

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3436
ATLANTIC COAST LINE RAILROAD COMPANY
IN RE ACCIDENT
AT HORTENSE, GA., ON
NOVEMBER 15, 1951

SUMMARY

Date: November 15, 1951

Railroad: Atlantic Coast Line

Location: Hortense, Ga.

Kind of accident: Side collision

Trains involved: Freight : Passenger

Train numbers: 210 : 75

Engine numbers: Diesel-electric : Diesel-electric
units 306A, units 537A,
306B and 395B 761B and 535A

Consists: 101 cars, cabooses : 21 cars

Estimated speeds: 5 m. p. h. : 67 m. p. h.

Operation: Interlocking

Track: Single; tangent; 0.3 percent
descending grade southward

Weather: Clear with low pockets of fog

Time: 8:03 p. m.

Casualties: 2 killed; 65 injured

Cause: Failure to operate passenger train in
accordance with signal indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3436

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

ATLANTIC COAST LINE RAILROAD COMPANY

January 14, 1952

Accident at Hortense, Ga., on November 15, 1951, caused by
failure to operate the passenger train in accordance
with signal indications.

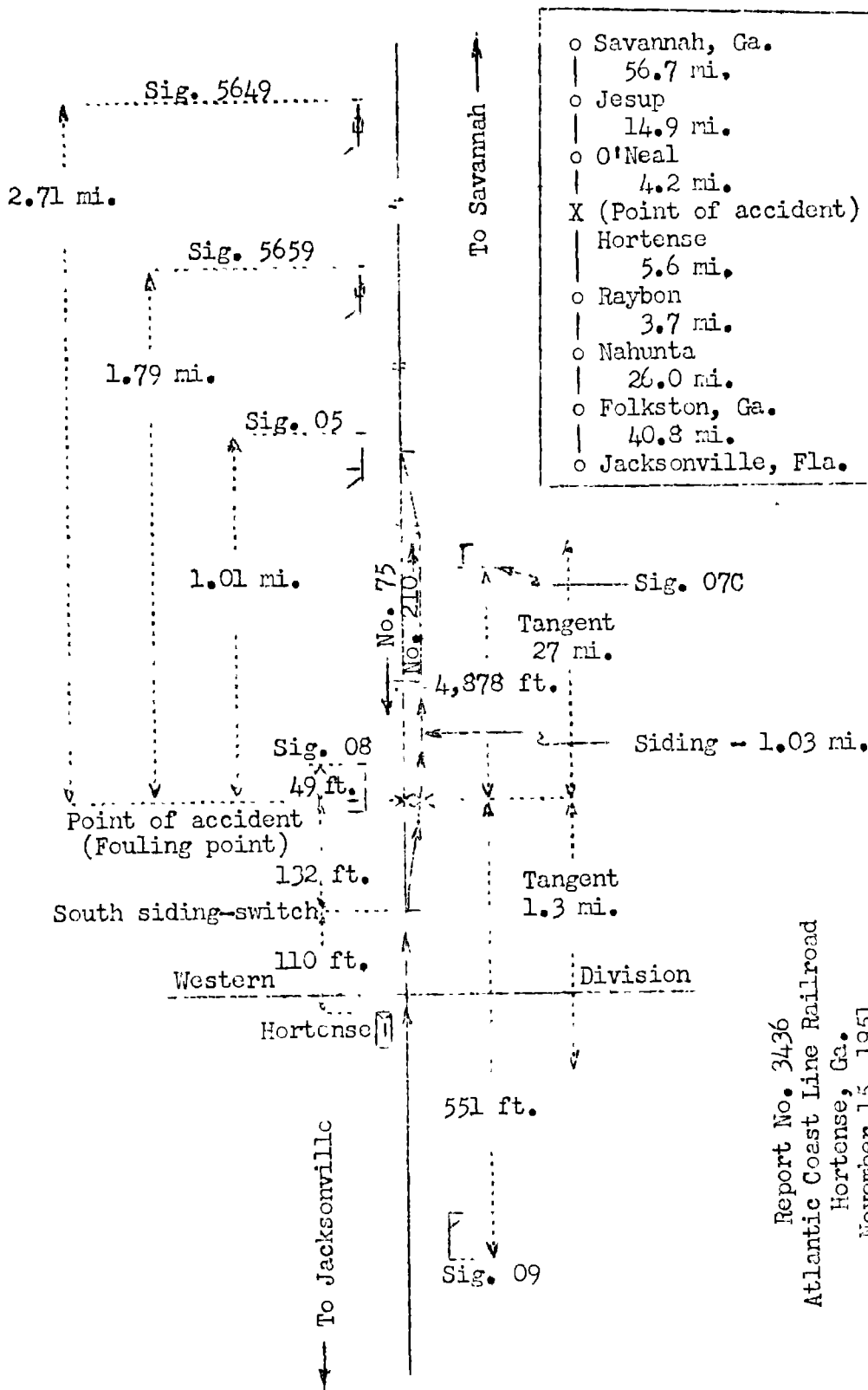
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On November 15, 1951, there was a side collision between a freight train and a passenger train on the Atlantic Coast Line Railroad at Hortense, Ga., which resulted in the death of 1 operator and 1 train-service employee, and the injury of 41 passengers, 7 railway-mail clerks, 1 person carried under contract, 8 dining-car employees, 4 Pullman Company employees, 2 mechanical-department employees, and 2 train-service employees.

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Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



- o Savannah, Ga. | 56.7 mi.
- o Jesup | 14.9 mi.
- o O'Neal | 4.2 mi.
- X (Point of accident)
- Hortense | 5.6 mi.
- o Raybon | 3.7 mi.
- o Nahunta | 26.0 mi.
- o Folkston, Ga. | 40.8 mi.
- o Jacksonville, Fla.

Report No. 3436
 Atlantic Coast Line Railroad
 Hortense, Ga.
 November 15, 1951

Location of Accident and Method of Operation

This accident occurred on that part of the Southern Division extending between Jacksonville, Fla., and Savannah, Ga., via Mahunta, Ga., 151.9 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable, train orders and an automatic block-signal system. At Hortense, Ga., 76.1 miles north of Jacksonville, a siding 1.03 miles in length parallels the main track on the east. The south switch of the siding is 110 feet north of the station. Both switches of the siding are within interlocking limits. The accident occurred at the fouling point of the main track and the south end of the siding, 132 feet north of the south siding-switch. The main track is tangent throughout a distance of 1.3 miles south of the point of accident and 27 miles northward. The grade is slightly undulating throughout a considerable distance on either side of the point of accident, and it is 0.3 percent descending southward at that point.

Semi-automatic signal 09, governing north-bound movements on the main track and from the main track to the siding, and semi-automatic signal 07C, governing north-bound movements from the siding to the main track, are located, respectively, 551 feet south and 4,878 feet north of the point of accident. Automatic signals 5649 and 5659 and semi-automatic signals 05 and 08, governing south-bound movements on the main track, are located, respectively, 2.71 miles, 1.79 miles, 1.01 miles, and 49 feet north of the point of accident. Signals 09, 05, and 08 are of the two-arm upper-quadrant semaphore type, signals 5649 and 5659 are of the one-arm upper-quadrant semaphore type, and signal 07C is a dwarf signal of the one-arm upper-quadrant semaphore type. The aspects applicable to this investigation and the corresponding indications and names are as follows:

<u>Signal</u>	<u>Day Aspect</u>	<u>Night Aspect</u>	<u>Indication</u>	<u>Name</u>
09	Horizontal-over-diagonal	Red-over-yellow	Proceed at restricted speed.	Restricting.
07C	Horizontal	Red	Stop.	Stop.
5649 5659	Diagonal, over number plate	Yellow	Proceed preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach.

05	Diagonal over- horizontal	Yellow-over- red	Proceed prepar- ing to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach.
08	Horizontal- over- horizontal	Red-over- red	Stop.	Stop.

Interlocking limits extend between signal 09 and signal 05. The controlling circuits are so arranged that when the routes are lined for a north-bound movement from signal 09 into the siding and for a south-bound movement from signal 05 to signal 08, signal 09 indicates Restricting, signal 07C indicates Stop, signals 5649, 5659, and 05 each indicate Approach, and signal 08 indicates Stop.

The interlocking at Hortense was of the electro-mechanical type. The control machine was located in the northeast corner of the station building. Approach locking was provided for signals governing movements at higher than restricted speed, and time locking was provided for all other signals. Mechanical, indication, and route locking also were provided. The mechanical locking and the control circuits were so arranged that a controlled signal could display an aspect to proceed only when conflicting routes through the interlocking were unoccupied and all signals governing movements through conflicting routes were displaying aspects to stop.

The station building was a one-story frame structure. The east side of the building was 10 feet west of the center-line of the main track, and the north side was 110 feet south of the south siding-switch.

This carrier's operating rules read in part as follows:

DEFINITIONS

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or switch not properly lined and to look out for broken rail, but not exceeding 20 miles an hour.

Medium Speed.--A speed not exceeding 30 miles an hour.

54. All members of engine and train crews must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

605. Interlocking signals govern the use of the routes of an interlocking, and as to movements within home signal limits their indications supersede the superiority of trains, but do not dispense with the use or the observance of other signals whenever and wherever they may be required.

FORMS OF TRAIN ORDERS

S-E.

- (1.) No 2 Eng 500 wait at H until 9 59 A M for
No 1 Eng 505.

The train first named must not pass the designated point before the time given, unless the other train has arrived. The train last named is required to run with respect to the time specified at the designated point or any intermediate station where schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of the train first named.

The maximum authorized speeds were 79 miles per hour for the passenger train and 60 miles per hour for the freight train.

Description of Accident

No. 210, a north-bound third-class freight train, consisted of Diesel-electric units 306A, 306B, and 395B, coupled in multiple-unit control, 101 cars and a caboose. At Folkston, 35.3 miles south of Hortense, the crew received copies of train order No. 60 reading in part as follows:

* * *

No 75 Eng 537 wait at Hortense until 801PM

* * *

for No 210 Eng 306.

This train passed Folkston at 7:12 p. m., 1 hour 56 minutes late, and passed Nahunta, the last open office, 9.3 miles south of Hortense, at 7:46 p. m., 2 hours late. The front of the train passed signal 09, which indicated Restricting, and while the train was entering the siding at Hortense at a speed of about 5 miles per hour the ninety-third car was struck by No. 75 at the fouling point of the main track and the south end of the siding.

No. 75, a south-bound first-class passenger train, consisted of Diesel-electric units 537A, 761B, and 535A, coupled in multiple-unit control, one express car, two mail cars, one baggage car, six coaches, one tavern car, one dining car, and nine sleeping cars, in the order named. The fourth, ninth, tenth, and seventeenth cars were of lightweight steel construction, and the other cars were of conventional all-steel construction. The fourth, sixth, ninth, tenth, eleventh, twelfth, and seventeenth cars were equipped with tightlock couplers. At Jesup, 19.1 miles north of Hortense and the last open office, the crew received copies of train order No. 60. This train departed from Jesup at 7:47 p. m., 1 hour 15 minutes late, passed signals 5649, 5659, and 05, each of which indicated Approach, passed signal 08, which indicated Stop, and while moving at a speed of 67 miles per hour it struck the ninety-third car of No. 210.

The ninety-third to the ninety-ninth cars, inclusive, of No. 210 were derailed. These cars stopped in various positions on or near the track. They were badly damaged. The Diesel-electric units, the first 10 cars, and the front truck of the eleventh car of No. 75 were derailed. A separation occurred between each unit of the train from the first Diesel-electric unit to the tenth car. The first Diesel-electric unit stopped on its right side. Its front end was 431 feet south of the point of accident and 43 feet west of the track, and its rear end was 80 feet west of the track. The second Diesel-electric unit stopped on its left side and at right angles to the track. Its front end was toward the west and against the rear end of the first unit. The third unit stopped upright. Its front end was 350 feet south of the point of accident and 38 feet west of the track, and its rear end was 20 feet west of the track. The first car stopped on its right side, at an angle of about 60 degrees to the track, with its front end on the track structure 282 feet south of the point of accident and its rear end toward the northwest. The second and the third cars stopped on their right sides, and the fourth and the fifth cars stopped upright. Each of these cars stopped parallel to the preceding car and against it. The sixth car stopped upright, with its front end against the rear end of the fifth car and its rear end on the

track structure. The seventh car stopped upright, with its front end against the rear end of the sixth car and its rear end 26 feet west of the track. The eighth car stopped upright, with its front end against the rear end of the seventh car and its rear end on the track structure. The ninth and the tenth cars stopped upright and approximately in line with the track. The Diesel-electric units and the first to the ninth cars, inclusive, were badly damaged, the tenth car was somewhat damaged, and the eleventh car was slightly damaged. The station building at Hortense was demolished.

The engineer of No. 75 and the operator at Hortense were killed. The fireman and the baggageman of No. 75 and an electrical supervisor and a travelling electrician were injured.

The weather was clear with low pockets of fog at the time of the accident, which occurred about 8:03 p. m.

Discussion

The crews of both trains held copies of train order No. 60, which provided that No. 75 would wait at Hortense until 8:01 p. m. for No. 210. Under the rules, if No. 210 proceeded to Hortense to meet No. 75 it was required to enter the interlocking limits at Hortense not later than 7:56 p. m. Within interlocking limits trains are governed by signal indications, which supersede the superiority of trains. Surviving members of the crews of both trains so understood.

The train dispatcher on duty at the time of the accident said that when No. 210 passed Raybon, 5.6 miles south of Hortense, the operator at Hortense informed him of that fact. He instructed the operator to line the route for No. 210 to take the siding to meet No. 75 at Hortense.

As No. 210 was approaching Hortense the enginemen and the front brakeman were in the control compartment at the front of the locomotive, and the conductor and the flagman were in the caboose. The route was lined for movement from signal 09 to the siding. The engineer said that the front of the train passed signal 09, which indicated Restricting, and entered the siding at 7:56 p. m. He then dimmed the headlight. The capacity of the siding at Hortense is 100 cars and he was doubtful that his train of 101 cars would clear between the siding switches. In order to avoid stopping on the siding, he reduced the speed of the train to about 5 miles per hour so that the front end would not reach signal 07C until after No.

75 had passed the north siding-switch. The engineer did not notice the indication of signal 03. The fireman and the front brakeman said that this signal indicated Stop when the front of their train passed it. They looked at this signal intermittently as their train moved through the siding, and they said that it continued to indicate Stop from the time their locomotive passed it until the accident occurred. As No. 75 approached the north siding-switch, the employees on the locomotive of No. 210 could see the semaphore arms of signal 05. They observed that the signal indicated Approach for the movement of No. 75. They said they thought that No. 75 passed the front of their train at an unusually high speed, and that the brakes of No. 75 had not been applied at that time.

As No. 75 was approaching the point where the accident occurred the enginemen and an electrical supervisor were on the locomotive and the members of the train crew were in various locations throughout the cars of the train. The headlight and the oscillating signal light were lighted brightly. The brakes of the train had been tested at Savannah and had functioned properly when used en route. According to the statement of the fireman, at O'Neal, 4.2 miles north of Hortense, they observed the headlight of No. 210 in the vicinity of Hortense. A short time after the train passed O'Neal they consulted their watches and observed that it was 8:01 p. m. The fireman remarked that the train would not reach Hortense until after the time specified in train order No. 60, and the engineer replied that he thought No. 210 was on the siding at Hortense. The fireman said that signals 5649, 5659, and 05 each indicated Proceed, that he and the engineer called the indication of each signal, and that the train was operated in accordance with these indications. He said that after the train passed the north siding-switch at Hortense the indication of signal 08 changed from Proceed to Stop; however, at that time there was no change in the condition of the track or the interlocking which would cause a change of indication of that signal. At the same time, both he and the engineer observed that the rear end of No. 210 was not clear of the main track, and the engineer immediately made an emergency application of the brakes. The electrical supervisor said that he made a routine inspection of the Diesel engines shortly after the train departed from Jesup. He returned to the control compartment at the front of the locomotive as the train was closely approaching signal 05. He did not observe the aspect of this signal, but he heard the fireman call a proceed indication and the engineer answer. He said that the engineer closed the throttle before the train passed the north siding-switch at Hortense. After the front end of No. 75 passed the front end of No. 210, he saw that

signal 08 indicated Stop. At the same time, the engineer made an emergency application of the brakes. The conductor said that the train passed the north siding-switch at Hortense several seconds after 2:02 p. m. He observed the front end of No. 210 near the north end of the siding, and he was unaware that anything was wrong until the brakes were applied in emergency. He thought that his train was a considerable distance south of the north siding-switch at this time. According to the tape of the speed recording device, a speed of between 80 and 83 miles per hour was maintained between O'Neal and the north siding-switch at Hortense. The emergency brake application became effective about 1,400 feet north of the point of accident, and the speed had been reduced to 67 miles per hour when the collision occurred.

The interlocking machine and all interlocking equipment in the station were destroyed. Signal wires on a pole line south of signal 08 were broken, and signal cables and track throughout a distance of 385 feet south of signal 08 were badly damaged or destroyed. Undamaged portions of the signal system were tested after the accident occurred and functioned as intended.

The investigation indicates that the signal system was functioning properly when the accident occurred. The engineer of No. 75 was killed in the accident, and it could not be determined why the train was not operated in accordance with the signal indications.

Cause

It is found that this accident was caused by failure to operate the passenger train in accordance with signal indications.

Dated at Washington, D. C., this fourteenth day of January, 1952.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.