

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE PENNSYLVANIA RAILROAD NEAR SHORT LANE, MD., ON JANUARY 17, 1929.

February 2, 1929.

To the Commission.

On January 17, 1929, there was a rear-end collision between a passenger train and a freight train on the Pennsylvania Railroad near Short Lane, Md., the wreckage being struck by another passenger train moving in the opposite direction on an adjoining track. This accident resulted in the death of 5 employees and the injury of 25 passengers, 6 mail clerks and 7 employees.

Location and method of operation

This accident occurred on that part of the Maryland Division extending between Brill, Pa., and North Point, Md., a distance of 85.3 miles, these stations are located near Philadelphia and Baltimore, respectively. In the vicinity of the point of accident this is a double-track line over which trains are operated by time-table, train orders and an automatic block-signal system. The point of accident was 1,875 feet south of the station at Short Lane, approaching this point from the south the track is tangent for a distance of more than 2 miles, while the grade for a distance of more than 1 mile is slightly ascending for northbound trains, being 0.36 per cent at the point of accident.

The signals involved in this accident were signals 690 and 682, located 8,800 and 4,300 feet, respectively, south of the point of accident. These signals are of the three-position, upper-quadrant, semaphore type, located on signal bridges. There is an interlocking tower at a point about 800 feet south of signal 690 from which are operated the various switches and signals in the vicinity of the station at Perryman, including the switch leading to the northbound siding, this siding has a capacity of 109 cars and extends northward from Perryman approximately half the distance to the point of accident.

The day was dark and cloudy and it was very foggy at the time of the accident which occurred at about 4.53 p.m.

(Automatic block-signal system at end of report)

Description

Northbound freight train extra 1472 consisted of 99 cars and a caboose, hauled by engine 1472, and was in charge of Conductor Hardesty and Engineman Wright. A slow-speed signal indication was received as this train approached the interlocking plant at Perryman and it headed in on the north-bound siding, clearing the main track at 4.30 p.m. for train No. 124, which passed Perryman at 4.32 p.m. After the passage of train No. 124 authority was obtained to enter upon the main track and the train started to move at 4.38 p.m. The train had headed out on the main track and its rear end had reached a point about 4,300 feet north of the siding or $1\frac{1}{2}$ miles north of Perryman, and was traveling at a speed estimated to have been from 12 to 15 miles per hour, when it was struck by train No. 412.

Northbound passenger train No. 412 consisted of two postal storage cars, one mail car, one combination car, two coaches and two baggage cars, all of steel construction hauled by engine 1630, and was in charge of Conductor Lambert and Engineman Sweeting. This train passed Perryman at 4.50 p.m., one minute late, and collided with the rear end of extra 1472 while traveling at a speed estimated to have been between 45 and 55 miles per hour.

Southbound passenger train No. 121 consisted of five Pullman sleeping cars, four parlor cars, one dining car, two coaches and one combination car, all of steel construction and located in the train in the order enumerated, hauled by engine 3855, and was in charge of Conductor Myers and Engineman Terhune. This train passed Oakington, about 4.5 miles north of the point of accident and the south end of the four-track portion of the main line, at 4.47 p.m., 13 minutes late, and collided with the wreckage of extra 1472 while traveling at a speed estimated to have been approximately 60 miles per hour.

The caboose and six rear cars of extra 1472 were demolished, while the next three cars in this train were derailed and more or less damaged, some of the wreckage fouling the southbound track. Engine 1630 of train No. 412 was derailed to the right and came to rest on its right side parallel with the track, the first three cars in this train were derailed but they remained upright and were not badly damaged. Engine 3855 of train No. 121 was derailed to the right and came to rest on its right side clear of the tracks, the first three sleeping cars in this train were also derailed to the right and they came to rest leaning against an embankment

on that side of the track. The employees killed were the flagman and a brakeman of extra 1472, the engineman of train No. 412, and the engineman and fireman of train No. 121.

Summary of evidence

The statements of Engineman Wright, Fireman Jumbrom and Conductor Hardesty, of extra 1472, all of whom were riding on the engine of that train at the time of the accident, were to the effect that after their train came to a stop on the northbound siding, the conductor went to the telephone booth for the purpose of communicating with the operator at Perryman and ascertaining what train they were to follow, and Conductor Hardesty said that when he told the operator that train No. 124 had just passed him the operator gave him verbal permission to occupy the main track and proceed, at the same time telling him to let the operator know when the switch had been opened and the main track fouled. Conductor Hardesty said he immediately left the booth, opened the switch, and then returned to the booth and notified the operator that the track was fouled, this was at 4.35 p.m. Conductor Hardesty then gave Engineman Wright a proceed signal and boarded the engine, which pulled out of the siding slowly in order to give the flagman an opportunity to close the switch and board the caboose, thus avoiding stopping the train for that purpose. The statements of these employees also indicated that when their engine had reached a point a short distance north of the station at Short Lane, moving at the normal speed of 12 or 14 miles per hour, southbound train No. 121 passed them on the adjoining track, and it was just after the passage of this train that the air brakes were applied in emergency on their own train due to the fact that the rear end of it had been struck by train No. 412. Their statements also were to the effect that on account of the dense fog their range of vision was restricted to a few car-lengths; in fact, Engineman Wright said he had been unable to see the indication of signal 672, located a few feet north of where the accident afterwards occurred, for a distance of more than 50 feet. Under the conditions as they existed, however, with his train moving at normal speed, Conductor Hardesty did not consider that there was any occasion to provide flag protection against following trains, although subsequently he made the statement that the flagman should have thrown off fuses and from his personal acquaintance with the flagman he felt sure that this had been done.

Fireman Lee, of train No. 412, said that he saw all signals between Baltimore and Edgewood, a distance of 20.5 miles, he did not call the indications of all of them as in some cases he and the engineman would indicate by a wave of the hand that they had seen the signals. Edgewood was the first stop for this train after leaving Baltimore and is located 6.1 miles south of Perryman. The first signal that Fireman Lee said he missed was the distant signal for the interlocking plant at Perryman, he also missed the home interlocking signal as well as the first automatic signal just north of Perryman, this being signal 690, and he said that the engineman did not call the indications of any of these signals or indicate that he knew he had passed them. About 30 seconds after passing Perryman, Fireman Lee put in a fire and then began looking for signal 682, which is located just south of the north end of the siding. He was not able to see it, however, and when the accident occurred he was in the act of crossing over to the engineman's side of the engine to tell the engineman that he had missed the signals and to find out if the engineman had seen them; no application of air brakes had been made, the engine was still working steam and was traveling at a speed of 50 or 55 miles per hour, he had not noticed any burning fuses. Fireman Lee was familiar with the rule requiring that the position of all fixed signals be called by the engineman and repeated by the fireman and he said he had realized they were not complying with the rule and that this was the reason he was crossing over to the engineman's side when the accident occurred. It further appeared from the statements of Fireman Lee that when talking with Engineman Sweeting at the hospital the engineman said he must have missed a signal and when Fireman Lee asked him if he had seen the rear end of the train ahead, the engineman replied "Didn't you hear me apply the brakes?" When questioned on this point, however, Fireman Lee said he did not hear the brakes applied. Fireman Lee had fired for Engineman Sweeting at different times for a period of 10 years or more, he said that the engineman appeared to be in normal condition on the day of the accident and that nothing unusual had occurred on the trip between Baltimore and the point of accident, which would have required special attention from the engineman.

The statements of Conductor Lambert, Baggage-master Newnom and Flagman Beck, all of train No. 412, were to the effect that the speed of their train was from 45 to 55 miles per hour when they felt an emergency application of the air brakes followed almost immediately by the shock of the collision. The conductor also said

that at Baltimore he had compared time and checked general orders with Engineman Sweeting and that the engineman appeared to be in normal condition in every respect. The baggagemaster stated that after the accident he saw a car lying on the southbound track and at once started northward intending to go around this car and then flag any southbound train which might approach, but almost immediately he saw the headlight of train No. 121, which appeared through the fog to be about the size of an electric light bulb. Baggagemaster Nernom noted that the engine of this train was working steam and he at once got up on the low embankment on the west side of the track, giving emergency stop signals until the engine was about two telegraph-poles distant, at which time the baggagemaster ran back out of the way. He estimated the speed of train No. 121 to have been 60 or 65 miles per hour when it collided with the wreckage. The statements of all three of these employees agreed with those of the surviving members of the crew of extra 1472 as to the existence of a dense fog which very materially restricted their range of vision.

Conductor Myers, of train No. 121, said his train passed Cockington at a speed of about 60 miles per hour and that afterwards this rate of speed was increased to a slight extent. From his position in the rear car of the train he did not notice any application of the brakes prior to the time his train was derailed. The statements of Baggagemaster Boylan and Flagman Winstead of train No. 121 also indicated that there was no application of air brakes on their train prior to the time it collided with the wreckage of extra 1472.

Crossing Watchman Dorsey, on duty at Short Lane, said he was flagging the crossing for extra 1472, which was then passing that point, when train No. 121 approached from the opposite direction and he said it was immediately after the passage of train No. 121 that the brakes were applied on extra 1472, bringing the freight train to a quick stop.

Operator Sellers, on duty at the interlocking plant at Perryman, said that extra 1472 was into clear on the northbound siding at 4.30 p.m. and that train No. 124 passed at 4.32 p.m. When the conductor of extra 1472 inquired as to what train he should follow Operator Sellers communicated with the train dispatcher and the latter instructed him to allow the extra to follow train No. 124. This permission was given to the conductor accordingly and he said that they had the switch opened and were moving at 4.38 p.m. The next northbound train was train No. 412. Operator Sellers gave this train a

clear indication at the home interlocking signal and he said it passed the tower at 4.50 p.m. On account of the weather conditions, however, Operator Sellers was unable to tell what indication was displayed by signal 690, located approximately 800 feet north of the tower. Operator Seyfried, on duty at Oakington, said train No. 121 passed at 4.47 p.m., but he had no knowledge concerning the accident except that his power line went out of service at 4.53 p.m.

Dispatcher Jackson confirmed the statement of Operator Sellers about having given the latter authority to allow extra 1472 to follow train No. 124, and he also stated that he had not been informed by the operators at Perryman and Oakington that there was a dense fog prevailing at the time. Mr. Jackson said rule 251 governed in the operation of extra 1472 ahead of train No. 412; this rule provides in part that on portions of the railroad specified in the time-table, trains may enter a block between block stations and run with the current of traffic by permission of the signalman, which permission supersedes time-table superiority, in the current time-table of the Maryland Division there is a provision that this rule is in effect between Brill and High Point.

After the occurrence of the accident signal 682 was found in the stop position, while signal 690 was in the caution position. Inspection and test of these signals, as well as subsequent observations of their operation, showed them to be in proper operating condition and nothing was found to indicate that they did not operate properly and display the proper indications when passed by train No. 412. So many burned-out fuses were found in the vicinity that it was impossible to tell whether any had been thrown off by the Flagman of extra 1472.

Conclusions

This accident was caused primarily by atmospheric conditions which resulted in the failure of Engineman Sweeting of train No. 412 properly to observe signal indications.

The evidence indicated that the weather was very foggy and unfavorable to the observation of signal indications. The statements of Fireman Lee showed that he himself failed to observe the indications displayed by the four successive signals immediately south of the point of accident and he also said that Engineman Sweeting failed to call their indications, which was

contrary to the practice the engineman had been following on the trip northward from Baltimore. When taken in conjunction with the engineman's statement in the hospital that he must have missed a signal, and the fact that the train proceeded at a high rate of speed with no application of the air brakes having been made until possibly a second or two before the collision actually occurred, it is apparent that for some reason Engineman Sweeting failed to observe the caution and stop indications displayed by signals 690 and 682, respectively. It further appeared that Engineman Sweeting had been in normal physical condition and apparently he had been fully attentive to his duties in connection with the proper handling of his train until just before the accident occurred.

While not primarily responsible for the occurrence of this accident, Fireman Lee realized that he himself had missed the four signals in succession and he also knew that the engineman had failed to call their indications. The fireman said that after passing Perryman and putting in a fire he again looked for a signal but failed to see it and was crossing over to the engineman's side of the cab for the purpose of ascertaining whether the engineman had seen the signal indications when the accident occurred. While it is well recognized that a fireman's duties are such that he is often prevented from personally observing the indications of fixed signals, Fireman Lee should not have allowed four successive signals to be passed without either seeing them or hearing their indications called by the engineman. Rule 14 of this railroad is absolute in its requirement that enginemen and firemen must call the indications of fixed signals and Fireman Lee should have acted earlier in his endeavor to ascertain why Engineman Sweeting was not complying with the rule.

The evidence indicated that train No. 121 passed the head end of extra 1472 before the rear end of the latter train was struck by train No. 412 and under such circumstances there was no opportunity for the engine crew of extra 1472 to give a warning of danger to the engine crew of train No. 121. Train No. 121 also had passed the last automatic signal approaching the point of accident. Under these circumstances the only chance of preventing train No. 121 from colliding with the wreckage was the possibility that some one might be able to flag it in time to enable the engineman to bring the train to a stop. Such an attempt was made by the baggage-master of train No. 412, but the time at his disposal was

so short that when coupled with the extremely unfavorable weather conditions prevailing, it resulted in practically no warning being given to the engine crew of the approaching train, and consequently that train collided with the wreckage while moving at a high rate of speed.

Examination of the records for the 30 days immediately preceding the date of the accident showed an average daily train movement over this part of the road in both directions of slightly more than 119 trains, divided about equally between northbound and southbound movements. The traffic density here shown, together with the atmospheric conditions on this division, which skirts the shores of Chesapeake Bay where dense fogs are frequent creates a condition which calls for the additional protection contemplated by the report of the Commission in Automatic Train Control Devices, 148 I.C.C. 188, in which it said,

"This in no way relieves the carriers from the responsibility which rests on them to provide additional protection where needed in territory now equipped with block signals."

On lines of the Pennsylvania System automatic train stop devices have been installed pursuant to orders of the Commission as follows:

Road	Division	Miles of road	Miles of track	Number of locos.
Pennsylvania	Baltimore	81.7	163.4	116
"	Middle	130.4	490.4	329
P.C.C. & St.L.	Columbus	186.8	351.0	121
"	Pennandle	156.4	374.8	306
W.J. & S.S.	Atlantic (Penna)	56.4	112.8	129
Long Island (Pennsylvania Railroad, New York Zone)	North Side	20.8	32.8	100 Elec. cars 3 Elec.locos. 2 steam "
Long Island (Pennsylvania Railroad, New York Zone)	Montauk	27.6	55.2	150 Elec. cars 9 Elec.locos. 4 steam "
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Total equipped for operation over:				
Pennsylvania System		660.1	1580.4	1269
C.of N.J. installa- tion				63
N.Y.C. installation				38
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Total equipped by Penna. System		660.1	1580.4	1370

At hearings before the Commission in Automatic Train Control Devices, above referred to, it was stated by representatives of the Pennsylvania Railroad that it is planned to equip the line from North Philadelphia to Manhattan Transfer, and from time to time other portions of its main line, with a system of visible and audible cab signals without automatic train stop devices. Concerning this matter the Commission in its report of November 26, 1928, said:

p. 198. "Cab signals are without doubt an important development in the art of signalling. They place the signal indication immediately in front of the engineman where it cannot be obscured by snow, fog, smoke or other obstructions and where a combination of visible and audible indication is used it is without doubt a valuable addition to the signal system."

The accident here under investigation occurred in a dense fog when wayside signal indications were visible only for very short distances, and fogs of this character are frequently encountered in this locality. In view of the character and density of traffic on this line it is believed that the Pennsylvania Railroad should give immediate consideration to the question of extending their cab signal system or installing automatic train control on the main line of the Maryland Division for the purpose of providing additional protection against accidents of this character.

All the employees involved in this accident were experienced men and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND,

Director.