INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2847

THE ATLANTIC COAST LINE RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR HORTENSE, GA., ON

NOVEMBER 18, 1944

SUMMARY

Railroad:	Atlantic Coast Line
Date:	November 18, 1944
Location:	Hortense, Ga.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	91
Engine numbers:	Diesel-electric 517, 754, 514
Consist:	18 cars
Estimated speed:	85 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Single; tangent; level
Weather:	Clear
Time:	About 8:50 a. m.
Casualties:	134 injured
Cause:	Broken rail, as result of presence of transverse fissure

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2847

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

THE ATLANTIC COAST LINE RAILROAD COMPANY

January 11, 1945.

Accident near Hortense, Ga., on November 18, 1944, caused by a broken rail, as a result of the presence of a transverse fissure.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On November 18, 1944, there was a derailment of a passenger train on the Atlantic Coast Line Railroad near Hortense, Ga., which resulted in the injury of 110 passengers, 2 railway-mail clerks, 1 Pullman employee, 17 dining-car employees, 3 train attendants and 1 train-service employee.

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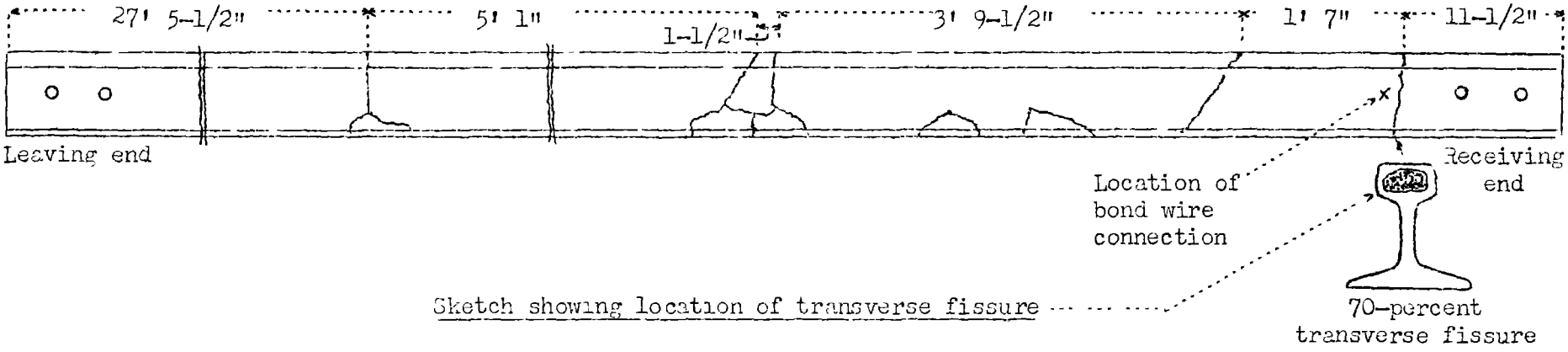
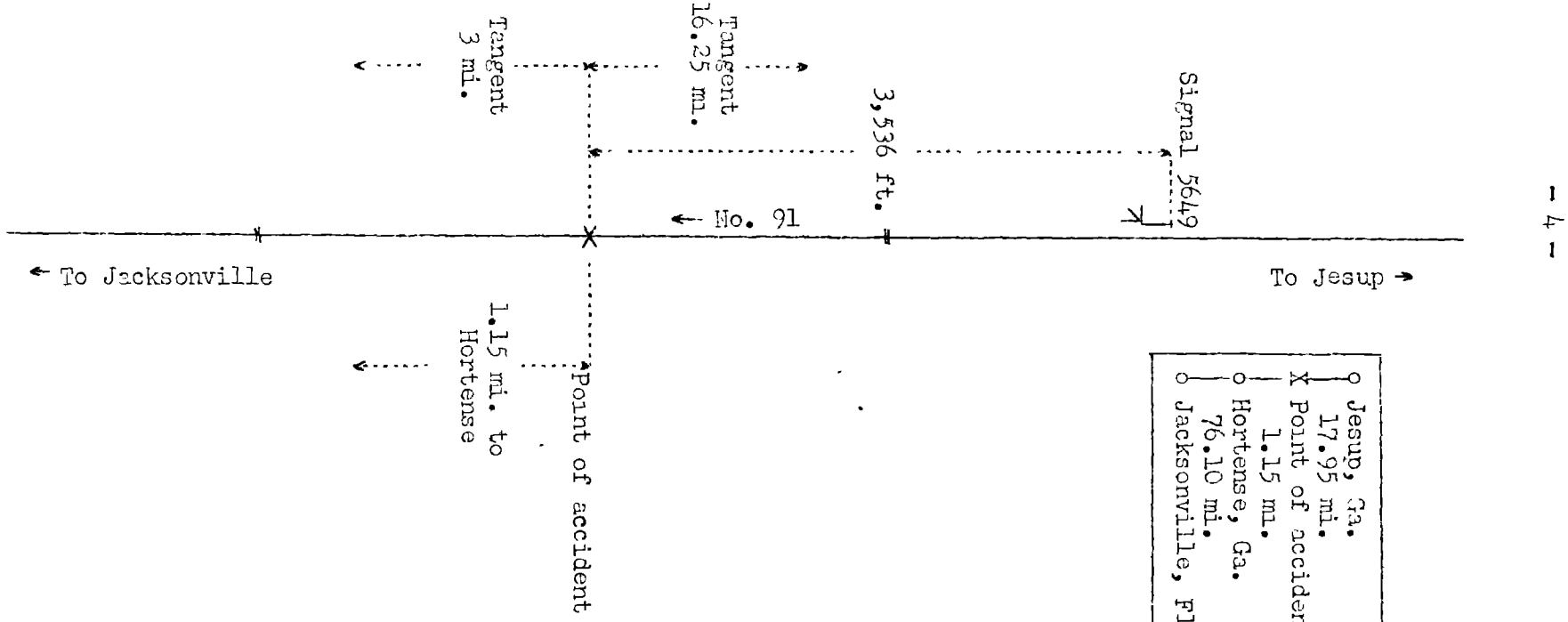
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Sketch showing location of transverse fissure



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Inv. No. 2847
Atlantic Coast Line Railroad
Hortense, Ga.
November 13, 1944

Location of Accident and Method of Operation

This accident occurred on that part of the Waycross District extending southward from Jesup, Ga., to Jacksonville, Fla., 95.2 miles. In the vicinity of the point of accident this was a single-track line over which trains were operated by timetable, train orders and an automatic block-signal system. The accident occurred on the main track 17.95 miles south of Jesup, at a point 1.15 miles north of Hortense. The main track was tangent throughout a distance of 16.25 miles north of the point of accident and 3 miles southward. The grade was practically level.

The track structure consisted of 100-pound rail, 39 feet in length, rolled in May, 1929, and laid in June, 1929, on 24 ties to the rail length. It was fully tieplated, single-spiked, provided with 4-hole angle bars 24 inches long and an average of 4 rail anchors per rail length, and was ballasted with slag and granite to a depth of 9 inches. The brand of the rail involved was Tenn, Number 868916, Letter B, ingot No. 21, 5-29.

Automatic signal 5649, governing south-bound movements, was 3,536 feet north of the point of accident.

The maximum authorized speed for the train involved was 90 miles per hour.

Description of Accident

No. 91, a south-bound first-class passenger train, consisted of Diesel-electric units 517, 754 and 514, one express car, one mail car, one express car, one passenger-baggage car, one coach, one dining car, one lounge car, four coaches, six Pullman sleeping cars and one dining car, in the order named. All cars were of steel construction. This train departed from Jesup, the last open office, at 8:35 a. m., 2 hours 8 minutes late, passed signal 5649, which displayed proceed, and while it was moving at an estimated speed of 85 miles per hour the rear truck of Diesel-electric unit 514, the first to the thirteenth cars, inclusive, and the front trucks of the fourteenth and the fifteenth cars were derailed.

The Diesel-electric units and the first car, remaining coupled, stopped with the front end of unit 517 about 3,050 feet south of the point of derailment. The first and second cars were separated about 1,890 feet. The second to the sixth cars, inclusive, stopped on their left sides and in various positions east of the track. The seventh to the thirteenth cars, inclusive, stopped practically upright and in various positions on the roadbed. The derailed equipment was considerably damaged.

The weather was clear at the time of the accident, which occurred about 8:50 a. m.

The train-service employee injured was the conductor.

Discussion

No. 91 was moving at a speed of about 85 miles per hour in territory where the maximum authorized speed was 90 miles per hour. The enginemen were maintaining a lookout ahead from the control compartment of the front Diesel-electric unit. Prior to the time of the accident the engines and the cars were riding smoothly, and there was no indication of defective equipment or track, nor of any obstruction having been on the track. When the front end of the first Diesel-electric unit passed over the point where the derailment occurred the enginemen heard an unusual noise, then the brakes became applied in emergency and the derailment occurred.

After the accident a broken rail was found on the east side of the track. The rail was broken in many pieces, 10 of which were recovered. The pieces were scattered throughout a considerable distance south of the point of derailment. The first break occurred between two ties at a point about 12 inches south of the receiving end of the rail. Through the head of the rail the break was practically flush with the south ends of the angle bars, but through the base it was about 1 inch south of the south ends of the angle bars. Through the web of the rail the break was north of the bond-wire connection. This piece of rail, the rail to which it was attached, and several rails from each side of the track were displaced from their normal locations as a result of the derailment. At the first break there was a transverse fissure which covered 70 percent of the cross-sectional area of the head of the rail and had progressed very close to the outer surface. The battered condition of the rail at the south end of this break indicated that this failure had occurred some time prior to the accident. Wheel marks on the north end of the rail at another break, which was 5 feet 4-1/2 inches south of the first break, indicated that the derailment occurred between these fractures. The other fractures appeared to have occurred during the derailment.

The track involved was last inspected by the section foreman and the signal maintainer about 36 hours prior to the accident, but no defective condition was observed. A rail-detector car was last operated over this territory on November 11, 194[illegible] This test disclosed transverse fissures in two rails that were replaced about 0.25 mile south of the point where the derailment occurred, but the detector tape indicated no defective condition of the rail in question. The roadmaster said a transverse fissure located in such close proximity to the rail joint would not be discovered by the rail-detector car.

Although the rail apparently was broken before the approach of No. 91, the automatic signals displayed proceed because the break was inside the bond-wire connection at the rail joint immediately north of the point of derailment.

During the 31-day period preceding the day of the accident the average daily movement in the vicinity of the point of accident was 27.16 trains. The territory under the supervision of the track foreman consisted of approximately 12 miles of main track, which he maintained with an average force of five men. The last general repair work this force performed in the vicinity of the point of accident was during August, 1944. After the accident examination of the track disclosed numerous irregularities throughout a distance of 3,420 feet immediately north of the point of derailment. Eighteen rail joints on the east side and twenty-three on the west side of the track were from 1/8 to 3/4 inch low. Tie plates were missing at five locations and spikes were missing at twenty-six locations. These conditions indicate that the operation of trains in this territory had been such that excessive stresses were being exerted upon the track structure, without adequate maintenance measures having been provided. It is obvious that the maximum authorized speed was excessive in view of the light rail in use and the inadequate maintenance of the track. After the occurrence of this accident, in the carrier's timetable issued December 17, the maximum authorized speed of the schedule involved was reduced from 90 to 75 miles per hour.

Cause

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

Dated at Washington, D. C., this eleventh day of January, 1945.

By the Commission, Commissioner Patterson.

W. P. BARTEL,
Secretary.

(SEAL)