INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3314

THE PENNSYLVANIA RAILROAD COMPANY

IN RE ACCIDENT

NEAR PLYMOUTH, IND., ON

MARCH 6, 1950

SUMMARY

Date:	March 6, 1950	
Railroad:	Pennsylvania	
Location:	Plymouth, Ind.	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 9522 West	: Extra 9533 West
Engine numbers:	Diesel-electric units 9522A 9511B and 9506A	: Diesel-electric units 9535A 9504B and 9520A
Consists:	70 cars, caboose	: 160 cars, caboose
Speeds:	Standing	: 38 m. p. h.
Operation:	Signal indications	
Tracks:	Double; tangent; 0.38 percent descending grade westward	
Weather:	Clear	
Time:	3 a. m.	
Casualties:	1 killed; 4 injured	
Cause:	Failure to operate following train in accordance with signal indications	

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3314

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

THE PENNSYLVANIA RAILROAD COMPANY

April 24, 1950

Accident near Plymouth, Ind., on March 6, 1950, caused by failure to operate the following train in accordance with signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On March 6, 1950, there was a rear-end collision between two freight trains on the Pennsylvania Railroad near Plymouth, Ind., which resulted in the death of one employee, and the injury of four employees. This accident was investigated in conjunction with a representative of the Indiana Public Service Commission.

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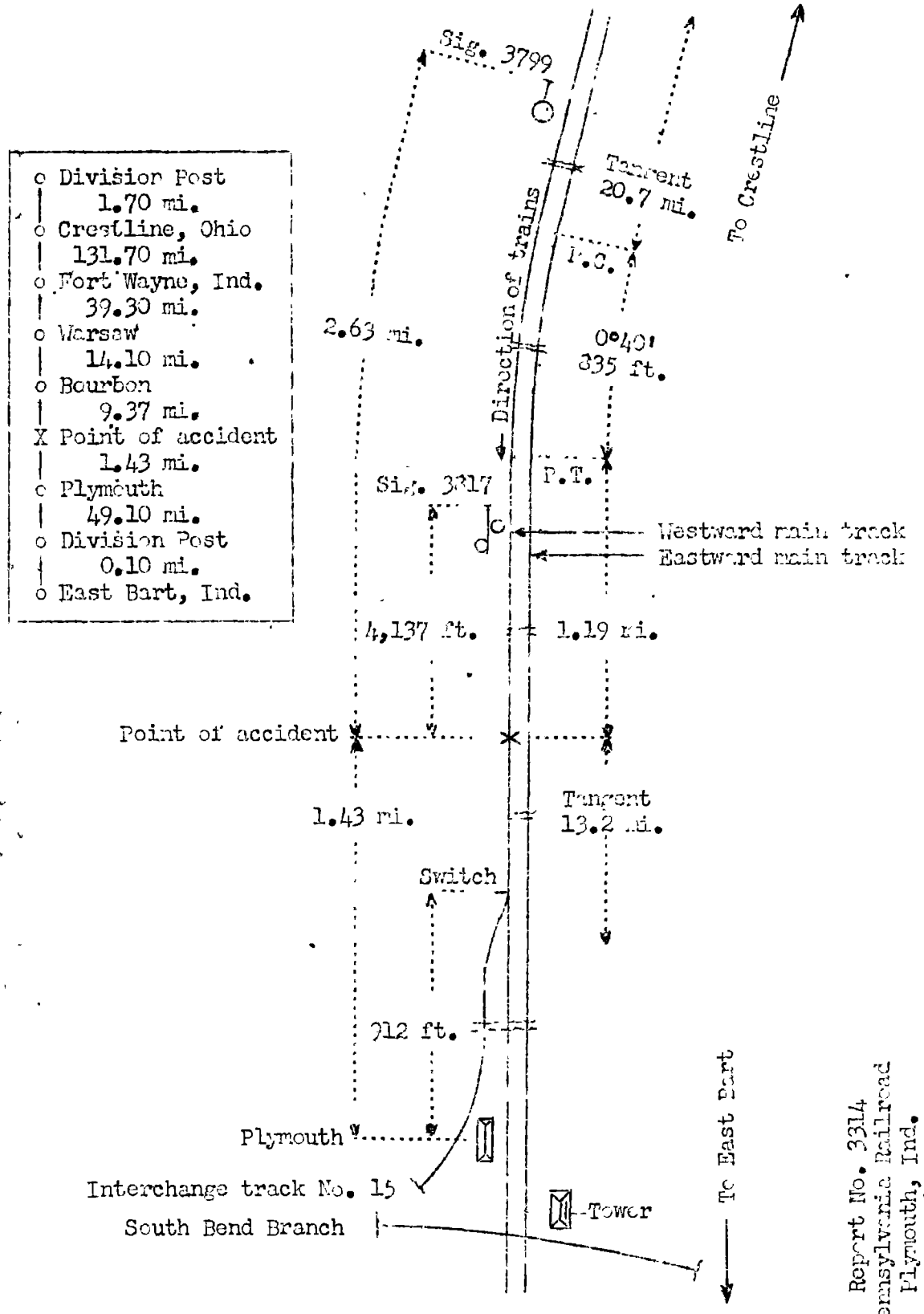
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Report No. 3314
Pennsylvania Railroad
Plymouth, Ind.
March 6, 1950

Location of Accident and Method of Operation

This accident occurred on that part of the Fort Wayne Division extending between Division Post, Crestline, Ohio, and Division Post, East Bart, Ind., 246.7 miles. In the vicinity of the point of accident this is a double-track line, over which trains moving with the current of traffic are operated by signal indications. The accident occurred on the westward main track, 194.47 miles west of Crestline and 1.43 miles east of the station at Plymouth. From the east there are, in succession, a tangent 20.7 miles in length, a 0°40' curve to the left 635 feet, and a tangent 1.19 miles to the point of accident and 13.2 miles westward. The grade for west-bound trains is 0.38 percent descending at the point of accident. At Plymouth the South Bend Branch of the Indianapolis Division crosses the Fort Wayne Division at grade. This crossing is protected by an interlocking. Interchange track No. 15 connects the westward main track of the Fort Wayne Division with the South Bend Branch. The east switch of this track is located 912 feet east of the station at Plymouth. In the vicinity of the point of accident, the tracks are laid in a cut, the walls of which rise to an average height of 15 feet above the level of the tops of the rails.

Automatic signals 3799 and 3817, governing west-bound movements on the westward main track, are located, respectively, 2.63 miles and 4,137 feet east of the point of accident. Signal 3799 is of the position-light type, approach lighted, and displays three aspects. Signal 3817 is of the color-light type, continuously lighted, and displays three aspects. It is the approach signal to interlocked signal No. 1 at Plymouth interlocking. The aspects and the corresponding indications and names applicable to this investigation are as follows:

Signal	Aspect	Indication	Name
3799	Three white lights in diagonal position to the right	Proceed prepared to stop at next signal. Train exceeding Medium speed must at once reduce to that speed.	Approach.
3817	Red over red marker-light, staggered	Stop; then proceed at Restricted speed.	Stop-and-proceed.

The controlling circuits are so arranged that when a westbound train is occupying the westward main track between signal 3817 and interlocked signal No. 1, signal 3799 indicates Approach and signal 3817 indicates Stop-and-Proceed.

This carrier's operating rules read in part as follows:

DEFINITIONS

Speeds

Medium Speed--Not exceeding one-half the speed authorized for passenger trains but not exceeding 30 miles per hour.

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

* * *

Restricted Speed--Not exceeding 15 miles per hour prepared to stop short of train, obstruction or switch not properly lined and to look out for broken rail.

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

15. Torpedoes

The explosion of two torpedoes is a signal to proceed at Reduced speed. The explosion of one torpedo will indicate the same as two but the use of two is required.

* * *

35. The following signals will be used by flagmen:

* * *

Night signals--A red 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.

* * *

Note--When trains are operating under Automatic Block System Rules, the requirements of Rule 99, in so far as protecting against following trains is concerned, will have been complied with when full protection is afforded against trains moving at Restricted speed.

4106-A. * * * all members of engine and train crews must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

The maximum authorized speed for the trains in this accident was 50 miles per hour.

Description of Accident

Extra 9522 West, a west-bound freight train, consisted of Diesel-electric units 9522A, 9511B and 9506A, coupled in multiple-unit control, 70 cars and a caboose. This train departed from Fort Wayne, 64.2 miles east of Plymouth, at 1:42 a. m., and stopped on the westward main track at Plymouth at 2:30 a. m., with the caboose standing 1.43 miles east of the station. About 30 minutes later the rear end was struck by Extra 9533 West.

Extra 9533 West, a west-bound freight train, consisted of Diesel-electric units 9533A, 9504B and 9520A, coupled in multiple-unit control, 160 cars and a caboose. This train departed from Fort Wayne at 1:08 a. m., passed Warsaw, the last open office, 24.9 miles east of Plymouth, at 2.27 a. m., passed signals 3799 and 3817, and while moving at a speed of 38 miles per hour it struck the rear end of Extra 9522 West.

The caboose and the rear 12 cars of Extra 9522 West were derailed. The fifty-ninth, sixtieth and sixty-second cars were somewhat damaged. The sixty-first and the sixty-third to the seventieth cars, inclusive, and the caboose were destroyed. The first Diesel-electric unit of Extra

9533 West was derailed to the north and stopped 515 feet west of the point of collision. The front end was 85 feet north of the westward main track and the rear end was on the westward main track. The second Diesel-electric unit was derailed and stopped with its front end near the rear end of the first unit and its rear end 22 feet north of the westward main track. The third Diesel-electric unit was derailed and stopped with its front end against the rear of the second unit and its rear end diagonally across the westward main track. The three Diesel-electric units were badly damaged. The first to the twenty-third cars, inclusive, were derailed. The first eleven cars, the thirteenth to the fifteenth cars, inclusive, and the seventeenth, eighteenth and twenty-third cars were destroyed. The twelfth, the sixteenth, and the nineteenth to the twenty-second cars, inclusive, were badly damaged.

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

The fireman of Extra 9533 West was killed. The engineer, the conductor, the front brakeman and the flagman of Extra 9533 West were injured. The estimated damage to the locomotive and cars was approximately $410,000.00.

The first Diesel-electric unit of Extra 9533 West was equipped with a safety-control feature actuated by a diaphragm foot-valve pedal. If pressure on this pedal is released a service application of the air brakes will result, unless a brake application of predetermined brake-cylinder pressure has been made or the handle of the automatic brake valve is depressed. A warning whistle in the cab operates in conjunction with the safety-control feature and sounds for a limited time before a safety-control application is initiated, unless forestalled by pressure on the pedal or by holding the handle of the automatic brake valve in depressed position. A safety-control application or an emergency application of the air brake, from any cause, cuts off power to the traction motors of the Diesel-electric units.

The cab of the first Diesel-electric unit of each train was equipped with trainphone apparatus with loud speaker for communication with similarly equipped engines, cabooses, and stations.

Discussion

Extra 9522 West stopped about 2:30 a. m. on the westward main track at Plymouth, where 29 cars immediately behind the engine were detached from the train and placed on an auxiliary track. The rear end of the train was 4,137 feet west of signal 3817. When the train stopped, the enginemen were in the cab of the first Diesel-electric unit and the front brakeman and the third brakeman were in the vicinity of the front end of the train. The conductor and the flagman were in the caboose. Immediately after the train stopped, the flagman proceeded eastward with flagging equipment to provide protection. The flagman said he placed two torpedoes on the north rail of the westward main track approximately 700 feet east of the caboose and then returned to a point approximately 100 feet east of the caboose. The conductor inspected about 25 cars in the rear portion of the train and then returned to the rear of the train. Both the conductor and the flagman heard Extra 9533 West approaching before they could see the headlight. They said that no signal was sounded on the pneumatic horn as the train approached. When the headlight became visible the flagman lighted a red fusee and gave stop signals. These signals were not acknowledged and there was no apparent reduction of speed of the approaching train. The flagman continued to give stop signals with the lighted fusee until immediately before the engine of the approaching train passed him. He then threw the burning fusee toward the front window of the cab in an attempt to attract attention. The brakes of the train were not applied and the train continued without any reduction in speed until it struck the caboose of the standing train.

The engine crew of Extra 9522 West said that after the cars were placed on the auxiliary track at Plymouth, several attempts were made to talk with the engine crew of the following train by trainphone but there was no response to their calls. The fireman saw the headlight of the following train approaching from the east and the reflection from the lighted fusee of the flagman of his train. The collision occurred before the Diesel-electric units of Extra 9522 West were recoupled to the train, and members of the crew at the front end of the train were unaware of the accident until informed of it by the conductor.

As Extra 9533 West was approaching the point where the accident occurred the enginemen were in the cab of the first Diesel-electric unit. The windows of the cab were closed. Two brakemen were in the cab of the third Diesel-electric unit, and the conductor and the flagman were in the

caboose. The headlight was lighted brightly. The brakes of this train had been tested at Fort Wayne but they had not been used en route. The trainphone apparatus was operative at Fort Wayne and was used to communicate with the engine crew of Extra 9522 West, the preceding train. The engineer said that between Fort Wayne and Bourbon both he and the fireman had called the indication of each signal. Bourbon is 9.37 miles east of the point of accident. He also said that before his engine passed Bourbon he observed that the lamp on the panel of the trainphone apparatus was lighted. This indicated that the apparatus was in service. He also sounded the engine whistle signal for rail-highway grade crossings at Bourbon. However, he said he did not remember anything that occurred from the time the train passed Bourbon until after the accident occurred. The fireman was killed. The two brakemen who were in the cab of the third Diesel-electric unit said the trainphone apparatus in the cab of that unit was in service but they did not hear any conversation over it. They did not observe the aspects of the wayside signals. They said they did not hear the explosion of a torpedo and they did not see a lighted fusee before the accident occurred.

Although no surviving member of the crew of Extra 9533 West saw the aspects displayed by signals 3799 and 3817, they were observed to be functioning properly after the accident occurred. These signals displayed proper aspects for the preceding train, and they functioned properly when tested after the accident occurred. Under the conditions existing, the aspect displayed by signal 3799 required that the speed of Extra 9533 West be reduced at once to medium speed and to be so controlled that the train could be brought to a stop before passing signal 3817. The aspect displayed by signal 3817 required that Extra 9533 West stop before it passed the signal, and then to proceed at restricted speed. Members of the train crew had noticed nothing unusual in the handling of the train prior to the time the accident occurred. They stated that there was no reduction in speed as the train approached the point of accident.

Cause

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

Dated at Washington, D. C., this twenty-fourth day of April, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.