

Inv-2311

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
ATLANTIC COAST LINE RAILROAD

FLORENCE, S. C.

NOVEMBER 25, 1938

INVESTIGATION NO. 2311

SUMMARY

Inv-2311

Railroad: Atlantic Coast Line
Date: November 25, 1938
Location: Florence, S. C.
Kind of accident: Collision
Trains involved: Yard engine : Freight
Train number: : 538
Engine numbers: 171 : 412
Speed: Standing : 10-20 m.p.h.
Operation: Timetable and train orders
Track: Single; tangent; practically level
Weather: Clear and dark
Time: About 5:54 p.m.
Casualties: 1 killed; 4 injured
Cause: Failure of No. 538 to be operated
under proper control within yard
limits.

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January 6, 1939.

To the Commission:

On November 25, 1938, there was a collision between a yard engine and a freight train on the Atlantic Coast Line Railroad at Florence, S. C., which resulted in the death of one employee and the injury of three employees on duty and one employee off duty.

Location and Method of Operation

This accident occurred on the Northern Division, on that part of the Columbia District which extends between Robbins and Florence, S. C., a distance of 138 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders, no block system being in use. The accident occurred within yard limits at a point 13,095 feet north of the south yard-limit board. Approaching this point from the south and beginning at the south yard-limit board the track is tangent 2,167 feet, followed by a 1°04' curve to the right 3,008 feet in length, then tangent track 7,920 feet to the point of the accident and a considerable distance beyond. The grade is slightly ascending from the south yard-limit board northward one-half mile, then practically level to the point of accident.

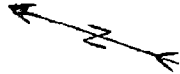
A siding 2,722 feet in length parallels the main track on the west side; the accident occurred on the main track at a point 239 feet north of the south switch of the siding. McQueen Street and Coit Street cross the main track and the siding at right angles 178 feet and 834 feet, respectively, north of the south switch of the siding and 61 feet south and 595 feet north, respectively, of the point of accident.

The maximum authorized speed for local freight trains is 40 miles per hour.

Rules 18, 93 and 93 (a) of the book of operating rules read as follows:

Rule 18. Yard engines will display the head light to the front and rear by night. ***.

Rule 93. Within yard limits the main track may be used, clearing the time of first-class trains five minutes.



Coit Street

Siding

595 ft.

Point of accident

61 ft.

McQueen Street

178 ft.

Point of switch

7,681 ft.

PT

1°4'

3,008 ft.

PC

2,167 ft.

Direction of No. 538

Yard Limit Board

✕	Florence, S.C.
	(P of A)
	11.4 mi.
○	Timmons ville
	5.9 mi.
○	Cartersville
	21.7 mi.
○	Sumter
	99.0 mi.
○	Robbins, S. C.

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 Atlantic Coast Line R.R.
 Florence, S. C.
 November 25, 1938

Second, third and fourth class and extra trains must move within yard limits prepared to stop unless the main track is seen or known to be clear.

Rule 93 (a) Switch engines will run carefully, looking out for approaching trains, and will promptly clear main track upon approach of all trains.

It was dark and the weather was clear at the time of the accident, which occurred about 5:54 p.m.

Description

Yard engine 171, an 0-6-0 type, headed southward, in charge of Yard Foreman Hyman and Engineman Medlin, was engaged in assembling cars from various tracks in the vicinity of the point of accident for subsequent movement to other parts of the yard; at the time of the accident, with one empty tank car coupled ahead of it and one tank car of gasoline coupled to the rear, this yard engine had stopped following a back-up movement to couple to three cars which had previously been switched to the main track when the empty tank car was struck by No. 538.

No. 538, a north-bound fourth-class local freight train, consisted of 23 loaded cars, 4 empty cars and a caboose, hauled by engine 412, of the 4-6-2 type, and was in charge of Conductor Hunter and Engineman Bowie. This train departed from Sumter, 39 miles south of Florence, at 3:50 p.m., according to the train sheet, 4 hours 20 minutes late, left Timmons ville, the last open office, 11.4 miles south of Florence, at 5:40 p.m., 4 hours 24 minutes late, passed the south yard-limit board at Florence at a speed estimated to have been from 25 to 35 miles per hour, and while moving at a speed variously estimated to have been between 10 and 20 miles per hour, collided with the empty tank car coupled ahead of yard engine 171.

Engine 412 and its tender were not greatly damaged and stopped parallel to and east of the main track leaning eastward at an angle of about 45 degrees with the front end of the engine 281 feet north of the point of collision. U.T.L. 35544, the empty tank car, stopped with the rear end on the main track and the forward end about 15 feet west of the main track, badly damaged and off the trucks. Yard engine 171, badly damaged, stopped on its right side west of and practically parallel to the main track and about opposite engine 412; the tender was knocked off its trucks and stopped upright and across the main track a short distance north of the engine. S.E.P.X. 8547, a tank car loaded with gasoline, was knocked off its trucks and stopped on the main track about 200 feet north of the engine;

gasoline escaped through a large hole in the south end and subsequently became ignited, resulting in the total destruction of the car. The employee killed was the engineman of yard engine 171, and the employees injured were the engineman, the fireman, and the head brakeman of No. 538, and an engineman deadheading on No. 538.

Summary of Evidence

Fireman Rest, of yard engine 171, stated that they had placed about twenty cars in the siding and cut the crossing at Coit Street when he observed No. 538, the headlight of which was burning brightly, about 2 miles distant; he called the engineman's attention to it, and although he received no reply, he thought that the engineman was aware of the approach of the train. The engine, headed southward, with an empty tank car ahead moved from the siding to the main track, at which time No. 538 was approximately 1 mile south, and while backing slowly he again observed this train when it was within about three or four car lengths from his engine and it was traveling at a speed which caused him to believe that it would not be stopped before colliding with the empty tank car; he called his engineman's attention to the impending danger and advised him to jump, but the engineman began to sound the whistle. He said that the yard engine was either moving backward very slowly or about in the act of coupling to other cars which they had left on the main track when the accident occurred at which time his engine whistle was being sounded. Just prior to the accident he jumped from his engine. He estimated that 4 or 5 minutes had elapsed from the time he first observed No. 538 until the time of the accident. He stated that the headlights on yard engine 171 and its tender were so arranged to be bright on the one when dim on the other. When they were moving from the siding the headlight on the front of the engine was burning brightly and continued so until the time of backing up, when the tender headlight was made bright, causing the front headlight of the engine to become dimmed; he estimated that this latter condition existed about 2 minutes prior to the occurrence of the accident. It was his opinion that the reflection of the dimmed headlight could not be seen from behind a car. He stated he had attended recent rules meetings and recalled special emphasis being stressed on observance of yard-limit rules, and in this instance he was of the opinion a fusee should have been lighted when his engine moved to the main track and started to back up. There were fusees on his engine and the reason he did not take such action was that on previous occasions he had been reprimanded by other enginemen for wasting them, and recently he has waited to be instructed to use fusees.

Yard Foreman Hymen, of yard engine 171, stated that his engine was either backing up or in the act of coupling to the cars on the main track when he saw No. 538 with its headlight dimmed about 10 or 12 car lengths from yard engine 171. He went to the east side of the tracks so that his stop signal could be seen from the engineman's side of No. 538 and gave stop signals approximately 30 seconds; the accident occurred when he was in plain view of the engineman of No. 538 about eight car lengths from the point of the collision. As a result of the impact his engine was shoved forward about two car lengths and the cars already on the main track passed him at a speed of about 25 or 30 miles per hour. He was positive that the headlight of No. 538 was dimmed and said that had it been bright he could have seen the train approaching a distance of 2 miles and would have let it by without delay. However, even with the headlight in question dimmed he knew no reason why either his engineman or the yard helper could not have seen the approaching train at the time of moving from the siding to the main track, and he thought that the fireman of No. 538 should have seen the yard helper's light when the latter was between the main track and the siding making the coupling. When No. 538 was within about 10 car lengths of yard engine 171, his engineman sounded the whistle twice, which was the only action he observed taken by members of his crew in an attempt to stop the train.

Yard Helper Parker, of yard engine 171, corroborated the statement of Fireman Best concerning the manipulation of the headlights on the tender and engine of the yard engine at the time of moving from the siding to the main track. He stated that when moving from the siding he did not see No. 538 approaching but said that if the headlight of that train had been burning brightly at that time he would have been able to see it a distance of about $1\frac{1}{2}$ miles. He signalled his engineman to back toward the cars standing on the main track, and as he was in the act of making the coupling thereto, about eight car lengths north of McQueen Street, he observed the surroundings were illuminated by the headlight of an approaching train approximately 1,200 feet distant and that the headlight was burning brightly and properly focused. He immediately started running on the west side of the main track between his engine and the siding toward No. 538, giving stop signals with his light and calling to attract the attention of that crew to the fact that the yard engine was occupying the main track. The engine of No. 538 passed him at McQueen Street at a speed of about 20 miles per hour. He did not hear No. 538 whistle for any street crossings; he heard his engineman sound the whistle twice and he was sounding the third blast when the accident occurred, at which time he estimated that his engine had been standing about one minute. He stated that

the usual procedure with respect to approaching trains in this vicinity is for yard engines to clear first-class trains 5 minutes and work on the main track until the approach of other trains, clearing them as quickly as possible. When switching at night and headlights are dimmed on yard engines, as an extra precaution, fusees or other means are used in signalling trains, but in this instance when he saw the headlight the train was too close for him to display a lighted fusee.

Engineman Bowie, of No. 538, stated that the air brakes functioned properly en route. Approaching Cartersville, 17.3 miles south of Florence, he turned the headlight on and, to the best of his knowledge, it was on full but apparently focused a little high; however, he thought he could have seen a man standing on the track a distance of 800 feet. Coming into Florence Yard at a speed of about 25 miles per hour, he made a brake-pipe reduction of approximately 3 pounds when within about one-half mile of the point of the accident, at which time the switch light at the south end of the siding was green; when about twenty-five car lengths from the point of accident he further reduced the brake-pipe pressure without having released after the first reduction; when the speed of his train was about 16 or 17 miles per hour, he was in the act of releasing the brakes when he, and either the engineman who was deadheading or the fireman, both of whom were on the left seatbox, observed a tank car on the main track about three or four car lengths distant. He immediately moved the brake valve to emergency position, but an emergency effect was not obtained due to the previous service reductions. He sounded a crossing whistle signal at a point approximately 486 feet south of the point of the accident. He saw neither headlights nor hand lanterns, nor did he hear whistle signals of the yard engine, and in the absence of such indication together with the fact that several automobiles were crossing the tracks on Coit Street, he believed that the main track was clear. He stated that a headlight on a yard engine would be obscured with a tank car ahead of it, but the rays thereof would spread to each side of the dome of such a car. At the time of the accident the weather was clear and it was dark; there was neither smoke nor steam to obscure his view, and while his headlight was burning brightly it was his opinion that due to being out of focus it reflected somewhat above the tank car, otherwise he would have been able to see the car earlier. He said he was not running as fast as was customary for road trains in this vicinity; he had his train under control and could have stopped within an additional 150 feet from point of the accident. He also stated that when coming into this yard from the south during the day, he has found cars within yard limits on the main track without protection, but never at night. He attended three rules meetings this year and had been instructed

that trains must move within yard limits prepared to stop within range of vision or short of obstruction. It was his opinion that yard engines should protect against fourth-class or any other trains; however, he later modified this statement to the extent that no train should be exempt from protecting itself while occupying the main track within yard limits except yard engines if they had headlights burning and in clear view of an approaching train, otherwise, a hand lantern or fusee should be used as additional precaution.

Fireman Sturdivant, of No. 538, corroborated the statement of the engineman with respect to the movement of his train from the south yard-limit board to the point of accident except that he did not see any automobiles on Coit Street and that the headlight of his engine focused on the tank car. It was his opinion that because of yard flood-lights and street lights in the background hindering the range of vision they saw this car as soon as it was possible. Records indicate that he had attended three rules meetings recently.

Head Brakeman McLaughlin, of No. 538, stated that all employees on the engine were looking ahead when entering Florence Yard, at which time he estimated the speed to have been about 35 miles per hour. He did not see any lights or signals of any character in the vicinity of the point of accident. He was in the gangway of the engine, and when he first saw the tank car it was about four or five car lengths away, at which time they were traveling at a speed of about 15 or 20 miles per hour and the engineman made an emergency application of the brakes. He said that the headlight was turned on brightly at Cartersville and remained so and to the point of accident. He had attended three rules meetings within the past year.

Engineman McDaniel, deadheading on No. 538, stated that he was on the front of the left seatbox and the fireman was behind him. Passing the south yard-limit board the train was moving at a speed of about 25 miles per hour, and he thought it was possible then to have stopped within the range of vision. He did not hear a whistle signal of the yard engine. He estimated that they were within about 150 feet of the tank car when he first saw it; he called a warning, at which time the speed was about 15 miles per hour and at the time of the impact it had been reduced to about 10 miles per hour. The headlight on this engine was burning brightly and he did not notice it being out of focus; he was looking ahead but did not see the headlight of the yard engine or any hand lanterns in this vicinity.

Conductor Hunter, of No. 538, stated that the speed was about 30 miles per hour when passing the south yard-limit board at Florence. The first brake application was made about one-half

mile south of the point of accident, reducing speed to about 15 miles per hour, and several minutes later an emergency application was made. The accident occurred about 5:54 p.m. He stated that the brakes functioned properly and that a 70-pound brake-pipe pressure was maintained.

The statement of Flagman Russell, of No. 538, added nothing of importance.

Trainmaster McNeill stated that at no time during the recent rules meetings were Rules 93 and 93 (a) given any interpretation other than their exact wording, which he considered so simple and complete as to require no amplification. According to a statement furnished by him each of the employees previously mentioned herein had attended an average of two of these meetings recently.

Master Mechanic Watherspoon arrived at the scene of accident at 6:30 p.m., at which time he inspected the engines involved with the following results:

On engine 412 reverse lever was seven notches from center in forward motion, automatic brake valve was in emergency position, independent brake valve was in running position, throttle and sand valve were in closed positions.

On engine 171 reverse lever was about five notches ahead of center in forward motion, however, it was not latched in the quadrant and the reverse lever was bent. The automatic brake and the independent brake valves were in full release and application positions, respectively, and the throttle was in closed position.

Observations of the Commission's Inspectors

The Commission's inspectors examined work reports from November 1 to 24, inclusive, and there was no indication that any engineman had taken exceptions to or complained about the condition of the headlight of engine 412.

On the evening of November 30, from the south siding switch observation was made of No. 538 moving within Florence Yard; at 5:42 p.m. the train was first seen about the center of the curve or approximately $1 \frac{2}{3}$ miles distant, and the engine passed the south switch of the siding at 5:44:30 p.m. at a speed of not less than 20 miles per hour. A service application of the brakes was made about 1,794 feet south of the siding switch and released soon thereafter, with the engine working steam the entire time. The weather was clear and it was fairly dark; the headlight was bright and appeared to be properly focused.

Discussion

According to the evidence, shortly before the accident occurred yard engine 171 headed out from the south end of the siding to the main track with one empty tank car coupled ahead of it and one tank car of gasoline coupled behind it, and was either backing slowly or in the act of coupling to three cars standing on the main track between McQueen Street and Coit Street when the empty tank car was struck by No. 538 while traveling at a speed of from 10 to 20 miles per hour.

The front headlight of the yard engine was burning brightly when moving from the siding to the main track; when starting the backward movement the rear headlight automatically became bright and the front headlight became dim, this latter condition existing a few minutes prior to the occurrence of the accident. Before leaving the siding the fireman of the yard engine observed the bright headlight of an engine approaching about 2 miles distant and called his engineman's attention to this fact; he was certain the engineman understood what he had told him. The fireman also observed the approaching headlight when it was 1 mile distant and again when it was within three or four car lengths of his engine. When the approaching train was three or four car lengths away, the engineman of the yard engine began sounding whistle signals. The yard foreman did not see No. 538 until it was about ten or twelve car lengths from the yard engine. The yard helper saw No. 538 when it was about 1,200 feet distant. Both the yard foreman and the yard helper gave stop signals with their lanterns but according to the evidence no one on No. 538 observed either these hand signals or the dimmed headlight, nor did they hear the whistle signals given by the yard engineman. According to the evidence the four employees on the engine of No. 538 were looking ahead approaching the point of the accident but they were unaware of anything on the main track until they saw the empty tank car about four car lengths distant. The engineman of No. 538 thought the headlight of his engine was focused above the tank car but the fireman said the headlight was focused on the tank car and the deadhead engineman did not think the headlight was improperly focused. In the twenty-four days preceding the day of the accident no one had complained about the headlight of this engine. There was neither smoke nor fog to impair visual conditions but the fireman of No. 538 was of the opinion that yard flood-lights and street lights in the background restricted the vision in such manner that the tank car could not have been seen previous to the time those on the engine of No. 538 saw it.

The evidence disclosed a lack of a common understanding of Rules 93 and 95 (a). The fireman of the yard engine thought the movement of his engine on the main track should have been protected by the use of a fusee. The yard helper said that it had

been the practice as an extra precaution to protect by the use of a lighted fusee when the yard engine headlight was dimmed. The engineman of No. 538 said that he had often found unprotected cars on the main track within yard limits during the daytime but never at night, but he said he had been instructed that trains must move within yard limits prepared to stop within the range of vision or short of obstruction. The evidence was to the effect that No. 538 was proceeding at a speed of not less than 15 miles per hour when the tank car was seen about four car lengths distant. From this it appears that No. 538 was not proceeding at a speed which would enable it to stop within the range of vision or short of an obstruction. The trainmaster stated that all of the employees involved had recently attended an average of two rules meetings in which no interpretations of Rules 93 and 93 (a) were given other than their exact wording which he considered so simple and complete as to require no amplification. On the evening of November 30, or five days after this accident occurred, the Commission's inspectors, from the south switch of the siding, first observed No. 538 of that day at 5:42 p.m., at which time it was $1 \frac{2}{3}$ miles distant, and the engine passed the switch at a speed of not less than 20 miles per hour at 5:44:30 p.m., or $2 \frac{1}{2}$ minutes after it was first seen; the engineman said that he was proceeding at a lower speed than was customary. From this it appears that the employees either do not have a proper understanding of Rule 93 or that officials are not enforcing this rule according to its exact wording.

Conclusion

This accident was caused by the failure to operate No. 538 under proper control within yard limits.

Recommendation

It is recommended that responsible officials take necessary action to obtain a common understanding of the rules governing operation of trains within yard limits and require a strict observance thereof.

Respectfully submitted,

W. J. PATTERSON,

Director.