

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2992
THE PENNSYLVANIA RAILROAD COMPANY
REPORT IN RE ACCIDENT
NEAR MOUNT UNION, PA., ON
MAY 10, 1946

SUMMARY

Railroad: Pennsylvania
Date: May 10, 1946
Location: Mount Union, Pa.
Kind of accident: Rear-end collision
Equipment involved: Freight train : Two engines
Train numbers: Extra 6714 East : Extra 6871 East
Engine numbers: 6714 : 6871
Consists: 110 cars, capoose : Engine 6812 in tow
Estimated speeds: Standing : 18 m. p. h.
Operation: Automatic block and cab-
signal systems
Tracks: Four; 1° 26' curve; 0.13 percent
ascending grade eastward
Weather: Hazy
Time: 3:30 a. m.
Casualties: 1 killed
Cause: Failure to operate following
train in accordance with
signal indications

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2992

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

THE PENNSYLVANIA RAILROAD COMPANY

June 26, 1946.

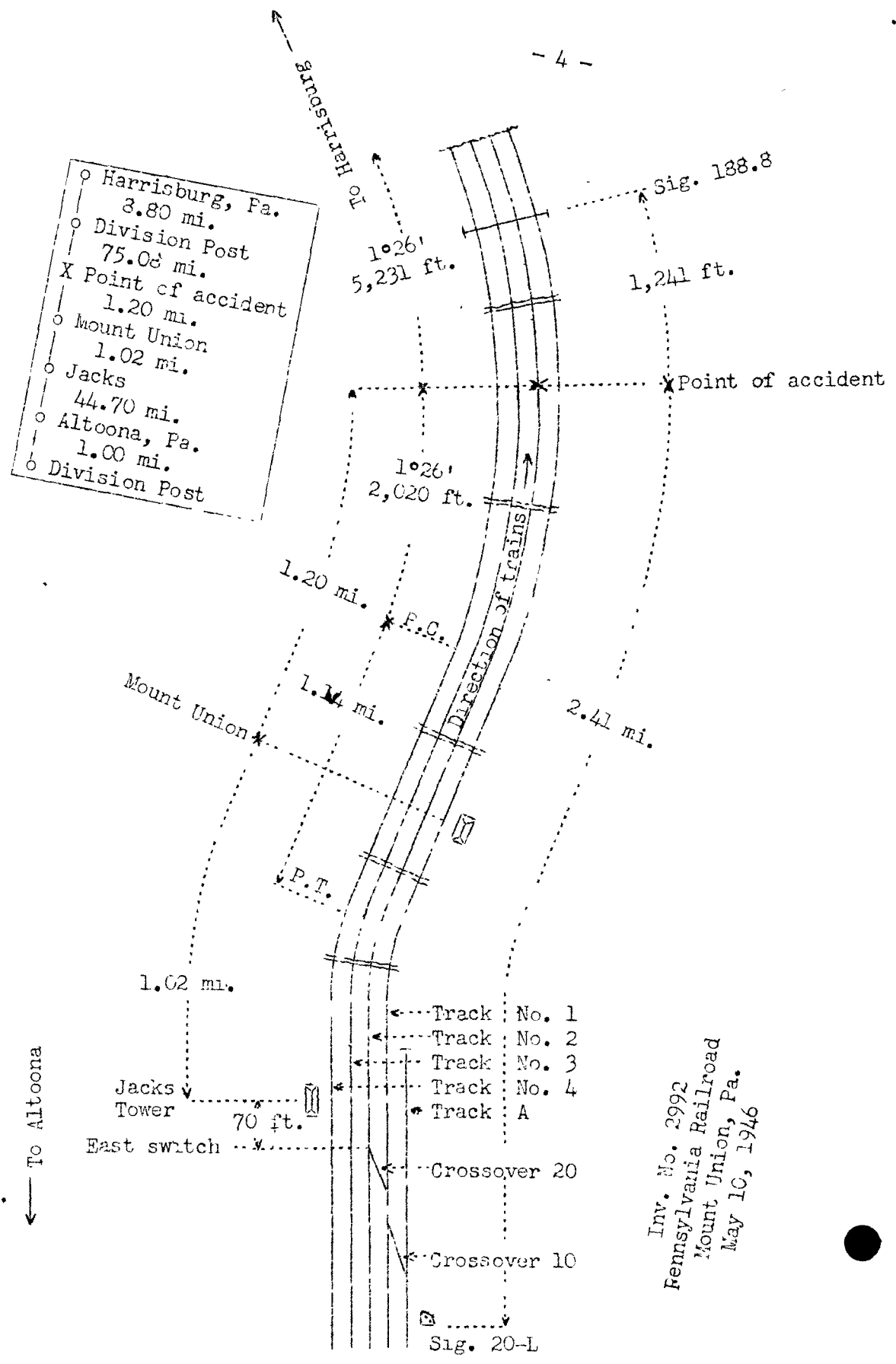
Accident near Mount Union, Pa., on May 10, 1946, caused
by failure to operate the following train in accord-
ance with signal indications.

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REPORT OF THE COMMISSION

PATTERSON, Commissioner:

On May 10, 1946, there was a rear-end collision between
a freight train and two engines, coupled, on the Pennsylvania
Railroad near Mount Union, Pa., which resulted in the death
of one employee.

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



Inv. No. 2992
 Pennsylvania Railroad
 Mount Union, Pa.
 May 10, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Middle Division extending between Division Post, near Altoona, and Division Post, near Harrisburg, Pa., 125 miles, a four-track line in the vicinity of the point of accident. The main tracks from south to north are designated as No. 1, eastward passenger, No. 2, eastward freight, No. 3, westward freight, and No. 4, westward passenger. Trains moving with the current of traffic on tracks Nos. 1, 2, 3 and 4 are operated by automatic block-signal and cab-signal systems. At Jacks, 44.7 miles east of Altoona, secondary track A parallels the main tracks on the south. Movements from track A to track No. 1 and thence to track No. 2 are made through crossovers 10 and 20, which are controlled from the interlocking machine at Jacks. The east switch of crossover 20 is 70 feet west of the tower. The accident occurred on track No. 2, at a point 2.22 miles east of Jacks and 1.2 miles east of the station at Mount Union. From the west on track No. 2 there is a tangent 1.14 miles in length, which is followed by a 1°26' curve to the left 2,020 feet to the point of accident and 5,231 feet eastward. The grade is 0.13 percent ascending eastward.

Home signal 20-L, a dwarf signal governing movements from track A to any main track within the interlocking limits at Jacks and automatic signal 188.8 governing east-bound movements on track No. 2 are, respectively, 2.41 miles west and 1,241 feet east of the point of accident. These signals are of the position-light type. Signal 20-L is controlled from the interlocking machine at Jacks. The cab signals are of the four-indication position-light type. The involved aspects and corresponding indications and names of these signals are as follows:

| <u>Signal</u> | <u>Aspect</u> | <u>Indication</u> | <u>Name</u> |
|---------------------|---|---|-------------------|
| 20-L and cab signal | Two white lights in diagonal position to the left | Proceed at Restricted speed. | Restricting. |
| 188.8 | Three white lights in horizontal position over white marker | Stop; then proceed at Restricted speed. | Stop-and-proceed. |

The controlling circuits are so arranged that when an east-bound train is occupying track No. 2 in the block extending from a point 1,743 feet east of signal 20-L to signal 188.8, crossovers 10 and 20 may be lined for an east-bound movement from track A to track No. 2 and signal 20-L will display proceed-at-restricted-speed. The controlling circuits of the cab-signal system are so arranged that, when an east-bound train is occupying the block extending from a point 1,743 feet east of signal

20-L to signal 188.6, the cab signals of a following train moving eastward from track A through crossovers 10 and 20 and thence eastward on track No. 2 will display proceed-at-restricted-speed from signal 20-L eastward to the point where the track is occupied by the preceding train.

Operating rules read in part as follows:

DEFINITIONS

* * *

Cab Signal--A signal located in engineman's compartment or cab indicating a condition affecting the movement of a train or engine.

* * *

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.

18. 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.

* * *

19. The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear of the train:

* * *

By night, on engines and cars, marker lamps lighted showing red to the rear * * *

35. The following signals will be used by flagmen:

* * *

Night signals--A red light, a white light, torpedoes and fuses.

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 fuses.

* * *

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 fuses must be thrown 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.

296. Cab signal indications do not supersede fixed signal indications except when cab signal changes to a more restrictive or a more favorable indication after passing a fixed signal.

In the vicinity of the point of accident, the maximum authorized speed on track No. 2 is 50 miles per hour.

Description of Accident

Extra 6714 East, an east-bound freight train, consisting of engine 6714, 110 cars and a caboose, passed Jacks at 3:11 a. m. and stalled on track No. 2 about 3:29 a. m., with the rear end standing 2.22 miles east of Jacks and 1,241 feet west of signal 188.8. About 1 minute later the rear end of this train was struck by Extra 6871 East.

Extra 6871 East consisted of engine 6871, which was hauling engine 6812 in tow. This train was into clear on track A at Jacks when Extra 6714 East passed that point. Extra 6871 passed signal 20-L, which displayed proceed-at-restricted-speed, moved eastward through crossovers 10 and 20, entered track No. 2 and departed east-bound from Jacks at 3:19 a. m., and while moving at an estimated speed of 18 miles per hour it struck Extra 6714.

The caboose of Extra 6714 was demolished and the wreckage was consumed by fire. The rear three cars were derailed and stopped in various positions across the four main tracks. These cars were badly damaged as a result of the collision and the fire. Engine 6871 was derailed but remained upright. It stopped 120 feet east of the point of accident, across tracks Nos. 2 and 3 and at an angle of 30 degrees to them. Engine 6812 and the tender of engine 6871 were derailed but remained upright and practically in line with track No. 2. Engine 6871 was badly damaged.

There was a slight haze at the time of the accident, which occurred about 3:30 a. m.

The conductor of Extra 6714 was killed.

Discussion

Because the steam pressure failed, Extra 6714 East stalled on an ascending grade about 3:29 a. m., with its rear end standing 1,241 feet west of signal 183.8 and 2.41 miles east of signal 20-L. About 1 minute later the rear end of this train was struck by Extra 6871 East.

Under the rules of this carrier, 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. During the night, lighted fuseses must be thrown off at proper intervals. In automatic block-signal territory full flag protection consists of providing flag protection a distance sufficient only for stopping a following train which is being operated in such manner that it can be stopped short of a preceding train or an obstruction. When a train is moving under a proceed-at-restricted-speed indication, the speed must not exceed 15 miles per hour and the train must be operated in such manner so that it can be stopped short of a preceding train or an obstruction.

The investigation disclosed that engines 6871 and 6812, coupled, backed into clear on track A at Jacks about 2:15 a. m. The steam pressure of engine 6812 failed and the fire was drawn. Then the air-brake system on engine 6812 was arranged for dead-engine operation. The air-brake system of both engines was in the charge of the engineer of engine 6871, and the brakes functioned properly. Extra 6714 East, moving on track No. 2, passed Jacks at 3:11 a. m. Soon afterward the operator lined the route from track A through crossovers 10 and 20, thence to track No. 2. Signal 20-L displayed proceed-at-restricted-speed, and the cab signals on each side of the cab of the first engine of Extra 6871 displayed the same indication. The most favorable indication which can be displayed by signal 20-L is proceed-at-restricted-speed. Extra 6871 departed from Jacks at 3:19

a. m. After this train passed the eastern limits of the interlocking, 1,743 feet east of signal 20-L, it entered a block which extended to signal 188.8, a distance of 2.31 miles. Trains moving east-bound from track A to track No. 2 are controlled by the indication displayed by signal 20-L until the trains reach signal 188.8, unless the cab signals change to display an indication which is more favorable. As Extra 6871 was approaching the point where the accident occurred, the speed was about 18 miles per hour and the headlight was lighted brightly. Throughout a considerable distance between Jacks and the point where the accident occurred, both engineers of the first engine were maintaining a lookout ahead. Soon after Extra 6871 entered the curve to the left, the fireman proceeded to the coal space of the tender to open a slide of the stoker conveyor so that coal might feed to the stoker. As soon as the engineer observed that the fireman had left the cab he turned toward the tender and told the fireman to maintain a lookout from the left side of the cab. Immediately afterward the engineer again looked ahead and observed the lighted red marker lamps of Extra 6714 at a distance of about 200 feet. He immediately applied the brakes. However, the speed was not materially reduced at the time of the collision. The fireman had just returned to his seat when the accident occurred. The engineers who were riding on the second engine were not aware of anything being wrong until the accident occurred. The engineers of the first engine said the cab signals continued to display proceed-at-restricted-speed from Jacks to the point of accident, and they understood that the block was occupied by a preceding train. Under the rules, the speed of Extra 6871 was required to be so controlled that the train could be stopped short of a preceding train. The fireman said that after his engine had moved about 1,000 feet east of the west end of the curve involved the coal stopped feeding into the stoker, and, since he observed no indication of a preceding train or any flagman's signals, he proceeded into the coal space of the tender. He said he warned the engineer that he was leaving his usual post of duty, but the engineer said he did not hear this warning and was not aware that the fireman was not maintaining a lookout ahead until just before the accident occurred. Neither of these employees heard or saw any flagging signals between Jacks and the point of accident nor the flagman of the preceding train until after the accident occurred. At that time the flagman was about 300 feet west of the point of accident.

Immediately prior to the accident, the conductor and the flagman of Extra 6714 were in the caboose. The conductor was killed in the accident. The flagman of Extra 6714 said that about the time his train stalled he observed the headlight of Extra 6871 approaching to the rear of his train, and he alighted to provide flag protection. At that time, he had in his possession a lighted white lantern, a lighted red lantern, fuses and torpedoes. Because the fol-

lowing train was closely approaching, there was not sufficient time in which to light a fusee. Therefore, he gave flagging signals with the lighted lanterns from a point about 300 feet to the rear of his train. However, these flagging signals were not acknowledged.

Extra 6714 consumed 18 minutes between Jacks and the point of accident, and the average speed was 7.4 miles per hour. Extra 6871 consumed 11 minutes in traversing the same distance, and the average speed was 12.2 miles per hour. Under these conditions, Extra 6714 was moving under circumstances in which it might be overtaken by another train. The superintendent said that flagmen are not required to drop lighted fusees unless the view is obscured. The flagman said that his understanding of "obscured" is that the view must be obscured by fog or other weather conditions. The flagging rule of this carrier is predicated on the protection afforded by the automatic block-signal system, and flagmen are required to take such action only as may be necessary to stop a following train which is required to move in such manner that it can be stopped short of a preceding train regardless of track curvature, gradients or weather conditions.

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-sixth day of June, 1946.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.