

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2548  
THE ATLANTIC COAST LINE RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
NEAR HORTENSE, GA., ON  
NOVEMBER 27, 1941

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## SUMMARY

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Railroad: Atlantic Coast Line  
Date: November 27, 1941  
Location: Hortense, Ga.  
Kind of accident: Derailment  
Train involved: Passenger  
Train number: 91  
Engine numbers: Diesel-electric 504 and 501  
Consist: 14 cars  
Estimated speed: 78 m. p. h.  
Operation: Timetable, train orders and  
automatic block-signal system  
Track: Single; tangent; practically level  
Weather: Clear  
Time: About 5:53 a. m.  
Casualties: 2 killed; 77 injured  
Cause: Accident caused by broken rail,  
as result of presence of transverse  
fissure

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2548

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

THE ATLANTIC COAST LINE RAILROAD COMPANY

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January 16, 1942.

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Accident near Hortense, Ga., on November 27, 1941, caused  
by broken rail, as result of presence of transverse  
fissure.

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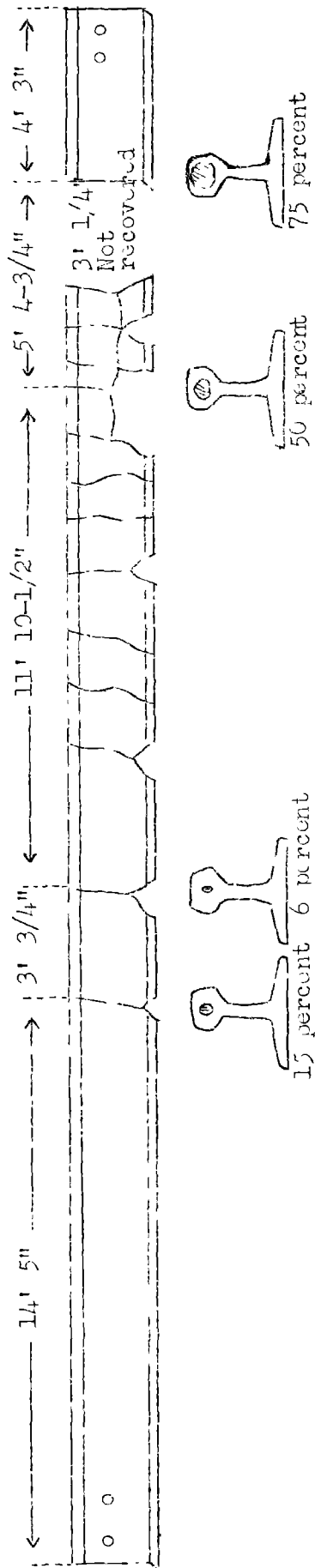
REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

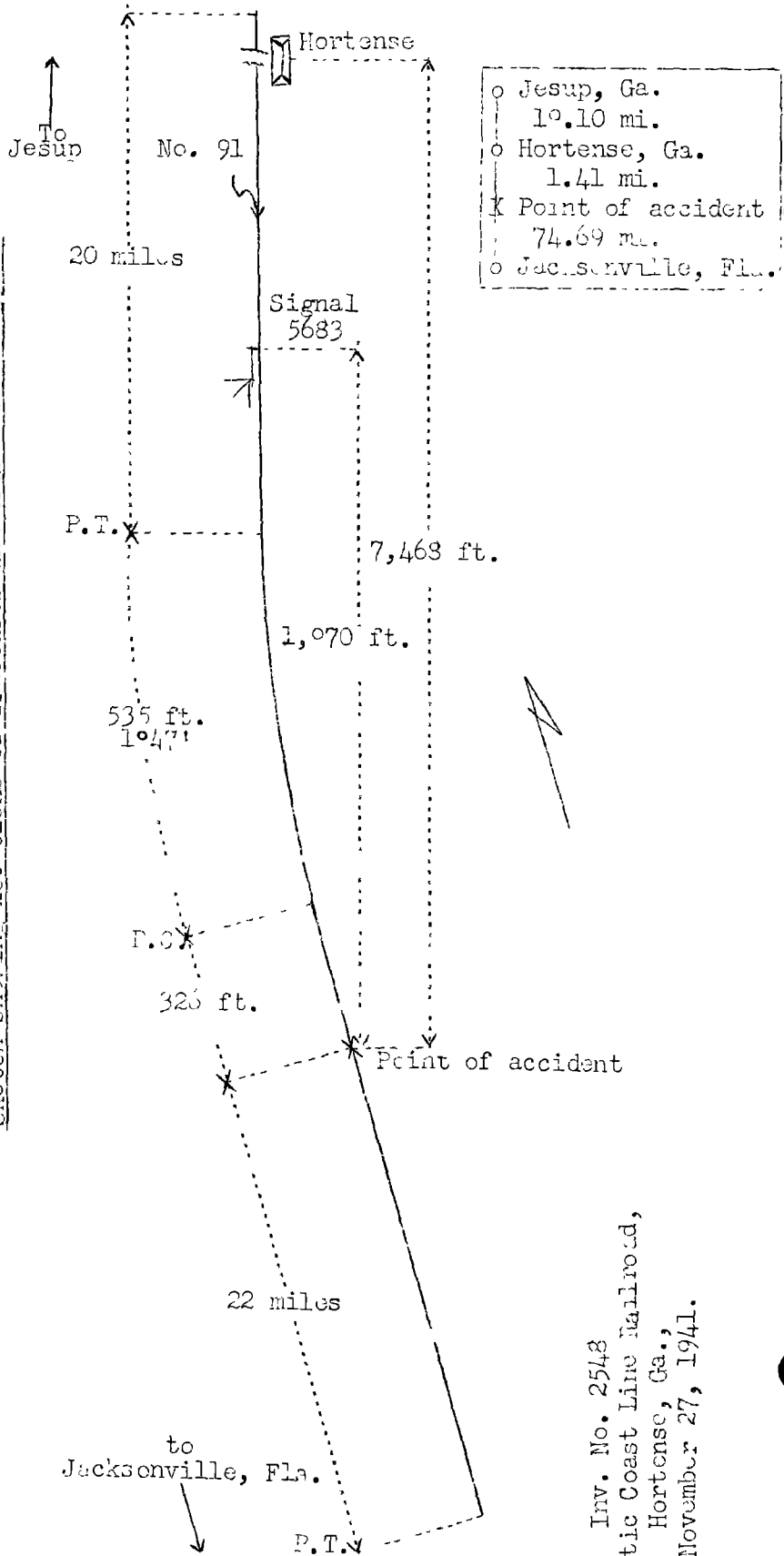
On November 27, 1941, there was a derailment of a passenger train on the Atlantic Coast Line Railroad near Hortense, Ga., which resulted in the death of 2 passengers, and the injury of 55 passengers, 6 Pullman employees, 1 train attendant, 13 dining-car employees and 2 train-service employees.

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<sup>1</sup>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.



Sketch showing locations of fractures and transverse fissures



Inv. No. 2548  
 Atlantic Coast Line Railroad,  
 Hortense, Ga.,  
 November 27, 1941.

### Location of Accident and Method of Operation

This accident occurred on that part of the Waycross District which extends between Jesup, Ga., and Jacksonville, Fla., via the Short Line, a distance of 95.2 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. The accident occurred at a point 7,468 feet south of the station at Hortense. As the point of accident is approached from the north there are, in succession, a tangent about 20 miles in length, a 1°47' curve to the left 535 feet, and a tangent extending 326 feet to the point of derailment and about 22 miles beyond. The grade is practically level.

In the vicinity of the point of accident the track is laid on a fill about 10 feet in height. The track structure consists of 100-pound rail, 39 feet in length, laid on 24 treated ties to the rail length; it is fully tieplated, single-spiked, equipped with 4-hole continuous angle bars and 4 anchors to each rail. The track is ballasted with 10 inches of slag on top of 6 inches of gravel.

Semi-automatic signal C5 and automatic signal 5683, which govern southward movements, are located, respectively, 12,323 feet and 1,970 feet north of the point of derailment.

In the vicinity of the point of accident the maximum authorized speed for the train involved is 80 miles per hour.

### Description of Accident

No. 91, a south-bound first-class passenger train, consisted of Diesel-electric engines 504 and 501, 3 express cars, 1 baggage-mail car, 1 dormitory car, 2 coaches, 1 dining car, 1 tavern car, 2 coaches and 3 Pullman sleeping cars, in the order named. The first to the sixth cars, inclusive, and the twelfth to the fourteenth cars, inclusive, were of conventional all-steel construction. The seventh to eleventh cars, inclusive, were streamlined, were of stainless-steel construction, and were equipped with tight-lock couplers. After a terminal air-brake test was completed this train departed from Savannah, Ga., 75.8 miles north of Hortense, at 4:30 a. m., according to the dispatcher's record of movement of trains, on time, departed from Jesup, 19.1 miles north of Hortense, at 5:33 a. m., 3 minutes late, passed Hortense, the last open office, at 5:50 a. m., 1 minute late, and while moving at a speed of 78 miles per hour as indicated by the speed-recorder tape it was derailed at a point 7,468 feet south of Hortense.

Engines 504 and 501 and the first five cars were not derailed and stopped with the front end of the first engine about 3,300 feet south of the point of derailment. The knuckle of the coupler at the rear of the fifth car was broken. The sixth and seventh cars, remaining coupled, stopped with the front end of the sixth car about 2,300 feet north of the fifth car. The rear truck of the seventh car was derailed. The eighth to eleventh cars, inclusive, remained coupled and were derailed to the east and stopped on their left sides with the front end of the eighth car on the roadbed and the rear end of the eleventh car about 30 feet east of the center-line of the track. These cars were considerably damaged. The twelfth car was derailed to the east, became separated from the eleventh car and stopped, considerably damaged, about 70 feet behind the eleventh car; it leaned at an angle of 75 degrees to the track and its front and rear ends were, respectively, about 45 feet and 30 feet east of the track. The thirteenth car, remaining coupled to the twelfth car, was derailed to the east and leaned at an angle of about 45 degrees to the track, with the front end 30 feet and the rear end 25 feet east of the track; it was slightly damaged. The fourteenth car was derailed, became separated from the thirteenth car, stopped about 20 feet behind it, and leaned to the east at an angle of 45 degrees, with the front and rear ends about 12 feet and 8 feet, respectively, east of the track. The rear end of the fourteenth car stopped 203 feet south of the point of derailment. About 400 feet of the track structure was destroyed.

The engines were in good mechanical condition and after the accident there was no indication of dragging equipment or of any obstruction having been on the track. At the point of derailment there was a broken rail on the east side of the track. A portion of the receiving end 4 feet 3 inches in length remained in place. The rail involved was a 39-foot, 100-pound R E section, open hearth rail, manufactured by the Tennessee Coal, Iron and Railroad Company in May, 1929, and laid during the same year. The heat number was 846518, Letter A, and the ingot number was 20.

The first break occurred on a tie at a point 4 feet 3 inches south of the receiving end of the rail. From this point southward 14 additional breaks in the rail occurred. At the first break a transverse fissure covering about 75 percent of the cross-sectional area of the head was observed. At points 9 feet 7-3/4 inches, 21 feet 6-1/4 inches, and 24 feet 7 inches south of the receiving end of the rail there were transverse fissures, which covered, respectively, 50 percent, 6 percent, and 15 percent of the cross-sectional area of the head. All pieces of the broken rail were recovered except a portion 3 feet 1/4 inch in length immediately south of the first fracture.

The weather was clear at the time of the accident, which occurred about 5:53 a. m.

The train-service employees injured were the conductor and the flagman.

#### Data

A detector car was last operated over the territory involved on January 23, 1940.

During the 30-day period preceding the day of the accident, the average daily movement over the line involved was 13.17 trains.

#### Discussion

No. 91 was moving at a speed of about 78 miles per hour when it became derailed in territory where the maximum authorized speed was 80 miles per hour. Prior to the time of the accident, the engine and cars had been riding smoothly, and there was no indication of defective track or equipment, nor of any obstruction on the track. The last automatic signal that No. 91 passed displayed proceed. The first knowledge the enginemen had of the accident was the emergency application of the brakes which occurred when the cars were derailed. The baggagemaster, who was in the fourth car, heard the coupler at the rear end of the fifth car break and then felt the brakes apply in emergency. The porter, who was in the seventh car, felt the brakes apply in emergency, and the car began to sway and to lurch. The conductor, who was in the ninth car, did not know of the derailment until that car began to sway and to lurch. Just before the general derailment occurred, the flagman observed from the rear vestibule of the rear car that fire was flying from car wheels near the middle of the train.

Soon after the derailment occurred, a broken rail with four transverse fissures was found on the east side of the track. The rail was broken into at least fifteen pieces. The first fissure was 4 feet 3 inches from the receiving end of the rail and covered about 75 percent of the cross-sectional area of the head of the rail but had not progressed to the outer surface at any point. The second fissure was 9 feet 7-3/4 inches from the receiving end of the rail and covered about 50 percent of the cross-sectional area of the head of the rail. The third and fourth fissures were, respectively, 21 feet 6-1/4 inches and 24 feet 7 inches from the receiving end and, respectively, covered 6 percent and 15 percent of the cross-sectional area of the head. The other breaks in the rail appeared to have resulted during the process of de-

railment. Apparently the derailment occurred at the first fissure and the rail did not become broken until after the front part of the train had passed this point.

The track involved was last inspected from a motor car 5 days before the day of the accident and no defective condition was found. A detector car was last operated over this district on January 23, 1940. A few days before this accident occurred a broken rail was found 1,560 feet from the point of accident. About 2 months prior to the day of the accident another broken rail was found. The Commission investigated the derailment of a passenger train, as a result of a broken rail, on March 30, 1941, that occurred at a point 5.5 miles north of the point where the accident here under investigation occurred. The investigations of these accidents disclose that there is need for more frequent and thorough inspections of the track on this line.

Cause

It is found that this accident was caused by a broken rail, as a result of a transverse fissure.

Dated at Washington, D. C., this sixteenth day of January, 1942.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.