

Inv-2402

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
PENNSYLVANIA RAILROAD

MEADOWS YARD, N.J.

DECEMBER 31, 1939

INVESTIGATION NO. 2402

SUMMARY

Inv-2402

Railroad:	Pennsylvania	
Date:	December 31, 1938	
Location:	Meadows Yard, N. J.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 1532	: Extra 4780-4789
Engine numbers:	1532	: 4786-4789
Consist:	32 cars and caboose	: Caboose
Speed:	Standing	: 20 m. p. h.
Operation:	Assigned yard track	
Track:	Single; tangent; 0.131 percent ascending grade eastward	
Weather:	Clear	
Time:	1:27 a.m.	
Casualties:	1 killed, 2 injured	
Cause:	Failure to control the speed of the second train in compliance with rules applicable to move- ments on an assigned track	

February 27, 1940.

To the Commission:

On December 31, 1939, there was a rear-end collision between two freight trains on the Pennsylvania Railroad at Meadows Yard, N. J., which resulted in the death of one employee and the injury of two employees.

Location and Method of Operation

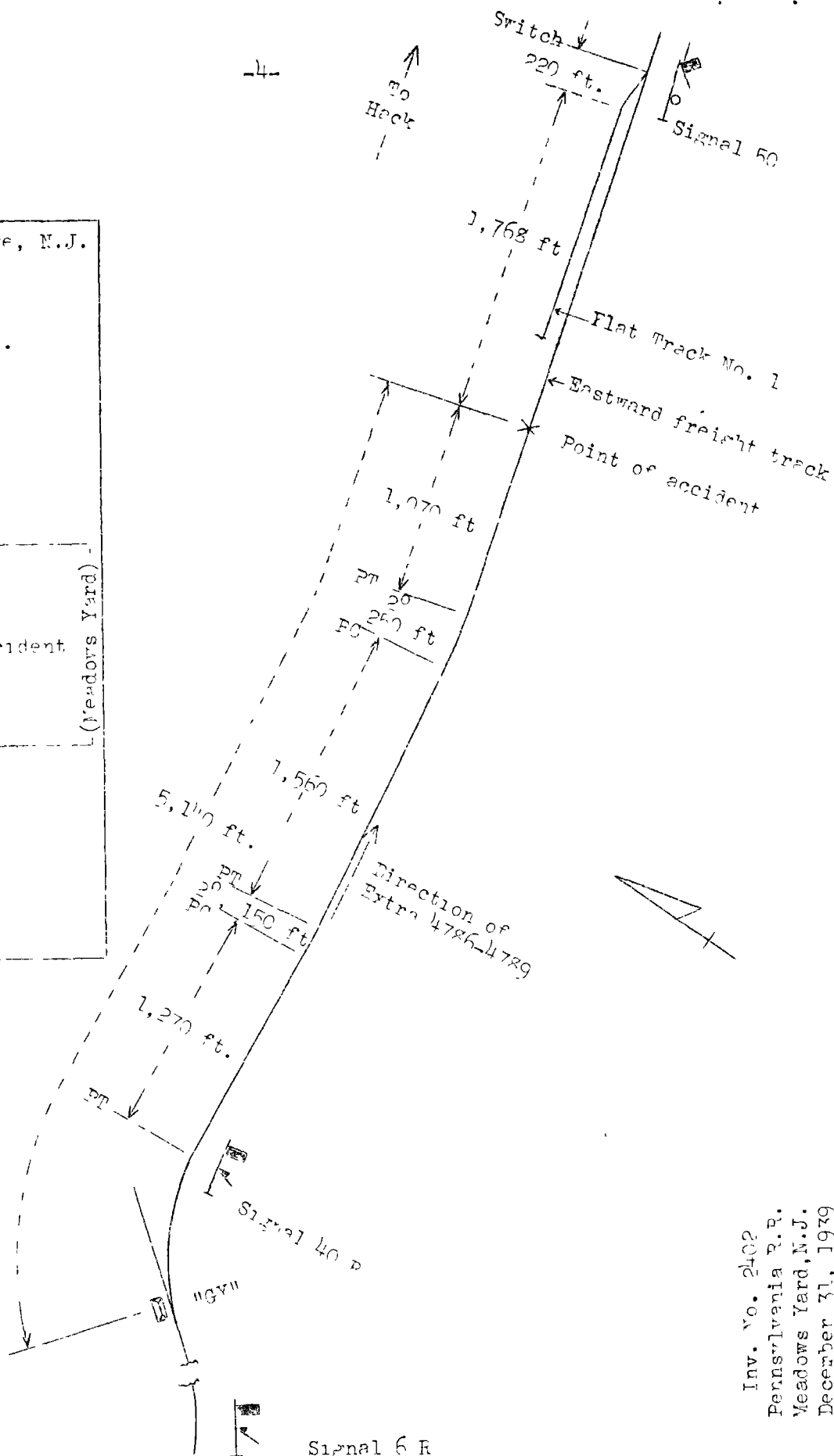
This accident occurred on that part of the New York Division which extends between Harsimus Cove and "A-3, N. J., a distance of 3.3 miles. An assigned track for eastward freight movements extends from GY interlocking through Meadows Yard to Hack interlocking, a distance of 1.9 miles; movements on this track are made as prescribed by time-table special instructions. Neither train orders nor block signals are used. At the entrance to this track interlocking home signals are used for either stopping trains or permitting them to enter and to proceed on this track; these signals do not indicate track occupancy, as portions of the track are not equipped with track circuits. The accident occurred on this track at a point 5,140 feet east of GY station, or approximately half-way between GY and Hack. Approaching from the west there are, in succession, a tangent 1,270 feet in length, a 2° curve to the left 150 feet in length, a tangent 1,560 feet in length, a 2° curve to the left 250 feet in length, and a tangent which extends 1,070 feet to the point of accident and 2,030 feet beyond. The grade for east-bound trains is, successively, 0.5 percent descending 2,200 feet, level 1,150 feet, 0.111 percent ascending 900 feet and 0.131 percent ascending 100 feet to the point of accident.

A classification yard lies north of the east yard freight track and adjacent to it. Flat track No. 1, of this yard, is contiguous and parallel to the eastward freight track, and, at its eastern end, connects with the eastward freight track at a point approximately 1,990 feet east of the point where the accident occurred.

Interlocking home signals 6R and 40R governing eastward movements are located 5,781 and 2,124 feet, respectively, west of the point of accident, and are controlled from GY station; these are position-light signals and display indications as follows:

o	Marsitus Cove, N.J.
	0.5 mi.
o	Brunswick St.
	0.7
o	"SC"
	1.4 mi.
o	Hack
	0.35 mi.
x	Point of accident
	0.95 mi.
o	"GY"
	4.4 mi.
o	WA-5
	0.4 mi.
o	WA-3, N.J.

(Meadows Yard)



Inv. No. 2402
 Pennsylvania R.R.
 Meadows Yard, N.J.
 December 31, 1939

Indication	Name
Stop	: Stop-signal
Proceed at not exceeding 15 miles per hour with caution prepared to stop short of train or obstruction.	: Caution-slow-speed-signal

Signal 50, an approach signal to the home signal at Hack, is located 3,892 feet east of signal 40R and 1,768 feet east of the point of accident; this is a position-light signal and displays indications as follows:

Indication	Name
Proceed at not exceeding 15 miles per hour with caution prepared to stop short of train or obstruction.	: Caution-slow-speed-signal
Approach next signal prepared to stop. A train exceeding one-half its maximum authorized speed at point involved must at once reduce to not exceeding that speed.	: Approach-signal
Proceed	: Clear-signal

Rules 90b and 103 of the operating rules and D1004, S18A, D1623, and D1803 of the time-table special instructions read in whole or in part as follows:

90b. Sidings to be used in an assigned direction must not be used in reverse direction unless authorized by the Superintendent or, in emergency, under protection as prescribed by Rule 99.

103. When cars are pushed by an engine, a trainman must take a conspicuous position on the front of the leading car.

If signals from the trainman cannot be seen from the engine it must be stopped immediately.

When trains are frequently pushed, a back-up hose equipped with brake valve and alarm whistle must be used. When so equipped and enginemen so advised they are relieved from stopping when signals cannot be seen from the leading car. ***

D1004 Rule 19a: A train not equipped to display the markers prescribed by Rule 19, will display on rear of train *** ; by night, a red light, ***.

S18A. Rule 93b. On portion of the railroad, within defined limits within terminals specified in the time table, trains and engines are not required to protect against following movements. *** On other than main tracks within these limits, trains and engines must move at such speed that they can stop within range of vision, unless such track is seen or known to be clear and switches properly set.

D1623. Following tracks operated as assigned tracks: Rule 90b in effect.

* * *

Eastward Freight Track GY to Hack.

* * *

D1803. Rule 93b in effect as follows:

* * *

Between Harsimus Cove and Lane, (freight tracks).

* * *

The maximum authorized speed on the track involved is 15 miles per hour.

The weather was clear at the time of the accident, which occurred at 1:27 a.m.

Description

Extra 1532, with Conductor Corcoran and Engineman Berrien in charge, consisted at the time of the accident of steam engine 1532, a caboose, and 32 loaded coal cars, in the order named. Consisting of the engine and the caboose only, this train passed Hack at 12:13 a. m., according to the train sheet, proceeded under flag protection westward on the eastward freight track at Meadows Yard, entered flat track No. 1, and, after picking up 32 cars, moved out on the eastward freight track, then moved in reverse direction on this track and stopped with the engine standing a short distance west of signal 50 and the rear end standing 5,140 feet east of GY. After standing at this location about 5 minutes the rear end was struck by Extra 4736-4739.

Extra 4786-4789, with Conductor McFadden and Engineman Hagenlocker in charge, consisted of an all-steel caboose and electric engines 4789 and 4786, in the order named. The caboose, which, according to standards of the carrier, was equipped with

an emergency brake valve, was pushed ahead of engines 4789 and 4786, which were operated as a 2-unit engine and controlled from engine 4786. This train left GY, moving eastward on the eastward track, at 1:23 a.m., according to the train sheet, and, while moving at a speed of 20 miles per hour, collided with the rear end of Extra 1532.

The rear two cars of Extra 1532 were overturned to the right; the rear car was demolished and the second car from the rear was badly damaged. The caboose of Extra 4786-4789 became derailed and stopped at an angle of 45 degrees to the track; the roof was badly distorted, the side sheets were bent, and a body bolster and a truck arch-bar were broken. Engine 4789 was not derailed but was badly damaged; the front of the over-cab, the unit switches and the transformers were destroyed, as well as all electrical equipment at the rear end.

The employee killed was the flagman of Extra 4786-4789, and the employees injured were the conductor and the brakeman of Extra 4786-4789.

Summary of Evidence

Engineman Berrien, of Extra 1532, stated that his train entered flat track No. 1 about 12:35 a. m. He saw the flagman of his train leave the caboose to assist in picking up cars; at that time the flagman had in his possession two red lanterns. He could not say positively that the flagman placed the red lanterns on the rear of the train. When the train was ready to depart from flat track No. 1 the conductor told him that permission had been obtained to occupy the eastward freight track and to move in a reverse direction far enough for the engine to clear signal 50. He proceeded eastward on the eastward freight track, and then backed the train west of signal 50. The purpose of this movement, which was customary, was to attain sufficient speed for pulling the train over the Hackensack River bridge. After his train had stood about 5 minutes, signal 50 changed to display a proceed indication, but before the train could be started the collision occurred. The weather was clear and he said that a car could be seen about 5 or 6 car lengths distant.

Fireman Purgavie, of Extra 1532, stated that just prior to the accident a car could be seen on tangent track about 30 car lengths distant; however, he said that after the accident he could not see to the rear of his train.

Conductor Corcoran, of Extra 1532, stated that after his train entered flat track No. 1, he reported into clear to the operator at GY; then he walked toward the rear of the train with the flagman, who at that time had in his possession one white and two red lanterns. He said that as he went only half-way back he did not see the flagman place the red lanterns on the rear end. After an air-brake test was made and the train was ready to depart he obtained permission from the operator at GY to make a reverse movement upon the eastward freight track far enough westward so that when his train started it could attain sufficient speed to surmount the grade approaching the Hackensack River bridge. This movement was completed, the train stopped just west of signal 50, and he was at a telephone located about 6 car lengths east of the engine when he heard the crash of the collision, which occurred about 1:27 a. m. When making the reverse movement he was able, because of track curvature, to see a red lantern swinging at the rear end of his train, but after the accident he was unable to find evidence of red lanterns in the wreckage. At the time of the accident he saw the flagman walking toward the engine and about 6 or 7 car lengths distant from it. It is customary for a flagman to ride the front end when leaving Meadows Yard. In one statement he said that it was possible to see an object 10 car lengths distant, but in another he said that it was possible to see about 30 car lengths, as the snow on the ground reflected light. He said the reverse movement on the eastward freight track was made in the usual manner and that his crew had complied with all rules applicable.

Flagman Lehman, of Extra 1532, stated that he had two red lanterns and one white lantern in his possession when he walked to the rear of the cars that were to be picked up. A cut was made at the rear of the thirty-second car, and the two red lanterns were attached by wire hooks to the outer ends of the end-sill handholds at the rear end of the rear car. During the reverse movement, which was made in the usual manner, he rode on the rear car until the train stopped, then he started toward the front end of his train and was about 5 or 6 car lengths distant from the engine when the accident occurred. He was certain that the red lanterns were lighted when he left the rear of the train but after the accident was unable to find evidence of the lanterns as the rear two cars were overturned and coal was spilled on the ground.

Conductor McFadden, of Extra 4786-4789, stated that the air brakes were tested and they functioned properly. When approaching the point of accident he was maintaining a lookout and had stationed himself on the right side of the front platform of the caboose, which was being pushed eastward by engines

4786 and 4789 on the eastward freight track; the flaman was stationed on the left side of the platform near the emergency brake-valve. A caution-slow-speed indication was displayed by signal 6R and the train proceeded prepared to stop at signal 40R, which was displaying a stop indication. When the train approached signal 40R the indication changed to caution-slow-speed and the speed was increased to about 20 miles per hour. Soon afterward he observed that cars were standing about 8 car lengths distant on the eastward freight track and there was no light on the cars. Simultaneously his train increased speed and he jumped off when about 1-1/2 car lengths distant from the cars ahead. It was his opinion that his flaman endeavored to apply the brakes by the emergency brake-valve on the caboose, and, being occupied at that duty, failed to jump off. He understood that when cars are pushed it is the duty of the person riding the front car to observe conditions ahead and to transmit information to the engineman by means of hand or lantern signals. He said that when he was on the front end of the caboose and it was being pushed ahead of the engine, he was responsible for controlling the speed. In this instance, at the speed in which his train was moving, there was insufficient time to give a stop signal to the engineman in time to avert the collision. Although the speed was in excess of that authorized on the eastward freight track, he did not think it unsafe; the increased rate of speed, which he estimated as about 30 miles per hour, attained just as the cars ahead came into view, was directly responsible for his inability to give a stop signal in time to avert the collision. He understood that the signals involved did not indicate track occupancy, and that trains are required to run on the eastward freight track prepared to stop within range of vision; it is not unusual to find trains standing on this track. He said that there had been instances when it was necessary to apply the air brakes by means of the caboose emergency brake-valve while traversing yard tracks. Although the weather was clear the limit of visibility was about 8 car lengths.

Front Brakeman Etzweiler, of Extra 4786-4789, stated that when approaching the point of accident he was stationed in the front doorway of the caboose and was looking ahead. In effect he corroborated the conductor's statement, except that he said the range of visibility was 10 car lengths. He was familiar with the rules in effect pertaining to movements on the eastward freight track. He was not alarmed at the speed at which his train was moving just prior to the accident, as it was about the usual speed maintained.

Engineman Hagenlocker, of Extra 4786-4789, stated that the air brakes were tested and they functioned properly. When approaching the point of accident, he was operating the controls from the west cab of engine 4786, which was at the west end of

his train, and engine 4789 and the caboose were ahead of him as the train moved eastward on the eastward track. A caution-slow-speed indication was displayed by signal 6R and signal 40R displayed a stop indication until his train was about 2 or 3 car lengths from it, when it changed to caution-slow-speed. The speed was increased to 12 or 15 miles per hour and he maintained a constant lookout. The caboose and the engine ahead restricted his view, consequently, he was unable to see either the cars ahead or the red lanterns. He said he knew that the caboose was equipped with an emergency brake-valve. He understood Rule 103 and was depending upon the train crew using the emergency brake-valve in any instance when he could not see a stop hand-signal. The fireman called the indication at signal 50 as being clear; he opened the controller to the second notch and the speed was increased, as indicated by the speedometer, to 20 miles per hour. The train had moved only 4 or 5 car lengths farther when it struck the train ahead. Just prior to the collision, as the speed was about 14 miles per hour, he thought the train could have been stopped in time to avert the accident, provided the conductor could see the train ahead a distance of 8 car lengths and had given a stop signal. He said after the accident the conductor told him that he did not see the train ahead until the caboose was 1-1/2 car lengths distant. He understood the rules required that trains be operated on the eastward freight track prepared to stop within range of vision, and that the maximum authorized speed was 15 miles per hour. In this instance, it was not his intention to violate the speed restriction nor to accept the indication of signal 50, but he opened the controller to the second notch for the purpose of keeping the motors moving in accordance with the instructions for handling motors at low speed. The instructions prohibit operation with the controller in one notch continuously and require that it be opened and closed alternately. He said that visibility was restricted to 8 or 10 car lengths.

Fireman Schauer, of Extra 4786-4789, stated that when his train was approaching the point of accident he was maintaining a lookout from his side of the engine. He could not see the speedometer but estimated that the speed was about 20 or 22 miles per hour. He corroborated the engineer's statement in all essential details. He said that a light on a car could have been seen a distance of 20 or 25 car lengths, but that a car without a light attached could have been seen only 5 or 6 car lengths.

Operator Jewens, of GY, stated that he gave Extra 1532 permission to make a reverse movement on the eastward track to back clear of signal 50. At the same time he permitted Extra 4786-4789 to enter the eastward freight track but held signal 40R at stop until the conductor of Extra 1532 reported that the reverse movement was completed. Then he permitted Extra 4786-

4789 to proceed eastward on the eastward freight track. There was nothing unusual in the movement which Extra 1532 made. He said that it was possible to see about 75 car lengths at the time of the accident, which occurred about 1:27 a. m.

According to the data furnished by the railroad, the eastward freight track at Meadows Yard is an assigned track but is not a main track.

After the accident occurred a shattered red lantern was found under the debris at the scene of the accident.

Discussion

According to the evidence, Extra 1532 moved forward from flat track No. 1, entered the eastward freight track at a point about 220 feet east of signal 50, then, after receiving permission from the operator at GY station, backed westward on the eastward track and stopped with the engine standing just west of signal 50 and the rear end 5,140 feet east of GY station. The flagman said that he attached two lighted red lanterns to serve as markers on the rear end-sill handholds of the rear car. He rode the rear end back on the eastward freight track until the train stopped, then walked toward the front end. The train had been standing at this point about 5 minutes when its rear end was struck by Extra 4786-4789.

The maximum authorized speed on the track involved is 15 miles per hour. This track is an assigned track and rules applicable to assigned tracks prescribe that trains be operated at such speed that they can be stopped within range of vision; trains and engines are not required to protect against following movements. Signals in use on this track do not indicate track occupancy.

Engines 4786 and 4789, operating as a 2-unit engine and pushing the caboose ahead, entered the eastward freight track at GY station; the controls were operated from the west cab of the more westerly unit. Signal 40R was displaying a stop indication as this train approached, but before it stopped the signal indication changed to caution-slow-speed, and Extra 4786-4789 proceeded eastward at a speed of about 14 miles per hour. The fireman of this train observed that signal 50 was displaying a proceed indication and informed the engineman of that fact. He immediately opened the controller to the second notch and the speed was increased to 20 miles per hour, as indicated by the speedometer. Neither the engineman nor the fireman observed that Extra 1532 was occupying the track between their own train and signal 50, because their view ahead was obscured by engine 4789 and the caboose. The conductor and the

flagman of the second train were stationed on the front platform of the caboose to maintain a lookout and to transmit to the engineman, by lantern signals, information of conditions on this track which might affect the safe passage of their train. The conductor said that when he saw the cars ahead they were but 8 car lengths distant and at that time there was no lighted lantern displayed at the rear end. The flagman of the first train said that the red lanterns were lighted when he started toward the front end and the conductor of the first train stated that he saw one lighted red lantern swinging at the rear of the train as it backed around a curve on the eastward freight track shortly before the accident occurred. A shattered red lantern was recovered from the debris after the accident but it could not be determined whether it was lighted at the time of the accident. The conductor of the second train said that simultaneously with seeing the cars ahead the speed of his train increased so rapidly that it was impossible either to reach the emergency brake-valve on the opposite side of the platform or to give a lantern stop signal in time to avert the collision. Why the flagman did not open the emergency brake-valve is not known, as he was killed in the accident.

According to the rules applicable to operation on the track involved, the flagman of the first train was not required to provide flag protection and the second train was required to run prepared to stop within range of vision. All members of the crews of both trains involved were familiar with the rules applicable to an assigned freight track. All surviving members of the crew of the second train stated that the speed was in excess of the maximum authorized speed of 15 miles per hour, but all were agreed that such speed was not unusual. The engineman said that he had opened the controller for the purpose only of keeping the motors moving, and not in response to the proceed indication at signal 50, and his intention was to close the controller immediately and to drift.

Conclusion

This accident was caused by failure to control the speed of Extra 4786-4789 in compliance with the rules applicable to train movements on an assigned track.

Respectfully submitted,

S. N. MILLS,

Director.