

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2948
THE BOSTON TERMINAL COMPANY
REPORT IN RE ACCIDENT
NEAR SOUTH STATION, BOSTON, MASS., ON
NOVEMBER 17, 1945

SUMMARY

Railroad: Boston Terminal Company
Date: November 17, 1945
Location: South Station, Boston, Mass.
Kind of accident: Rear-end collision
Trains involved: B. & A. engine and : B. & A. passenger
cars train
Train number: : 91
Engine numbers: 577 : 502
Consist: 6 cars : 4 cars
Estimated speed: Standing : 15 m. p. h.
Operation: Signal indications; interlocking
Tracks: Four; 8°30' curve; 0.70 percent
descending grade westward
Weather: Clear
Time: 3:32 p. m.
Casualties: 118 injured
Cause: Failure to obey interlocking
signal indication

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2948

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

THE BOSTON TERMINAL COMPANY

December 28, 1945.

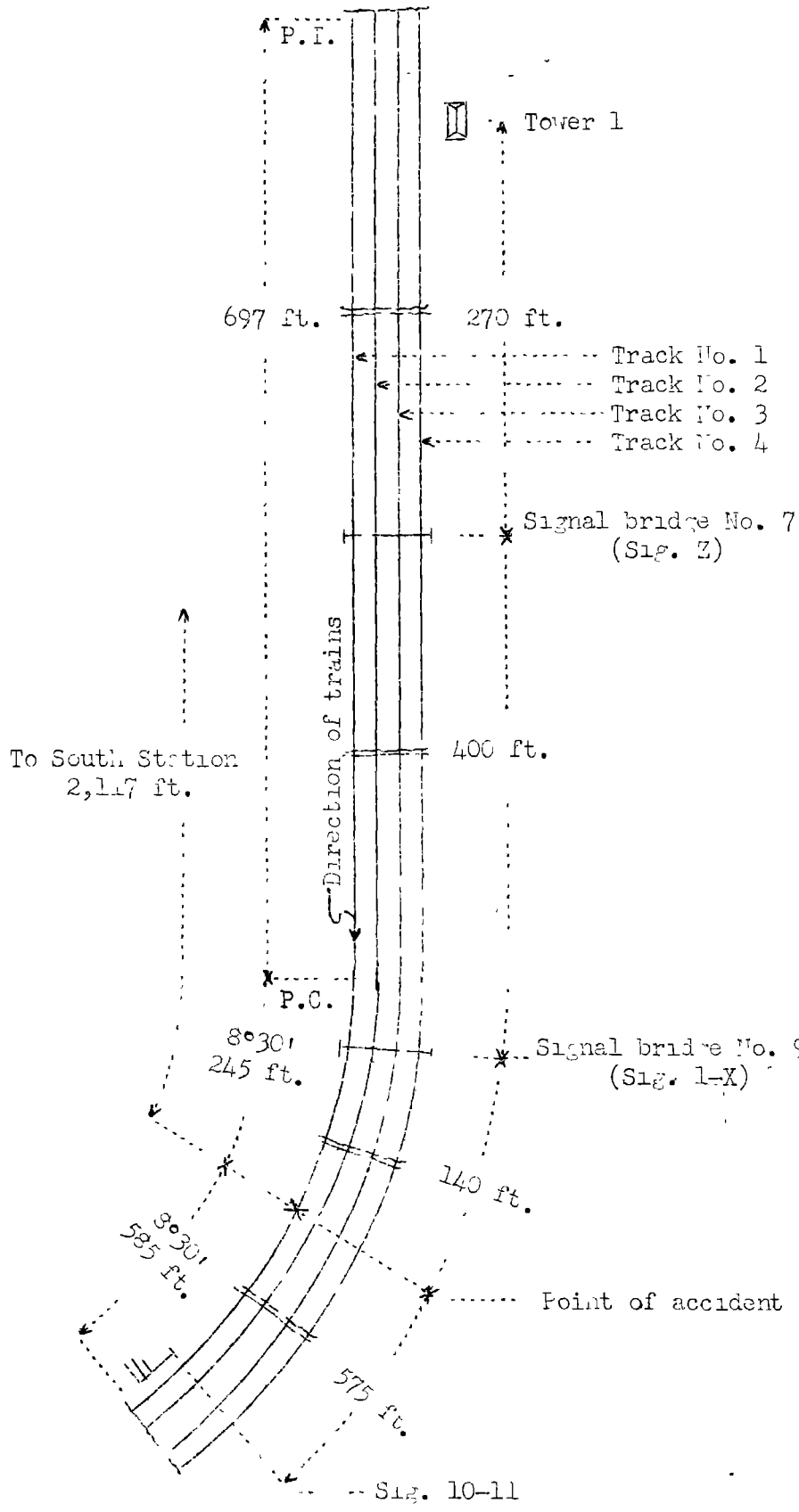
Accident near South Station, Boston, Mass., on November
17, 1945, caused by failure to obey an interlocking
signal indication.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On November 17, 1945, there was a rear-end collision between an engine and a passenger train of the Boston and Albany Railroad on the line of the Boston Terminal Company near South Station, Boston, Mass., which resulted in the injury of 106 passengers, 5 employees off duty and 7 employees on duty. This accident was investigated in conjunction with representatives of the Massachusetts Department of Public Utilities.

¹Under 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. 2948
Boston Terminal Company
South Station, Boston, Mass.
November 17, 1945

Location of Accident and Method of Operation

This accident occurred on that part of the railroad extending between South Station, Boston, and Terminal Yard Limit, 0.5 mile, a four-track line in the vicinity of the point of accident, over which trains are operated in either direction by signal indications. The main tracks from north to south are designated as tracks Nos. 1, 2, 3 and 4. Trains and engines of the Boston and Albany Railroad are regularly operated over tracks Nos. 1 and 2. The accident occurred within interlocking limits on track No. 1 at a point 2,117 feet west of the station. From the east on track No. 1 there is a tangent 697 feet in length, which is followed by an 8°30' curve to the right 245 feet to the point of accident and 585 feet westward. The grade is 0.70 percent descending westward.

Interlocking signals Z and 1-X, governing west-bound movements on track No. 1, are, respectively, 540 feet and 140 feet east of the point of accident, and are mounted, respectively, on signal bridges No. 7 and No. 9. These signals are controlled from Tower 1, located 810 feet east of the point of accident, and are of the two-indication, lower-quadrant, semaphore type. The involved day aspects and corresponding indications of these signals are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>
Z	60° below horizontal	Proceed
1-X	Horizontal	Stop

The interlocking at Tower 1 is of the electro-pneumatic type. The machine consists of 131 working levers in a 143-lever frame. Route, indication and mechanical locking are provided. An illuminated track diagram which indicates track occupancy and signal indications is provided. The controlling circuits are so arranged that when a train or an engine is occupying track No. 1 between signal 1-X and signal 10-11, located 715 feet west of signal 1-X, signal 1-X displays stop and signal Z displays proceed.

Operating rules read in part as follows:

28. When a signal indicates "Stop," trains and engines must come to a stop and will not pass it until it indicates "Proceed"; except that a train may proceed after stopping, under definite directions for each movement from the signal tower. * * *

31. All movements will be governed by interlocking signals and must, at all times, be under control. Employees must not call a signal as clear until close enough to be certain that it governs their route. * * *

38. The interlocking-signals are not block signals, and must not be relied upon to protect against following trains. * * *

41. Trains or engines will not exceed a speed of fifteen (15) miles per hour while running over tracks of the Terminal Company, * * *

99. When a train stops or is delayed, a flagman must go back immediately with proper signals a sufficient distance to insure full protection.

Description of Accident

B. & A. engine 577, headed eastward and pushing six passenger-equipment cars westward, stopped about 3:28 p. m. on track No. 1 at signal 10-11, which displayed stop. About 4 minutes later the engine was struck by No. 91.

No. 91, a west-bound B. & A. passenger train, consisted of engine 502, three coaches and one passenger-baggage car, in the order named. All cars were of steel construction. This train departed from South Station at 3:30 p. m., on time, passed signal Z, which displayed proceed, passed signal 1-X, which displayed stop, and while moving on track No. 1 at an estimated speed of 15 miles per hour it struck engine 577 at a point 140 feet west of signal 1-X.

The force of the impact moved engine 577 and the cut of cars westward about 60 feet. The engine was derailed but remained upright and in line with the track. The engine of No. 91 was derailed to the north and stopped on its right side practically parallel to the track. Both engines were considerably damaged, and the first car of No. 91 was slightly damaged.

The weather was clear at the time of the accident, which occurred about 3:32 p. m.

The engineer, the fireman and one brakeman of engine 577, and the conductor, the helper conductor, the engineer and the fireman of No. 91 were injured.

Discussion

The rules governing operation in this territory provide that movements in either direction on the main tracks may be made when authorized by proper signal indications, but at a speed not exceeding 15 miles per hour. Trains or engines moving under a proceed indication must be prepared to stop short of a signal displaying stop.

About 4 minutes after engine 577, headed eastward and pushing six passenger-equipment cars westward, stopped in compliance with a stop indication displayed by signal 10-11, the engine was

struck by No. 91 at a point 140 feet west of signal 1-X, which displayed stop.

The crew of engine 577 consisted of an engineer, a fireman and two brakemen. When the accident occurred the enginemen were on the engine and the brakemen were in the front vestibule of the most westerly car. These employees were not aware that No. 91 had passed signal 1-X until immediately prior to the collision. The rules of this carrier require that flag protection must be furnished against following movements. However, it was the understanding of the employees concerned that, under the circumstances present, flag protection was not required for engine 577.

As No. 91 was approaching the point where the accident occurred the speed was about 15 miles per hour. The brakes of this train had been tested and had functioned properly. The engineer was maintaining a lookout ahead. The fireman was on the deck of the engine tending the fire. The engineer said he thought signal 1-X displayed proceed, and he called the indication to the fireman. The engineer saw the preceding movement, but he thought it was moving on a yard track. He first became aware that the preceding engine and cars were on track No. 1 just before the collision occurred. Then he moved the brake valve to emergency position. Track curvature made it difficult to determine definitely which track the preceding engine was occupying. There was no condition of the engine that distracted the attention of the engineer or obscured his view of the track ahead.

The controlling circuits of the interlocking are so arranged that when a train or engine is occupying track No. 1 immediately west of signal 1-X, this signal displays stop. The leverman and the train director, who were in Tower 1 when the accident occurred, said they observed signal 1-X displaying stop for No. 91. In tests after the accident the interlocking functioned properly.

Cause

It is found that this accident was caused by failure to obey an interlocking signal indication.

Dated at Washington, D. C., this twenty-eighth day of December, 1945.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.