

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3361
THE PENNSYLVANIA RAILROAD COMPANY
IN RE ACCIDENT
NEAR JEWETT, OHIO, ON
SEPTEMBER 1, 1950

SUMMARY

Date: September 1, 1950

Railroad: Pennsylvania

Location: Jewett, Ohio

Kind of accident: Rear-end collision

Trains involved: Freight : Freight

Train numbers: Extra 6777 West : Extra 5817 West

Engine numbers: 6777 : Diesel-electric
units 5817A
and 5729A

Consists: 71 cars, caboose : Caboose

Speeds: 3 m. p. h. : 20 m. p. h.

Operation: Automatic block and cab-signal
systems

Tracks: Double; 2°20' curve; 0.75 percent
descending grade westward

Weather: Clear

Time: 2:45 p. m.

Casualties: 3 injured

Cause: Failure to operate following train
in accordance with signal
indications

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3361

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

THE PENNSYLVANIA RAILROAD COMPANY

October 31, 1950

Accident near Jewett, Ohio, on September 1, 1950, caused
by failure to operate the following train in
accordance with signal indications.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On September 1, 1950, there was a rear-end collision between two freight trains on the Pennsylvania Railroad near Jewett, Ohio, which resulted in the injury of three employees. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Ohio.

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.

To Pittsburgh →

Sig. 667

Track No. 1, eastward
Track No. 2, westward

- Pittsburgh, Pa.
- | 0.2 mi.
- Division Post
- | 41.0 mi.
- Weirton Jct., Ohio
- | 16.3 mi.
- Acre
- | 10.6 mi.
- X Point of accident
- | 1.8 mi.
- Jewett
- | 87.7 mi.
- Division Post
- | 0.2 mi.
- Newark, Ohio

1.51 mi. 3,456 ft.

Direction of trains

P.T.

P.C.

2020'
1,350 ft.

Point of accident

2020'
245 ft.

To Jewett
1.8 mi.

To Newark

Report No. 3361
Pennsylvania Railroad
Jewett, Ohio
September 1, 1950

Location of Accident and Method of Operation

This accident occurred on that part of the Fanhandle Division extending between Division Post, Pittsburgh, Pa., and Division Post, Newark, Ohio, 157.4 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 automatic block-signal and cab-signal indications. The main tracks from south to north are designated as No. 1, eastward, and No. 2, westward. The accident occurred on track No. 2 at a point 68.1 miles west of Pittsburgh and 1.8 miles east of the station at Jewett. From the east there are, in succession, a tangent 3,456 feet in length, and a 2°20' curve to the left 1,350 feet to the point of accident and 245 feet westward. The grade is 0.75 percent descending westward throughout a distance of 4,930 feet to the point of accident.

Automatic signal 667, governing west-bound movements on track No. 2, is located 1.51 miles east of the point of accident. This signal is of the position-light type and is approach lighted. It displays three aspects. There is an amber marker light under this unit. A yellow disc, on which is shown the letter "G" in black, is mounted on the mast below the marker light.

The cab signals are of the continuous-inductive, four-indication, position-light type. Each locomotive is equipped with two cab signals which are so arranged that their aspects may be observed by the enginemen from their respective positions in the control compartment. The aspects applicable to this investigation and their corresponding indications and names are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
667	Three amber lights in horizontal position over amber marker light over yellow disc with letter "G" in black	Stop; then proceed at Restricted speed. NOTE--Freight trains of 90 or more cars or having tonnage of 80 per cent or	Stop-and-proceed.

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
		more of the prescribed engine rating may proceed at Restricted speed without stopping at signals displaying a yellow disc on which is shown the letter "G" in black.	
Cab Signal	Two white lights in diagonal position to the left.	Proceed at Restricted speed.	Restricting.

The controlling circuits are so arranged that when the block of signal 667 is occupied, this signal indicates Stop-and-proceed, except that freight trains of 90 or more cars or having tonnage of 80 percent or more of the prescribed engine rating may proceed at Restricted speed without stopping, because of the grade marker disc displayed on the signal mast. The cab signal of an engine entering an occupied block indicates Restricting and the cab signal warning whistle sounds until acknowledged.

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

DEFINITIONS

Speeds

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.

15. Torpedoes

The explosion of two torpedoes is a signal to proceed at Reduced speed. * * *

* * *

35. The following signals will be used by flagmen:

Day signals--A red flag, torpedoes and fuseses.

* * *

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 fuseses.

* * *

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

* * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fuseses must be dropped off at proper intervals.

* * *

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.

The maximum authorized speed for freight trains was 50 miles per hour.

Description of Accident

Extra 6777 West, a west-bound freight train, consisted of engine 6777, 71 cars and a caboose. This train passed Acre, the last open office, 10.6 miles east of the point where the accident occurred, at 2:15 p. m., and stopped on track No. 2 about 2:40 p. m., with the rear end 1.8 miles east of the station at Jewett. About 5 minutes later while it was moving westward at a speed of about 3 miles per hour the rear end was struck by Extra 5817 West.

Extra 5817 West, a west-bound freight train, consisted of Diesel-electric units 5817A and 5729A, coupled in multiple-unit control, and a caboose. This train passed Acre at 2:21 p. m. and stopped at signal 667, which indicated Stop-and-proceed, then proceeded westward and while moving at an estimated speed of 20 miles per hour it struck the rear end of Extra 6777 West.

The caboose and the rear three cars of Extra 6777 West were derailed. The caboose and the sixty-ninth car were badly damaged. The seventieth car was demolished and the seventy-first car was slightly damaged. Extra 5817 West stopped with the front of the first Diesel-electric unit 60 feet west of the point of accident. The front end of the first Diesel-electric unit was somewhat damaged. No equipment of Extra 5817 West was derailed.

The conductor and the flagman of Extra 6777 West, and the front brakeman of Extra 5817 West, were injured.

The weather was clear at the time of the accident, which occurred about 2:45 p. m.

The brake equipment of Diesel-electric unit 5817A was of the 24-RL type with DA-24-H automatic brake valve and S-40-F independent brake valve. An emergency valve was located on the fireman's side of the operating compartment. The feed valve was adjusted to supply brake-pipe pressure of 80 pounds. Each unit was equipped with a 3-position K-2 rotair valve. Under the rules of the carrier, the freight position is used with freight trains of more than 25 cars to retard the development of brake cylinder pressure on the locomotive and synchronize it with that of the cars in the train. In that position the controlled emergency feature of the brake equipment is operative. The engineer can nullify the controlled emergency feature and obtain a rapid development of maximum locomotive brake-cylinder pressure during an emergency application by moving the independent brake valve to full application position. The passenger position is used on passenger trains, and in that position the controlled emergency feature is inoperative. The lap position is used when the brakes are not controlled from that unit. A safety-control feature with diaphragm foot valve is provided. Each unit is equipped with an H-5-A relay air valve to provide automatic sanding of the rails during an emergency application of the brakes.

Discussion

The rules of this carrier provide that, when a train is moving in automatic block-system territory and 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 against a train moving at restricted speed. When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. When the view is obscured, lighted fuses must be dropped off at proper intervals. A train may, after stopping at a signal which indicates Stop-and-proceed, proceed into the block governed by that signal but the speed must not exceed 15 miles per hour and must be so controlled that the train can be stopped short of a train ahead. The same restrictions apply while a train is moving in an occupied block under a Restricting cab-signal indication.

About 2:40 p. m. Extra 6777 West stopped on track No. 2 east of the station at Jewett, where a helper engine was detached from the front of the train. The rear end of the train was about 1-1/2 miles west of signal 637. The brakes of this train had been tested and had functioned properly when used en route. When the train stopped, the flagman immediately alighted from the caboose and proceeded eastward to provide protection. At a point approximately 300 feet east of the caboose he placed two torpedoes on the rail about 39 feet apart. About 4 minutes later he was recalled. After the train began to move westward the conductor and the flagman were in the cupola of the caboose. When the train had proceeded westward a distance of about 300 feet they heard the explosions of the two torpedoes. Until that time they were not aware that the following train was approaching. The conductor said that when he first saw the following train he realized that it was moving too fast to be stopped short of his train. Both the conductor and the flagman alighted from the caboose a few seconds before the collision occurred.

Extra 5817 West departed from Acre about 6 minutes after the preceding train departed from that station. The enginemen were maintaining a lookout ahead from their respective positions in the control compartment of the first Diesel-electric unit. The conductor, the flagman and the front brakeman were in the caboose. The brakes of this train had been tested and had functioned properly when used en route. The engineer said that each roadway signal between Acre and the point where the accident occurred indicated Stop-and-proceed. He said the train was stopped at each signal

and the Restricting cab-signal indication was acknowledged as the train entered each block. As the train approached the point where the accident occurred the speed was about 20 miles per hour. Because of track curvature and vegetation on the embankment on the inside of the curve the view of the point where the accident occurred from the cab of a west-bound engine is restricted to a distance of about 1,000 feet. The fireman called a warning when he first observed the caboose of the preceding train. The engineer immediately initiated an emergency application of the brakes, but the speed of the train was not materially reduced before the collision occurred.

The investigation disclosed that when the accident occurred the rotair valve was in position for freight service. As a result, the controlled emergency feature of the 24-RL brake equipment was operative and the development of maximum locomotive brake-cylinder pressure during the emergency application of the brakes was retarded. In that position, about 35 seconds is required after the automatic brake valve is placed in the emergency position to develop locomotive brake-cylinder pressure of 50 pounds. With a freight train consisting only of the engine and the caboose, the rules require that the rotair valve be placed in position for passenger service. In that position, only 6 seconds is required to develop maximum locomotive brake-cylinder pressure during an emergency application of the brakes. The engineer said he was not accustomed to operating Diesel-electric units with the valve in passenger position and forgot to change the valve to that position. However, signal 667 indicated Stop-and-proceed when Extra 5817 West passed it and the cab signal indicated Restricting while the train was moving in the block of signal 667. Each indication required the train to be so operated that it could be stopped short of a preceding train.

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 thirty-first day of October, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.