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INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
PENNSYLVANIA RAILROAD AT HEATON, PA.,  
ON MARCH 6, 1919.

March 28, 1919.

On March 6, 1919, there was a rear-end collision between two freight trains on the Pennsylvania Railroad at Heaton, Pa., which resulted in the death of 4 employees and the injury of 2 employees, one of whom afterwards died. After investigation of this accident, the Chief of the Bureau of Safety submits the following report.

The part of the Philadelphia Division upon which this accident occurred is known as the Trenton Cut-Off, extending from Glen Loch to West Morrisville, and is used exclusively for freight movements. It is a double-track line, and train movements are handled under time table rules and train orders, protected by a manual block signal system under which permissive movements are allowed. Approaching the point of accident from the west, the track is straight with a slight descending grade for about 1-1/2 miles. The weather was clear.

Eastbound extra 3275 consisted of 85 cars and a caboose, hauled by engines 3275 and 3602, en route to West Morrisville, and was in charge of Conductor Jury and Enginemen Bogentoyler and Cork. It passed SN Block Station, which is about 17 miles from West Morrisville, at 5.11 a.m., stopping for water with the rear end about 3,000 feet beyond the tower. It was while standing at this point that it was struck by eastbound extra 1566 at 5.28 a.m.

Eastbound extra 1566 consisted of 75 cars and a caboose, hauled by engine 1566, and was in charge of Conductor Miller and

Engineman Gaeckler. Approaching SN Block Station, the train was running at a speed estimated to have been about 18 miles an hour, the speed being controlled by the independent engine brake. A permissive signal was displayed at the signal located about 300 feet west of the tower. No application of the brakes was made at this point, and the train continued until within a few hundred feet of the rear of extra 3275, when the flagman and the markers on the caboose were seen at about the same time, the engineman at once making an emergency application of the air brakes. The speed of extra 1566 at this time was estimated to have been about 18 or 20 miles an hour.

The caboose of extra 3275 was demolished, and engine 1566 and several cars in that train derailed. Fire broke out in the wreckage, spread to cars on adjoining tracks and resulted in the more or less total destruction of 36 cars. The employees killed were deadheading in the caboose of extra 3275.

At the time extra 1566 approached the point of collision, westbound extra 1414 was standing on the westbound track with the engine about 350 feet east of the caboose of extra 3275. It was claimed by Engineman Gaeckler as well as by Conductor Miller, who was riding on the engine at the time, that this headlight blinded them and prevented their seeing the flagman or the caboose of extra 3275 until too late to avert the collision.

Engineman Black of extra 1414 stated that coming into Heaton he had been closely following another train and that at County Line, 2.6 miles from SN Block Station, he had dimmed the electric headlight on his engine so that he could have a better

view of the rear end of the train ahead. He then closed up on that train and stopped a short distance from it. After it had departed, he called in his flagman and had just started his train when the accident occurred on the adjoining track. Engineman Gaeckler came down to his engine and told him that he could have seen the rear end of the train ahead of him if it had not been for the electric headlight of engine 1414. Engineman Black said he told him that he could see for himself that it was dimmed and that if he wanted to he could get on the engine.

Engineman Gaeckler stated that he shut off steam at the top of the hill about 1 mile distant, at which time the speed was about 15 miles an hour, and then drifted toward SE Block Station with the independent brake applied. He saw the headlight of extra 1414 before reaching the block signal, which was displaying a caution indication, meaning that the block in advance was occupied. He stated that he turned out the headlight on his engine so that it would not interfere with his vision, turning it on again when a few hundred feet beyond the block station. He was looking out of the side window all of the time and did not see the flagman until within 15 car lengths of the train ahead, when he made an emergency application of the air brakes. The speed of his train at this time was still about 18 miles an hour. He thought the headlight on engine 1414 was turned on fully, although the engineman of that train said it was dimmed. Engineman Gaeckler said that it was on account of this headlight that he did not see the flagman or the rear end of the train until it was too late. After the accident, he went to engine 1414 and told Engineman Black that

he could not see on account of the headlight. The headlight on that engine looked very bright, but he was unable to say that it was turned on fully.

Conductor Miller stated that he was riding on the left side of the engine approaching SN Block Station, and that he found the block signal in the caution position. He called the signal, and the engineman answered him. This was about 60 car lengths west of the signal, and the speed at that time was about 15 or 16 miles an hour. The speed increased slowly, being about 18 miles an hour when passing the block station. He saw an electric headlight on the westbound track and said it was burning very brightly and prevented him from seeing ahead more than a few car lengths. He did not speak to the engineman about it, however, as he did not think the train was traveling at a dangerous rate of speed. He and the engineman saw the flagman at about the same time, the engineman at once applying the brakes. He thought the flagman was only 1 or 2 car lengths back from his train and said that the markers were not burning brightly. He was positive that it was the headlight of engine 1414 which prevented their seeing the rear end of extra 3275.

Fireman Little of extra 1566 stated that after leaving the top of the hill, steam was shut off and the train allowed to drift. He did not see the signal indication just before reaching SN Block Station, as he was working on the fire, but he heard the engineman call it caution. He did not know how fast the train was running, but estimated the speed to have been about 15 or 16 miles an hour. After finishing work on the fire, he

got on his seat with the conductor, and at about that time the engineman called to them to look out, at the same time applying the brakes. He looked out and at first could not see anything, being blinded from having worked on the fire, but in a few seconds he saw the flagman and the markers of the train ahead. At this time, the engine was within 5 car lengths of the flagman. He jumped from the engine, and stated that when his train stopped 9 cars had passed him. He did not pay much attention to the flagman at this time, but thought he was about 7 or 8 car lengths in rear of him. )

Head Brakeman Gross of extra 1566 stated that he was standing in the gangway on the engineman's side of the engine. The signal approaching SN Block station was in the caution position. The speed at this time was about 20 miles an hour, being held in check with the independent brake. After passing SN Block station, he looked out and noticed the electric headlight of engine 1414, but was unable to say whether or not it was dimmed. He said, however, that he could not see very far ahead of his engine and did not see the flagman of extra 3275, but said that he was not paying very much attention to the track ahead. When the engineman applied the air brakes in emergency, he looked out and saw the flagman and the rear end of the train, the train being about 15 car lengths ahead.

A. W. McClelland, Assistant Superintendent of the Philadelphia Division, was riding in the caboose of extra 1566 when the accident occurred. He was standing in the cupola approaching SN Block station and said he did not think the speed was more

than 18 miles an hour. At the time of the collision, there was no severe shock in the caboose, it appearing as if a rough stop had been made.

Flagman Muckel of extra 3275 stated that he got off his train just before it stopped. At this time, the markers were burning brightly. When several car lengths back from the rear of his train, he saw a headlight in the distance and continued toward it until it reached the straight track approaching the point of collision, at which time he stopped for a second and began to give stop signals with his lanterns. He thought that at this time he was back about 12 or 13 car lengths. He then continued back, swinging his lanterns, and had reached a point about 20 or 25 car lengths from the rear of his train when he had to jump from the track to avoid being struck. He did not know how fast the train was traveling and was unable to say whether or not the brakes were applied. He said that he had not paid any particular attention to the headlight of engine 1414, but did not think it was turned on fully.

Operator est, on duty at SN Block Station, stated that the rear end of extra 3275 passed the tower at 5.11 a.m. He saw the flagman coming back to protect the train, but did not notice how far he went. A permissive signal was displayed for extra 1566, the rear end of the train stopping just beyond the tower at 5.28 a.m. The train was drifting as it passed the tower, and there was no indication that the brakes were applied. He thought the speed was greater than usual under a permissive signal, saying that it was about 20 or 25 miles an hour. He saw

the flagman of extra 3275 swinging his lanterns across the track, and at this time wondered whether or not extra 1566 would be able to stop. He said that the headlight of extra 1414 did not obscure his view either of the flagman or of the rear end of extra 3275. He did not see the flagman jump from the track and did not see the collision, as he was called to the telephone by the dispatcher, who inquired if extra 1566 was coming. He told the dispatcher that the train was coming, that it was "going some" and that he thought there would be a wreck. By this time, the train had stopped with its rear end just east of the trolley, and he reported the train by at 5.28 a.m.

In view of the statements of the employees of extra 1566 that it was the electric headlight of engine 1414 which obscured their view until it was too late to avert the collision, a test was made on March 12th. Engine 1414 was placed on the westbound track at the point where it was standing at the time of the collision, with the headlight turned on fully. A caboose with markers was stationed on the eastbound track at the point where the caboose of extra 3275 had been standing, approximately 332 feet west of engine 1414. A flagman was then stationed 718 feet in rear of the caboose, being placed by Engineman Gaeckler at the point where he thought the flagman was when he first saw him, while freight cars were placed on the two sidings on either side of the main tracks. The engine used in making the test runs was No. 1071, of the same type as engine 1566. The weather conditions at the time of the test, according to Enginemen Gaeckler and Black, were practically identical with those existing on the

morning of the accident. The final test was held at 5.18 a.m., a difference of 10 minutes from the time the accident occurred on account of an earlier sunrise. It will be noted that in this arrangement no consideration was paid to the statements of the flagman that he was back farther than stated by the engineman or to the statements of Engineman Black that the headlight on engine 1414 was dimmed at the time of accident. After making several preliminary runs, a final test was made, the engine running at a speed of 20 miles an hour, and the headlights of both engines 1414 and 1071 being turned on fully. An object thrown from the engine at the point where the markers of the caboose could first be seen, which was agreed to by the engineman operating the engine, was found to be 2,118 feet from the caboose, while the flagman's signals were seen a second or two afterward. Acting Superintendent Elmer, making observations from the gangway on the engineman's side, threw off another object when the markers could be seen from his position, and this distance was found to be 1,430 feet. When the headlight of engine 1414 was dimmed, it was found that the markers and the flagman could be seen about twice as far.

As a result of the investigation of this accident and the tests made in connection therewith, it is believed that Engineman Gaeckler was not operating his train under proper control. He had received a permissive signal which indicated to him that he was entering an occupied block. Disregarding the question of fact as to whether or not the headlight on engine 1414 was dimmed, the fact remains that according to his own statement his view was obscured and knowing that he was in an occupied block, the



only thing for him to do was to reduce the speed of his train to such an extent that he could stop without danger to a train ahead, no matter how limited his view might be. Conductor Miller was on the engine at the time, was observing signals, and stated that his vision was also obscured. Under the circumstances, it is believed that Conductor Miller is equally responsible with Engineman Gaeckler. It is also believed that Flagman Muckel of extra 3275 did not properly perform his duties. His train passed SN Block Station at 5.11 a.m., while the collision occurred at 5.28 a.m. at a point about 3,000 feet beyond the tower. Even if his train consumed 5 minutes in coming to a stop within this distance, he still had 12 minutes at his disposal. According to Engineman Gaeckler, the flagman was back about 15 car lengths, while according to his own statement he was back 25 car lengths. Accepting his own statement as true, he was back a distance of only 1,000 feet, when he had time enough to have gone back a mile if he had so desired. Had he gone back a greater distance and had he placed torpedoes on the rail in the event no attention was paid to his stop signals, it is probable that Engineman Gaeckler would have been warned of the presence of the train ahead in time to enable him to bring his own train safely to a stop.

This accident was caused by extra 1566 not being operated under proper control within an occupied block, for which Engineman Gaeckler and Conductor Miller are equally responsible. A contributing cause was the failure of Flagman Muckel properly to protect his train.

Engineman Gaeckler was employed as a fireman in 1908. In 1916, he was promoted to engineman. His record was good. Conductor Miller was employed as a brakeman in 1891, promoted to flagman in 1901, and to conductor in October, 1918. He had a good record. Flagman Muckel was employed as a brakeman in 1891, and promoted to flagman in 1901. In 1913, he was suspended for two weeks on account of not having a lamp on the rear of a train, resulting in a yard collision. In 1916, he was again suspended for two weeks for improper flag protection, resulting in a rear-end collision.

None of the employees involved had been on duty in violation of any of the provisions of the hours of service law.

G.V.L.