INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3531

CENTRAL OF GEORGIA RAILWAY COMPANY

IN RE ACCIDENT

AT CHEWACLA, ALA., ON

JULY 29, 1953

SUMMARY

Date:	July 29, 1953
Railroad:	Central of Georgia
Location:	Chewacla, Ala.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	10
Engine number:	Diesel-electric units I.C. 4032 and I.C. 4033
Consist:	10 cars
Speed:	58 m. p. h.
Operation:	Timetable, train orders, and automatic block-signal system
Track:	Single; 3° curve; 0.81 percent descending grade eastward
Weather:	Clear
Time:	12:13 p. m.
Casualties:	14 injured
Cause:	Insecure condition of track

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3531

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

CENTRAL OF GEORGIA RAILWAY COMPANY

September 4, 1953

Accident at Chewacla, Ala., on July 29, 1953, caused by insecure condition of track.

REPORT OF THE COMMISSION[1]

CLARKE, Commissioner:

On July 29, 1953, there was a derailment of a passenger train on the Central of Georgia Railway at Chewacla, Ala., which resulted in the injury of 10 passengers, 1 Pullman Company employee, and 3 dining-car employees.

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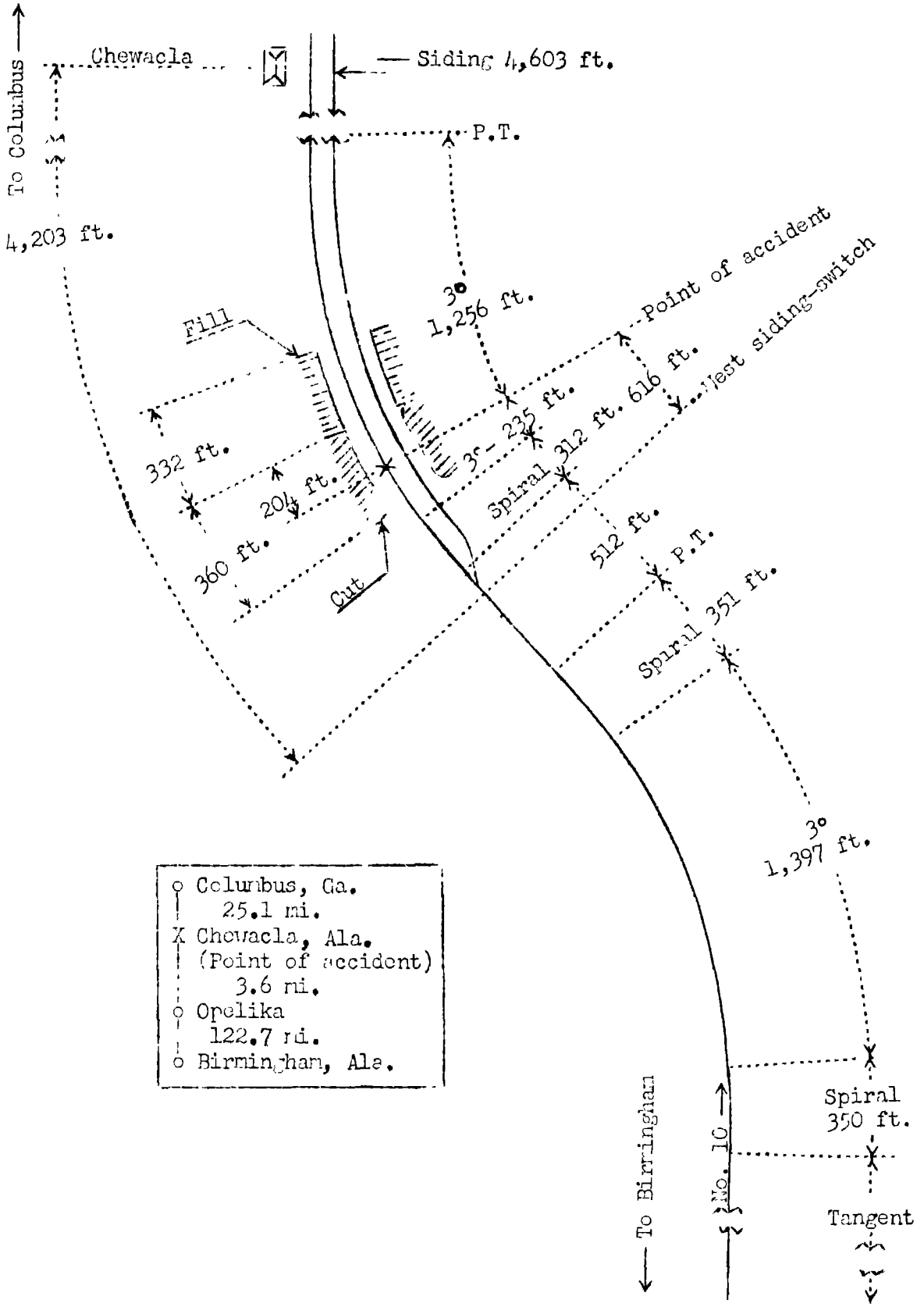
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.



Report No. 3531
Central of Georgia Railway Company
Chewacla, Ala.
July 29, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the Columbus Division extending between Birmingham, Ala., and Columbus, Ga., 151.4 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 Chewacla, 126.3 miles east of Birmingham, a siding 4,603 feet in length parallels the main track on the south. The west switch of this siding is 4,203 feet west of the station. The accident occurred on the main track at a point 616 feet east of the west siding-switch. From the west the track is tangent throughout a considerable distance and then there are, in succession, a spiral 350 feet in length, a 3° curve to the left 1,397 feet, a spiral 351 feet, a tangent 528 feet, a spiral 312 feet, and a 3° curve to the right 255 feet to the point of accident and 1,256 feet eastward. The grade for east-bound trains is 0.81 percent descending at the point of accident. In the vicinity of the point of derailment the track is laid in a cut, the north wall of which rises to a height of about 8 feet above the level of the tops of the rails. The east end of the cut is 204 feet east of the point of derailment. Immediately east of this cut the track is laid on a fill about 8 feet in height and 332 feet in length.

On the curve on which the accident occurred the track structure consists of 112-pound rail, 39 feet in length, laid new in November, 1946, on an average of 24 treated ties to the rail length. It is fully tieplated with double-shoulder tieplates. Each rail is double-spiked on the gage side and single-spiked on the field side. The track structure is provided with one anchor spike per tieplate, 4-hole 24-inch joint bars, and 8 rail anchors per rail. It is ballasted with slag to a depth varying from 8 to 10 inches below the bottoms of the ties. At the point of accident the specified curvature was 3 degrees and the specified superelevation was 4 inches.

Special instructions issued to track supervisors and section foremen read in part as follows:

* * *

Supervisors and Foremen must acquaint themselves with locations where track is tight enough to involve danger of buckling and promptly take necessary steps to relieve the danger * * *

* * *

In all classes of work during hot weather not over two ties in a place should be removed before replacing the new ties and spiking them up. All new ties must be spiked as soon as put in and before trains are allowed to pass over. The least possible amount of track should be opened up in connection with the work and must be filled in to top of ties close behind.

* * *

The maximum authorized speed for passenger trains with conventional equipment is 60 miles per hour.

Description of Accident

No. 10, an east-bound first-class passenger train, consisted of Diesel-electric units IC 4032 and IC 4033, coupled in multiple-unit control, one express car, one mail-express car, four express cars, two coaches, one cafe-lounge car, and one sleeping car, in the order named. All cars were of all-steel construction. The Diesel-electric units and the eighth car were equipped with tightlock couplers. This train departed from Opelika, 3.6 miles west of Chewacla and the last open office, at 12:08 p. m., 7 minutes late, and while it was moving on a 3° curve to the right at a speed of 58 miles per hour the rear two cars were derailed at a point 616 feet east of the west siding-switch at Chewacla.

A separation occurred between the eighth and the ninth cars. The forward portion of the train stopped with the rear end of the eighth car about 2,463 feet east of the point of derailment. A separation occurred between the derailed cars. The ninth car stopped on its left side, with the front end against the north wall of a cut and about 540 feet east of the point of derailment. The front end and the rear end of this car were, respectively, 19.5 feet and 22.5 feet north of the center-line of the track. The tenth car stopped north of the track, immediately west of the ninth car and approximately in line with it. It leaned to the north at an angle of about 15 degrees. The front end and the rear end of this car were, respectively, 23 feet and 17 feet north of the center-line of the track. The ninth car was badly damaged, and the tenth car was considerably damaged. Inflammable materials in the kitchen section of the ninth car became ignited, and this car, which was damaged by the derailment, was further damaged by fire.

The weather was clear at the time of the accident, which occurred about 12:13 p. m.

Discussion

As No. 10 was approaching the point where the accident occurred the speed was about 58 miles per hour. The engineer and the fireman were maintaining a lookout ahead from the control compartment at the front of the locomotive. The baggageman-express messenger was in the sixth car, the conductor and the flagman were in the seventh car, and the train porter was in the eighth car. The engineer made a service application of the brakes as the train was closely approaching the curve on which the accident occurred. The enginemen said that the locomotive was riding smoothly and there was no indication of defective track. They first became aware that anything was wrong when the brake-pipe pressure became depleted as a result of the derailment. The baggageman-express messenger said that as the train was moving on the curve on which the accident occurred there was an unusual lateral movement of the sixth car followed by a series of bumps. He said that stacked express packages were thrown down by the violent movements. The conductor said that soon after the seventh car passed the west siding-switch there was an unusual noise and he heard pieces of ballast strike the underside of the car. Then there was an unusual vertical movement, and he proceeded to the end of the car and opened the conductor's valve. He said that the absence of an exhaust from the valve indicated to him that the brakes already were applied in emergency. The train porter said that there were several violent vertical movements of the eighth car immediately before the brakes became applied in emergency.

Examination of the equipment of No. 10 after the accident occurred disclosed no condition which could have caused or contributed to the cause of the accident. Examination of the track disclosed that a section of track 233 feet in length on the 3° curve to the right was deflected outward. The maximum deflection, which was 2 feet 11 inches, was located 124 feet east of the west end of the deflected section. The first mark of derailment was a flange mark which appeared on the gage side of the head of the north or high rail 2 feet 11 inches west of the point of maximum deflection. This mark extended eastward and inclined to the top of the rail in a distance of 7 feet 8 inches, then crossed the head diagonally to the north side of the rail in a distance of 2 feet 8 inches.

Other marks on the rails and ties east of the initial point of derailment indicated that wheels had become derailed on both sides of both rails. The north rail was displaced outward and off the ends of the ties throughout a distance of 390 feet eastward from the point of derailment. The tops of the ties, joint bars, tieplates, and other parts of the track structure on the south side of the south rail were marked at irregular intervals throughout a distance of 317 feet. In this area the south rail was loosened from the spikes at many points and was distorted with alternate bends to the right and left. The track structure was badly damaged throughout a distance of 428 feet.

The investigation disclosed that on the day of the accident a section force consisting of a foreman and six sectionmen was engaged in renewing ties on the curve on which the accident occurred. At the time of the accident 20 ties had been replaced within a distance of 565 feet, which extended between points 116 feet east and 449 feet west of the point of derailment. In renewing these ties the sectionmen had removed sufficient ballast at the location of each tie to permit the removal of the tie. The spikes in these ties were then pulled and the tieplates were removed. The foreman said that a track jack was used only to the extent necessary in order to remove the tieplates. He said that in each instance in which the jack was used it was placed next to the tie which was to be removed and the rail was elevated only a sufficient distance to free the tieplate. He did not think the rails were raised high enough to disturb the adjacent ties in the ballast. As each tie was removed a new tie was immediately put in place. After tieplates were applied and placed on the new ties, sufficient ballast was tamped under the ends of the ties to raise the ties against the bottoms of the rails. In this vicinity the distance between tie-centers was an average of 19.5 inches. The distances between tie replacements at three points were, respectively, 7 feet, 4 feet, and 5 feet. The first two points were located west of the point of derailment. Tie renewals at six points were separated by distances varying between 13 feet and 19 feet, three were at distances varying between 28 feet and 30 feet, four were at distances varying between 40 feet and 46 feet, and three were at distances in excess of 50 feet, the maximum of which was 84 feet. When the accident occurred sufficient ballast had been tamped under the ends of the new ties to raise the ties against the bottoms of the rails, but the ties had not been spiked and the ballast which had been removed from the cribs had not been replaced.

A west-bound freight train passed Chewacla about 30 minutes before the accident occurred. After this train passed, the section foreman walked eastward from the west siding-switch to the point at which the sectionmen were working and instructed the men to take their lunch period. The foreman said that at this time the track was in normal alinement and he observed no defective condition. The temperature had risen from about 76 degrees at 7:30 a. m. to about 88 degrees at 10:30 a. m., and the foreman observed that the rail joints were closed. He thought that the expansion of the rails was normal for summer weather.

After the accident occurred it was found that the displacement of the track began at a point about 8 feet west of the 565-foot section of track in which 20 ties had been renewed. This section of track remained in normal alinement when a west-bound freight train passed at a speed of about 35 miles per hour, but it was deflected outward as No. 10 moved over the curve at a speed of about 58 miles per hour. No work was done on the track between the times the two trains passed, and it appears that during the process of renewing ties before the freight train passed the section force disturbed and loosened the track structure to the extent that it did not provide normal resistance to the lateral stresses exerted by the movement of No. 10 on the curve. The south or low rail was not damaged in the derailment. When the track was being repaired after the derailment occurred it was necessary to cut a section 3 inches long from this rail in order to restore the normal alinement of the curve. From this it appears that the rails were under some compression as a result of the heat. However, the ends of the rails bore no indications that the joints had been under excessive compression, and there were no indications that the rails in the vicinity of the point of accident had been creeping appreciably in either direction. Evidently, the combination of compressed rails, the loosening of the track structure in replacing ties, the absence of spikes in the renewed ties, and the lateral pressure exerted by the movement of No. 10 over the curve in question caused the track to be deflected outward.

The section foreman was familiar with the instructions which required that during hot weather not more than two adjacent ties were to be removed from the track at the same time and that replacement ties were to be spiked immediately after they were placed in the track, but because the tie renewals were interspersed among many other ties he planned to expedite the work by completing the spiking and restoring the ballast after all the ties were placed.

Cause

It is found that this accident was caused by insecure condition of the track.

Dated at Washington, D. C., this fourth day of September, 1953.

By the Commission, Commissioner Clarke.

(SEAL)

GEORGE W. LAIRD,

Acting Secretary.