INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3038

THE BALTIMORE AND OHIO RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR NEWBURG, W. VA., ON

NOVEMBER 18, 1946

SUMMARY

Railroad:	Baltimore and Ohio
Date:	November 18, 1946
Location:	Newburg, W. Va.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	4
Engine numbers:	6204, 4416 and Diesel-electric units 56A and 56B
Consist:	12 cars
Speed:	31 m. p. h.
Operation:	Signal indications
Tracks:	Three; 10° curve; 1.4 percent ascending grade eastward
Weather:	Foggy
Time:	5:42 a. m.
Casualties:	1 killed; 5 injured
Cause:	Broken rail

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3038

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

THE BALTIMORE AND OHIO RAILROAD COMPANY

December 19, 1946

Accident near Newburg, W. Va., on November 18, 1946, caused by a broken rail.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On November 18, 1946, there was a derailment of a passenger train on the Baltimore and Ohio Railroad near Newburg, W. Va., which resulted in the death of one train-service employee, and the injury of one passenger, two dining-car employees, one train-service employee and one Diesel-engine supervisor.

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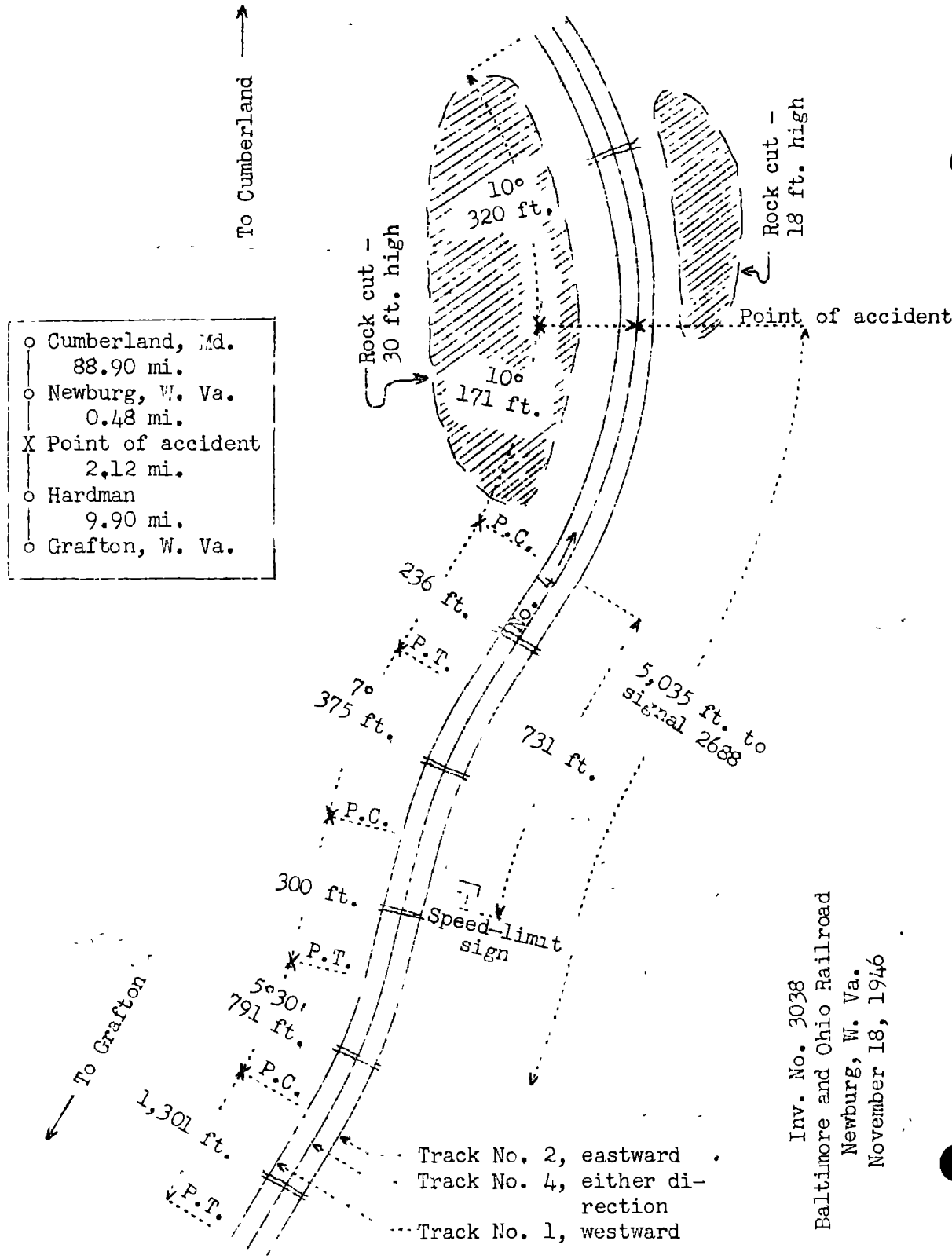
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3038
Baltimore and Ohio Railroad
Newburg, W. Va.
November 18, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Cumberland Division extending between Grafton, W. Va., and Cumberland, Md., 101.4 miles. In the vicinity of the point of accident this is a three-track line. The main tracks from south to north are designated as No. 2, eastward; No. 4, either direction; and No. 1, westward. Trains moving with the current of traffic on tracks Nos. 1 and 2, and in either direction on track No. 4, are operated by signal indications. The derailment occurred on track No. 4, at a point 12.02 miles east of Grafton and 0.48 mile west of the station at Newburg. From the west on track No. 4 there are, in succession, a tangent 1,301 feet in length, a 5°30' curve to the left 791 feet, a tangent 300 feet, a 7° curve to the right 375 feet, a tangent 236 feet and a 10° curve to the left 171 feet to the point of accident and 320 feet eastward. At the point of accident the grade is 1.4 percent ascending eastward.

In this vicinity the tracks are laid in a rock cut, the south wall of which rises to a height of 18 feet and the north wall to 30 feet. On the curve involved the track structure of track No. 4 consists of 130-pound rail, 39 feet in length, laid on an average of 22 treated hardwood ties to the rail length. It is fully tieplated with single-shoulder canted tieplates, double-spiked, provided with 4-hole angle bars 25 inches in length, and 8 rail anchors per rail length, and is ballasted with crushed stone to a depth of 24 inches. The specified curvature was 10° and the maximum superelevation was 4-1/2 inches. The derailment occurred 171 feet east of the west end of the curve, where the curvature was 1°45' and the superelevation was 7/8 inch. The rail at the point of derailment was rolled in December, 1927, laid new in 1928 about 80 miles east of Newburg, and was relaid at the point of derailment in August, 1941.

Automatic signal 2688, governing east-bound movements on track No. 4, is 5,035 feet west of the point of accident. This signal is of the color-position-light type and is approach-lighted.

Time-table special instructions prescribed the maximum authorized speed for the train involved as 45 miles per hour on tangent track and 30 miles per hour on the curve on which the derailment occurred. A speed-limit sign, bearing the numerals 30, is located 731 feet west of the west end of the curve.

Description of Accident

No. 4, an east-bound first-class passenger train, consisted of steam engine 6204, a 2-10-2 type, steam engine 4416, a 2-8-2 type, Diesel-electric engines 56A and 56B, coupled in multiple-unit control, one mail car, one baggage-express car, one passenger-baggage car, three coaches, one dining car and five Pullman

sleeping cars, in the order named. All cars were of steel construction. This train passed Hardman, the last open office, 2.12 miles west of the point of accident, at 5:38 a. m., 2 minutes late, and while it was moving on track No. 4 at a speed of 31 miles per hour the engines and the first five cars were derailed.

The first engine and its tender, remaining coupled, stopped practically upright, with the front end of the engine on track No. 4 about 240 feet east of the point of derailment and the rear end and the tender on track No. 2. The second engine stopped practically upright and in line with track No. 2, with the front end against the tender of the first engine. The tender of the second engine stopped across tracks Nos. 1 and 4 and at an angle of 45 degrees to its engine. The first and second engines were considerably damaged, and the cab of the second engine was demolished. The first Diesel-electric unit stopped practically upright across tracks Nos. 4 and 2, with its front end against the south wall of the cut and its left side against the second engine. This unit was badly damaged. The second unit stopped practically upright at the rear of the first unit, with the front end on track No. 4 and the rear end 20 feet south of track No. 2. This unit was considerably damaged. The first three cars stopped practically upright across tracks Nos. 4 and 2 and at angles of about 25 degrees to them. The fourth and fifth cars stopped upright on track No. 4 and in line with it. The first three cars were considerably damaged, and the fourth and fifth cars were slightly damaged.

The weather was foggy at the time of the accident, which occurred about 5:42 a. m.

The engineer of the second engine was killed, and the fireman of the second engine was injured.

Discussion

No. 4 was entering a 10° curve to the left and was moving at a speed of 31 miles per hour, as indicated by the tape of the speed recorder of the first Diesel-electric unit, when the enginemen of the first steam engine felt an unusual movement of the engine and saw fire flying from the driving-wheel assembly. The engineer of the first steam engine had charge of the train-brake system and he immediately moved the brake valve to emergency position, but the derailment occurred before the train could be stopped. The last automatic block signal west of the point where the derailment occurred displayed proceed for No. 4. 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. The maximum authorized speed on the curve was 30 miles per hour. At the point of derailment the curvature was 1°45', the superelevation was 7/8 inch and the gage was 4 feet 8-3/4 inches.

After the accident portions of a broken rail were found under the tender of the second steam engine. This rail was identified as having been in track No. 4 on the high side of the curve at the point of derailment. The rail was broken through the head, the web and the base at four locations. The first break occurred 3 inches east of the receiving end of the rail and extended vertically 1-1/2 inches through the head thence horizontally 3 inches through the web to the receiving end. The second break extended diagonally downward through the web from the east end of the first break to a point 8-3/4 inches above the base. The third break extended horizontally eastward from the second break through two bolt holes thence diagonally downward through the web and the base to a point 11-1/2 inches east of the receiving end. The fourth break occurred 15-3/8 inches east of the first break and extended diagonally downward through the head and the web to a point 1-1/2 inches above the east end of the third break. At the fourth break there was a vertical pipe or split in the web 2 inches long. No portion of the vertical split extended to the outer surface. The breaks other than the vertical split were new, and there was no batter mark at either end of the breaks extending through the head of the rail. Evidently the vertical split in the web had existed for some time prior to the accident and the complete failure occurred when the first engine passed over the location of the vertical split.

The track involved was last inspected by the section foreman about 48 hours before the accident occurred, and no defective condition of the rail was observed. A rail-detector car was last operated over this territory on July 20, 1948. This test did not disclose any defect in the rail in question.

Cause

It is found that this accident was caused by a broken rail.

Dated at Washington, D. C., this nineteenth day of December, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.