INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2622

THE PENNSYLVANIA RAILROAD COMPANY
AND
THE NEW YORK, CHICAGO & ST. LOUIS RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT PLYMOUTH, IND., ON

AUGUST 24, 1942

SUMMARY

Railroads:	Pennsylvania	: New York, Chicago & St. Louis
Date:	August 24, 1942	
Location:	Plymouth, Ind.	
Kind of accident:	Side collision	
Trains involved:	Engine and cars	: Freight
Train numbers:		: 80
Engine numbers:	6859	: 516
Consist:	24 cars	: 46 cars, caboose
Speed:	Practically stopped	: 18 m. p. h.
Operation:	Interlocking	
Track:	Double; tangent; 0.38 percent descending grade eastward	: Single; tangent; level
Weather:	Clear	
Time:	About 5:09 a. m.	
Casualties:	2 injured	
Cause:	Accident caused by derailed cars obstructing crossing immediately in front of N.Y.C.& St. L. train	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2622

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

THE PENNSYLVANIA RAILROAD COMPANY
AND
THE NEW YORK, CHICAGO & ST. LOUIS RAILROAD COMPANY

October 28, 1942.

Accident at Plymouth, Ind., on August 24, 1942, caused by derailed cars obstructing crossing immediately in front of N.Y.C.& St. L. train.

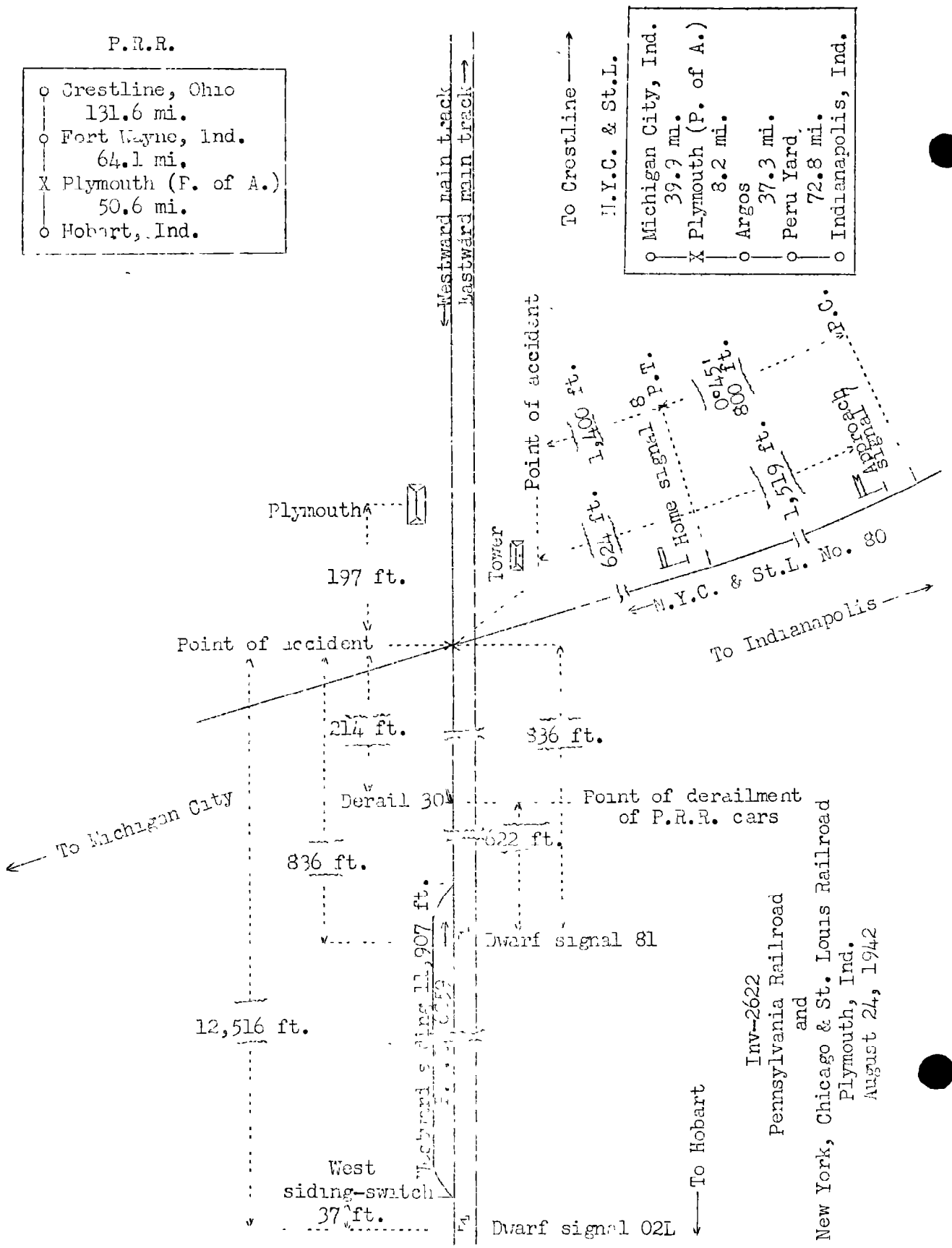
REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On August 24, 1942, there was a side collision between a freight train of the Pennsylvania Railroad and a freight train of the New York, Chicago & St. Louis Railroad at Plymouth, Ind., which resulted in the injury of two employees.

---

[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-2622
Pennsylvania Railroad
and
New York, Chicago & St. Louis Railroad
Plymouth, Ind.
August 24, 1942

Location of Accident and Method of Operation

This accident occurred at an intersection of the Pennsylvania Railroad and the New York, Chicago & St. Louis Railroad, hereinafter referred to, respectively, as the P. R. R. and the N. Y. C. & St. L. The crossing is located on that part of the P. R. R. designated as the Fort Wayne Division and extending between Crestline, Ohio, and Hobart, Ind., a distance of 246.3 miles, and on that part of the N. Y. C. & St. L. designated as the Indianapolis Division and extending between Michigan City and Indianapolis, Ind., a distance of 158.2 miles. In the vicinity of the point of accident the P. R. R. is a double-track line over which trains moving with the current of traffic are operated by an automatic block-signal system, the indications of which supersede time-table superiority. On the P. R. R. a siding 11,907 feet in length parallels the main tracks on the north. The east and west switches of this siding are located, respectively, 572 and 12,479 feet west of the crossing. In the vicinity of the point of accident the N. Y. C. & St. L. is a single-track line over which trains are operated by timetable and train orders, and a manual-block system for following movements only. The tracks of these lines intersect at an angle of 67°, and the crossing is located at a point 197 feet west of the P. R. R. station at Plymouth. Timetable directions on the P. R. R. are east and west, and on the N. Y. C. & St. L., north and south. The accident occurred within interlocking limits and on the crossing. As the crossing is approached from the west on the P. R. R. there is a tangent 11-1/2 miles to the crossing and some distance beyond. Throughout a distance of 1 mile immediately west of the point of accident the grade for east-bound trains is 0.38 percent descending. As the crossing is approached from the south on the N. Y. C. & St. L. there is a 0°45' curve to the right about 800 feet in length, which is followed by a tangent 1,400 feet to the crossing. At the crossing the grade is level.

Movements over the crossing are governed by an interlocking which is controlled from a tower in the southeast angle of the intersection. The interlocking machine is of the electro-mechanical type. The mechanical portion consists of 47 working levers in an 84-lever frame, and the electrical portion consists of 10 working levers in a 32-lever frame. The mechanical levers operate 25 signals, 5 switches, 13 derails and 18 facing-point locks. The electric levers control 8 mechanical facing-point lock levers, 1 crossover, 1 switch and 1 derail. An electric 4-lever table machine is also located in the tower for the operation of the westward siding-switches and protecting signals. Derails are provided on all main tracks. Electric switch locking is provided throughout the interlocking. The time release for the eastward dwarf home signal on the westward main track is set for 30 seconds. Dwarf home signals 02L and 81, which govern east-bound movements on the P. R. R. westward main track, are located, respectively, 12,516 feet and 836 feet west of the crossing. These signals are of the one-unit, two-indication, position-light type, and are continuously lighted. The aspects,

indications and names of these signals are as follows:

Aspect	Indication	Name
45 Degrees, upward to left	Proceed at restricted speed	Restricting
Horizontal	Stop	Stop-signal

Approach signal 7 and home signal 8, which govern northbound movements on the N. Y. C. & St. L., are located, respectively, 2,143 feet and 624 feet south of the intersection. These signals are of the one-arm, two-indication, lower-quadrant, semaphore type, and are oil burning. The involved night aspects, indications and names of these signals are as follows:

Night Aspect	Indication	Name
Approach Signal 7		
Yellow	Approach Home Signal with Caution	Caution-Signal
Home Signal 8		
Green	Proceed	Clear-Signal

An audible approach-indicator located in the tower at Plymouth gives information of the approach of a north-bound N. Y. C. & St. L. train from a point 5,471 feet south of the crossing.

Operating rules of the Pennsylvania Railroad read in part as follows:

DEFINITIONS

> Restricted Speed--Not exceeding 15 miles per hour prepared to stop short of train, obstruction or switch not properly lined * * *.
>
> 102. When a train is * * * stopped suddenly by an emergency application of the air brakes * * *, adjacent tracks as well as tracks of other railroads that are liable to be obstructed must be protected at once * * *.
>
> 103. When cars are pushed by an engine and the conditions require, a trainman must take a conspicuous position on the leading car; under such circumstances if signals from the trainmen cannot be received by the engine crew, the movement must be stopped immediately * * *.
>
> 663. A train or engine must stop clear of an interlocking signal indicating "stop." * * *.

In the vicinity of the point of accident the maximum authorized speed on the P. R. R. for the involved engine moving in backward motion is 35 miles per hour, and for freight trains on the N. Y. C. & St. L., 40 miles per hour.

Description of Accident

Extra 6859 West, a west-bound P. R. R. freight train, consisting of engine 6859, 61 loaded and 42 empty cars and a caboose, entered the westward siding at Plymouth at 4:25 a. m., according to the dispatcher's record of movement of trains, to clear for a west-bound first-class passenger train. Before Extra 6859 West departed from Fort Wayne, 64.1 miles east of Plymouth, a terminal air-brake test was made and the brakes functioned properly. About 4:59 a. m., engine 6859 with 24 cars entered the westward main track at the west siding-switch. The engine, in backward motion and pushing the cut of cars, proceeded eastward against the current of traffic, passed dwarf signal 02L, which displayed restricting, passed dwarf signal 81, which displayed stop, and while moving at an estimated speed of 12 to 30 miles per hour the first 9 cars were derailed at derail 30, located 214 feet west of the crossing, and stopped with the second car on the crossing. Immediately afterward this car was struck by N. Y. C. & St. L. No. 80.

No. 80, a north-bound second-class N. Y. C. & St. L. freight train, consisting of engine 516, 37 loaded and 9 empty cars and a caboose, departed from Peru Yard, 45.5 miles south of Plymouth, at 10:05 p. m., August 23, according to the dispatcher's record of movement of trains, 6 hours 5 minutes late, departed from Argos, 8.2 miles south of Plymouth and the last open office, at 4:40 a. m., 10 hours 5 minutes late, passed approach signal 7, which displayed caution, passed home signal 8, which displayed proceed, and while moving at an estimated speed of 18 miles per hour it collided with the derailed cars on the crossing.

Of the P. R. R. cut of cars the first 8 were derailed and stopped in various positions across both main tracks and to the north of them. These cars were badly damaged. The front truck of the ninth car was derailed. The sills of the thirteenth car were buckled. The second car was shoved ahead of the N. Y. C. & St. L. engine. It stopped about 120 feet north of the crossing and across the N. Y. C. & St. L. track, and was demolished. Engine 516, of the N. Y. C. & St. L. train, was derailed and stopped upright, badly damaged and in line with the track, with the front end about 115 feet north of the crossing. The engine truck was destroyed and the front end was badly damaged.

The weather was clear and day was breaking at the time of the accident, which occurred about 5:09 a. m.

The employees injured were the engineer of the N. Y. C. & St. L. train and the front brakeman of the P. R. R. train.

Discussion

The rules of the P. R. R. which govern operation within interlocking limits require that when a dwarf home signal displays restricting, a train or engine must be operated at a speed not exceeding 15 miles per hour and be prepared to stop short of train, obstruction, or a switch not properly lined. Trains or engines must stop short of signals that display stop. In addition, when cars are being pushed by an engine, a trainman must take a conspicuous position on the forward car and, if signals from the trainman cannot be seen by the enginemen, movement must be stopped immediately.

About 4:59 a. m. the operator-leverman at Plymouth lined the west siding-switch for engine 6859 with 24 cars to move from the westward siding to the westward main track, and after that movement was completed he restored the switch to normal position and placed the signal lever in position for signal 02L to display restricting. Before the movement from the siding to the main track had been completed, the annunciator gave information of the approach of a north-bound N. Y. C. & St. L. train, and the operator-leverman lined the route for this train to move through the interlocking. He said that the derails on the P. R. R. were in derailing position and that the home signals displayed stop. About 5:09 a. m. the operator-leverman observed the P. R. R. cut of cars pass dwarf signal 81, and soon afterward it became derailed. The cars continued across the crossing immediately in front of the N. Y. C. & St. L. train.

The fireman of the N. Y. C. & St. L. train said that as his train was approaching Plymouth the speed was about 10 miles per hour and the engineer and he were maintaining a lookout ahead. The approach signal displayed a yellow aspect; however, soon afterward the engineer called that the home signal was clear, and the speed was increased to about 18 miles per hour. When the engine was about 120 feet south of the P. R. R. westward main track, derailed cars on the P. R. R. obstructed the N. Y. C. & St. L. main track. The fireman called a warning and the engineer immediately placed the brake valve in emergency position, but the distance was not sufficient for the N. Y. C. & St. L. train to stop short of the cars. At the time of the investigation the engineer of the N. Y. C. & St. L. train was unable to make a statement, because of injuries. The front brakeman was unaware of anything being wrong until after the accident had occurred.

According to the statement of the front brakeman of the P. R. R. train, after engine 6859 started eastward on the westward main track the speed was too high for him to board the forward car. He gave a signal to stop, then boarded the seventh car to the rear of the forward car, gave a back-up signal and proceeded on top of the cars to the third car. Because the second car was a gondola, he remained in the center of the third car and maintained a lookout ahead. As the cut of cars was

approaching the crossing the speed was about 30 miles per hour, signal 81 displayed stop, and he held out his lighted lantern as a signal for the engineer to reduce speed. From his statement it is apparent that he did not have a clear understanding concerning the aspects and indications that could be displayed by signal 81 and the manner in which a train or engine should be controlled in accordance with such indications, and he was confused concerning what occurred after he gave the signal to reduce speed. The middle brakeman said that he was stationed on top of the ninth car to the rear of the front brakeman and did not see the indication displayed by signal 81. He did not see any lantern signals given by the front brakeman, and the middle brakeman did not give any lantern signal after the back-up movement was started. The middle brakeman said that the speed was about 12 miles per hour at the time of the derailment. The engineer said that as the cut of cars was approaching the crossing he was maintaining a lookout toward the rear from the right cab window. Because signal 81 was between the main tracks, he was unable to observe its indication and was depending upon lantern signals from the brakemen stationed on the cars for information with regard to controlling the speed of the cut of cars. He said that nothing obscured his view of the brakemen's lanterns. When the cut of cars was approaching signal 81 he asked the fireman what indication was displayed, and the fireman replied that he was unable to see it. About that time the middle brakeman gave a lantern signal to back and the engineer understood that the route was lined for movement through the interlocking on the westward main track. The fireman said that he was maintaining a lookout toward the rear from the left cab window but was unable to see the lantern of either brakeman or the indication displayed by signal 81. The conductor, who was on the engine, said that he did not hear the engineer remark that a signal to back had been given by one of the brakemen; however, the fireman heard the remark. The first knowledge that any member of the crew on the engine had that an accident was imminent was when the brakes became applied in emergency as a result of the derailment. The engineer had used the automatic brake valve to stop the cut of cars after it cleared the west siding-switch, and the brakes had functioned properly.

Soon after the accident occurred, examination of the interlocking disclosed that it was lined for movement on the N. Y. C. & St. L. The lights in signal 81 were lighted and the signal displayed stop.

The investigation of this accident disclosed that no member of the crew was on the forward car of the P. R. R. cut, as required by the rules. The front brakeman had only 3 months' experience as a brakeman and the middle brakeman only 1 month.

If an experienced member of the crew had been stationed on the forward car, this accident could have been averted.

Cause

It is found that this accident was caused by derailed cars obstructing a crossing immediately in front of N. Y. C. & St. L. train.

Dated at Washington, D. C., this twenty-eighth day of October, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.