INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2810

THE BALTIMORE & OHIO RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR WARING, MD., ON

JULY 2, 1944

SUMMARY

Railroad:	Baltimore & Ohio	
Date:	July 2, 1944	
Location:	Waring, Md.	
Kind of accident:	Rear-end collision	
Trains involved:	Passenger	: Freight
Train numbers:	12	: Extra 4616 East
Engine numbers:	5052	: 4616, 4494
Consist:	10 cars	: 77 cars, caboose
Estimated speed:	Standing	: 10 m. p. h.
Operation:	Automatic block-signal and automatic train-stop system	
Track:	Double; tangent; 0.01 percent descending grade eastward	
Weather:	Clear	
Time:	12:14 a. m.	
Casualties:	47 injured	
Cause:	Failure properly to control speed of following train in accordance with signal indications	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2810

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

THE BALTIMORE & OHIO RAILROAD COMPANY

August 17, 1944.

Accident near Waring, Md., on July 2, 1944, caused by failure properly to control speed of following train in accordance with signal indications.

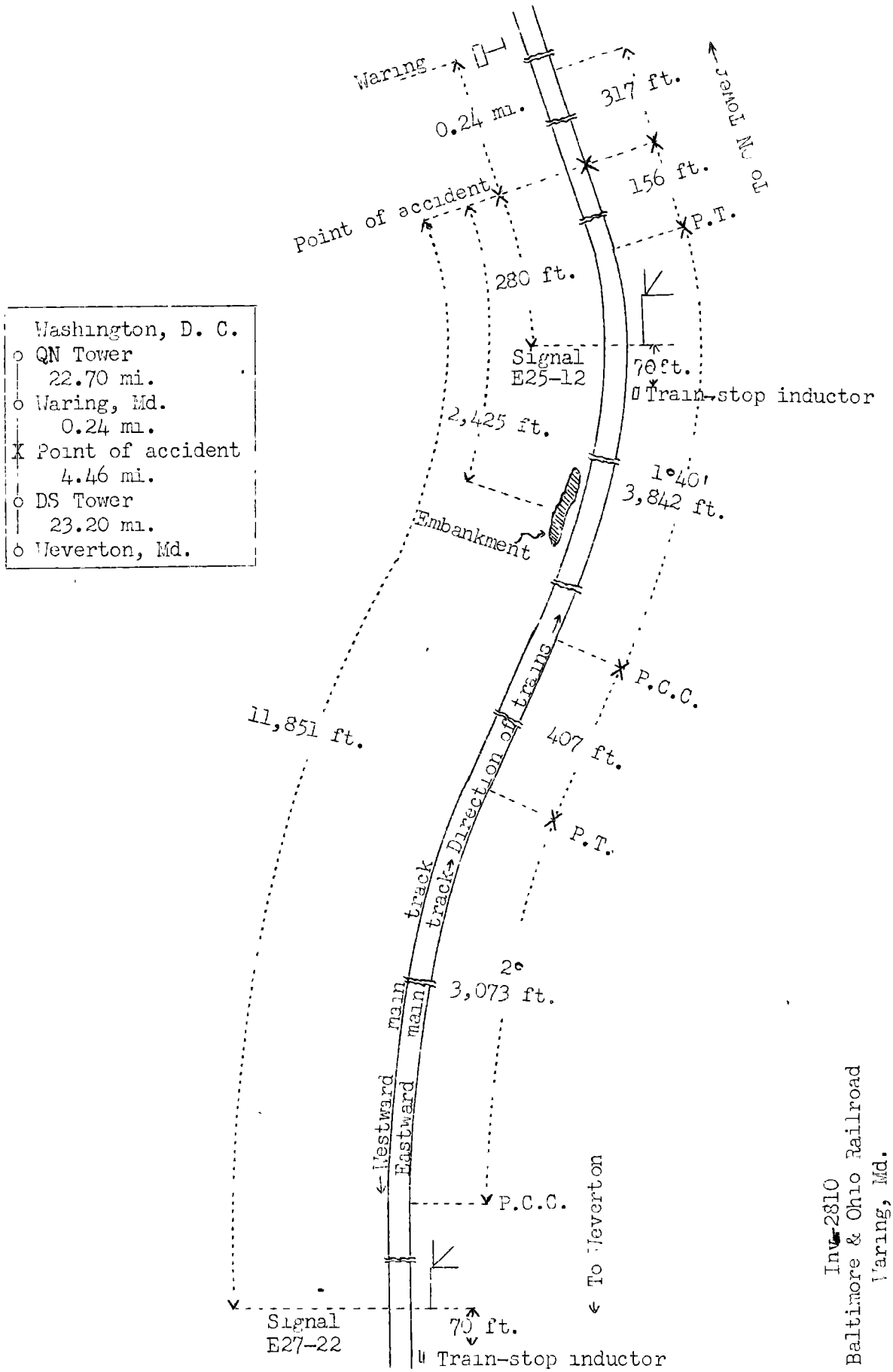
REPORT OF THE COMMISSION[1]

PATTERSON, Chairman:

On July 2, 1944, there was a rear-end collision between a passenger train and a freight train on the Baltimore & Ohio Railroad near Waring, Md., which resulted in the injury of 42 passengers, 1 railway-mail clerk, 2 train porters, and 2 train-service employees off duty. This accident was investigated in conjunction with a representative of the Public Service Commission of Maryland.

---

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



Inv. 2810
Baltimore & Ohio Railroad
Waring, Md.
July 2, 1944

Location of Accident and Method of Operation

This accident occurred on that part of the Baltimore Division designated as the Metropolitan Sub-Division and extending eastward from Weverton, Md., to QN Tower, Washington, D. C., 50.6 miles. In the vicinity of the point of accident this was a double-track line over which trains moving with the current of traffic were operated by an automatic block-signal system, the indications of which superseded time-table superiority, and an automatic train-stop system. The accident occurred on the eastward main track 27.66 miles east of Weverton, at a point 0.24 mile west of the station at Waring. From the west there were, in succession, a compound curve to the right 3,073 feet, the maximum curvature of which was 2°, a tangent 407 feet, a compound curve to the left 3,842 feet, the maximum curvature of which was 1°40', and a tangent 156 feet to the point of accident and 317 feet beyond. The grade for eastbound trains was descending, successively, 0.78 percent 600 feet, 1.10 percent 1,300 feet, 0.94 percent 1,900 feet, 1.00 percent 3,300 feet, 0.54 percent 300 feet and 0.01 percent 673 feet to the point of accident and 127 feet beyond.

Automatic signals E27-22 and E25-12, which governed eastbound movements on the eastward main track, were located, respectively, 11,851 and 280 feet west of the point of accident. These signals were of the one-arm, three-indication, upper-quadrant, semaphore type, and were approach-lighted. The involved aspects and corresponding indications and names of these signals were as follows:

Aspect	Indication	Name
45 degrees, yellow	Proceed, preparing to stop at next signal, and be governed by indication displayed by that signal. Train exceeding medium speed must at once reduce to that speed.	Approach.
Horizontal, red	Stop, then proceed at restricted speed until entire train passes next signal.	Stop and Proceed.

The automatic train-stop system was of the intermittent-inductive type. Engines were provided with acknowledging devices. Train-stop inductors for the eastward main track were located 70 feet west of each eastward signal.

SPEED RESTRICTIONS.

Normal Speed--The maximum speed permitted by timetables for main track movements.

Medium Speed--One-half the normal speed, not to exceed thirty (30) miles per hour.

* * *

Restricted Speed--Proceed, prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

Operating rules read in part as follows:

11. A train finding a fusee burning on or near its track must stop and extinguish the fusee and then proceed at restricted speed.

15. The explosion of two torpedoes is a signal to reduce speed. The explosion of one torpedo will indicate the same as two, but the use of two is required.

* * *

34. All members of train and engine crews will, when practicable, communicate to each other the indication of each signal affecting the movement of their train or engine.

35. The following signals must be used by flagmen:

* * *

Night Signals--

A red light,
A white light,
Torpedoes and fusees.

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees.

* * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. * * *

* * *

99. (A). Should a train be seen or heard approaching before the flagman has reached the required distance, he must, at once, place two torpedoes on the rail, and, at night * * * carry a lighted fusee, continuing in the direction of the approaching train.

The maximum authorized speed for passenger trains was 70 miles per hour, and for freight trains, 50 miles per hour.

Description of Accident

No. 12, an east-bound first-class passenger train, consisted of engine 5052, one storage-mail car, one mail car, two express cars, one passenger-baggage car, four coaches and one Pullman sleeping car, in the order named. All cars were of steel construction. This train passed DS Tower, 4.7 miles west of Waring and the last open office, at 12:03 a. m., 2 minutes late. This train separated between the first and second cars, and the brakes became applied in emergency. It stopped about 12:08 a. m. with the rear end standing 280 feet east of signal E25-12, and about 6 minutes later the rear end was struck by Extra 4616 East.

Extra 4616 East, an east-bound freight train, consisted of engine 4616, 77 cars, a caboose and engine 4494, in the order named. This train departed from DS Tower at 12:09 a. m., passed signal E27-22, which displayed approach, passed signal E25-12, which displayed stop-and-proceed, and while moving at an estimated speed of 10 miles per hour it struck No. 12.

The rear car of No. 12, engine 4616 and the first seven cars of Extra 4616 were derailed and considerably damaged.

It was clear at the time of the accident, which occurred about 12:14 a. m.

After the accident a piece of metal 9-1/2 inches long was found in the center of the eastward main track, and a piece 14-1/2 inches long was found outside the south rail of the

eastward main track, about 1,600 feet west of the point of accident. The pieces of metal were broken parts of the crosshead shoe flange of the engine of No. 12. Investigation disclosed that one of the pieces of metal apparently was thrown against the coupler lever at the rear end of the first car of No. 12 with sufficient force to cause the knuckle of the coupler to open.

Engine 4616 was equipped with 6-ET brake equipment. Of the cars of Extra 4616, 40 cars were provided with AB-type and the remainder with K-type brake equipment. After the accident, examination of the undamaged cars of this train disclosed that the brakes were operative. The brake-cylinder piston-travel varied between 6-3/4 inches and 9-1/2 inches. The piston-travel on one car was less than 7 inches, and on 3 cars it was more than 9 inches.

Discussion

Under the rules of this carrier governing operation in automatic block-signal territory an approach indication requires that the speed of a train must be reduced immediately to medium speed and the train must be prepared to stop at the next signal. All the employees concerned so understood.

About 6 minutes after No. 12 stopped, the rear end was struck by Extra 4616 East 280 feet east of signal E25-12.

When No. 12 was approaching the point where the accident occurred the train separated between the first and second cars, and the brakes became applied in emergency. The flagman immediately dropped a lighted 5-minute fusee from the rear car, and, when the train stopped, went back to provide flag protection. He had reached a point about 1,800 feet west of the rear of his train when he saw the reflection of the headlight of an approaching train. He lighted a fusee, proceeded toward the approaching train, and had reached a point about 2,000 feet to the rear of his train, where he was giving stop signals with a lighted fusee, when Extra 4616 passed him.

As Extra 4616 was approaching signal E27-22, located 11,571 feet west of signal E25-12, the speed was about 25 miles per hour. The train air-brake system was in the charge of the engineer of the first engine. The brakes had functioned properly at all points where used en route. The enginemen of the first engine and the front brakeman were maintaining a lookout ahead. There was no condition of the engine that distracted their attention or obscured their view of the track

ahead. Signal E27-22 displayed approach, and the employees on the engine called the indication. The acknowledging lever was used in the vicinity of the approach signal to forestall an automatic application of the brakes. The approach indication required the speed not to be in excess of 25 miles per hour until the train reached the next signal, and to be so controlled that the train could be stopped short of the next signal. When the engine was about 1 mile east of signal E27-22, the speed was about 35 miles per hour, and the engineer made a 7-pound brake-pipe reduction. From this point eastward the view of the track ahead was materially restricted because of embankments, vegetation adjacent to the track and track curvature. The train was moving on a descending grade. The engineer said he thought he had the train under proper control, and he was preparing to make an additional service brake-pipe reduction when the fireman and the front brakeman warned him of a lighted fusee about 500 feet distant. Then the fireman and the front brakeman observed simultaneously signal E25-12 displaying stop-and-proceed and the lighted red markers of the preceding train, and they called a further warning. The engineer immediately moved the brake valve to emergency position, but the train passed signal E25-12 and struck No. 12. The speed of Extra 4616 was about 10 miles per hour when the collision occurred.

Cause

It is found that this accident was caused by failure properly to control the speed of the following train in accordance with signal indications.

Dated at Washington, D. C., this seventeenth day of August, 1944.

By the Commission, Chairman Patterson.

W. P. BARTEL,
Secretary.

(SEAL)