safe for ordinary train operation, and a proper regard for safety should have prompted the chief train dispatcher, after having received notice of the bad condition of the track from the crew of train No. 6, not only to make certain that the section foreman was properly notified, but to have the track repaired immediately, or have the bad spot that had been reported either patrolled or marked by a green light, as required by a special notice in effect at that time, or take other necessary precautions to insure the safety of train movement.

Operator Goodell was negligent on account of his failure immediately to deliver the message from Conductor Jenkins which he received and placed in the mail box. The laborer on the section stated that he did not get this message until about 8.00 a. m. If this be true, it was not until after the derailment occurred. Messages of such a character, pertaining to the safety of track, should receive prompt delivery. It is possible that had this message been promptly delivered to the section foreman by the operator, located a distance of only 700 feet from the office, arrangements could have been made to

patrol this track or mark the bad spot, and the accident might have been prevented.

The investigation developed that the section foreman has $8\frac{1}{2}$ miles of main line and almost one mile of siding under his charge, and that the average number of men employed on the section for the last six months was 1 foreman and 3 laborers. At this time, however, the section crew consisted of the foreman and only one laborer. The track at the point of derailment had been inspected only once from November 4 to November 9, and had not been inspected either on the day of the accident or on the day preceding, although that part of the track was known to be particularly troublesome. It is probable that had a daily inspection been made the bad condition would have been discovered and remedied. Furthermore, it appears that while the chief dispatcher was under the impression that the section foreman was notified of the bad spot reported on November 3, and had repaired it, the section men did not receive any information regarding that bad spot until after it was reported the second time, and probably not until after the accident occurred. Accidents such as this may be expected to occur unless proper track inspection and supervision is maintained and repairs promptly made.

Engineman Murphy entered the service of the Chicago, Milwaukee & St. Paul Railway as engineman in October, 1898, and the superintendent stated that he considered him one of his best enginemen, although he had been running as an extra passenger engineman for only about a year. Dispatcher Shait entered the service of this railroad in February, 1912 and his record was good. Operator Goodell entered the service in July, 1913, as caller, and since June 26 of this year has been employed as operator. Section Foreman D. D. Murphy has been employed on the section on which the accident occurred since 1891 or 1892, while Acting Section Foreman Francis Murphy has had 6 months' experience working with his father from time to time.

At the time of the accident the engine crew of train No. 20 had been on duty 55 minutes, prior to which Engineman Murphy had been off duty about 26 hours and Fireman Otis about 35 hours.