INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2711

THE PENNSYLVANIA RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR HELMETTA, N. J., ON

JULY 18, 1943

SUMMARY

Railroad:	Pennsylvania	
Date:	July 18, 1943	
Location:	Helmetta, N. J.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 1542 West	: Extra 4702 West
Engine numbers:	1542	: 4702
Consist:	74 cars, caboose	: Caboose
Speed:	Standing	: 20-25 m. p. h.
Operation:	Timetable, train orders and manual-block system	
Track:	Single; 1°12' curve; practically level	
Weather:	Clear	
Time:	10:36 p. m.	
Casualties:	1 killed	
Cause:	Failure properly to control speed of following train in compliance with permissive-block indication	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2711

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

THE PENNSYLVANIA RAILROAD COMPANY

August 14, 1943.

Accident near Helmetta, N. J., on July 18, 1943, caused by failure properly to control speed of following train in compliance with permissive-block indication.

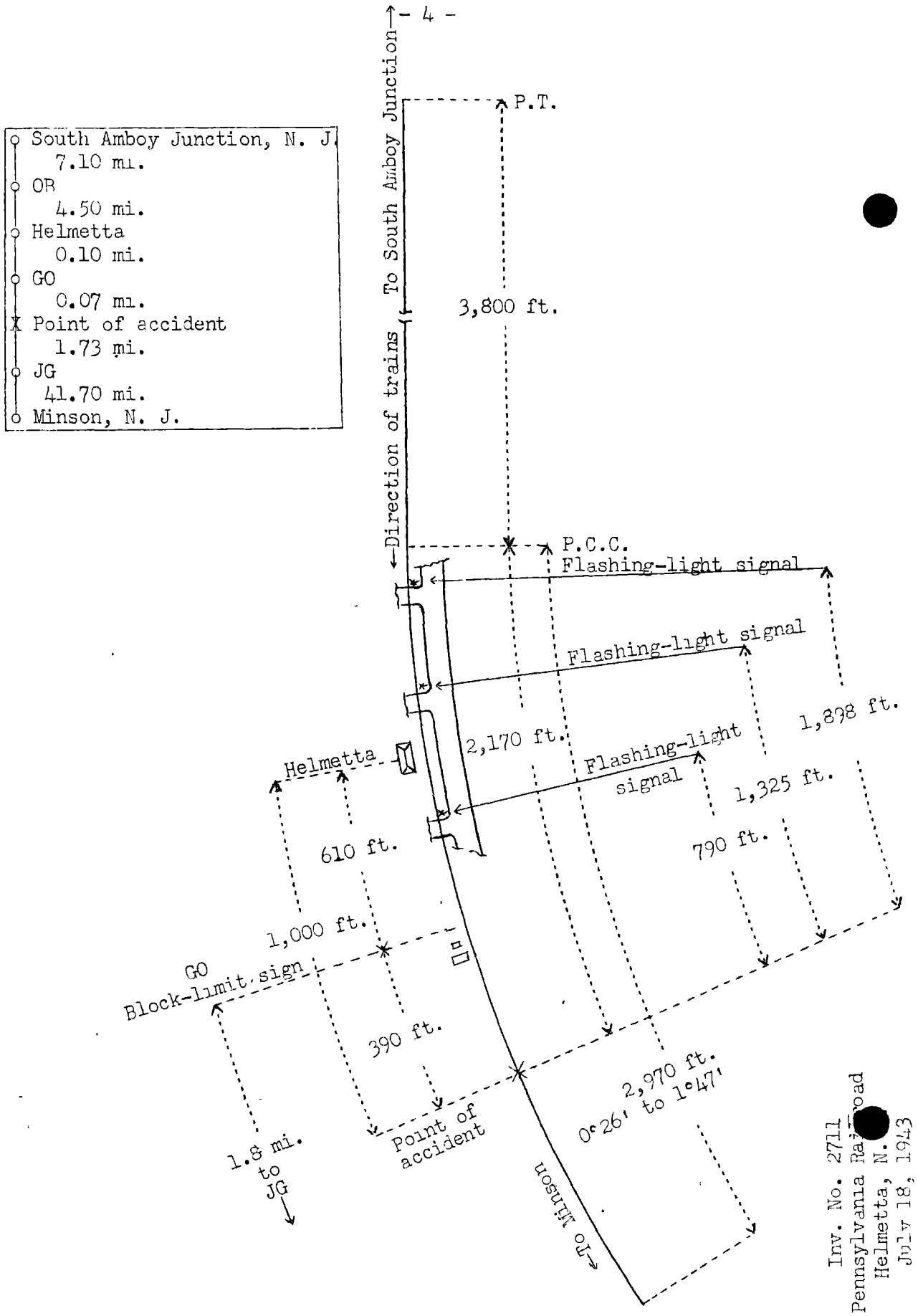
REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On July 18, 1943, there was a rear-end collision between two freight trains on the Pennsylvania Railroad near Helmetta, N. J., which resulted in the death of one employee. This accident was investigated in conjunction with a representative of the New Jersey Board of Public Utility Commissioners.

---

[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. 2711
Pennsylvania Railroad
Helmetta, N. J.
July 18, 1943

Location of Accident and Method of Operation

This accident occurred on that part of the New York Division designated as the Amboy Branch and extending between South Amboy Junction and Minson, N. J., 55.2 miles. The line was equipped with an overhead catenary system for the electric propulsion of trains. In the immediate vicinity of the point of accident this was a single-track line over which trains were operated by timetable, train orders and a manual-block system. The accident occurred at a point 1,000 feet west of the station at Helmetta. Approaching from the east there was a tangent 3,800 feet in length, which was followed by a compound curve to the left 2,970 feet in length, the curvature of which varied from 0°26' to 1°47'. The accident occurred on this curve at a point 2,170 feet from its eastern end, where the curvature was 1°12'. At the point of accident the grade was practically level.

The block involved extended between block-limit station GO and block station JG, a distance of 1.8 miles. Block-limit station GO was in the charge of the signalman at block station JG. The eastern limit of the block was indicated by a sign located 610 feet west of the station at Helmetta. This sign consisted of the letters GO in white on a black signboard 9-1/2 inches wide and 23 inches long mounted horizontally 7 feet 2 inches above the level of the rail on a mast 7 feet 6 inches south of the south rail. For a night indication a light was provided in a box 13-1/2 inches high and 27 inches long, mounted horizontally on the mast 8 feet 8 inches above the level of the rail, with a red and a yellow lens, each of which was 5 inches in diameter. The yellow lens was next to the main track. Both the sign and the night indication were visible from either direction. A telephone booth was located on the south side of the track 19 feet west of the block-limit sign.

Operating rules read in part as follows:

DEFINITIONS

Block-Limit Signal--A fixed signal indicating the limit of a block the use of which by trains is prescribed by manual block system rules.

Block-Limit Station--A place at which a block-limit signal is displayed.

Reduced Speed--Prepared to stop short of train or obstruction.

35. The following signals will 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 recalled and safety to the train will permit, he may return.

When conditions require, he will leave the torpedoes and a lighted fusee.

* * *

289. NAME: Permissive-block.

INDICATION--Block occupied; * * * for trains other than passenger trains, proceed at reduced speed, but not exceeding thirty miles per hour.

305. Block signals govern the use of the blocks, but unless otherwise provided, do not supersede the superiority of trains, nor dispense with the use and the observance of other signals whenever and wherever they may be required.

At a block-limit station trains will be governed in their use of the block by instructions of the signalman in charge of the block-limit station as indicated on the time-table.

317. (For absolute block for opposing movements and permissive block for following movements on the same track.)

* * *

Before admitting a train other than a passenger train to a block, the signalman in charge of the block station or block-limit station at the entrance of the block must know that the block is clear of opposing trains and passenger trains, and that no opposing train or no passenger train has been given permission or a signal to enter the block. * * * If the block is clear of opposing

trains and passenger trains, the signalman in charge of the block station may permit a train other than a passenger train to follow a train other than a passenger train into the block by displaying a Permissive-Block signal for the train to be admitted to the block. The signalman in charge of a block-limit station may give a train at that block-limit station verbal permission to enter one block. The signalman, when authorized by the superintendent, will issue Clearance Card (Form K) to a train to pass one or more block-limit stations as though Permissive-Block signal were displayed.

* * *

FORMS OF BLANKS

Form K — Clearance Card — Form K

_____ Block Station _____ M., _____ 19___

To Conductor and Engineman:

Train _____ Engine _____

Proceed at _____

As though _____ signal were displayed.

Report clear at _____

_____
Signalman.

The signalman may issue this card only when authorized by the superintendent. Before issuing it, the signalman must have proper understanding with other signalmen, if any, having authority over blocks mentioned, and must know that blocks mentioned above are clear of opposing trains, and clear of trains that may not be followed in the same block by the train addressed.

The conductor and engineman receiving this card properly filled out and signed, or authorized by the signalman to fill it out, may proceed as directed above.

When delivered by telephone, the signalman will show on his office copy the name of the person to whom delivered.

Special time-table instructions provide that Rule 317 will govern movements within the territory involved in this accident.

The maximum authorized speed for freight trains was 30 miles per hour.

Description of Accident

Extra 1542 West, symbol A-1, a west-bound freight train, consisting of steam engine 1542, 74 cars and a caboose, stopped on the main track about 10:30 p. m., according to the statement of the conductor, with the rear end standing 390 feet west of block-limit station GO and 1,000 feet west of the station at Helmetta. About 6 minutes later the rear end was struck by Extra 4702 West.

Extra 4702 West, a west-bound freight train, consisted of electric engine 4702 and a caboose. At block-limit station OB, 4.5 miles east of Helmetta, the crew received copies of Clearance Form K authorizing this train to proceed at block-limit stations OB and GO as though permissive block-signals were displayed. This train departed from block-limit station OB at 10:27 p. m., according to the dispatcher's record of movement of trains, passed block-limit station GO, and while moving at an estimated speed of 20 to 25 miles per hour it collided with the rear end of Extra 1542.

The caboose and the rear car of Extra 1542 were derailed and badly damaged. The front end of engine 4702 was badly damaged.

From the left side of a west-bound engine the view of the point where the accident occurred was restricted to about 1,000 feet, because of buildings, vegetation and poles adjacent to the track, and track curvature. Street crossings at grade were located at points, respectively, 790 feet, 1,325 feet and 1,893 feet east of the point of accident. These crossings were protected by red flashing-light signals. The masts of the signals on the south side of the track were located about 8 feet south of the south rail and the centers of the lenses were about 4 feet 6 inches above the level of the rail. Some of the lights were focused to the southeast and were visible from an approaching west-bound engine after it had passed the actuating point 3,762 feet east of the point of accident.

Discussion

The rules governing operation on this line provide that when a train stops under circumstances in which it may be overtaken by another train the flagman must go back immediately a sufficient distance to insure full protection, place two torpedoes and, when necessary, in addition, display lighted fusees. In manual-block territory a following train moving under permissive-block authority must proceed prepared to stop short of a train ahead.

About 6 minutes after Extra 1542 West stopped, it was struck by Extra 4702 West 390 feet west of the eastern limit of the block involved. Extra 4702 was moving under permissive-block authority, and therefore was required to proceed prepared to stop short of train ahead.

Soon after Extra 1542 stopped, the engine was detached and the members of the crew, except the flagman, were engaged in picking up cars. The flagman said that when his train stopped he immediately went back to provide flag protection, and had reached a point about 400 feet east of the rear of his train when he heard a train approaching from the east. He placed a torpedo on the rail, proceeded toward the approaching train and had reached a point about 740 feet to the rear of his train where he was giving stop signals with a lighted red lantern when the engine of Extra 4702 passed him. The rules governing operation in manual-block territory provide that block signals do not dispense with the use and the observance of other signals whenever and wherever they may be required. If the flagman of the preceding train had proceeded eastward at an average gait during the 6 minutes his train was stopped he could have reached a point at least 2,000 feet to the rear. A lighted fusee displayed from a point 2,000 feet east of the rear end of the preceding train could have been seen from the engine of a following train approximately 1,200 feet. If such flag protection had been provided for Extra 1542 this accident might have been prevented.

As Extra 4702 was approaching the point where the accident occurred, the speed was 20 or 25 miles per hour and the enginemen were maintaining a lookout ahead. The brakes had been tested and had functioned properly. The fireman said that because of track curvature and the flashing red lights of the crossing signals he was not aware that the flagman of the preceding train was giving stop signals with a lighted red lantern until their engine was within a short distance east of the point where the accident occurred. The fireman immediately called a warning to the engineer and was attempting to jump off when the collision occurred. He did not observe what action

was taken by the engineer to apply the brakes, but he thought the brakes were applied in emergency soon after the flagman's signals were seen. It could not be determined why the engineer failed to take action to control the speed of Extra 4702 in accordance with the requirements under a permissive-block indication, as he was killed in the accident. The conductor estimated the speed of his train as 20 to 25 miles per hour when the brakes became applied in emergency just before the collision occurred. If the speed of Extra 4702 had been controlled in accordance with permissive-block authority this accident would not have occurred.

Cause

It is found that this accident was caused by failure properly to control speed of the following train in compliance with permissive-block indication.

Dated at Washington, D. C., this fourteenth day of August, 1943.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.