

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 3181
READING COMPANY
REPORT IN RE ACCIDENT
NEAR VALLEY FORGE, PA., ON
MAY 9, 1948

SUMMARY

Railroad: Reading
Date: May 9, 1948
Location: Valley Forge, Pa.
Kind of accident: Derailment
Train involved: Passenger
Train number: 2048
Engine number: 603
Consist: 5 cars
Estimated speed: 30 m. p. h.
Operation: Signal indications
Tracks: Four; tangent; 0.19 percent
descending grade eastward
Weather: Clear
Time: 7:55 p. m.
Casualties: 2 killed; 66 injured
Cause: Malicious tampering with track

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3181

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

READING COMPANY

June 24, 1948

Accident near Valley Forge, Pa., on May 9, 1948, caused
by malicious tampering with the track.

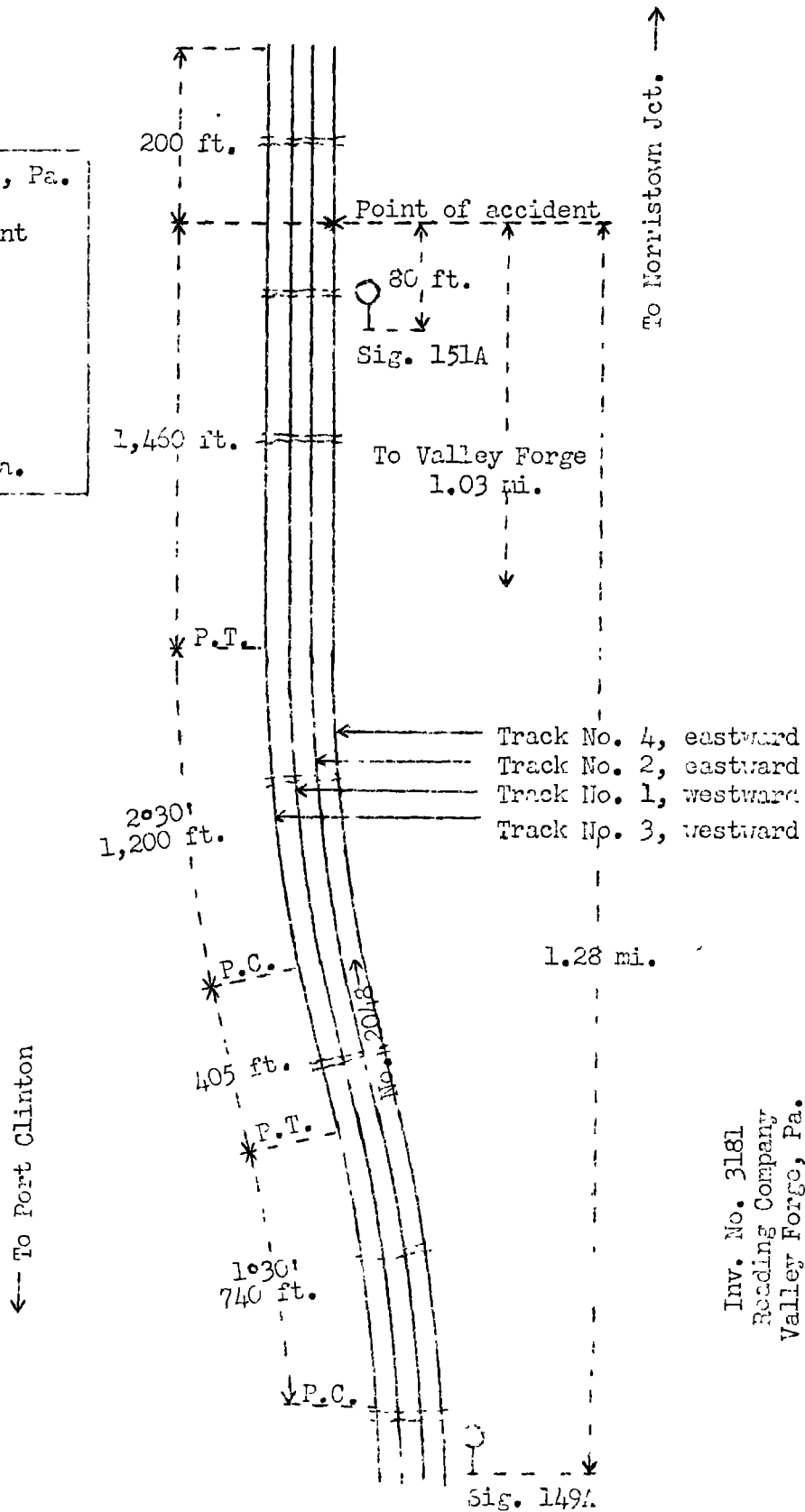
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On May 9, 1948, there was a derailment of a passenger train on the line of the Reading Company near Valley Forge, Pa., which resulted in the death of 2 employees, and the injury of 66 passengers. This accident was investigated in conjunction with a representative of the Pennsylvania Public Utility Commission.

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.

- o Norristown Jct., Pa. 4.62 mi.
- X Point of accident 1.03 mi.
- o Valley Forge 1.23 mi.
- o Perkiomem Jct. 52.15 mi.
- o Division Post 1.25 mi.
- o Port Clinton, Pa.



Inv. No. 3181
Reading Company
Valley Forge, Pa.
May 9, 1948

Location of Accident and Method of Operation

This accident occurred on that part of the Reading Division extending between Division Post, near Port Clinton, and Norristown Jct., Pa., 59.03 miles. In the vicinity of the point of accident this is a four-track line over which trains moving with the current of traffic are operated by signal indications. The main tracks from south to north are designated as No. 4 and No. 2, eastward, and No. 1 and No. 3, westward. The accident occurred on track No. 4 at a point 55.66 miles east of Port Clinton and 1.03 miles east of the station at Valley Forge. From the west on track No. 4 there are, in succession, a 1°30' curve to the left 740 feet in length, a tangent 405 feet, a 2°30' curve to the right 1,200 feet and a tangent 1,460 feet to the point of accident and 200 feet eastward. The grade is 0.19 percent descending eastward.

The track structure consists of 130-pound rail, 39 feet in length, laid new in 1926 on 22 treated ties to the rail length. It is fully tensioned with single-shoulder tieplates, spiked with one rail-holding spike on the outside of the rails and two rail-holding spikes on the inside of the rails, and provided with an average of 6 rail anchors per rail length, and 24-inch 4-hole continuous head-free type joint bars. The joint-bar bolts are secured by nuts and lock washers. The track is ballasted with crushed stone to a depth of 15 inches. The rail joints are bonded for signal circuits. Two bond wires 45 inches in length and 165 millimeters in diameter are secured to double-groove 3/8-inch channel pins driven into 9/16-inch holes in the center of the web of the rail about 2-1/2 inches outside the ends of the joint bars.

Automatic signals 149A and 151A, governing east-bound movements on track No. 4, are, respectively, 1.28 miles and 90 feet west of the point of accident. These signals are of the 3-indication, color-light type, and are approach lighted.

The maximum authorized speed for passenger trains is 60 miles per hour.

Description of Accident

No. 2048, an east-bound first-class passenger train, consisted of engine 606, a 4-6-0 type, one baggage car and four coaches, in the order named. The first car was of steel underframe construction, and the remainder of the cars were of conventional all-steel construction. This train departed from Perkiomen Jct., the last open office, 2.26 miles west of the point of accident, at 7:48 p. m., 3 minutes late, passed signal 149A, which displayed proceed, stopped at the station at Valley

Forge, and departed from that station at 7:52 p. m., 3 minutes late, passed signal 151A, which displayed proceed, and while it was moving on track No. 4 at an estimated speed of 30 miles per hour the engine and the first four cars were derailed at a point 80 feet east of signal 151A.

The engine and tender, remaining coupled, were derailed to the right and stopped against an embankment, with the front of the engine 400 feet east of the point of derailment. A separation occurred between the tender and the first car, but the cars remained coupled. The first car stopped against the embankment, with the front end about 10 feet west of the rear of the tender. The second and third cars stopped immediately south of track No. 4, and leaned to the south at an angle of about 40 degrees. The fourth car stopped on the roadbed, practically in line with the track, and leaned to the south at an angle of about 15 degrees. The engine was badly damaged, and the derailed cars were considerably damaged.

The engineer and the fireman were killed.

The weather was clear and it was dark at the time of the accident, which occurred about 7:55 p. m.

The total weight of engine 606 in working order is 216,640 pounds, distributed as follows: Engine truck, 47,640 pounds; and driving wheels, 169,000 pounds. The specified diameters of the engine-truck wheels and the driving wheels are, respectively, 36 and 68-1/2 inches. The driving wheelbase is 13 feet 6 inches long and the total wheelbase is 25 feet 6 inches. The total length of the engine and tender is 66 feet 1 inch.

The tender is rectangular in shape, and is equipped with two 4-wheel trucks. Its capacity is 8,000 gallons of water and 12 tons of coal. The weight of the tender loaded is 162,000 pounds.

The last class 3 repairs were completed July 28, 1947. The last monthly inspection and repairs were completed May 9, 1948. The last trip inspection and repairs were completed at Bethlehem, Pa., at 11:50 a. m., on the date of the accident. The accumulated mileage since the last class repairs was 21,021 miles.

Discussion

When the derailment occurred the conductor was in the third car and the flagman was in the fourth car. These employees said that prior to the accident the cars had been riding smoothly, and they were not aware of anything being wrong until the accident occurred. They estimated the speed of their train as about 30 miles per hour at the time of the derailment.

Soon after the accident occurred, several officials and employees of the railroad and some officers of the state and county police found one of the rails on the south side of track No. 4 displaced a few inches from its normal position. All rail-holding spikes, the two pairs of joint bars, the joint-bar bolts, the lock washers and the nuts had been removed, and these appurtenances were found on the roadbed in the immediate vicinity. The condition of the bolts indicated that the nuts had been removed by a wrench. The spikes were practically straight. The spike-holes and marks on the lower surfaces of the heads of the spikes indicated that the spikes had been removed by means of a claw bar. The investigation disclosed that some person or persons had made a forced entry into a section toolhouse, located 1.2 miles east of the point of accident, and a check of the tools usually stored in the toolhouse indicated that one track wrench and one claw bar were missing. At the time the investigation was completed the missing tools had not been recovered.

Examination of the engine of No. 2048 disclosed a heavy indentation about 1-3/4 inches long and 1/2-inch deep on the flange of the right No. 1 driving wheel. This mark and flange marks on the head of the receiving end of the displaced rail indicate that the rail had been loosened and shifted inward from its normal location before No. 2048 was derailed. The exact time the rail was shifted is not known. The rail-bond wires at the receiving end of the displaced rail were not broken. The rail-bond wires at the leaving end of the rail were broken as a result of the derailment. The position of the displaced rail after the derailment and the condition of the rail-bond wires indicate that the rail had not been shifted sufficiently prior to the derailment to interfere with the normal operation of the signal system.

The track in this vicinity was last patrolled about 34 hours before the derailment occurred, and no abnormal condition was observed. The last train prior to No. 2043 passed over this track about 1 hour 50 minutes before the accident occurred, and no unusual condition was observed by the crew of this train.

Cause

It is found that this accident was caused by malicious tampering with the track.

Dated at Washington, D. C., this twenty-fourth day of June, 1948.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.