INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3618

THE NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY COMPANY

IN RE ACCIDENT

AT DANLEY, TENN., ON

APRIL 15, 1953

SUMMARY

Date:	April 15, 1955
Railroad:	Nashville, Chattanooga & St. Louis
Location:	Danley, Tenn.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	94
Engine number:	Diesel-electric units 806 and 911
Consist:	11 cars
Estimated speed:	35 m. p. h.
Operation:	Signal indications
Track:	Single; 2° curve; 1.00 percent ascending grade northward
Weather:	Clear
Time:	4:45 p. m.
Casualties:	6 injured
Cause:	Defective track due to malicious tampering

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3618

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

THE NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY COMPANY

May 9, 1955

35-B

Accident at Danley, Tenn., on April 15, 1955, caused by defective track due to malicious tampering.

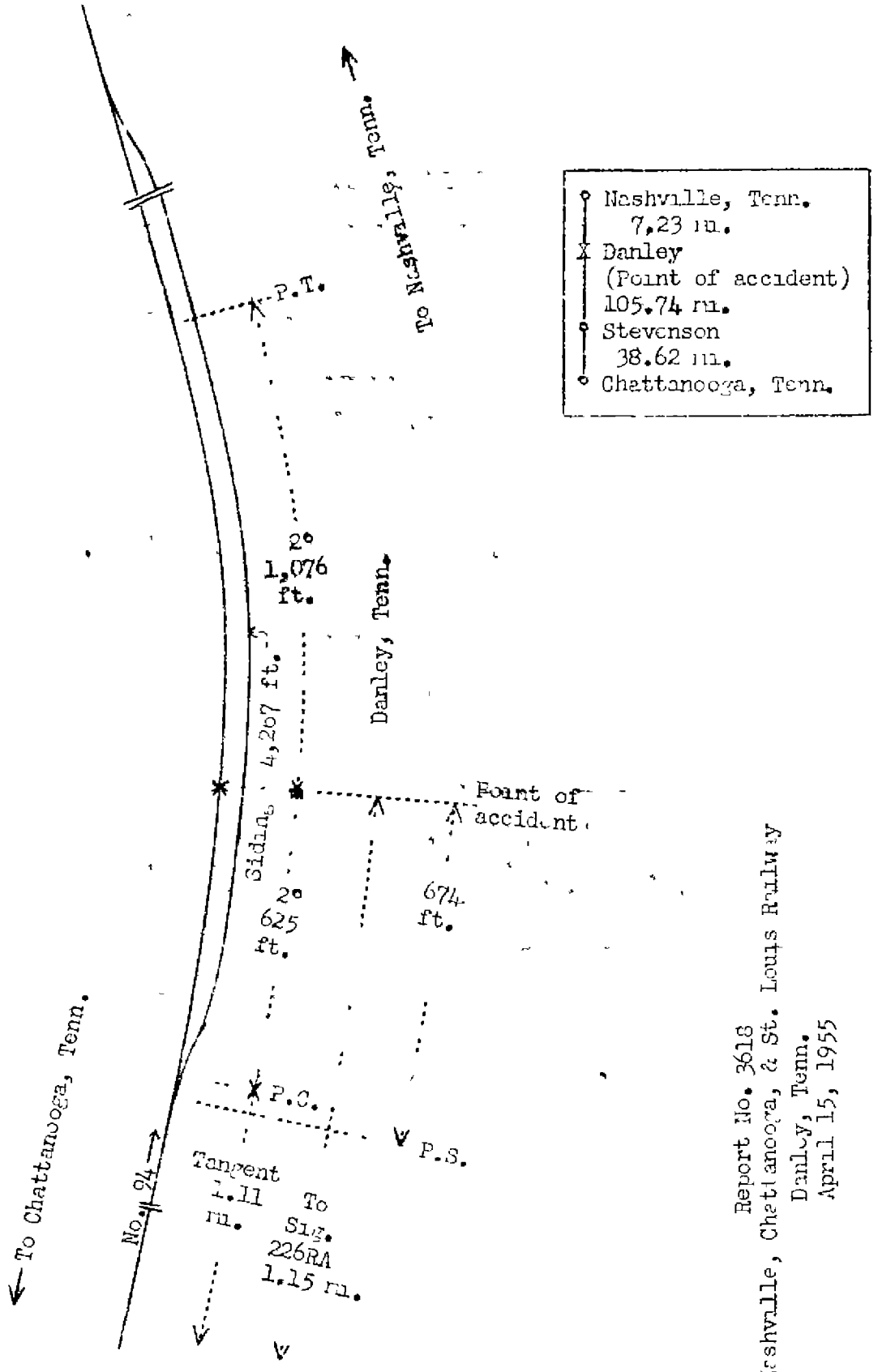
REPORT OF THE COMMISSION[1]

CLARKE, Commissioner:

On April 15, 1955, there was a derailment of a passenger train on the Nashville, Chattanooga & St. Louis Railway at Danley, Tenn., which resulted in the injury of four passengers, one railway mail clerk, and one train porter.

---

[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. 3618
Nashville, Chattanooga, & St. Louis Railway
Danley, Tenn.
April 15, 1955

Location of Accident and Method of Operation

This accident occurred on that part of the Chattanooga Division extending between Chattanooga and Nashville, Tenn., 151.59 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by signal indications. At Danley, 144.36 miles north of Chattanooga, a siding 4,267 feet in length parallels the main track on the east. The accident occurred on the main track at a point 674 feet north of the south siding-switch at Danley. From the south there is a tangent 1.11 miles in length and a 2° curve to the left 625 feet to the point of accident and 1,076 feet northward. The grade is 1.00 percent ascending northward at the point of accident.

In the vicinity of the point of accident the structure of the main track consists of 132-pound rail, 39 feet in length, laid new in 1950 on an average of 22 treated ties to the rail length. It is fully tieplated with double-shoulder canted tieplates and is spiked with two rail-holding spikes and two plate-holding spikes per tieplate. It is provided with 6-hole 36-inch joint bars and an average of 12 rail anchors per rail. It is ballasted with crushed limestone to a depth of 12 inches below the bottoms of the ties. At the point of accident the specified superelevation is 3-1/2 inches.

Semi-automatic signal 226RA, governing north-bound movements on the main track, is located 1.15 miles south of the point of accident. This signal is of the color-light type and forms part of a traffic-control system which extends between Stevenson, 38.62 miles north of Chattanooga, and a point 1.90 miles south of Nashville. Electric switch locking is provided at the siding switches at Danley.

In the vicinity of the point of accident the maximum authorized speed for passenger trains is 50 miles per hour.

Description of Accident

No. 94, a north-bound first-class passenger train, consisted of Diesel-electric units 806 and 911, coupled in multiple-unit control, six baggage cars, one mail car, one baggage car, two coaches, and one sleeping car, in the order named. All cars were of all-steel construction. This train departed from Chattanooga at 12:16 p. m., 36 minutes late, and passed signal 226RA, which indicated Proceed, at 4:43 p. m , 1 hour 14 minutes

late. While it was moving at an estimated speed of 35 miles per hour the second to the tenth cars, inclusive, and the front truck of the eleventh car were derailed at a point 674 feet north of the south siding-switch at Danley.

The train stopped with the front end of the locomotive 911 feet north of the point of derailment. A separation occurred between the seventh and eighth cars, and these cars stopped with the south end of the seventh car 6 feet 6 inches north of the north end of the eighth car. There were no other separations between the units of the train. The derailed equipment was derailed toward the east and stopped approximately in line with the track. The second, third, and eleventh cars remained upright, the seventh car leaned toward the west at an angle of approximately 30 degrees, and the other derailed cars leaned toward the east at angles of from 45 to 50 degrees. The eleventh car was slightly damaged, and the other derailed cars were somewhat damaged.

The weather was clear at the time of the accident, which occurred at 4:45 p. m.

Discussion

As No. 94 was approaching the point where the accident occurred the enginemen were maintaining a lookout ahead from their positions in the control compartment at the front of the locomotive. The members of the train crew were in the ninth car of the train. The engineer said that as the train approached the curve on which the accident occurred the speed was reduced from 40 miles per hour, as indicated by the speed-indicating device, to about 35 miles per hour. The members of the crew said that the locomotive and the cars were riding smoothly, and until the brakes became applied in emergency as a result of the derailment they noticed no indications of defective track or equipment.

Examination of the locomotive and cars after the accident occurred disclosed no defective condition which could have caused or contributed to the cause of the derailment. Examination of the track throughout a considerable distance immediately south of the point of derailment disclosed no indications of dragging equipment nor of an obstruction having been on the track.

Examination of the track at the point of derailment disclosed that all rail fastenings had been removed from a rail in the east side of the track and that this rail had been displaced as No. 94 was passing over it. Northward from a point about 13 feet north of the south end of a rail, all

rail-holding spikes had been removed throughout the remainder of the length of the rail. The plate-holding spikes had not been disturbed, and this rail remained in normal position on the tie plates. The joint bars had been removed from each end of the next rail to the north. This rail had been displaced from its position in the track as the train was passing over it, and it was found about 15 feet west of the center-line of the track and parallel to it. It was about 9 feet north of its original position in the track. A number of the ties which had been under this rail had been demolished by derailed equipment. Examination of the ties on which the tie plates remained in place disclosed that all rail-holding spikes throughout the length of the rail had been removed. Apparently the plate-holding spikes had not been disturbed prior to the time of the derailment. Throughout the area in which the rail-holding spikes had been removed the ties and tie plates bore fresh tool marks which appeared to have been made by the heel of a claw bar used in removing the spikes. The locations and appearance of these marks indicated that the bar had been used by a person experienced in track work. The marks were fresh, and the absence of dust or dirt in the indentations indicated that they had been made within a short time prior to the time of the derailment. At the receiving end of the next rail to the north of the displaced rail, the field side of the head of the rail was heavily battered. The south end of this rail had been forced to the west by derailed equipment, and the east wheels of the following derailed equipment had passed to the right of the rail. North of this point the rails and ties had been displaced by derailed equipment throughout a distance of about 390 feet. There were no broken rails and no other separations between the rails.

The four joint bars which had been removed from the track were found about 50 feet east of the track and opposite the original location of the displaced rail. The appearance of these joint bars indicated that they had been removed from the track only a short time before they were found, and the positions in which they were found indicated that they had been carried to that point and had not been thrown from the track during the derailment. Track bolts, nuts, and spikes were also found in this vicinity. The bolts were intact and the threads had been freshly oiled, indicating that the nuts had been removed with a wrench. The spikes had the appearance of having been removed from the track only a short time before they were found. There were very few marks on the rail which was displaced from the track, and there was no batter on the ends. Apparently this rail was thrown out of the track almost immediately after it was dislodged from its normal position.

The rail-head bond at the south end of this rail had been pulled apart, evidently at the time the rail was dislodged, and the bond at the north end of the rail had been sheared off by derailed equipment.

Indications were found that an attempt had also been made to remove the joint bars from a joint in the west rail. At the second joint south of the south end of the displaced rail the fourth bolt from the north end of the joint bar had been removed. Fresh tool marks on the nuts on the field side of the first, third, and fifth bolts from the north end of the joint bar indicated that attempts had been made to remove these nuts. The tool marks were similar to those made by a standard track wrench.

Apparently the person or persons who removed the rail fastenings from the east rail left the rail in place and did not disturb the bonds at the ends of the rail. The train dispatcher said that he noticed nothing unusual in the operation of the control machine of the traffic-control system on the day of the accident. Signal 226RA displayed the normal aspect for the movement of No. 94, and the enginemen of No. 94 noticed no unusual condition as the locomotive approached and passed over the point at which the derailment occurred. If the rail had been displaced and the bond wires broken before No. 94 passed signal 226RA, the signal should have indicated Stop. The signal system was tested after the track was repaired, and it functioned properly.

On April 9 the track supervisor inspected the track in the vicinity of the point of accident from a track motor-car, and again from a locomotive on April 14. He detected no defective or unusual condition. A south-bound freight train consisting of 4 Diesel-electric units, 33 cars, and a caboose passed the point of accident about 6 hours before the accident occurred. The crew of this train noticed no unusual condition of the track.

In the immediate vicinity of the point of accident there are no houses or highways, and it is probable that persons working on the track or tampering with the track at this point would not attract attention. At the time this investigation was completed the person or persons who removed the rail fastenings had not been apprehended.

Cause

This accident was caused by defective track due to malicious tampering.

Dated at Washington, D. C., this ninth day of May, 1955.

By the Commission, Commissioner Clarke.

(SEAL)

HAROLD D. McCOY,

Secretary.