INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3182

THE DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR SLATEFORD JCT., PA., ON

MAY 15, 1948

SUMMARY

Railroad:	Delaware, Lackawanna and Western
Date:	May 15, 1948
Location:	Slateford Jct., Pa.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	9
Engine number:	1136
Consist:	8 cars
Speed:	Overturning
Operation:	Timetable, train orders and automatic block-signal system
Track:	Double; 7°00' curve; 0.11 percent descending grade westward
Weather:	Misting
Time:	About 11:27 p. m.
Casualties:	2 killed
Cause:	Excessive speed on curve

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3182

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

THE DELAWARE, LACKAWANNA AND WESTERN RAILROAD COMPANY

July 2, 1948

Accident near Slateford Jct., Pa., on May 15, 1948, caused by excessive speed on a curve.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On May 15, 1948, there was a derailment of a passenger train on the Delaware, Lackawanna and Western Railroad near Slateford Jct., Pa., which resulted in the death of two employees. This accident was investigated in conjunction with a representative of the Pennsylvania Public Utility Commission.

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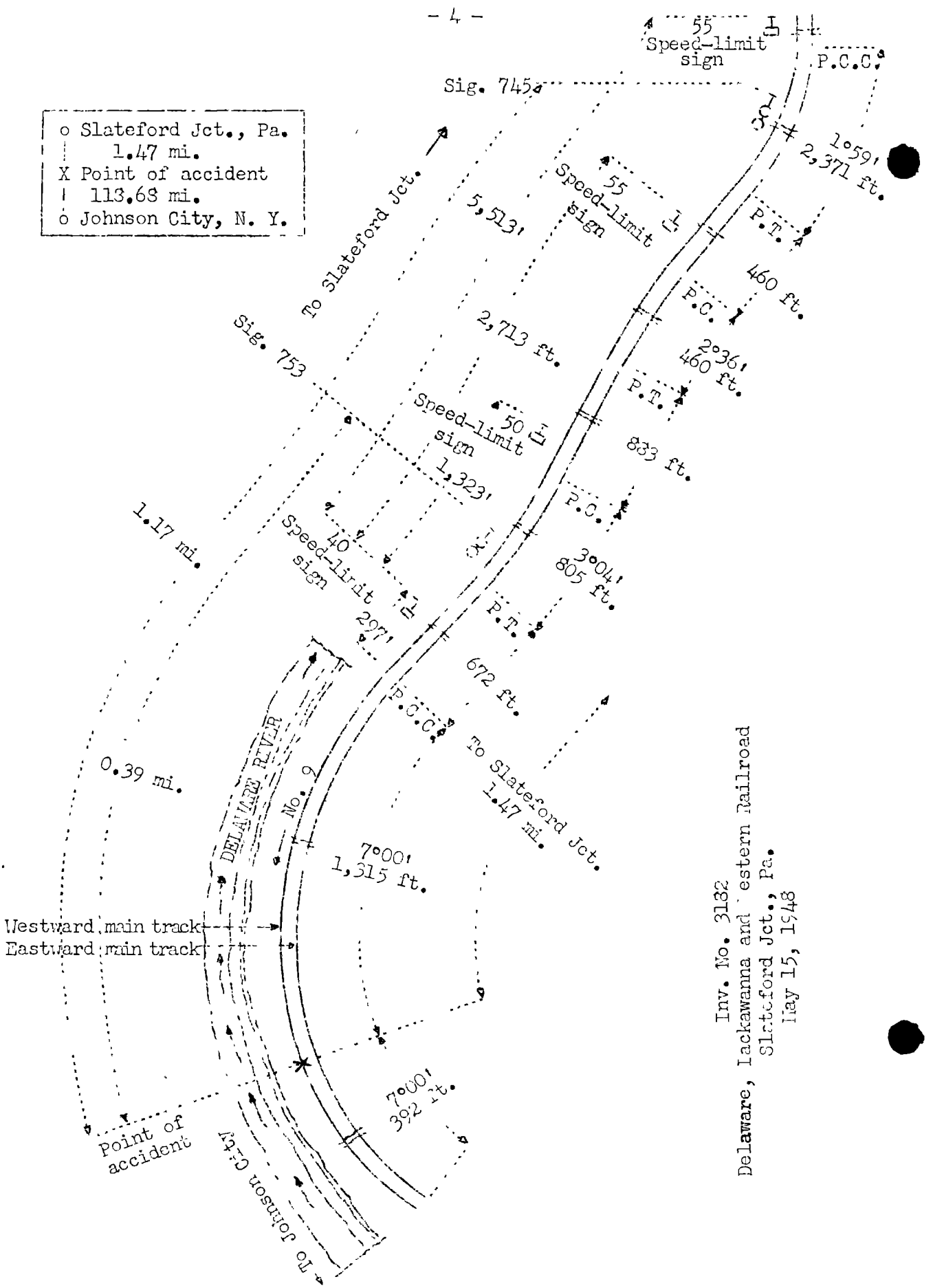
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3132
Delaware, Lackawanna and Western Railroad
Slateford Jct., Pa.
May 15, 1948

Location of Accident and Method of Operation

This accident occurred on that part of the Scranton Division extending between Slateford Jct., Pa., and Johnson City, N. Y., 120.15 miles, a double-track line in the vicinity of the point of accident, over which trains moving with the current of traffic are operated by timetable, train orders and an automatic block-signal system. The accident occurred on the westward main track at a point 1.47 miles west of the tower at Slateford Jct. From the east on the westward main track there are, in succession, a compound curve to the right, having a maximum curvature of 1°59', 2,371 feet in length, a tangent 460 feet, a 2°36' curve to the left 460 feet, a tangent 883 feet, a 3°04' curve to the right 805 feet, a tangent 672 feet and a compound curve to the left, having a maximum curvature of 7°00', 1,715 feet to the point of accident and 392 feet westward. The grade for west-bound trains is, successively, 0.88 percent ascending 1,000 feet, 0.10 percent ascending 1,100 feet, 0.04 percent descending 1,400 feet, level 400 feet, 0.24 percent descending 300 feet, 0.04 percent ascending 300 feet and 0.11 percent descending 115 feet to the point of accident and 785 feet westward.

In this vicinity the tracks are laid immediately south of the south bank of the Delaware River. At mean water level the south bank of the river extends 32 feet below the level of the tops of the rails of the westward main track and 36 feet horizontally distant from the north rail of that track. On the curve on which the accident occurred the structure of the westward main track consists of 131-pound rails, 39 feet in length, laid new during 1943 on an average of 24 treated ties per rail length. It is fully tieplated with double-shoulder canted tie plates, spiked with three spikes per tie plate, provided with 6-hole 36-inch joint bars and an average of 10 rail anchors per rail length, and is ballasted with crushed stone to a depth of 13 inches below the ties. The specified superelevation on the 7°00' portion of the curve was 6 inches. At the point of derailment the superelevation was 6 inches, the gage was 4 feet 8-5/8 inches and the curvature was 7°00'.

Automatic signals 745 and 753, governing west-bound movements on the westward main track, are, respectively, 1.17 miles and 0.39 mile east of the point of accident. These signals are of the color-light type, and are approach lighted.

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

DEFINITIONS

* * *

Fixed Signal--A signal of fixed location indicating a condition affecting the movement of a train.

A "Fixed Signal" covers such signals as * * * slow boards, or other means for displaying indications that govern the movement of a train.

* * *

689. Permanent Slow-speed boards, designating the maximum speed of trains at points indicated in time-table, must be observed by all trains unless speed is further restricted by special instructions.

Time-table special instructions prescribe the maximum authorized speed for the train involved as 70 miles per hour on tangent track, 50 miles per hour on the 3°04' curve immediately east of the point of accident and 40 miles per hour on the curve on which the derailment occurred. A black octagon-shape metal-plate speed-limit sign, stamped to display the number 40, is located 9 feet 6 inches north of the north rail of the westward main track and 297 feet east of the east end of the curve on which the derailment occurred. A similar speed-limit sign, stamped to display the number 50, is located 9 feet 6 inches north of the north rail of the westward main track and 1,323 feet east of the first-mentioned sign. Two other speed-limit signs, stamped to display the number 55, are located, respectively, 2,713 feet and 5,513 feet east of the first-mentioned sign. These signs are 24 inches wide by 16 inches high and are mounted on masts 4 feet 10-1/2 inches above the level of the tops of the north rails of the westward main track. None of these signs is provided with night illumination.

Description of Accident

No. 9, a west-bound first-class passenger train, consisted of engine 1136, a 4-6-2 type, one milk car, one parlor car, two baggage cars, one coach, two baggage cars and one coach, in the order named. The first and third cars were of steel-underframe construction, and the remainder of the cars were of all-steel construction. This train

departed from Hoboken, N. J., 75.74 miles east of the point of accident, at 10:03 p. m., 38 minutes late, passed Slateford Jct., the last open office, about 11:25 p. m., 24 minutes late, passed signals 745 and 753, which displayed proceed, and while it was moving on the westward main track the engine and the first car were derailed.

The engine and tender, remaining coupled, overturned to the right, rolled completely over, and stopped upright on the riverbed, with the front of the engine 320 feet west of the point of accident and 65 feet north of the north rail of the westward main track. The engine truck became detached, as a result of the derailment, and stopped adjacent to the front end of the engine. Both sides of the engine were badly damaged, and the cab was demolished. The first car became separated from the tender and the second car, and stopped on the riverbed immediately behind the tender. This car was badly damaged. The second to the eighth cars, inclusive, remained coupled and were not derailed. This portion of the train stopped with the front end of the first car 1,735 feet west of the point of derailment. The equipment of No. 9 was not provided with tight-lock couplers.

The engineer and the fireman were killed.

It was misting at the time of the accident, which occurred about 11:27 p. m.

The total weight of engine 1133 in working order is 301,000 pounds, distributed as follows: Engine truck, 52,500 pounds; driving wheels, 191,000 pounds; and trailer truck, 57,500 pounds. The specified diameters of the engine-truck wheels, the driving wheels, and the trailer-truck wheels are, respectively, 33, 79 and 51 inches. The driving-wheelbase is 14 feet long, the total length of the engine wheelbase is 36 feet, and the total length of the engine and tender is 83 feet 6-3/8 inches. The engine was not equipped with a speedometer or a speed-recording device.

The tender is rectangular in shape, and is equipped with two 4-wheel trucks. Its capacity is 10,800 gallons of water and 18 tons of coal. The weight of the tender loaded is 209,500 pounds.

The last class 5 repairs were completed on April 6, 1948. The last trip inspection and repairs were completed at Hoboken at 7:14 p. m., on May 15, 1948. The accumulated mileage since the last class 5 repairs was 4,049 miles.

Engine 1136 and its tender are provided with No. 6-ET brake equipment, and the tender is provided with a brake-pipe vent valve. The regulating devices were adjusted to supply brake-pipe pressure of 110 pounds and main reservoir pressure of 130 pounds.

The center of gravity of the engine is 76 inches above the tops of the rails. The center of gravity of the tender, with the calculated amount of fuel and water remaining at the time of the accident, was estimated as 63-1/2 inches above the tops of the rails. The calculated equilibrium, safe and overturning speeds for engine 1136 moving on a 7° curve having a superelevation of 6 inches are 37, 52 and 78 miles per hour.

Discussion

As No. 9 was approaching the point where the accident occurred the conductor, the flagman and the baggageman were in the rear car. Prior to the accident the cars had been riding smoothly, and the members of the train crew said they were not aware of anything being wrong until the accident occurred. They thought the speed of their train was being controlled in accordance with the speed restrictions in the territory involved. They said that the last brake application they observed prior to the time of the accident was when the train was approaching the tower at Slateford Jct., and that this application was released soon afterward. The brakes had functioned properly en route. Each of those employees said he consulted his watch as the rear car passed the tower at Slateford Jct., and observed the time as 11:25 p. m. The conductor said that according to his watch the time was 11:28 p. m. when he felt the train lurch at the time of the accident. The flagman and the baggageman did not again consult their watches until after the accident occurred. The operator at Slateford Jct. said that he was on the platform when No. 9 passed, and there was no indication of dragging equipment. He estimated the speed of No. 9 as about 50 miles per hour and observed the time as 11:25 p. m. when the train passed the tower. The train dispatcher said that at 11:27 p. m. noise on the dispatcher's telephone circuit indicated that the line had been struck.

Examination of engine 1136 and the cars of No. 9 disclosed no condition which could have contributed to the cause of the derailment. The engine-truck and driving-wheel assemblies were in good condition. The wheels were tight on their axles and the tires were tight on the wheel centers. Measurements of the tires, the wheels and the lateral motion were within the specified limits. The driving-box shoes and

wedges, and the chafing plates between the engine and tender were well lubricated. The spring arrangements were maintained in good alinement, the equalizers and hangers were properly maintained, and there was no indication of unequal distribution of weight. There was no mark of derailment on the flanges, treads, or side surfaces of any wheel of the engine. The throttle lever was in closed position, the reverse lever was in position for backward motion, and the independent and the automatic brake valves were in running position. There was no condition found that would prevent proper application of the train brakes.

Examination of the track throughout a distance of 1.47 miles eastward from the point of derailment disclosed that there was no mark on the track structure indicating dragging equipment, or of any obstruction having been on the track. The surface, alinement and gage of the track on the curve involved were well maintained for the maximum authorized speed of 40 miles per hour. The track in this vicinity was last inspected by members of the track force during the morning of the day of the accident. The engineer of a west-bound freight train which passed over this track about 50 minutes before the derailment occurred said that his engine rode smoothly at a speed of about 35 miles per hour, and that there was no indication of defective track.

The first mark on the track structure was an angular peening of the metal on the outside corner of the top of the head of the high, or north, rail. This mark started at a point 594 feet west of the east end of the 7°00' portion of the curve and continued westward a distance of 300 feet. Then wheel marks appeared on a tie plate immediately outside the base of the high rail and continued diagonally outward on the top surfaces of the ends of ties throughout a distance of about 40 feet. There was no flange mark on the rails or between the rails, and there was no mark on the flanges, the treads or the side surfaces of the wheels of the engine. The drawbar and the safety bar between the engine and the tender were twisted to the right at an angle of about 25 degrees at the tender end. The engineer of maintenance-of-way said that the calculated overturning speed for engine 1133 at the point of derailment was 78 miles per hour. The investigation disclosed no contributing factor or cause other than excessive speed. Apparently the train was moving at overturning speed when it entered the 7°00' portion of the curve, as indicated by the angular peening of the high rail, which occurred during the process of the overturning of the engine.

Cause

It is found that this accident was caused by excessive speed on a curve.

Dated at Washington, D. C., this second day of July, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.