

INTERSTATE COMMERCE COMMISSION

WASHINGTON

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INVESTIGATION NO. 2474

THE ATLANTA, BIRMINGHAM & COAST RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR WOODBURY, GA., ON

DECEMBER 29, 1940

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## SUMMARY

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Railroad: Atlanta, Birmingham & Coast  
Date: December 29, 1940  
Location: Woodbury, Ga.  
Kind of accident: Derailment  
Train involved: Passenger  
Train number: First 1  
Engine number: 229  
Consist: 3 cars  
Speed: 35-40 m. p. h.  
Operation: Timetable and train orders  
Track: Single; 4° right curve; 0.43 percent ascending grade southward  
Weather: Cloudy  
Time: About 9:35 a. m.  
Casualties: 2 killed; 1 injured  
Cause: Accident caused by spread rails, as a result of inadequate maintenance of track

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2474

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

THE ATLANTA, BIRMINGHAM & COAST RAILROAD COMPANY

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March 6, 1941

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Accident near Woodbury, Ga., on December 29, 1940, caused  
by spread rails, as a result of inadequate maintenance  
of track.

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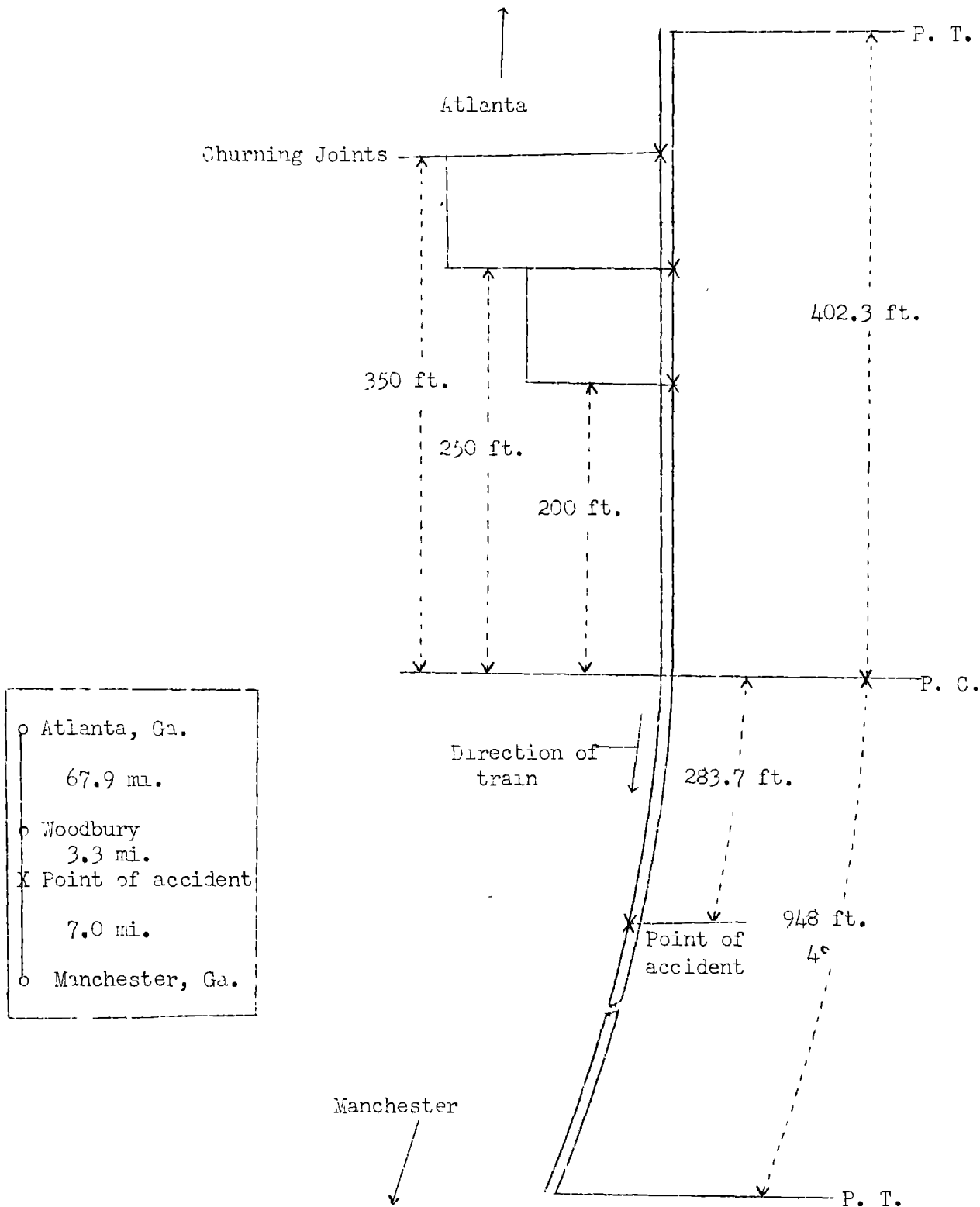
REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

On December 29, 1940, there was a derailment of a  
passenger train on the Atlanta, Birmingham & Coast Railroad  
near Woodbury, Ga., which resulted in the death of two em-  
ployees and the injury of one railway mail-clerk.

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<sup>1</sup>Under authority of section 17 (2) of the Interstate Com-  
merce Act the above-entitled proceeding was referred by the  
Commission to Commissioner Patterson for consideration and  
disposition.



Inv. No. 2474  
Atlanta, Birmingham & Coast Railroad  
Woodbury, Ga.  
December 29, 1940.

### Location and Method of Operation

This accident occurred on that part of the Birmingham Division designated as the Atlanta District which extends between Atlanta and Manchester, Ga., a distance of 78.2 miles. Timetable directions, which are north and south, are used in this report. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders; there is no block system in use. The derailment occurred at a point 3.3 miles south of Woodbury. As the point of accident is approached from the north there are, in succession, a tangent 4,951.8 feet in length, a 3° curve to the right 675.6 feet, a tangent 494.8 feet, a 4° curve to the left 2,562.6 feet, a tangent 402.3 feet, and a 4° curve to the right 948 feet; the derailment occurred on the last-mentioned curve at a point 283.7 feet south of its northern end. At the point of accident the grade for south-bound trains is 0.43 percent ascending.

The derailment occurred in a cut 20 feet in depth and 600 feet in length, at a point 400 feet from its northern end. South of this cut the track is laid on a fill about 15 feet in height and about 1,000 feet in length.

The track structure consists of 80-pound rail, 33 feet in length, laid on an average of 18 ties to the rail length; it is about 75 percent tieplated, single-spiked; and is ballasted with 6 to 8 inches of slag and cinders. The maximum superelevation of the curve involved was 4-1/4 inches and the gage varied between 4 feet 8-1/2 inches and 4 feet 9-1/2 inches. The superelevation at the point of derailment was 4 inches.

Rules for the Government of Employees read in part as follows:

#### ROADMASTERS

552. They are responsible for the safe condition and proper maintenance of track, roadway, \* \* \*.  
\* \* \*

#### TRACK FOREMEN

571. Track Foremen report to and receive instructions from the Roadmaster.

573. They are responsible for the proper inspection and safe condition of the track and roadway under their charge, \* \* \*.

The maximum authorized speed for the train involved was 50 miles per hour on tangents and 45 miles per hour on curves.

The weather was cloudy at the time of the accident, which occurred about 9:35 a. m.

### Description

First 1, a south-bound first-class passenger train, with Conductor Coleman and Engineman Richards in charge, consisted of engine 229, of the 2-8-2 type, one mail-express car, one passenger-baggage car and one coach, in the order named; all cars were of steel construction. This train departed from Atlanta, 67.9 miles north of Woodbury, at 7:15 a. m., according to the train sheet, on time, departed from Woodbury, the last open office, at 9:29 a. m., 1 minute late, and, while moving at a speed estimated to have been between 35 and 40 miles per hour, became derailed at a point 3.3 miles south of Woodbury.

The entire train, remaining coupled, was derailed to the left of the track. Engine 229 and its tender stopped, badly damaged, on their left sides down the embankment, 35 feet east of the track, parallel to it, and about 14 feet below its level; the front end of the engine was 377 feet south of the point of derailment. The first car was derailed to the left, stopped with its front end 25 feet and its rear end 10 feet east of the track, and leaned to the right at an angle of 45 degrees; this car was badly damaged. The second car stopped with its front end 15 feet east of the track and its rear end on the roadbed and leaned to the left at an angle of 10 degrees. The third car stopped upright and in line with the track. The second and third cars were slightly damaged.

The employees killed were the engineman and the fireman.

### Summary of Evidence

Conductor Coleman stated that at Atlanta the air brakes were tested and they functioned properly en route. As his train approached the point where the accident occurred, he was in the second car and the speed was 35 miles per hour; the train was riding smoothly. The first he knew of anything being wrong was when the brakes became applied, and then the train became derailed. After the accident occurred he talked with the engineman, who told him that the track spread under the engine. The conductor examined the track to the rear of the train a distance of 1,200 feet and observed marks on ties about 40 feet north of the rear car; north of these marks there was no indication of anything having been dragged. He observed that the curve involved had been resurfaced recently and new ties had been placed in the track. The accident occurred about 9:35 a. m., at which time the weather was cloudy.

Train Porter Johnson stated that as his train approached the point where the derailment occurred he was in the first car. He heard the engine whistle sounded several times and soon afterward the train became derailed. He opened the conductor's valve but the brakes were already applied. On December 28 he was on the tender of the engine of No. 2, a north-bound passenger train, as it rounded the curve involved at a speed of about 35 or 40 miles per hour; at that time there was no indication of rough or uneven track

Flagman Brennan stated that the speed of his train was 35 or 40 miles per hour at the time of derailment.

Chief Engineer Spell stated that he arrived at the scene of accident about 3:45 p. m. and examined the track. The first mark of derailment was a flange mark on a tie 5 inches inside the low rail at a point 283.7 feet south of the north end of a 4° curve to the right; the derailment occurred at the end of the temporary easement where the superelevation was being changed from 5-1/2 inches to 4 inches. At a point 6 feet south of the first mark there were flange marks on the inside surface of the web and the base of the high rail; these marks began just south of the point on the curve where work of increasing the superelevation was discontinued on December 27. The ties south of the point of accident were in fair condition. Southward from a point on the tangent about one rail length north of the north end of the curve involved the cross levels and the gage were as follows:

<u>Point</u>	<u>Elevation</u>	<u>Gage</u>
Center	0"	4' 8-7/8"
Joint	1/2"	4' 8-5/8"
Center (P. C.)	0"	4' 0"
Joint	1/4"	4' 8-5/8"
Center	1/3"	4' 8-5/8"
Joint	1/2"	4' 8-5/8"
Center	1"	4' 8-5/8"
Joint	1"	4' 8-3/4"
Center	1-1/2"	4' 8-1/2"
Joint	1-5/8"	4' 8-5/8"
Center	1-7/8"	4' 8-5/8"
Joint	2"	4' 8-1/2"
Center	2-1/4"	4' 8-5/8"
Joint	2-1/4"	4' 8-5/8"
Center	2-3/4"	4' 8-5/8"
Joint	3-1/4"	4' 8-1/2"
Center	3-1/4"	4' 8-3/4"
Joint	3-1/4"	4' 9-1/2"

<u>Point</u>	<u>Elevation</u>	<u>Gage</u>
Center	3-1/4"	4' 9-1/4"
Joint	4"	4' 9-1/4"
Center	4-1/4"	4' 9"
Joint	4-1/4"	4' 9-1/4"
Center	4"	4' 8-7/8"
(P.D.)Joint	4"	4' 9"

Throughout the easement at the north end of the curve about 12 ties were not spiked on the low rail but all ties were spiked on the high rail; he did not consider this condition unsafe. It was his opinion that wheels dropped inside the low rail, the high rail was overturned under the engine at the run-off of the superelevation, and the rails were spread. He did not consider the general condition of the track unsafe for the maximum authorized speed; however, subsequent to the accident, authorized speed in this vicinity was reduced. Standard gage of 4 feet 8-1/2 inches for curves up to 8 degrees was maintained. He said there was no evidence of curve-worn rail.

Assistant Engineer Cahill stated that he inspected the track the day after the accident occurred. About 100 feet north of the point of derailment the gage was 4 feet 9-1/2 inches and within a distance of about 600 feet immediately north of the point of derailment there were several churning joints but he did not make a record of their locations. Near a joint on the low rail five ties were separated from the rail about 3/4 inch and were loose in the ballast; just south of this joint several ties were decayed and the spikes were loose, and about 150 feet north of it on the high rail three adjacent ties near a joint were churning. He said that as the churning joints were on opposite rails it was possible for an engine moving over these joints to start to swing, but not sufficiently to be unsafe. In his opinion a joint that would depress 1-1/2 to 2 inches under the weight of a train indicated a bad track condition. Just north of the point where the track was destroyed there were marks on the ties and on the head of the outside rail, then flange marks appeared on the web and the base of the rail to the point where the track was destroyed. He said that probably track conditions contributed to the cause of the accident.

Roadmaster Lavery stated that he arrived at the scene of accident about 3:30 p. m., December 29, and inspected the track. In his opinion the general condition of the track was fair. There had been heavy rains during the week prior to the accident. He observed several churning joints at points north of the curve involved; at one of these joints five ties were loose; however, he considered the track at that point safe for regular speed. In one statement he estimated that the surface



of the track at this point would deflect 1/4 inch under the weight of a train; however, in another statement he said it would deflect as much as 2 inches but this condition was not dangerous. A section force had increased the superelevation on the curve involved to 4-1/2 inches to the end of the easement of the curve and from that point southward there was a run-off of 1/2 inch. The roadmaster inspected the track throughout a distance of 1,590 feet north of the point of derailment and found no evidence of equipment having been dragged. At the point of derailment flange marks on the ties between the rails were observed and they continued southward to the point where the track was destroyed. At a point 6 feet south of the first mark on the ties, marks appeared on the base and the web of an overturned rail on the high side of the curve. He observed churning ties, joints that would depress as much as 2 inches, loose spikes, wide gage, unspired ties, split ties, marks on ties and marks on the web of a rail, but he said that he did not have any idea as to what caused the derailment. He rode around the curve twice on the day preceding the accident, once on a freight train which was moving about 40 miles per hour, and the second time on a motor-car; he observed no indication of faulty track.

Section Foreman Lewis, in charge of the section involved, stated that since March, 1940, his force consisted of seven laborers. On December 27 his force was engaged in replacing ties in the vicinity of the point where the accident occurred. On the curve involved 36 ties were renewed within five rail lengths. Beginning at the north end of the curve involved, the superelevation was increased to 4-1/2 inches to a point three rail lengths north of the point where the derailment occurred; an allowance of 1/2 inch was made for settling. A run-off of 1/2 inch was provided throughout one rail length. He intended to resurface the curve after traffic had caused it to settle. He said that as a result of rain falling throughout a week prior to the accident there were several churning joints on his section. There were five bad ties near the first rail joint north of the point of accident. He did not think this condition contributed to the cause of the derailment; however, he thought five or six bad ties under one rail joint indicated poor track.

Engineman Jackson, of No. 4, a north-bound passenger train, stated that at 3:38 a. m., December 29, his train moved over the curve involved at a speed of about 30 miles per hour. He did not observe any indication of irregular or rough track.

Engineman Presley, of Extra 232, a north-bound freight train, stated that about 4 a. m., December 29, his train was moving at a speed of 35 or 40 miles per hour when it passed the point where the derailment afterward occurred and he did not

observe any rough or irregular track at the north end of the curve involved.

Machinist Epperson inspected engine 229 before it departed from Atlanta. He said the engine was in safe and suitable condition for service.

Assistant Master Mechanic Croom stated that he examined engine 229 at the point of accident and later at Manchester. There was no condition of the engine that could have contributed to the cause of the accident.

According to data furnished by the railroad company, engine 229 was given Class 5 repairs at Westwood Shop, Fitzgerald, Ga., and was released from the shop on December 22, 1940.

#### Observations of the Commission's Inspectors

The Commission's inspectors examined the track throughout a distance of 685 feet immediately north of the point of derailment and observed that on the tangent north of the curve involved numerous ties were loose in the ballast, and spikes were loose. At a point 350 feet north of the north end of the curve, two ties were churning at a rail joint in the west rail; 250 feet north of the curve two ties were churning in the east rail and spikes could be pulled by hand. At a point 200 feet north of the curve involved five adjacent ties had settled in the ballast under the east rail and were separated from the rail distances of 1/4 to 1/2 inch; this condition permitted the track to be deflected 1-1/2 to 2 inches under the weight of a train. At several places heads of spikes were above the base of the rail from 1/2 to 1-1/2 inches. On an average, four ties per rail length were in poor condition. Preceding the first mark of derailment there was no evidence of dragging equipment or of any obstruction having been on the track. The first mark of derailment was a flange mark on a tie 283.7 feet south of the north end of the curve and 5 inches inside the low rail; at a point 6 feet farther south flange marks appeared on the inside surface of the web and on the base of the high rail, which had been overturned.

#### Discussion

According to the evidence, First 1 was moving at an estimated speed of 35 to 40 miles per hour on a 4° curve to the right when the engine became derailed at a point 283.7 feet south of the northern end of the curve. The maximum authorized speed on this curve for the train involved was 45 miles per hour. The engine was in good mechanical condition and there was no indication of equipment having been dragged or of any obstruction on the track.

The first mark of derailment was found to be a flange mark 5 inches inside the low rail, and 6 feet farther south marks appeared on the inside surface of the web and base of the high rail, which had been overturned outward. It is apparent that wheels on the low side dropped inside the low rail and wheels on the outside dropped to the web of the overturned high rail. The track was only about 75 percent tieplated. Immediately north of the point of derailment there were split ties, decayed ties, ties bunched, loose spikes, rail-pulled spikes, spikes missing, churning joints, irregular superelevation on the curve, and gage varying from standard to as much as 1 inch in excess of standard. The churning joints and irregular surface of the track would cause the engine to swing laterally, and irregular gage would cause the engine to pivot horizontally. The lateral swinging and the pivoting would cause excessive pressure to be exerted against the gage side of both rails. Apparently, on account of insecure spiking, this pressure widened the gage sufficiently to permit wheels to drop inside the low rail.

It is possible that recent heavy rainfall had some bearing on the condition of the churning joints; nevertheless, the investigation of this accident disclosed that the track in the vicinity of the point of derailment was otherwise poorly maintained for the operation of trains at the speed authorized.

#### Cause

It is found that this accident was caused by spread rails, as a result of inadequate maintenance of track.

Dated at Washington, D. C., this sixth day of March, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.