INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE DELAWARE & HUDSON RAILROAD AT SCRANTON, PA., ON OCTOBER 9, 1933.

January 24, 1934.

To the Commission:

On October 9, 1933, there was a derailment of a pay train on the Delaware & Hudson Railroad at Scranton, Pa., which resulted in the death of 1 employee and the injury of 9 occupants of the pay car and 3 employees.

Location and method of operation

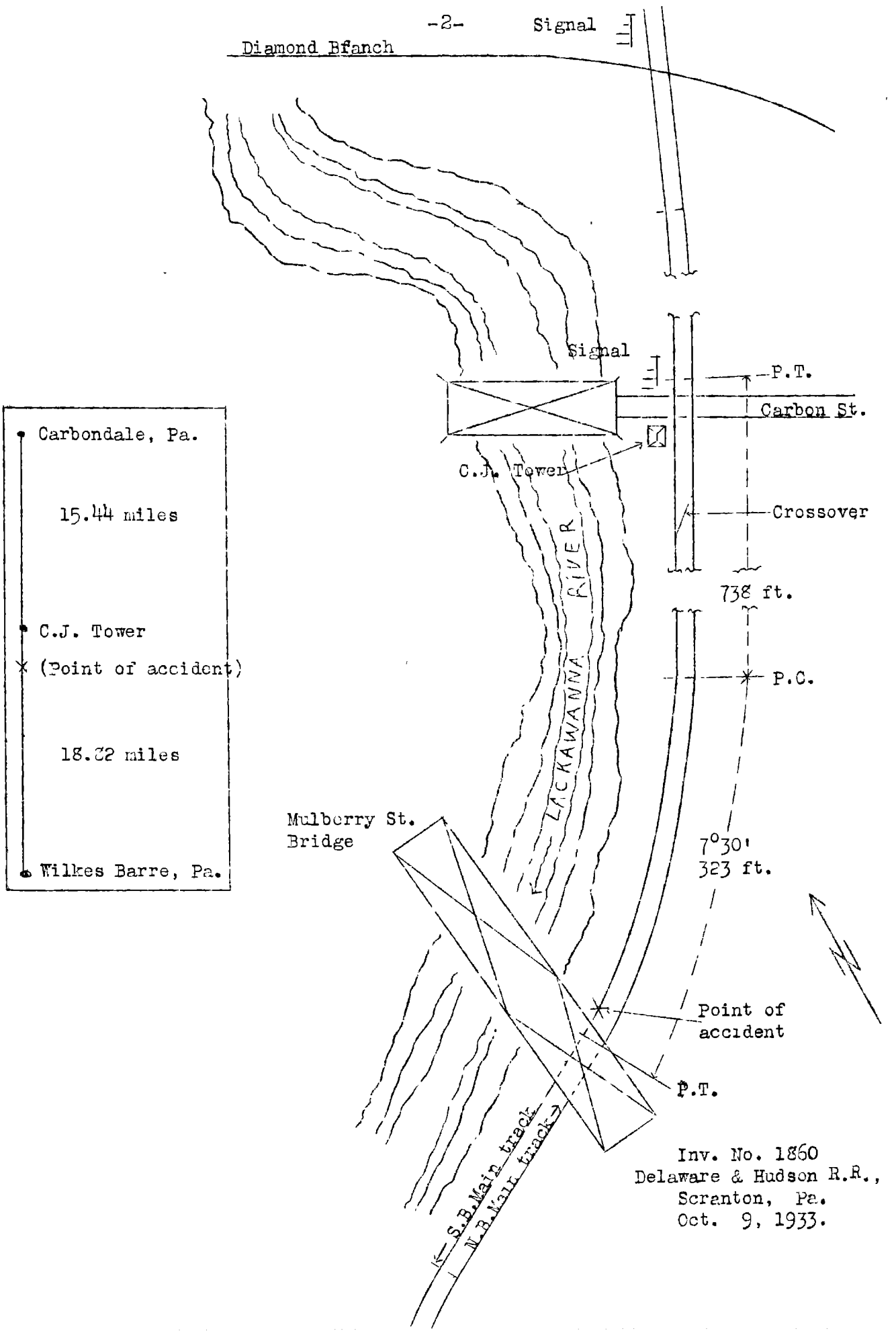
This accident occurred on that part of the Pennsylvania Division extending between Carbondale and Wilkes-Barre, Pa., a distance of 34.26 miles; in the vicinity of the point of accident this is a double track line over which trains are operated by time table, train orders, and an automatic block-signal system. The initial point of derailment was on the south-bound main track just north of Mulberry Street bridge; this is an overhead street bridge spanning the tracks and also the Lackawanna River, which parallels the tracks on the west. Approaching the bridge from the north, the track is tangent for a distance of 738 feet, followed by a 7° 30' curve to the right 323 feet in length, the accident occurring on this curve at a point 29 feet from its leaving end. The grade for south-bound trains is 0.14 percent descending at the point of accident.

The track is laid with 90-pound rails, 39 feet in length, with an average of 21 ties to the rail length, single spiked, fully tieplated, and ballasted with cinders to a depth of 18 inches; rail anchors are also used. The speed limit for engines of the type involved is 45 miles per hour when hauling a train, and 40 miles per hour when running light.

The weather was clear at the time of the accident, which occurred about 1:41 or 1:42 p.m.

Description

South-bound pay train extra 456 consisted of pay car 652, of wooden construction, hauled by engine 456, of the double-cab type, and was in charge of Conductor French and Engineman Monroe. This train passed Green Ridge yard office, about 6,500 feet from the point of derailment, at 1:38 p.m., passed Carbon Street tower, the last open office, 950 feet north of Mulberry Street bridge, at 1:41 p.m., according to the train sheet, and was derailed while traveling at a speed variously estimated to have been between 30 and 50 miles per hour.



Inv. No. 1860
Delaware & Hudson R.R.,
Scranton, Pa.
Oct. 9, 1933.

Engine 456, its tender and the pay car were overturned to the left and stopped parallel with the tracks; the engine was lying on the north-bound main track with its front end 290 feet south of the point of derailment. The employee killed was the fireman, while the employees injured were the conductor, engineman and the trainman.

Summary of evidence

Engineman Monroe stated that the speed was about 30 or 35 miles per hour approaching the grade crossing with the Diamond Branch, which crosses the main track at a point about 2,400 feet north of Mulberry Street bridge, and he shut off steam and permitted the train to drift. On reaching a point about midway between the Diamond Branch crossing and Carbon Street tower, he made about a 10-pound brake pipe reduction, and released the brakes just before going by Carbon Street. He then began working steam with a light throttle and when about an engine length south of the cross-over between Carbon Street and Mulberry Street bridge, the south switch of this cross-over being located about 400 feet south of Carbon Street tower, he made another reduction of about 10 pounds and then lapped the brake valve. Shortly thereafter, while traveling at a speed of about 35 miles per hour on the straight track, the engine gave a severe lurch as though the driving wheels had run over a spike or some other object on the left rail, raising the engine on that side and throwing him off his seat box; before he could get straightened up or reach the brake valve the engine was turning over to the left. The air brakes had been tested and worked properly and there was nothing wrong with the engine.

Conductor French stated that approaching the grade crossing with the Diamond Branch he was standing in the vestibule door at the forward end of the pay car and saw that his train had the board for the crossing; he kept looking ahead and also saw that his train had a clear block at Carbon Street tower and that the train-order signal was clear. He then stepped inside and closed the door and was leaning against it when he felt the pay car give an unusually severe lurch to the left, after passing over the cross-over switch, which threw him off balance; the pay car then straightened up but on again looking through the front window he saw the tender tilting sideways and when he realized that it was not going to right itself, he shouted a warning of danger and then the accident occurred, at which time he estimated the speed to have been about 40 miles per hour. Conductor French did not recall having noticed any air-brake application made from the time the train left Market Street, 1.37 miles north of C.J. tower. He did not think that the lurching was caused by excessive speed, however, nor did he think that the speed was too high to round the curve upon which the accident occurred, but as the train was approaching Carbon Street Junction he did feel that the speed was then too high to negotiate the reverse curve south of the curve upon which the accident occurred.

Division Engineer McDonough and General Roadmaster Gutelius arrived at the scene of the accident about one-half hour after its occurrence and made a hurried inspection of the track in an endeavor to find a cause for the accident, but to no avail. Later on a detailed inspection was made under the direction of Roadmaster Gutelius and at the south end of the curve a mark was found which might have been made by a wheel flange or tread having dropped down on the outside of the high rail; following this mark northward around the curve it appeared that the outside top edge of the high rail had been compressed about 1/4 inch for a distance of about 40 feet; the scale on this part of the rail had been broken enough to show bright steel. Continuing back northward an additional distance of about 72 feet, there still were indications on the outside top edge of the high rail, and this mark gradually became lighter until it reached a point about 28 feet farther north. The mark described, having a total length of 140 feet, appeared to have been made by a wheel tread riding the outside top edge of the high rail, starting out lightly and increasing gradually until reaching the point where the bright steel showed 1/4 inch below the top of the rail; there was no corresponding mark on the west or low rail of the curve. In addition to these marks, starting at the point of derailment and going northward a distance of 19 feet there was a gouge mark on the extreme east end and across the top of a tie; the next three ties were not marked but the fourth tie had two gouge marks on it, one near the extreme end of the tie and the other about 6 inches from the end. There were no signs of dragging or derailed equipment between the rails to a point 48 feet south of where the flange mark appeared on the outside of the high rail; beginning about 33 feet south of where the flange went over the rail the ties began to be marked heavily on their eastern ends, the track damage gradually increasing up to the point where the derailed equipment stopped. There was also a mark on top of the high rail running along its center; it had somewhat the appearance of a flange mark, yet it did not appear to have marked the rail heavily enough to have been made by a flange. At points 280 and 407 feet north of the point of derailment, on the tangent north of the curve, the rail was rolled slightly and when gauged it was found to be about 1/8 inch tight, but there was looseness between the base of the rail and the spike. One joint on the curve was 1/4 inch tight, but the looseness between the base of the rail and the spike allowed for this tight gauge; this was a joint which had kicked in on the low side of the curve. The main portion of the curve gauged 1/8 to 1/3 inch wide, and the elevation varied from 2½ inches to 3-1/8 inches. Mr. Gutelius also said that there was a joint in the north end of the curve on the high rail which was about 3/4 inch low. It further appeared from Mr. Gutelius' statements that beginning at or a little north of the point of derailment, locomotive fuel coal had been freshly strewn over the north-bound track, while 160 feet north of the point of derailment there was a wet spot which he thought was made by water having been spilled on the west or low side of the curve,

apparently having splashed out of the man-hole of the tank. Careful inspection of the tangent track north of the curve, in the vicinity of where the engineman testified that he felt the engine rise on the left side, failed to disclose any track condition that would have caused such action to take place, nor was there any mark on the rail to indicate that the engine had run over any hard substance or metal that might have been placed on the rail. Mr. Gutelius said that a speed of 45 miles per hour, the maximum permissible speed for the type of equipment involved, would not be dangerous on the curve in question under the conditions as found to exist after the accident, and with reference to the low joint on the north end of the curve, he said no reports had been received during the preceding 24 hours to indicate that the track had been riding rough. He did not know definitely what caused the accident but felt that speed was a factor.

Various employees along the line, including General Yardmaster Atherton, Telegrapher McKune, Engineman Burnett and Conductor Vroman, all at Green Ridge, 6,500 feet north of the point of derailment, Signal Maintainer Seal and Assistant Signal Maintainer Lewis, who were painting a signal at the Diamond Branch crossing, Gate Tender Joseph at Carbon Street crossing, and Towerman O'Malley at C.J. tower, saw the pay train as it passed. The two signal men, the towerman and the gate tender thought the train was running faster than usual, but none of these employees estimated the speed to have been more than 40 miles per hour when it passed their respective locations.

Estimates of the speed by occupants of the pay car ranged from 30 to 50 miles per hour. Some of them thought that the speed was higher than usual, while others did not think so. Two office employees of a construction company, located in a building adjacent to the track, saw the pay train when it passed and they said the speed was much higher than usual; one of them said it was running faster than anything he had ever seen move over the track in this vicinity.

Section Foreman Roper did not think that the accident was the result of speed; in his opinion it might have been due to the train being so short that there was nothing of consequence to steady it around the curve.

Assistant Trainmaster Jaynes thought that the accident was due to a combination of speed and the surging of the water in the tank, and he thought that roadbed conditions contributed to the rocking of the equipment.

Careful inspection of the engine, tender and pay car after the accident failed to disclose anything that would have caused or contributed to the accident.

Conclusions

The cause of this accident was not definitely determined.

The engineman said he felt the engine rise on the left side as though it had run over a spike or other object lying on the rail, but careful examination of the track failed to reveal any indication of there having been an obstruction on the track, while equally careful examination of the equipment failed to disclose any defective condition which could have contributed to the occurrence of the accident. The evidence as to speed was conflicting, but the train had consumed 3 minutes between Green Ridge yard office and Carbon Street tower, reporting stations located slightly more than 1 mile apart, and these figures do not support the idea of excessive speed.

Respectfully submitted,

W. P. BORLAND,

Director.