No. 251.

March 1, 1915.

In re Investigation of accident which occurred on the Pennsylvania Railroad near Irving, N. Y., on February 2, 1915.

On February 2, 1915, there was a rear-end collision between two freight trains on the Pennsylvania Railroad, near Irving, N. Y., resulting in the death of one employee and injury to three employees. After investigation of this accident the Chief of the Division of Safety submits the following report:

The Chautauqua branch of the Pennsylvania Railroad, on which this accident occurred, is a single track line. the movement of trains being governed by time table, train orders and a manual block signal system.

Northbound freight train extra 6321, drawn by engines Nos. 6321 and 6328, consisting of 48 loaded cars and caboose, left Oil City, Pa., at 8.03 p.m., February 1st for Buffalo, N. Y. A few miles north of Oil City, the frame on engine No. 6328 was broken and this engine was then placed in the rear of the train, two cars ahead of the caboose. At Crow, a siding about 2 miles south of Irving, the crews were relieved on account of having been on duty sixteen hours, the enginemen, firemen, conductor and brakemen going to the caboose for the purpose of dead-heading to Buffalo, their terminal. The train departed from Crow at 11.45 a.m., in charge of Conductor Carroll, Engineman Liddy on the leading engine, and Engineman Christensen on the helping engine. It arrived at Irving about 11.55 a.m. and stopped with the leading engine at the water spout, located just north of a three-span steel girder bridge, 460 feet in length over the

Cattaraugus River. After the leading engine had taken water the train moved ahead and stopped for the second engine to get water, with the caboose on the northern end of the bridge. While standing there the train was struck by train 1st No. 303.

Northbound freight train 1st No. 303, drawn by engine No. 2881, consisted of 30 loaded cars and a caboose. This train, in charge of Conductor Schulman and Enginemen Schultz, left Oil City, Pa., at 2.15 a.m. on the date of the accident for Buffalo, N. Y. At "CK" block station, the last open telegraph office and about four miles south of the point of the accident, train 1st No. 303 received a permissive block signal and passed that station at 12.02 p.m. About 2,000 feet south of the bridge the engine exploded two torpedoes, and Enginemen Schultz made a light application of the air brakes. When about 400 feet from the bridge, he saw the flagman and at the same time the rear end of extra 6321. An emergency application of the brakes was then made, but the train failed to stop before the collision occurred.

The engine of train 1st No. 303 telescoped the caboose of the extra and forced it forward into the coal car immediately ahead. One of the brakemen deadheading in the caboose was killed.

Beginning about 1,0 feet south of the bridge there is a 2° 33' curve to the right, 800 feet in length, prior to which the track is straight for nearly a mile, with a .3% ascending grade for northbound trains. The rear of extra 6321 could be seen by the enginemen of the following train a distance of 700 feet. The ground was covered with ice, while the weather was clear.

Conductor Carroll, of extra 6?21, stated that when leaving Crow he went into the caboose and told the brakemen that the train would stop at Irving and both engines would take water. When the train stopped for the leading engine to take water, he left the caboose and got on the second engine. After the head engine had taken water, he heard the whistle sounded, but could not tell the number of blasts. The engineman remarked that the engineman on the head end had called in the flag, but he said, "He must have whistled off." The engineman of the second engine answered by two blasts of the whistle and after waiting two or three minutes the train started. When the second engine arrived at the water spout it was uncoupled from the train and had been standing there a short time taking water when the accident occurred, at about 12.12 p.m.

Engineman Liddy, of the leading engine, stated that at Crow he and Conductor Carroll, in the presence of the brakemen, arranged that both engines should take water at Irving; the flagman, however, was not present. The leading engine stopped at the water spout and was there about 10 minutes taking water. He then received a proceed signal from the brakeman, which he answered with two short blasts of the whistle. He then pulled ahead and was waiting for the second engine to take water when the collision occurred. He is positive that he did not, at any time, sound four blasts of the whistle.

Fireman Barrowman of the leading engine stated that leaving Crow it was understood that both engines were to take water at Irving. When the train arrived at the water spout the leading

engine was cut off and water taken, after which it was coupled to the train and the brakeman gave them a signal to go ahead. They pulled ahead and when the second engine had about reached the water spout, his enginemen sounded four short blasts of the whistle for the engineman of the second engine to signal him to stop when the train had pulled ahead far enough for the second engine to take water.

Brakeman Thumberg stated that at Crow arrangements were made for both engines to take water at Irving. Upon arrival at Irving, he cut off the leading engine and after it had taken water he recoupled it to the train, and told Engineman Liddy that it was all right to pull ahead. The engineman then sounded four blasts of the whistle. In about five minutes the rear engine answered by two blasts of the whistle; he then told Engineman Liddy to pull ahead. Engineman Liddy answered by sounding two blasts of the whistle, and pulled up for the second engine to take water.

Brakeman Keller stated that leaving Crow he was riding on the car ahead of the second engine. He knew nothing of the arrangements for the second engine to take water at Irving. The train stopped at Irving and the head engine took water; Engineman Liddy then sounded four long, distinct blasts of the whistle. He stated that he then looked back, and saw the flagman give a proceed signal, which Engineman Liddy acknowledged with two blasts of the whistle. This in turn was answered by the second engine. The train then pulled ahead for the second engine to take water.

Engineman Christensen, of the second engine, stated that upon arrival at Irving the head engine took water, after which Engineman Liddy sounded two blasts of the whistle. He answered immediately, opened the throttle of his own engine, and just as the train started he looked back and saw the flagman give a proceed

signal. He stated that if the head engineman called in the flagman before whistling off he did not hear the signal, as the safety valve on his engine was unseated part of the time.

Fireman Colegrove, of the second engine, stated that after the head engine had taken water, he heard four long blasts of the whistle sounded, and told his engineman they were calling in the flagman; his engineman answered by sounding two blasts of the whistle, Just before the collision occurred he saw the flagman about five feet from the southern end of the bridge, at which time he was going back but was making slow progress on account of oie on the ties.

Flagman Wagner stated that he did not receive any instructions or information relative to both engines taking water at Irving. The train stopped at about 11.55 a.m. with the head engine at the water spout. He immediately got off the caboose and walked back about 18 or 20 car lengths and remained until called in by four long blasts of the whistle on the lead engine. He then placed two torpedoes on the rail, returned to this caboose and gave a proceed signal. The train pulled up, stopping with the caboose on the northern end of the bridge, and he got off immediately. When he head the torpedoes explode, he took his flag and went back, reaching a point about five or ten feet south of the bridge when the approaching train passed him.

Engineman Schultz, of train 1st No. 303, stated that when passing "CK" block station he was given a permissive signal and proceeded at a speed of about 25 miles per hour. Before reaching the curve approaching Irving, and when about 2,400 feet south of the bridge, his engine exploded two torpedoes. He immediately

shut off, made a five-pound reduction of his train line pressure, and asked the brakeman and fireman, who had a better view, if they could see anything ahead, they replying in the negative. He stated that when a train was taking water at Irving its rear end usually extended south of the bridge, and in this case, seeing no rear end, he concluded that the train had gone. He drifted along and was just going to release the brakes when he saw the flagman and the caboose on the bridge. The brakeman and fireman shouted to him at the same time. He made an emergency application of the brakes and when the collision occurred had reduced the speed from about 15 miles per hour to about 3 or 4 miles per hour. He further stated that when he first saw the flagman, he was about 10 car lengths away and about in the middle of the bridge. All of is brakes, except one, were in good working order, and took hold in an effective manner.

Fireman Hughes, of train 1st No. 303, stated that upon the explosion of the torpedoes, the engineman shut off steam. Fireman Hughes then got upon the seat with the brakeman to look ahead, but saw nothing. As the train came near the bridge they saw the flagman running toward them, and at once shouted to the engineman, who immediately made an emergency application of the brakes.

This accident was caused by the failure of Flagman Wagner and Conductor Carroll properly to protect their train, and by the failure of Engineman Schultz properly to control the speed of his train after exploding two torpedoes.

Rule No. 99 of the operating rules of this railroad reads as follows:

> "When a train stops or is delayed, under circumstances in which it may be overtaken by another train, the flagman must go back immediately with stop signals a sufficient distance to insure full protection. When recalled he may return to his train, first placing two torpedoes on the rail when the conditions require it."

Under this rule, even if he had been called in when the first engine had finished taking water, when the train pulled up 48 car lengths and again stopped to permit the second engine to take water, Flagman Wagner should have gone back immediately, and not waited until he heard the approaching train, or depended upon the torpedoes he had placed on the track to provide protection. In view of the fact that the train stopped with the rear end on the bridge, in an unusual location, and that the view of an approaching train was obscured by a curve, proper regard for safety required that Flagman Wagner should have used extreme care in protecting the rear end of his train.

Conductor Carroll is equally at fault in that he failed to make definite arrangements with Flagman Wagner relative to both engines taking water at Irving. When his train pulled up for the second engine to take water he was only three car lengths from the rear of his train; he knew that the flagman had been recalled by the head engine, and when the second stop was made he should have made certain that his train was properly protected.

Engineman Schultz was at fault in failing properly to control the speed of his train after exploding the two torpedoes approaching Irving. General Rule No. 15 reads as follows:

"15. The explosion of two torpedoes, not more than 200 feet apart is a signal to reduce speed and look out for a stop signal or track obstruction."

When his train entered this block, he received a permissive signal, which required him to proceed with caution, expecting to find the block occupied. After exploding the torpedoes, the view being obstructed by the curvature of the track and also by the bridge, he should have so controlled the speed of his train as to have been able to stop it within his range of vision. If he had done so in this instance the accident would not have occurred.

While the evidence is conflicting, it is believed that Engineman Liddy sounded four blasts of the whistle before the second engine had taken water, and in so doing he used poor judgment in giving a signal which might be interpreted by the flagman as a signal to return to the train.

All of the employees involved in this accident were experienced men. The crew of extra 6321 had been on duty 3 hours and 14 minutes and the crew of train 1st No. 203, 11 hours and 14 minutes at the time of the accident.