

Inv-2438

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
PENNSYLVANIA RAILROAD

MILLVALE, PA.

JULY 22, 1940

INVESTIGATION NO. 2438

SUMMARY

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Railroad: Pennsylvania
Date: July 22, 1940
Location: Millvale, Pa.
Kind of accident: Side collision
Trains involved: Freight : Freight
Train numbers: Extra 3642 : Extra 4274
Engine numbers: 3642 : 4274
Consist: Caboose : 62 loaded cars and
caboose
Speed: 2 m.p.h. : 18-25 m.p.h.
Operation: Automatic block system for movements
with current of traffic; train orders
and manual block system for movements
against current of traffic.
Track: Double; 1° left curve; level
Weather: Clear
Time: 4:17 a.m.
Casualties: 1 killed and 1 injured
Cause: Train obstructing main track without
authority and without protection.

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September 12, 1940

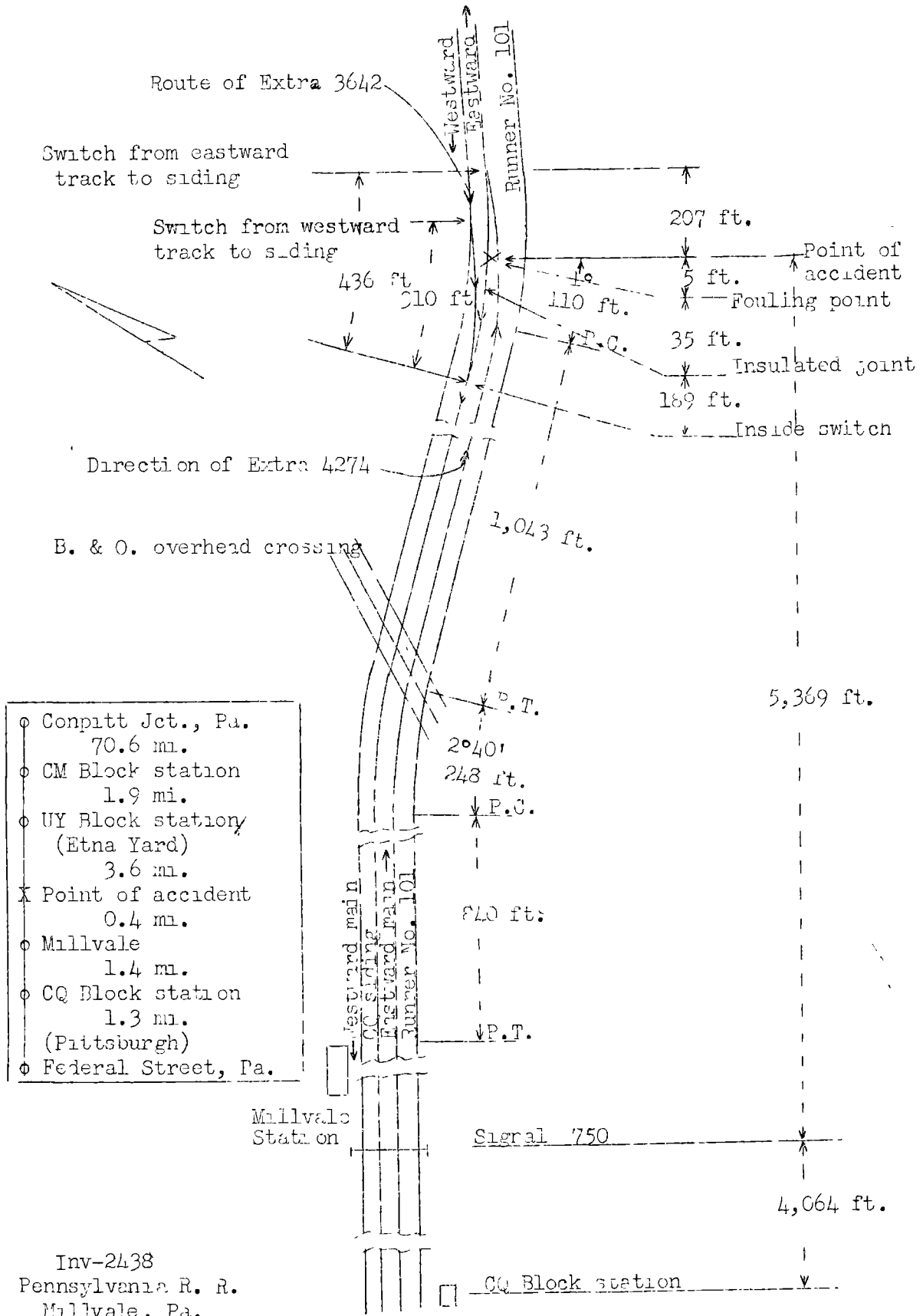
To the Commission:

On July 22, 1940, there was a side collision between two freight trains on the Pennsylvania Railroad near Millvale, Pa., which resulted in the death of one employee and the injury of one employee.

Location and Method of Operation

This accident occurred on that part of the Conemaugh Division which extends between Federal Street, Pittsburgh, and Conpitt Jct., Pa., a distance of 79.2 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 an automatic block system, the indications of which supersede the superiority of trains; trains moving against the current of traffic are operated by train orders and a manual block system. The accident occurred at a point 2,285 feet east of Millvale station or 9,433 feet east of CQ block station. At CQ block station a siding 9,880 feet long lies between the main tracks; the west switch of this siding is located 825 feet west of CQ block station. At the east end of the siding a facing-point turnout, 310 feet long, for west-bound trains extends from the westward main track to the siding, and a trailing-point turnout 436 feet long, for east-bound trains extends from the eastward main track to the siding. These turnouts are connected by a switch known as the inside switch. The normal position for the inside switch is for movement from the siding to the eastward main track. The collision occurred at a point about 5 feet east of the fouling point of the eastward main track and the turnout to the eastward main track or 207 feet west of the main-track switch of this turnout. The switch at the east end of the turnout to the eastward main track is of the hand-throw type and is provided with a switch-stand equipped with a non-sweating lamp. The lens of the lamp is 4-1/2 inches in diameter and is 11 inches above the ties and 4 feet north of the north rail. Night aspects are green when the switch is lined for main-track movement and red when lined for the siding.

As the point of accident is approached from the west on the eastward track there are, in succession, a tangent 840 feet in length, a 2°40' curve to the right 243 feet in length, a tangent 1,045 feet in length, and a 1° curve to the left which extends 110 feet to the point of accident and 202 feet beyond. The grade for east-bound trains is, successively, level 500 feet, 0.042 percent descending 500 feet, 0.078 percent ascending



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500 feet, 0.027 percent ascending 300 feet, 0.083 percent descending 400 feet, 0.10 percent descending 1,000 feet, and level 1,185 feet to the point of accident. At a point about 830 feet west of the point of accident the eastward main track emerges from under a trestle of the Baltimore & Ohio Railroad, which is 26 feet above the eastward main track.

Automatic signal 750, governing movements on the eastward track, is located 5,369 feet west of the point of the accident. An insulated track joint is located on the turnout to the eastward main track at a point 247 feet west of the eastward main-track switch. The collision occurred at a point approximately 40 feet east of the insulated joint.

Rules 99, 103, 104, 105 and 152 of the Book of Rules and time-table rule 511a read in whole or in part as follows:

99. * * *

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. * * *

* * *

Conductors and enginemen are responsible for the protection of their trains.

* * *

103.* * *

When trains are frequently pushed, a back-up hose equipped with brake valve and alarm whistle must be used. * * *

104. Conductors and flagmen are responsible for the position of switches used by them and their trainmen, * * *

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105. Both the conductor and the engineman are responsible for the safety of the train and the observance of the rules, * * *

152. When a train crosses over to, or obstructs, another track, unless otherwise provided it must first be protected as prescribed by Rule 99.

* * *

511a. * * * when moving from siding to main track, switch must be opened before main track is fouled.

The maximum authorized speed on the main tracks is 45 miles per hour.

It was dark and the weather was clear at the time of accident, which occurred about 4:17 a.m.

Description

Extra 3642, with Conductor Mulhearn, Conductor-pilot Lyne, and Engineman Peoples in charge, consisted of engine 3642 and a caboose. This train arrived at the east end of CQ siding as a west-bound train, entered the siding and was reported clear to the operator at UY block station, 4 miles east of Millvale, at 4:16 a.m., according to the block records. A back-up movement through the turnout to the eastward main track was started, and, while moving at a speed estimated to have been 2 miles per hour, this train collided with Extra 4274 East.

Extra 4274, an east-bound freight train, with Conductor Jenkinson and Engineman Henderson in charge, consisted of engine 4274, 62 cars and a caboose. This train passed CQ block station at 4:11 a.m., according to the train sheet, and, while approaching the east switch of CQ siding at a speed estimated to have been from 18 to 25 miles per hour, collided with Extra 3642.

Engine 3642 stopped on its right side on the westward main track and parallel to it. The tender remained coupled to the engine and stopped practically upright on the turnout and the eastward main track. The caboose was derailed but remained upright. Engine 4274 stopped on its right side on the north side of the eastward track and leaned at an angle of about 30 degrees. The tender remained upright but the front end rested on engine 4274 and the rear end on engine 3642. The first six cars of Extra 4274 stopped at right angles to the track; the seventh car was derailed and stopped at an angle of about 15 degrees to the track. The first seven cars were badly damaged. The first truck of the eighth car was derailed. The forty-third car was jack-knifed and it fouled the siding.

The employee killed was the fireman of Extra 3642 and the employee injured was the fireman of Extra 4274.

Summary of Evidence

Engineman Peoples, of Extra 3642, stated that an air-brake test was made at Pitcairn, located about 15 miles east of the point of the accident, and the brakes functioned properly en route. After receiving a conductor-pilot at CM block station, located 5.5 miles east of the point of accident, the rear part of the train was left at Etna, 3.6 miles east of the point of accident, and the first four cars were taken to CQ block station. The engine returned light to Etna and shoved the remainder of the cars into the yard, and then the engine with only the caboose proceeded westward on the westward main track and entered the east end of CQ siding. From this point his train was required to return to Pitcairn. As soon as the rear end of the caboose was clear of the inside switch the brakeman lined the inside switch for the train to move to the eastward main track and gave the engineman a back-up signal. When the train started to move through the turnout he asked the fireman if all was clear; the fireman replied that an east-bound train was approaching rapidly, whereupon he started to cross to the fireman's side of the cab to ascertain if the east-bound train was on runner track No. 101, which paralleled the eastward main track on the south, or on the eastward main track, but the collision occurred before he reached the left side of the cab. He thought that the accident occurred between 4:15 and 4:17 a.m. The weather was clear and visibility good. He assumed that necessary arrangements to use the eastward main track had been made before he received the back-up signal; however, he knew that the movement was not being protected by flag. He did not see the position of the east siding-switch.

Conductor-pilot Lyne, of Extra 3642, stated that he acted in the capacity of pilot from CM block station to the point of accident. After instructing the flagman to hold the train on the siding until permission was obtained for the eastward movement the conductor-pilot alighted at the telephone booth, located about 2 car lengths east of the westward main-track switch of the turnout, as the train was entering CQ siding. He was in conversation with the operator at UY block station when he saw an east-bound train approaching at a speed of about 25 miles per hour; his own train was moving slowly eastward through the turnout, although the switch lamp at the east siding-switch displayed a green aspect. He gave stop signals to both trains but the trains collided almost immediately afterward. He thought the accident occurred about 4:17 a.m.

Conductor Mulhearn, of Extra 3642, stated that because he was not qualified as a conductor on the Conemaugh Division he was furnished a conductor-pilot from CM block station to CQ block station. The conductor-pilot instructed all members of his crew relative to the movements to be made, which included instructions to wait in CQ siding until permission to move eastward was obtained. He stated that he instructed the flagman to protect the eastward movement through the turnout. When his train was making the back-up movement from the siding toward the eastward track, the conductor was making up reports inside the caboose. Hearing someone shout, he ran to the rear of the caboose and observed that the east siding-switch displayed a green aspect. He opened the conductor's emergency valve and his train stopped within about 20 feet; the accident occurred while his hand remained on the valve. He thought his train had remained in the siding about 1-1/2 minutes and that the accident occurred at 4:16 or 4:17 a.m.

Front Brakeman Sponsler, of Extra 3642, stated that he closed the main-track switch when his train entered CQ siding. He then walked toward the telephone booth and a moment later saw the caboose, with the flagman on the rear, and engine 3642 backing through the turnout toward the eastward main-track switch. At the same time he saw an east-bound train approaching rapidly; he ran toward that train and gave stop signals, but the accident occurred a moment later. He thought that Extra 4274 was moving at a speed of about 20 or 25 miles per hour.

Flagman Zorn, of Extra 3642, stated that as his train was entering CQ siding the conductor-pilot alighted from the caboose, the front brakeman was standing at the main-track switch of the turnout to the westward main track, the conductor was inside the caboose, and he himself was on the rear platform of the caboose. The conductor-pilot had told him that it would be necessary to throw one switch; therefore, immediately after his train entered CQ siding he threw the inside switch to normal position and gave the engineman a back-up signal without receiving any signal or instruction to do so. He knew that it was necessary to procure permission for his train to enter the eastward main track and to protect such movement as prescribed by rule 99; however, he stated that the conductor-pilot had not told him to hold his train clear of the eastward main track, and since he could see a red switch-light he thought there was no danger in making the movement. He did not sound a whistle signal from the rear of the caboose as his train backed slowly through the turnout. His first intimation of the impending accident was when his conductor came out of the caboose and opened the emergency valve.

Engineman Henderson, of Extra 4274, stated that an air-brake test was made at Conway, approximately 25 miles west of the point of accident. He had not used the train brakes between Conway and the point of accident. Signal 750 displayed a clear indication. His train was moving at a speed of about 20 miles per hour, and after his engine emerged from under the overhead bridge far enough to throw off the smoke surrounding the engine he saw signal 733, approximately 1,200 feet east of the point of accident, displaying a clear indication. He then observed someone giving stop signals. He applied the brakes in emergency, but the collision occurred almost immediately.

Fireman Lester, of Extra 4274, stated that signal 750 displayed a clear indication, which he called to the engineman. after his engine emerged from under the overhead bridge he saw a flash which appeared to be a stop signal and this was followed immediately by an emergency application of the air brakes, which reduced the speed slightly before the collision occurred.

Front Brakeman Fullerton, of Extra 4274, who was in the brakeman's cab on the rear of the tender, stated that he felt an emergency brake application just prior to the collision. He estimated the speed at the time of impact to have been about 20 miles per hour.

Conductor Jenkinson, of Extra 4274, estimated the speed of his train approaching the point of accident to have been 18 or 20 miles per hour. He felt no brake application prior to the collision.

The statements of Brakeman Rathburn, of Extra 4274, and Dispatcher Anderson brought out nothing additional of importance.

Block Operator McGrew, of UY block station, stated that the conductor-pilot of Extra 3642 reported that train into clear on CQ siding and clear of the westward main track at 4:16 a.m., and about 1 minute later he overheard the conductor-pilot report the collision to the train dispatcher. Operator McGrew stated that he did not give the crew of Extra 3642 permission to occupy the eastward main track.

Block Operator McCracken, of CQ block station, stated that Extra 4274 East, which passed his station at 4:11 a.m. at a speed of about 15 miles per hour, received a clear automatic signal indication. He did not have any conversation with any member of the crew of Extra 3642 and he did not give permission for that train to occupy the eastward main track. The weather was clear and it was dark at the time of the accident.

Signal Maintainer Willard stated that a test of signal 750 was made about 10 a.m. on the day of the accident and that the signal functioned properly. He said that about 9/10 of a second is required for this signal to function after the track circuit east of the insulated joint is occupied.

Observations of the Commission's Inspectors

The Commission's inspectors observed that the lights of the three switches at the east end of CQ siding are plainly visible from the engineman's side of an engine headed west and standing near the east end of the siding. These lights cannot be seen from the fireman's side of the engine. An approaching east-bound train is plainly visible from the fireman's side of an engine standing near the east end of the siding a distance of 1,560 feet but the view from the engineman's side is entirely obscured by the front end of the engine and the overhead bridge; these views do not change as the engine moves from the siding through the eastward turnout. From the fireman's side of an approaching east-bound engine the point of accident can be seen at a distance of 1,153 feet; from the engineman's front cab-window the point of accident is visible at a distance of 1,037 feet and from the side window it is visible at a distance of about 828 feet.

Examination of the track and damaged equipment at the point of accident indicated that the collision occurred about 40 feet east of the insulated joint in the eastward turnout. The left cylinders of the engines overlapped about 1 foot at the point of collision.

Discussion

According to the evidence, Extra 3642 West, consisting of an engine and a caboosc, cleared the westward main track at the east end of CQ siding. The conductor-pilot alighted at the telephone booth to report clear and to procure permission to move eastward on the eastward main track. The flagman, who was on the rear platform of the caboosc, had been instructed by the conductor-pilot that the train was to remain in clear until permission was received to move eastward. Immediately after the train arrived in the siding the flagman lined the inside switch for the turnout to the eastward main track, and gave the engineman a back-up signal notwithstanding that the eastward movement had not been authorized, flag protection was not provided, the whistle on the valve of the back-up hose was not sounded, and the main-track switch was not opened. When obeying the back-up signal the engineman knew that the movement was unprotected by flag, and as his train moved through the turnout

at a speed of about 2 miles per hour he failed to observe the green light displayed at the main-track switch, although it was plainly visible from his side of the engine. The conductor, who was working on reports in the caboose, heard a shout, ran to the rear of the caboose, and opened the air valve, but it was too late to prevent fouling the main track.

The engine of Extra 4274 East had reached a point not more than 800 feet west of the point of accident before the engineman or the fireman observed stop signals being given by some member of the crew of Extra 3642. The speed was reduced slightly as a result of an emergency application of the brakes. The brakes on Extra 4274 had been tested and functioned properly at a point 25 miles west of the point of accident but had not been used en route.

The engineman and the fireman of Extra 4274 stated that they received a clear indication at the last automatic block signal prior to the point of collision. If the main-track switch had been open or any part of Extra 3642 had occupied any part of the turnout east of the insulated joint before Extra 4274 passed the last signal, the crew of the latter train would have received a restrictive indication at this signal. Since the rear end of Extra 3642 was about 147 feet east of the insulated joint at the time of the collision and the speed was only 2 miles per hour, it follows that this train did not occupy any portion of the turnout east of the insulated joint more than 50 seconds before the collision occurred, and since the highest estimate of the speed of Extra 4274 was 25 miles per hour and the distance from the last signal to the point of accident was 5,369 feet, it follows that it would take more than 2 minutes for this train to traverse this distance; therefore, Extra 4274 had passed the last signal more than 1 minute before Extra 3642 occupied any part of the turnout east of the insulated joint.

Conclusion

This accident was caused by a train obstructing a main track without authority and without protection.

Respectfully submitted,

S. N. MILLS,

Director.