INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3188

THE BALTIMORE AND OHIO RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR LAUREL, MD., ON

JUNE 10, 1948

SUMMARY

Railroad:	Baltimore and Ohio
Date:	June 10, 1948
Location:	Laurel, Md.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	4
Engine number:	Diesel-electric 51A-78
Consist:	9 cars
Speed:	75 m. p. h.
Operation:	Signal indications
Track:	Double; 2°36' curve; 0.57 percent ascending grade eastward
Weather:	Clear
Time:	11:21 a. m.
Casualties:	1 killed; 53 injured
Cause:	Insecure condition of track

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3188

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

THE BALTIMORE AND OHIO RAILROAD COMPANY

July 12, 1948

Accident near Laurel, Md., on June 10, 1948, caused by insecure condition of the track.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On June 10, 1948, there was a derailment of a passenger train on the Baltimore and Ohio Railroad near Laurel, Md., which resulted in the death of 1 Pullman employee, and the injury of 32 passengers, 1 Pullman employee, 11 dining-car employees, 1 inspector of passenger service, 1 railroad real-estate agent, 5 track laborers, 1 train porter, and 1 train-service employee. This accident was investigated in conjunction with a representative of the Public Service Commission of Maryland.

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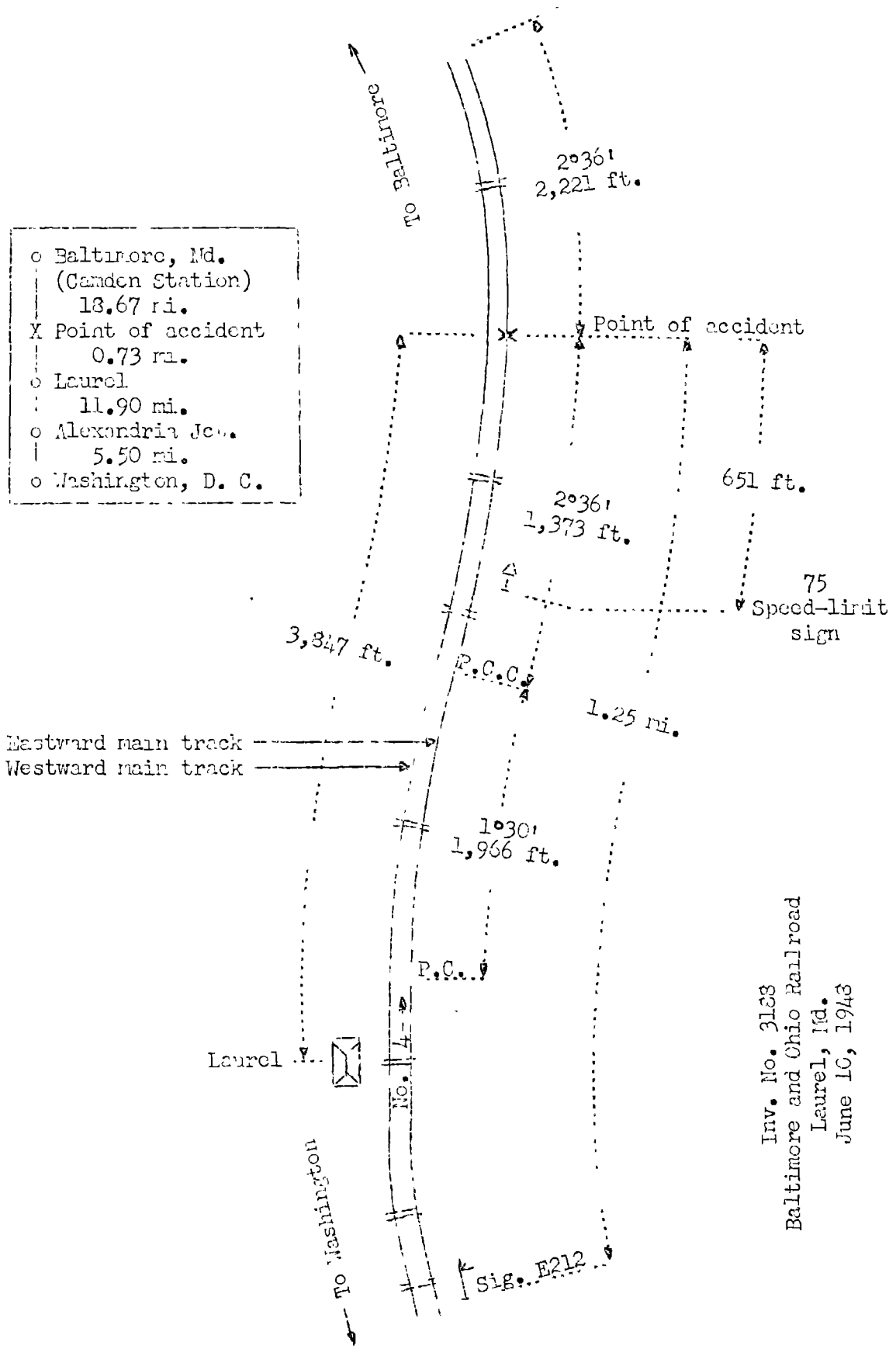
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3133
Baltimore and Ohio Railroad
Laurel, Md.
June 10, 1943

Location of Accident and Method of Operation

This accident occurred on that part of the Baltimore Division extending between Washington, D. C., and Baltimore, Md., 36.8 miles, a double-track line, over which trains moving with the current of traffic are operated by signal indications and an automatic train-stop system. The accident occurred on the eastward main track 18.15 miles east of Washington, at a point 3,847 feet east of the station at Laurel. From the west there is a 1°30' curve to the right 1,966 feet in length, then a compound curve to the left, having a maximum curvature of 2°36', 1,373 feet to the point of derailment and 2,221 feet eastward. The grade is 0.37 percent ascending eastward.

The track structure consists of 131-pound rail, 39 feet in length, laid new in 1944 on an average of 24 treated ties to the rail length. It is fully tieplated with double-shoulder tie plates, spiked with one rail-holding and one tie-plate-holding spike on each side of each rail, and provided with 4-hole joint bars 24 inches in length and an average of 8 rail anchors per rail length. It is ballasted with crushed stone to a depth of 18 inches. At the point of accident the specified curvature was 2°36' and the superelevation was 7 inches. Immediately prior to the time of the accident the track structure in question was materially altered by maintenance-of-way employees engaged in replacing and respacing ties.

Automatic signal E212, governing east-bound movements on the eastward main track, is 1.25 miles west of the point of accident.

This carrier's maintenance-of-way rules read in part as follows:

TRACK FOREMEN

150. (a) * * *

* * *

(c) He must see that the track is in good line and surface, and properly spiked; that it is in true gauge; that the cross ties are properly spaced, lined and tamped; that the roadbed is in good order; * * *

* * *

(h) Any work that interferes with the safe passage of trains at full speed is an obstruction and must not be attempted without full protection in both directions. If merely a reduction in speed is necessary, he must have Caution signals placed just beyond the obstruction on the engineman's side of the track. * * *

* * *

METHODS OF SURFACING

365. The following methods of surfacing will be considered good practice:

* * *

* * *

(b) Spike the rails to proper gauge, drive down all spikes and tighten the bolts.

* * *

(f) Tamp both faces of the tie uniformly and solidly for a distance of 18 inches from each side of the rail. * * *

* * *

(u) Do not permit a train to pass while adjacent or alternating ties are out of the track, or unspiked.

* * *

The maximum authorized speed for the train involved is 80 miles per hour on tangent track. A permanent speed-limit sign bearing the number 75 is located south of the eastward main track at a point 651 feet west of the point of derailment.

Description of Accident

No. 4, an east-bound first-class passenger train, consisted of Diesel-electric units 51A and 78, coupled in multiple-unit control, one baggage car, one passenger-baggage car, three coaches, one dining car, and three sleeping cars, in the order named. All cars were of all-steel construction. This train departed from Washington at 11:02 a. m., 2 minutes late, passed Alexandria Jct., 5.5 miles east of Washington and the last open office, at 11:12 a. m., 4 minutes late, passed signal E212, which displayed proceed, and while moving at a speed of about 75 miles per hour the sixth to ninth cars, inclusive, were derailed.

Separations occurred between the fifth and sixth cars, and between the seventh and eighth cars. The sixth and seventh cars, remaining coupled, stopped on their right sides, south of the eastward main track and parallel to it, with the east end of the sixth car 671.5 feet east of the point of derailment. The eighth and ninth cars, remaining coupled, stopped practically upright, with the east end of the eighth car 343 feet east of the point of derailment and 24.6 feet south of the eastward main track. The engine and the first five cars stopped, undamaged, with the front end of the engine about 1,800 feet east of the point of derailment. All of the derailed cars were badly damaged.

No. 509, a west-bound first-class passenger train, moving on the westward main track at a speed of about 75 miles per hour, met the engine and the first 5 cars of No. 4 about 1,200 feet east of the point of derailment. The leading unit of No. 509 struck a rail which had become displaced as a result of the derailment of No. 4 and which was suspended over the westward main track. The rail punctured the fuel tank of the Diesel-electric engine, the fuel became ignited, and the engine was badly damaged by fire. No. 509 was not derailed, and no one on this train was injured.

The flagman of No. 4 was injured.

The weather was clear at the time of the accident, which occurred at 11:21 a. m.

Discussion

No. 4 was moving at a speed of about 75 miles per hour on a 2°36' curve to the left, in territory where the maximum authorized speed was 75 miles per hour, when the derailment occurred. The engineer and the fireman were maintaining a lookout ahead from their accustomed positions in the control compartment of the leading unit, and the members of the train crew were in various locations throughout the train. As No. 4 was approaching Laurel the engine and cars were riding smoothly. Immediately before the derailment occurred, there were heavy lateral thrusts of the engine and corresponding thrusts of the cars. Before the engineer took action to stop the train, the brakes of the train were applied in emergency, as a result of separations of cars in the train.

Examination after the accident disclosed no defective condition of the equipment that could have caused the derailment, and there was no indication of dragging equipment or of any obstruction having been on the track. The first mark on the track structure was a flange mark on a tie 9 inches inside

the south, or high rail at a point 329 feet east of the point of maximum curvature. This mark continued eastward on the tops of the next nine ties, and the track beyond was destroyed a considerable distance. At the point where the flange mark first appeared, the track was 44 inches to the south, or to the outside, of its normal alinement on the curve. At points 39 feet, 78 feet, 117 feet, 155 feet, and 194 feet west of the flange mark, the track was thrown to the outside, respectively, 31-1/2 inches, 23-1/2 inches, 15-3/4 inches, 9-1/2 inches and 7/8 inch. At a point 2 feet 8 inches east of the first flange mark on the tie, a mark made by the face of a wheel flange appeared on the gage side of the head of the high rail, and it continued diagonally downward to the bottom edge, then along the bottom edge a distance of 12 feet 6 inches, and then diagonally upward to the top of the head. This condition indicated that the rail was overturning as the mark was being made. It is evident that because of the lateral thrust of the engine and cars against the high rail as the train rounded the curve the track was being progressively thrown out of normal alinement. Before the derailment occurred the track was shifted outward to a point where the ties under the high rail were unsupported and where the track pivoted on the shoulder of the roadbed.

Apparently the rear truck of the sixth car was the first to be derailed, and immediately afterward the front truck of the seventh car was derailed. After the rear truck of the sixth car was derailed, the rear end of that car tended to move away from the track and downward. The separation between the fifth and sixth cars and between the seventh and eighth cars each occurred as a result of broken knuckles. None of the cars was equipped with tightlock couplers.

For several days prior to the day of the accident, maintenance-of-way forces had been engaged in raising and surfacing the track, in replacing defective ties, and in adding a sufficient number of ties to average 24 ties per rail length. As a result, the ties remaining in the track were respaced and the ballast was loosened. On June 7, three days prior to the day of the accident, the eastward track on the curve involved had been raised an average of about 3 inches. On the day of the accident, a crew of 14 men were engaged in removing the defective ties, respacing and tamping the remaining ties, and in partially filling the cribs with ballast taken from between the tracks and from the shoulder of the eastward main track. Additional ballast was not provided. A second crew of 17 men were engaged in spiking,

installing new ties, and partially filling the cribs with ballast. About 6 men were engaged, among other duties, in driving rail-holding spikes. At the time of the accident, throughout a distance of 271 feet west of the point of accident there were 27 ties which were not spiked at either rail and 31 ties were spiked at only one rail. At five points adjacent ties were not spiked at either rail, at four additional points adjacent ties were not spiked at one rail, at ten points alternate ties were not spiked at either rail, and at thirteen other points alternate ties were not spiked at one rail. In addition, at least 33 ties were neither tamped nor tie plated. At no point throughout a distance of 271 feet west of the point of derailment was there a firm bond existing between the ties and the ballast. This condition, coupled with the large number of ties which were not spiked or only partially spiked, rendered the track unsafe for train movements. There was no train order or bulletin restricting the speed of No. 4 over the curve involved and flag protection was not provided by the maintenance-of-way forces. Under the rules of the carrier, no train should have been permitted to move over the track in the condition which existed where the derailment occurred.

Cause

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

Dated at Washington, D. C., this twelfth day of July, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.