

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ATLANTIC COAST LINE NEAR PALMYRA, N. C., ON MARCH 18, 1923.

April 13, 1923.

To the Commission:

On March 18, 1923, there was a rear-end collision between a Southern Railway freight train and an Atlantic Coast Line freight train, on the Atlantic Coast Line near Palmyra, N. C., which resulted in the death of two employees and the injury of two employees.

Location and Method of operation.

This accident occurred on that part of the Norfolk District, First Division, extending between Pinner's Point, Va., and Rocky Mount, N. C., a distance of 115.8 miles, at a point nearly $1\frac{1}{2}$ miles north of the station at Palmyra. This is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. Approaching the point of accident from the north, the track is tangent for several miles, while the grade for 2,600 feet is 0.36 per cent ascending, followed by 2,600 feet of 0.22 per cent descending grade, and is then 0.6 per cent ascending for about $1\frac{3}{4}$ miles, the accident occurring at a point approximately 3,600 feet south of the beginning of the 0.6 per cent grade.

This line is operated by the Atlantic Coast Line, and certain trains of the Southern Railway are also operated over it. Atlantic Coast Line time-table No. 1 includes a schedule for one southbound Southern Railway through freight train, being shown as train No. 257. However, the crews of both railroads operating out of Pinner's Point are assigned to schedules in the order in which they are called and ready to depart, and on this occasion the Southern Railway train was ready to leave before the Atlantic Coast Line train, and left the terminal as train No. 209. The Atlantic Coast Line train, which left later, assumed the schedule of train No. 257.

Except for banks of fog in the vicinity of the point of accident, the weather was clear at the time of the accident, which occurred at about 4.00 a. m.

Description.

Southbound Southern Railway second-class train No. 209 consisted of 74 cars and a caboose, hauled by engine 4611, and was in charge of Conductor Moore and Engineman Blankenship.

This train left Yard Tower, its initial station on the Norfolk District, at 10.25 p.m., passed Kelford, the last open telegraph office, 10 miles from Pamunty, at 3.18 a.m., reducing speed to receive a train order, Form 19, stopped for water at Norfleet, 5.1 miles from Pamunty, and had proceeded a distance of a little more than 4 miles, traveling at a speed variously estimated to have been from 7 to 20 miles an hour, when the rear end of the train was struck by train first No. 257.

Southbound Atlantic Coast Line second-class train first No. 257 consisted of 40 cars and a caboose, hauled by engine 1619, and was in charge of Conductor Thompson and Engineman Mero. This train left Yard Tower at 11.10 p.m., passed Kelford at 5.10 a.m., receiving a train order on Form 19, passed Norfleet without stopping, and collided with the rear end of train No. 209 while traveling at a speed estimated to have been between 25 and 30 miles an hour.

The caboose and eight rear cars of train No. 209 were thrown to both sides of the track, all badly damaged, the caboose and two other cars being destroyed. Engine 1619, of train first No. 257, came to rest about 400 feet south of the point of collision, clear of the track and badly damaged, the first four cars of train first No. 257 were also derailed and badly damaged. The employees killed were the conductor and flagman of train No. 209.

Summary of evidence.

Engineman Blankenship, of train No. 209, stated that he was making an average run and had experienced no difficulty in handling his train. After passing Kelford at 3.16 a.m., at a speed of 6 or 8 miles an hour, he again slowed down for Roanoke River trestle, consuming at least 10 minutes from the time he shut off steam approaching Norfleet water tank until the train stopped. Water was taken without uncoupling the engine, and when he recalled the flagman he looked back but saw no fire burning on the track behind his train as he left that point. He said that it was 3.39 a.m. when he left the water tank and 3.43 a.m. when his train passed Norfleet, the duration of the stop having been seven or eight minutes, and that shortly after leaving that point he ran into a fog bank. While on the ascending grade in the vicinity of the point of accident he heard the fireman say to the head brakeman "You must have hot box" and upon looking toward the rear of his train he saw a bright headlight, and at about this time the brake pipe pressure on his engine went down and the train came to a stop, he noted that it was 3.54 a.m. and said he had felt no shock from the collision, and at that time did not know there had been a collision. He further stated that at the time of the collision he was running at a speed of at least 20 miles an hour, and that he was running on the time of train first No. 257 and had been running on the time of that train from Yard Tower. He also stated

that he fully understood that when a train is delayed and running on the time of a following train, fusees should be thrown off at intervals, and thought that on account of the time lost in approaching the water tank at Norfleet and the time consumed in taking water at that point flag protection would be required for his train when he stopped there, he did not know whether the flagging rules were being observed at the rear of his train.

Fireman Williams, of train No. 209, stated that before the accident occurred he saw a light which appeared to be between his engine and caboose, he then put in a fire, and afterwards asked the head brakeman, who was riding on the engine, if he had found out what it was, and the brakeman said the caboose was on fire, at about that time the brake pipe pressure went down. He said he could see the markers on the caboose at the time the collision occurred, although there were streaks of fog in the vicinity. He said he ran all the way to Palmyra, about three-fourths of a mile, to flag train No. 42, and upon looking at his watch at Palmyra noted that it was 4.03 a.m.

Head Brakeman Swain said the fireman called his attention to a light at the rear of the train, and that on looking back he saw it was behind the train, he said it was just after this that he saw the headlight of the following train and expressed the opinion that the first light he saw was a fusee, he also said he saw this fusee when the flagman lighted it and threw it out on the engineman's side, this statement however, is conflicting, for if it was burning when his attention was first called to it, then it is obvious he could not have seen the flagman light it. He afterwards said he was not sure it was a fusee. His other statements practically corroborated those of the enginemen and fireman.

Engineman Mero, of train first No. 257, stated that approaching Kelford, he reduced speed to about 8 or 10 miles an hour to pick up a train order, Form 19, that the speed was about 20 miles an hour while crossing Roanoke River Trestle and that he passed Norfleet, without stopping, at 3.51 or 3.52 a.m. He said the first intimation he had of the track being obstructed was when he came out of a fog bank and saw the caboose of train No. 209 three or four car lengths ahead of his engine. His first thought on seeing the caboose was one of surprise that it should be standing there unprotected, as it did not appear to be moving. He did not see any fusees or other indication that the train ahead of him was being protected and he thought the caboose door was closed. On seeing the caboose he immediately shut off steam, applied the brakes in emergency, called to the fireman and the head brakeman, and jumped from the engine. He said when he first saw the rear of the train ahead of him his train was running at a speed of about 25 or 30 miles an hour, and that while he was running at a speed in excess of his scheduled running time, he was

running within the maximum speed limit, which is 30 miles an hour for freight trains, and was keeping a vigilant look-out ahead. He stated he was not forcing his engine at the time of the accident, as he had ample time to reach Palmyra for train No. 42, which he was to meet at that point. He thought that had the flagman or conductor of train No. 209 thrown off fuses in accordance with rule 39-a the accident would have been averted. The statements of Head Brakeman Pollock practically corroborated those of Engineman Mero. Fireman Gee was on the deck of the engine and he said he knew nothing about the accident until it occurred. He stated that afterwards he heard Engineman Mero tell Engineman Blankenship that the accident occurred at 3.51 a.m., which statement was verified by Engineman Blankenship; Engineman Mero did not recall this statement.

Conductor Thompson, of train first No. 257, said that he was riding in the caboose at the time of the accident and that the first knowledge he had of anything wrong was a sudden application of the air-brakes, followed by a jar. He said that just prior to the brake application his train was running at a speed of about 25 or 30 miles an hour. As soon as the train stopped he started toward the head end of the train, while Flagman Tew looked at his watch and said it was 3.59 a.m. At this time the weather was foggy, but the fog was not of sufficient density to prevent him from seeing a distance of two or three car lengths, and he had no difficulty in seeing Flagman Tew going back to flag. He thought it impossible for a tonnage train such as train No. 209 to maintain a speed of 30 miles an hour on the ascending grade, and thought the maximum speed possible for such a train at the point where the accident occurred would be about 10 or 12 miles an hour, judging from the wreckage he thought train No. 209 must have been traveling at a very low rate of speed. Flagman Tew corroborated the statements of Conductor Thompson as to the time of the accident and the speed of train first No. 257, adding that there were streaks of fog at the time of the accident.

Train Dispatcher Horton stated that his records show train No. 209 passed Kelford, the last open telegraph office north of the point of accident, at 3.18 a.m., and that train first No. 257 passed that point at 3.40 a.m. He stated that the tonnage rating of Southern Railway engine 4611, which was hauling train No. 209 on the day of the accident, is 2,400 tons and at the time of the accident this engine was hauling 2,393 tons. He said the usual running time between Kelford and Palmyra for tonnage freight trains is about 30 minutes exclusive of the stop at Norfleet, and that when a stop is made at Norfleet for water, the time is about 45 minutes; such trains require about 5 to 8 minutes in crossing the Roanoke River trestle and 10 to 15 minutes are usually required to take water at Norfleet. He said trains passing Norfleet without stopping can maintain a speed of about 35 miles an hour on the ascending grade north of Palmyra, but if a stop

is made at Norfleet it would be difficult to pick up to a speed of 25 miles an hour on this grade. He further stated that he was working with Suffolk, Va., at the time the wires failed, and fixed this time at 4 a.m. The statement of the dispatcher at Tarboro, N. C., and the operators at Kelford, Suffolk and Norfolk, as to the time at which the wires failed varied from 3.58 a.m. to 4.01 a.m.

The statement of Engineman Blankenship that he passed Kelford at 3.16 a.m. practically agrees with the train sheet record, which shows the 74-car train as having passed at 3.18 a.m. Engineman Blankenship also said he left the water tank at Norfleet at about 3.39 a.m., in other words, 41 minutes were consumed between the time of passing Kelford and the time of starting from the water tank. Engineman Blankenship also said 7 or 8 minutes were consumed in taking water, leaving 13 or 14 minutes as the running time of his train between Kelford and Norfleet water tank, a distance of about $4\frac{1}{2}$ miles. But when there is taken into consideration his further statement that at least 10 minutes elapsed between the time he shut off and the time of coming to a stop at the water tank, it is obvious that his train could not have consumed the time he said it did and still depart from the water tank at 3.39 a.m. It is believed that it left the water tank later than 3.39 a.m. and that train first No. 257 was not far behind it at that time. It is also believed that train No. 209 consumed more than 13 minutes in making the run of about $4\frac{1}{2}$ miles from the station at Norfleet to the point where the engine stopped after the accident, and that Dispatcher Horton's statement that the wires failed at 4 a.m. establishes the time at which the accident occurred.

The condition of the wreckage indicates that there was more difference in the speeds of the two trains at the time of the accident than would appear from the estimates of speed made by the crews. It seems probable that the speed of train No. 209 was low, but on the other hand it seems that the speed of train first No. 257 must have been at least the maximum allowed for freight trains, which is 30 miles an hour. If the accident occurred not later than 4 a.m., then train first No. 257 traveled the distance of slightly more than 4 miles between Norfleet and the point of accident in about 8 minutes, or at an average speed of about 30 miles an hour.

Conclusions.

This accident was caused by the failure of Conductor Moore and Flagman Bass, of train No. 209, properly to protect their train.

Consideration of all the evidence indicates that the speed of train No. 209 had been considerably reduced, and it appears that while running at a low rate of speed it was passing

through several banks of fog which materially restricted the view. This train had been delayed to such an extent that it was encroaching on the time of the following train, under these conditions it was being endangered by a following train within the meaning of rule 99-a, and should have been protected by the throwing off of lighted fuses. This rule reads as follows

"When the speed of a train is reduced and its rear thereby endangered by a following train before the flagman can get off, a lighted fusee must be thrown upon the track at intervals until the flagman can get back to protect his train."

Had the requirements of this rule been obeyed, it is probable that this accident would have been averted.

The evidence is not clear as to the exact extent of the view when passing through the banks of fog which were encountered by both crews, but it seems apparent that this fog was such as to interfere with the view very materially, and under such circumstances it is not thought that Engineman Mero, of train first No. 257, displayed good judgment in operating his train at ^{the} maximum rate of speed allowed, while there is no assurance that a reduction in speed would have prevented the accident, it is probable that the results would ~~not~~ have been as disastrous.

This accident again calls attention to the inherent deficiency of the time-interval system of train operating. *inc*
Had some form of block-signal system been in use on this line, this accident would no doubt have been prevented.

With the exception of the fireman of train first No. 257, and the head brakeman of each train, the employees involved were experienced men, at the time of the accident they had been on duty from 6 to 7 hours, after having been off duty from 9½ hours to several days.

Respectfully submitted,

(Signed) W. P. Borland.

Director.