IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE PENNSYLVANIA RAILROAD AT ALLIANCE, OHIO, AUGUST 26, 1920.

September 25, 1920.

On August 26, 1920, there was a rear-end collision between two freight trains on the Pennsylvania Railroad near Alliance, Ohio, which resulted in the death of 2 employees and the injury of 2 employees. After investigation of this accident the Chief of the Bureau of Safety reports as follows:

This accident occurred on the Eastern Division, which extends between Marsfield, Ohio, and Rochester, Pa., a distance of 149 miles. Between FO Tower, at the eastern end of the yard at Canton, and FD Tower, at the western end of the yard at Alliance, a distance of 12 miles, this is a four-track road. The two tracks in the center are passenger tracks over which trains are operated by time-table, train orders, and an automatic block-signal system. The track on the south is known as the eastward siding and the track on the north as the westward siding. Train movements over these sidings are governed by time-table and train orders. While the markers of trains operating on the sidings display yellow to the rear, under a practice which has existed on this division for a number of years all sidings of over 200 cars capacity are operated as main tracks so far as the flagging rules are concerned. No order covering this practice has been issued, but it is understood by all employees that flag protection will be provided. These sidings have been extended from time to time, through connections being made recently, and the work on the automatic block-signal system which is to protect train movements over them is expected to be completed within a few days, at which time the tracks will be designated as "freight running tracks." At present the only signals governing train movements within this territory on the eastward siding, on which this accident occurred, is a two-arm signal which displays various approach indications in connection with the home interlocking signal at FD Tower. This distant signal is 4,970 feet west of the home signal, and the accident occurred about 2,550 feet west of the distant signal. Approaching the point of accident from the west the track is tangent a distance of 3,300 feet. The grade is slightly descending for eastbound trains. The weather at the time of the accident was clear.

Eastbound freight train extra 7269 consisted of 58 cars and a caboose, hauled by engine 7269, and was in charge of Conductor Lehman and Engineman Montgomery. It passed FO Tower at 9 19 p.m., and after being delayed 35 or 40 minutes at mile post 92, approximately 5 miles east of FO Tower, was brought to a stop at the distant signal, which was displaying

a stop indication. The brakes were released and the train had started to proceed when its rear end was struck by extra 8345.

Eastbound freight train extra 8345 consisted of 36 cars and a caboose, hauled by engine 8345, and was in charge of Conductor Ashman and Engineman McMahon. It passed FO Tower at 10.41 p.m. and at about 11.15 p.m. collided with the rear end of extra 7269 while traveling at a speed estimated to have been between 15 and 20 miles an hour.

The caboose and seven cars of extra 7269 were derailed and more or less damaged. Engine 8345 came to rest on its right side on the south side of the track in a badly damaged condition, nearly 400 feet beyond the point of accident. The first three cars of extra 8345 were also derailed and considerably damaged. The employees killed were the conductor and flagman of extra 7269.

The engine crew of extra 7269 stated that after leaving mile post 92 no stops were made until their train arrived at the distant signal. Engineman Montgomery estimating the speed of the train between these two points at about 12 miles an hour. The statements of the engineman and of Head Brakeman Bakey indicate that after stopping at the distant signal the engineman released the brakes, whistled off, and that the engine had moved ahead a distance of about 5 feet when the brakes were applied as a result of the collision. None of these employees had noticed any fusees burning behind their train.

Engineman McMahon, of extra 8345, stated that after he had stopped in the yard at Canton for the caboose to be coupled to the train he made no stops up to the point of accident. While his engine had exploded two torpedoes when approaching the point where extra 7269 had stopped at mile post 92, he did not see anything of that train and did not know that he was following it closely. Approaching the point of accident he shut off steam at a point about 70 car-lengths distant, at which time the speed of the train was about 15 miles an hour. He claimed that the headlight of the engine hauling a train on the westward siding blinded him to such an extent that he did not see the rear end of extra 7269 until within 10 car-lengths of it, at which time he applied the air brakes in emergency. It further appeared from his statement that an air brake test was made before leaving the yard, west of FO Tower, and that he had been notified by the air brake inspectors that the brakes on all of the cars on his train except two were working. He had not applied the air brakes at any point between FO Tower and the point of accident

Fireman Kaufman, after working on the fire, looked

out of the window on the left side of the engine and saw the yellow markers of extra 7269 about 15 or 20 car-lengths distant. He heard the air brakes applied in emergency but said he did not think they took hold immediately. Head Brakeman Fleischman, who was riding on the fireman's seat box, did not notice extra 7269 until after the engineman called attention to it. Both the fireman and head brakeman verified the engineman's statement that there was a train approaching on the westward siding with a bright headlight, the head brakeman saying that the light blinded him. The statements of all three of these employees indicated that the markers of extra 7269 were burning.

Flagman Matthews, of extra 8345, who was sitting in the caboose cupola, did not feel any application of the brakes before the accident occurred, at which time the speed was about 20 miles an hour. Flagman Matthews thought that the headlight of the train on the westward siding was dimmed when it passed him. The conductor thought the first shock was caused by an air brake application.

There were two trains moving on the westward siding in the immediate vicinity of the point of accident, extras 7642 and 8426. These trains passed FD Tower at 11 p.m. and 11.08 p.m. respectively, the operator not noticing whether or not their headlights were dimmed. The headlight of extra 8426 undoubtedly was the one which Engineman McMahon claimed was not dimmed and had blinded him. Engineman Swain, in charge of engine 8426, saw the trains on the eastward siding but on account of there being a train immediately ahead of him, did not pay close attention to them, except to note that the headlight of one of the eastbound trains was burning brightly; he said he had dimmed his own headlight, but that it was rather bright when dimmed. He also said that the light shone a little to the right of the track. Fireman Handley, of extra 8426, noticed extra 8345 when it was about 100 feet from the rear end of extra 7269 and saw that there was going to be an accident. He said that at this time fire was flying from the wheels, indicating that the brakes had been applied. Fireman Handley noticed that the markers on the caboose of extra 7269 were burning but did not see any sign of a flagman, and was unable to estimate the speed of extra 8345. He thought his own engine was about 75 or 100 yards west of the accident when it occurred, while the head brakeman, who was riding on the left side of the engine, estimated this distance to have been about 20 car-lengths.

Engineman Riley, of extra 7642, the first train to pass on the westward siding, said an eastbound train passed him at a speed of about 30 miles an hour, and at that time he thought it was a high-class train running on the eastbound passenger track. He had not noticed any flagman. He dimmed the headlight of his engine when passing the engines of the

eastbound trains.

Various tests made on the night of August 31 with engine 8426 approaching on the westward siding with its headlight dimmed and also turned on full power, with all other conditions practically identical to those which existed on the night of the accident, showed that at no time was there any interference with the view of the markers on the rear of a train standing where the caboose of extra 7269 had been standing. These tests also developed that the markers could be seen at a distance of at least 4,296 feet; from this point it was also possible to see the distant signal, an additional distance of 2,541 feet east of the markers.

This accident was caused by the failure of Engineman McMahon, of extra 8345, to maintain a proper watch of the track ahead, and by the failure of Conductor Lehman and Flagman Cartright, of extra 7269, properly to protect their train.

Engineman McMahon said his vision was obscured by the headlight of extra 8426 and that on that account he was unable to see the markers of extra 7269 in time to prevent the accident. The tests which were made not only failed to substantiate this claim but showed that the markers of extra 7269 could have been seen at least 4,296 feet. Considering the unobstructed view and the favorable weather conditions prevailing, there is no reason why Engineman McMahon should not have seen the markers of extra 7269 in time to have prevented the accident.

The evidence indicates that no attempt was made by Flagman Cartright to protect his train when it was brought to a stop at the distant signal. Rule 99 requires that when a train is delayed under circumstances in which it may be overtaken by another train, the flagman must go back a sufficient distance to ensure full protection, while rule 99-a provides in part that "when conditions require it a fusee must be used." When extra 7269 was being brought to a stop at the distant signal it was in danger of being overtaken by a following train and a proper regard for safety should have prompted Flagman Cartright to throw out a fusee before the train was finally brought to a stop, and to have placed himself in position to afford full flag protection when this became necessary. Conductor Lehman was in the caboose at the time and in view of the fact that Flagman Cartright was not an experienced employee, the conductor should have been particularly careful to see that the flagman properly performed his duties.

Engineman McMahon was employed as a fireman in 1902 and promoted to engineman in 1907; in 1914 he was suspended for 2 weeks for overrunning a home signal. Conductor Lehman was employed as a brakeman in 1890 and promoted to conductor in 1900; in 1904 he was suspended for 4 weeks for responsi-

bility in connection with a rear-end collision. In 1910 he was promoted to passenger conductor and in 1917 was demoted to freight conductor. Flagman Cartright was employed as a brakeman in May, 1920; his record was clear.

At the time of the accident the engine crew of extra 8345 had been on duty about 2½ hours, previous to which they had been off duty 8 hours. Conductor Lehman and Flagman Cartright had been on duty about 5½ hours, previous to which they had been off duty about 15½ hours.

While he was not in any way responsible for this accident, attention is called to the fact that Head Brakeman Bakey, of extra 7269, was on duty in violation of the federal hours of service law. He went on duty at 9.35 p. m., August 25, and was relieved at 10 55 a m., August 26, having been on duty 13 hours and 20 minutes. He again went on duty, on the trip on which this accident occurred, at 5 45 p m , having had only 6 hours and 50 minutes off duty, and was still on duty at the time the accident occurred, resulting in an aggregate service of 17 hours and 10 minutes in the 24-hour period ending at 9.35 p m., August 26.