INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3212

READING COMPANY

REPORT IN RE ACCIDENT

AT MAHANOY CITY, PA., ON

OCTOBER 29, 1948

SUMMARY

Railroad:	Reading
Date:	October 29, 1948
Location:	Mahanoy City, Pa.
Kind of accident:	Derailment
Equipment involved:	Engine with cars
Engine number:	1643
Consist:	16 cars, caboose
Speed:	5 m. p. h.
Operation:	Timetable instructions
Track:	Single; 12° curve; 0.9 percent ascending grade eastward
Weather:	Clear and dark
Time:	6:20 p. m.
Casualties:	1 killed
Cause:	Broken rail

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3212

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

READING COMPANY

January 6, 1949

Accident at Mahanoy City, Pa., on October 29, 1948, caused by a broken rail.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On October 29, 1948, there was a derailment of an engine with cars on the line of the Reading Company at Mahanoy City, Pa., which resulted in the death of one employee.

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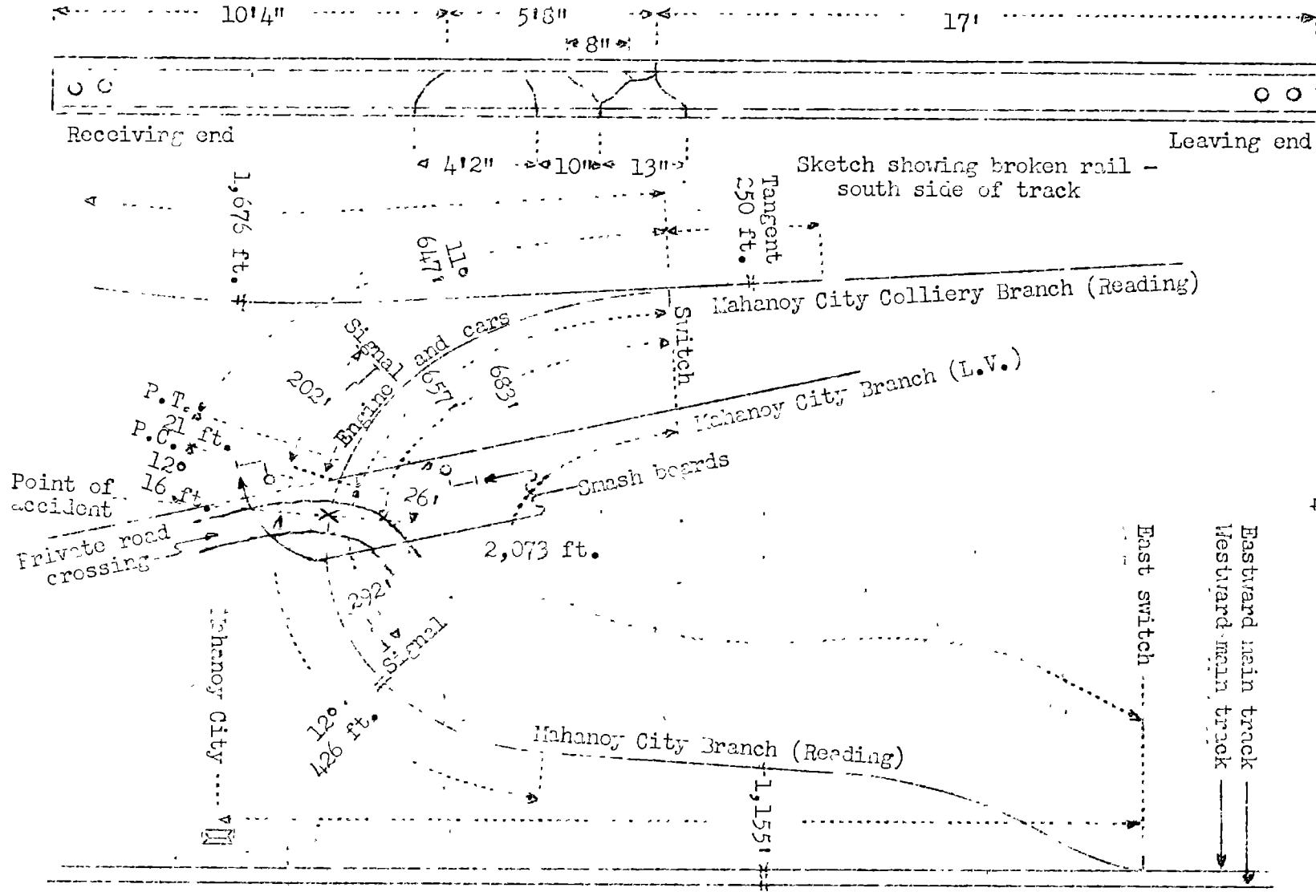
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3212
Reading Company
Mahanoy City, Pa.
October 29, 1948

Location of Accident and Method of Operation

This accident occurred on the Mahanoy City Branch of the Shamokin Division, a single-track colliery branch for freight use only, over which trains are operated by timetable instructions. There is no block system in use. This branch has a total length of 1.09 miles, and its east end connects with the westward main track of the Mahanoy City and Shamokin Branch at a point 1,155 feet east of the station at Mahanoy City. A second branch, designated as the Mahanoy City Colliery Branch, connects with the Mahanoy City Branch at a point 2,073 feet west of the main-track switch, and extends westward a distance of 1,676 feet.

The Mahanoy City Branch of the Lehigh Valley Railroad crosses the Mahanoy City Branch of the Reading at grade at a point 657 feet east of the switch leading to the Mahanoy City Colliery Branch. This crossing is protected by an interlocking, which normally is lined for movements over the Reading. Interlocking signals governing movements over the crossing on the Reading are 202 feet west and 292 feet east of the crossing. These signals are of the semaphore type, and are semi-automatic. They display two aspects, and each is provided with a marker light. Power-operated smash boards, normally in stop position, are located on either side of the crossing on the Lehigh Valley Railroad. The accident occurred at a private-road crossing on the Mahanoy City Branch at a point 26 feet east of the Lehigh Valley Railroad crossing. From the west there are, in succession, a tangent 250 feet in length, an 11° curve to the left 647 feet, a tangent 21 feet, and a 12° curve to the left 16 feet to the point of accident and 426 feet eastward. The grade for east-bound movements is 0.6 percent descending 250 feet, 0.1 percent descending 647 feet, level 21 feet and 0.9 percent ascending 16 feet to the point of accident and 426 feet eastward.

The track structure consists of 100-pound rail, 33 feet in length, rolled during 1913 and laid in its present location during 1944, on an average of 18 treated ties per rail length. It is provided with 26-inch 4-hole joint bars, and is fully tieplated with three spikes per tie plate. It is ballasted with cinders to a depth of 14 inches below the ties except through the private road crossing, which is ballasted with crushed stone.

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

* * *

103. When cars are pushed by an engine a trainman must take a conspicuous position at the head end of the draft, leading car when practicable, where he can observe conditions in advance of the movement.

* * *

Instructions appearing on carrier's Form R-36-Rev., for use in recording results of inspection of running rails in main tracks through public and private road crossings, read in part as follows:

* * *

INSTRUCTIONS:- Rails that have been in crossings seven (7) years must be examined once each year by opening up crossing, scraping the dirt from web of rail, and wire brush to inspect for fatigue cracks.

Rails at all crossings to be inspected twice each year visually or by digging up crossing and condition noted on form.

* * *

When crossing is dug up, at any time, for any reason, rails must be examined, * * * and results recorded * * *.

* * *

The maximum authorized speed for trains on this branch is 15 miles per hour.

Description of Accident

During switching operations on the Mahanoy City Colliery Branch, 13 cars were assembled ahead of engine 1643, headed east, and a caboose and 3 cars were behind the engine. About 6:18 p. m. this movement entered the Mahanoy City Branch, passed the interlocking signal at the Lehigh Valley crossing, which indicated proceed, and while it was moving at an estimated speed of 5 miles per hour the first three cars were derailed.

The first car was derailed to the right and leaned at an angle of approximately 45°. The front end of this car struck the concrete foundation of a building located parallel to and 9 feet 6 inches south of the center-line of the track, and was badly damaged. The second and third cars were derailed and slightly damaged.

The front brakeman was killed.

The weather was clear and it was dark at the time of the accident, which occurred about 6:20 p. m.

Discussion

Engine 1643 entered the Mahanoy City Branch about 5:20 p. m. and proceeded to the Mahanoy City Colliery Branch, where switching was performed. About 6:18 p. m. this movement proceeded eastward on the Mahanoy City Branch, with 13 cars of coal ahead of the engine and a caboose and 3 cars behind it. The engine was headed east. The interlocking signal indicated proceed. The engineer and the fireman were maintaining a lookout ahead from their respective positions in the cab of the engine. The front brakeman was riding on the front end-sill of the first car, the conductor was on the right front sill-step of the second car, and the flagman was providing flag protection at a public-road crossing 173 feet west of the point where the derailment occurred. The first any of these employees knew of anything being wrong was when they heard the collision of the first car with a building near the track. Prior to the time the derailment occurred, the engine and cars were riding smoothly and there was no indication of defective equipment or track, nor of any obstruction having been on the track.

After the accident, a broken rail was found in the private-road crossing where the derailment occurred. This rail was a 100-pound P. S. section, 33 feet in length. It was manufactured by the Pennsylvania Steel Company in 1913, and was laid in the crossing during 1944. The heat number, rail number, and ingot number were not legible. Between points 10 feet 4 inches and 16 feet from the receiving end, the head was separated from the web. There was a new break in the head of the rail at a point 16 feet from the receiving end. At this point the flange of a wheel of the first truck of the leading car mounted the rail 3/4-inch from the gage side and ran diagonally on the top of the rail 10-1/2 inches, then it dropped to the outside of the rail. In addition to the break through the head, there were five angular breaks extending through the web and base within the limits of the head and web separation. Examination disclosed that the fractured surfaces at the angular breaks were considerably corroded, which condition indicated that these fractures had existed some time prior to the final break.

Chemical analysis of this rail showed that the composition was in accordance with the specifications in effect at the time of its manufacture. This rail was inspected on June 28, 1948, when the ballast was removed through the crossing, and the base and the web of the rail in question were cleaned with a wire brush. At that time it was in good condition and showed no indication of fracture. It was last visually inspected on October 22, 1948, at which time no defective condition was found.

The private-road crossing is at the point of curvature of a 12° curve, and the rails in the crossing are subject to corrosion by ballast on either side of the rails and to flexing by heavily loaded trucks which frequently traverse the crossing. Apparently the rail section had been weakened by the corrosive action of the ballast and the flexing by heavily loaded trucks, and then broke when the loaded coal car entered upon it.

Cause

It is found that this accident was caused by a broken rail.

Dated at Washington, D. C., this sixth day of January, 1949.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.