

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE LEHIGH VALLEY RAILROAD AT RUMMERFIELD, PA , ON FEBRUARY 20, 1923.

March 3, 1923.

To the Commission:

On February 20, 1923, there was a rear-end collision between an express train and two light engines at Rummerfield, Pa., which resulted in the death of six employees. This accident was investigated in conjunction with a representative of the Public Service Commission of the Commonwealth of Pennsylvania.

Location and Method of operation.

This accident occurred on that part of the Seneca Division extending between Lunkhannock and Sayre, Pa., a distance of 64 miles, which for the most part is a double-track line over which trains are operated on time-table, train orders, and an automatic block-signal system. The signals in the vicinity of the point of accident are of the three-position, upper-quadrant type, normally displaying stop indications. The signals involved in this accident are signal 2431, located about 800 feet east of the point of accident, and signal 2411, located about  $1\frac{1}{2}$  miles farther east. The point of accident was about 800 feet east of the station at Rummerfield. Approaching this point from the east there is a 1-degree 35-minute curve to the left about 3,900 feet in length, then a short tangent, a 1-degree 40 minute curve to the left 910 feet in length, 850 feet of tangent, and a compound curve to the left 2,300 feet in length on which the accident occurred, at a point about 800 feet from its eastern end, where the curvature is  $1^{\circ} 15'$ . The grade is level or very slightly ascending for a considerable distance. The view across the inside of the curves is practically unobscured, although signal 2431 is difficult to observe from a distance on account of the nature of the background. The weather was cloudy at the time of the accident, which occurred between 6:55 and 7:00 A.M.

### Description

Westbound freight train extra 2109 was being delayed on account of the engine not steaming well, and when it stopped with its rear-end in the vicinity of signal 2431, extra 2108, which consisted of engine 2108, dead engine 1147 and a caboose, coupled to it for the purpose of assisting it. Extra 2108 was in charge of Conductor Baker and Engineer McHenry, with Travelling Fireman Davenport acting as messenger on the dead engine. After pushing extra 2109 until its rear-end was in the vicinity of the station it was brought to a stop and extra 2108 then backed eastward on the main track to a water spout about 700 feet east of the station, or 880 feet west of signal 2431. The evidence indicates that extra 2108 stopped at this water spout at about 6:45 A.M., and while it was standing at this point its rear end was struck by train No. 17.

Westbound express train No. 17 consisted of 16 rail and express cars and 1 combination car, hauled by engine 2016, and was in charge of Conductor Paul and Engineman Shellenberger. It left Tunkhannock at 6:13 A.M., two hours and eight minutes late passed Lacksville, the last open office, 18.9 miles from Rummelfield, at 6:37 A.M., and collided with extra 2108 while travelling at a speed variously estimated by the employees at between 25 and 45 miles an hour.

Extra 2108 was driven ahead a distance of a little more than an engine length. Its caboose was demolished, the tender of engine 1147 derailed, and the cab and rear end of the boiler of engine 1147 considerably damaged. Engine 2016, of train No. 17, was derailed to the left, together with its tender, and came to rest on its left side clear of the westbound main track approximately 100 feet beyond the point of collision. The forward truck of the first car in train No. 17 was also derailed, but none of the cars in this train was seriously damaged, nor was serious damage sustained by engine 2016. The employees killed were the engineman and fireman of train No. 17, together with a travelling fireman who was riding on the engine, the engineman and fireman of engine 1147, who were deadheading in the caboose, and the brakeman of extra 2109, who was also in the caboose.

### Summary of Evidence.

Travelling Fireman Davenport said his train coupled to extra 2109 at about 6:40 or 6:45 A.M., and after pushing it about five car lengths the train was brought to a stop. He was then opposite a telephone booth on the north side of the track and got off and went to the telephone while his own train backed to the water spout so that engine 2108 could

take water. As he got off he looked back and saw Flagman Lynch about a car length back of the caboose. After using the telephone he started toward the head end of extra 2109, and when about opposite the water tanks on the south side of the main track, about 500 feet west of the station, his attention was called to the fact that train No. 17 was approaching rapidly. At this time smoke was coming from the stack, as though the fireman was putting in a fire and the engine was apparently working steam. He continued to watch the train, expecting to see it slow down, but when it was about opposite signal 2431 he realized that it would not stop. He did not then notice the indication of the signal or see the flagman of extra 2108, neither did he hear the engineman of train No. 17 sound the whistle signal in answer to the flagman's stop signals. He further stated that he thought Flagman Lynch had had from 12 to 15 minutes in which to protect his train.

Conductor Baker, of extra 2108, stated his train coupled to extra 2109 at a point east of signal 2431, that his flagman started back at this point but boarded the caboose when the two trains started ahead. When the rear of extra 2108 reached the water spout the flagman again got off and started back. After extra 2109 stopped, and extra 2108 had uncoupled and backed to the water spout, Conductor Baker got off and followed Travelling Fireman Davenport to the telephone and he stated that Flagman Lynch was then six or eight car lengths east of the water spout, the last he saw of the flagman he was near signal 2431 and still going eastward. While at the telephone Conductor Baker heard an engine whistle sounded in acknowledgment of the flagman's signals, and looking eastward saw train No. 17 approaching. He estimated its speed at the time of the accident to have been about 35 or 40 miles an hour. Conductor Baker further stated that at no time did he notice the indication of signal 2431, except when his own train passed it, at which time it was in the stop position.

Flagman Lynch, of extra 2108, stated that after this train coupled to the rear of extra 2109 and started to assist it, he boarded the caboose and rode on it until extra 2109 stopped near the station. He then got off and started back to flag, carrying with him a red and white lantern and a red flag, reaching a point about 10 car lengths east of the water spout when he heard the whistle of train No. 17, which was not yet in sight, and he said he continued back until he reached a point about six car lengths east of signal 2431, which was displaying a stop indication, and that from

that point he gave a stop signal with his white lantern. The engine hauling train No. 17 was then on the tangent approaching the curve on which the accident occurred, or within about 800 feet of where he was standing, and he stated his stop signal was acknowledged with two short blasts on the whistle, but that train No. 17 passed him at a speed of about 45 miles an hour, with steam shut off and with fire flying from the wheels. Flagman Lynch further stated that he had about 10 minutes in which to protect his train and that he walked back at a rapid rate all the way.

Fireman McCarroll, of engine 2108, stated that after taking water, he fixed the fire in his engine and then got off and went to the caboose, boarding the west end of it. On looking eastward after getting inside the caboose he saw train No. 17 approaching, at or west of signal 2431, which was displaying a stop indication, and called to the men in the caboose that it was not going to stop and got off. He did not see Flagman Lynch flagging train No. 17, but said he heard the engineman sound two blasts on the whistle.

Operator Keeler, who lives at Rummerfield, was on the highway which parallels the tracks at the point of accident and was within 200 or 300 feet of it at the time of its occurrence. He stated train No. 17 was quite close before he noticed it, and that in his opinion it was travelling at the rate of 25 or 30 miles an hour, and possibly more, with the engine working steam. He did not see Flagman Lynch or notice the indication displayed by signal 2431, did not hear any whistle signal sounded, and did not notice any fire flying from the wheels or the position of any one in the cab of the engine.

Conductor Paul, of train No. 17, who was riding in the last car of that train, stated he saw the flagman of extra 2108 east of signal 2431, on the engineman's side of the track, the train passing him at a speed of about 40 or 45 miles an hour; he was unable to estimate how far the flagman was from the signal. His statements indicate that he was not certain as to whether he saw the flagman just before or after the brakes were applied, while his statements were confusing as to the time which elapsed between the application of the brakes and the occurrence of the accident, but they tended to indicate it was a matter of a few seconds, and that the speed was not reduced very much before the accident occurred. Conductor Paul further stated that two cars near the rear-end of the train were cut out at Wilkesbarre, 68

miles from Rummerfield, after which a stop was made at Pittston, speed reduced at Pittston Junction, a stop made at Tunkhannock, and speed reduced at Wyalusing, these points being approximately 60, 59, 37 and 10 miles, respectively, east of Rummerfield, and that the brakes worked properly at all times. He also stated that he last talked with Engineman Shellenberger at Wilkesbarre, and that at that time he seemed to be in normal condition.

Flagman Gallagher, of train No. 17, did not see the flagman of extra 2108, but stated that at about the time the brakes were applied Conductor Paul told him to brace himself, that they had passed a flagman. He thought the speed of the train was about 40 or 45 miles an hour, but did not think the speed was reduced very much, and was unable to make any accurate estimate as to how far the train travelled before the accident occurred. The last car of his train stopped opposite signal 2431, and he stated that just after getting off to flag he looked back at it and saw that it was displaying a stop indication.

Baggagemaster Becker of train No. 17, riding in the fifth car from the engine, said the first thing he noticed was an application of the air brakes, followed by the impact of the collision, after the train had travelled two or three car lengths, he estimated the speed to have been about 40 or 45 miles an hour. He did not know whether the engineman had shut off steam, and did not hear him sound the whistle in answer to the flagman's stop signals.

Road Foreman of Engines Kane stated he found the throttle open 14 notches, with the reverse lever four notches back from the full forward motion. A section of the cab brace was between the latch and handle of the throttle in such a way that the throttle could not be moved, while there were no marks of any kind on the throttle to indicate that it had been struck or scraped by any object. In his opinion the position of the throttle and the reverse lever, with the train which the engine was handling, would indicate a speed of 50 or 55 miles an hour.

Air Brake Inspector Burgess stated that at about 9:30 A.M. he found the brakes still applied on nine of the cars in train No. 17. He also found that all angle cocks were in proper position and all of the brakes cut in. The air brake hose was then uncoupled between the first four cars to see if there was any ice, but no indication was found of

ice or frost. The first car was partly derailed and damaged, and the remaining 16 cars were hauled to a side track, where a test was made of the air brakes of the first 12 cars, the last 4 cars not being tested on account of damage sustained at the head end of the 13th car. The train was then hauled to Sayre, a distance of 27 miles, where a test was made of the last 4 cars. These tests showed that the fourth car from the engine had a piston travel of 11 inches, and the 12th car had a piston travel of 9 inches, and the 14th a piston travel of  $8\frac{1}{2}$  inches, the piston travel on all the other cars varied from  $5\frac{1}{2}$  to 8 inches.

#### Conclusions.

This accident was caused by the failure of Engineman Shellenberger, of train No. 17, properly to observe and obey automatic signal indications, and by the failure of Flagman Lynch, of extra 2108, properly to protect his train.

There is nothing to indicate that Engineman Shellenberger saw the stop indications displayed by signal 2431, and there is a dispute as to whether he acknowledged the flagman's stop signals. But regardless of this latter fact, the testimony of the train crew of train No. 17, indicates that the brakes were not applied until the engine was within a few car lengths of the caboose of extra 2108. The view across the inside of the curve is good, and it is impossible to assign any reason why either Fireman Nodolin or Traveling Fireman Fox failed to maintain a lookout and observe the indication of signal 2431 or see the caboose of extra 2108.

The flagging rule of this railroad requires the flagman to go back a sufficient distance and there put down torpedoes, or if a train approaches before that distance is reached, then to put down torpedoes at once.

Flagman Lynch, according to his own estimate had 10 minutes at his disposal in which to protect his train, but had reached a point only about 1,050 feet from the point of accident at the time the engine of train No. 17 passed him. It is obvious either that he did not go back promptly or else went back very slowly. Flagman Lynch also failed to take any torpedoes with him, and therefore was unable to comply with that part of rule 99 requiring the use of torpedoes if a train approaches before the flagman has gone back a sufficient distance. Flagman Lynch also showed very poor judgment in using his white lantern in giving the stop signal

when he had with him a red lantern and also a red flag, it is not believed that the stop signal he says he gave was observed by the engineman, but if Engineman Shellenberger did observe it, it is entirely possible that the use of the white lantern may have caused him to misinterpret the nature of the signal which was given.

Conductor Baker was in position to know what the flagman was doing but said that the last time he saw him he was in the vicinity of signal 2431 and still walking eastward. Flagman Lynch in his statement indicates that train No. 17 must have been quite close by the time he reached the signal, and in view of the time which elapsed and the short distance covered by the flagman, it is apparent that Conductor Baker either knew the flagman was going back slowly or else did not pay any attention to him until just before train No. 17 approached.

This accident again calls attention to the necessity for some form of automatic train control for the prevention of accidents when for any reason an engineman fails to observe or obey signal indications, had such a device been in operation at this point this accident undoubtedly would not have occurred.

All the employees involved were experienced men; at the time of the accident they had been on duty from  $8\frac{1}{2}$  to  $15\frac{3}{4}$  hours, after off-duty periods ranging from  $8\frac{1}{4}$  hours to several days.

Respectfully submitted,

W. P. BORLAND

DIRECTOR.