

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2982  
ERIE RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
AT HAMMOND, IND., CN  
APRIL 4, 1946

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SUMMARY

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Railroad: Erie  
Date: April 4, 1946  
Location: Hammond, Ind.  
Kind of accident: Derailment and collision  
Equipment involved: Passenger train : Yard engine  
Train number: 15 :  
Engine numbers: 2932 : 242  
Consist: 6 cars : 6 cars  
Estimated speed: 40 m. p. h. : Standing  
Operation: Signal indications  
Tracks: Double; tangent; 0.32 percent  
descending grade westward  
Weather: Cloudy  
Time: 5:12 p. m.  
Casualties: 1 killed; 50 injured  
Cause: Loose wheel moving outward on  
wheel seat, and derailed  
passenger-equipment cars striking  
engine standing on adjacent track

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2982

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

ERIE RAILROAD COMPANY

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May 31, 1946.

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Accident at Hammond, Ind., on April 4, 1946, caused by a loose wheel moving outward on its wheel seat, and by derailed passenger-equipment cars striking an engine standing on an adjacent track.

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REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

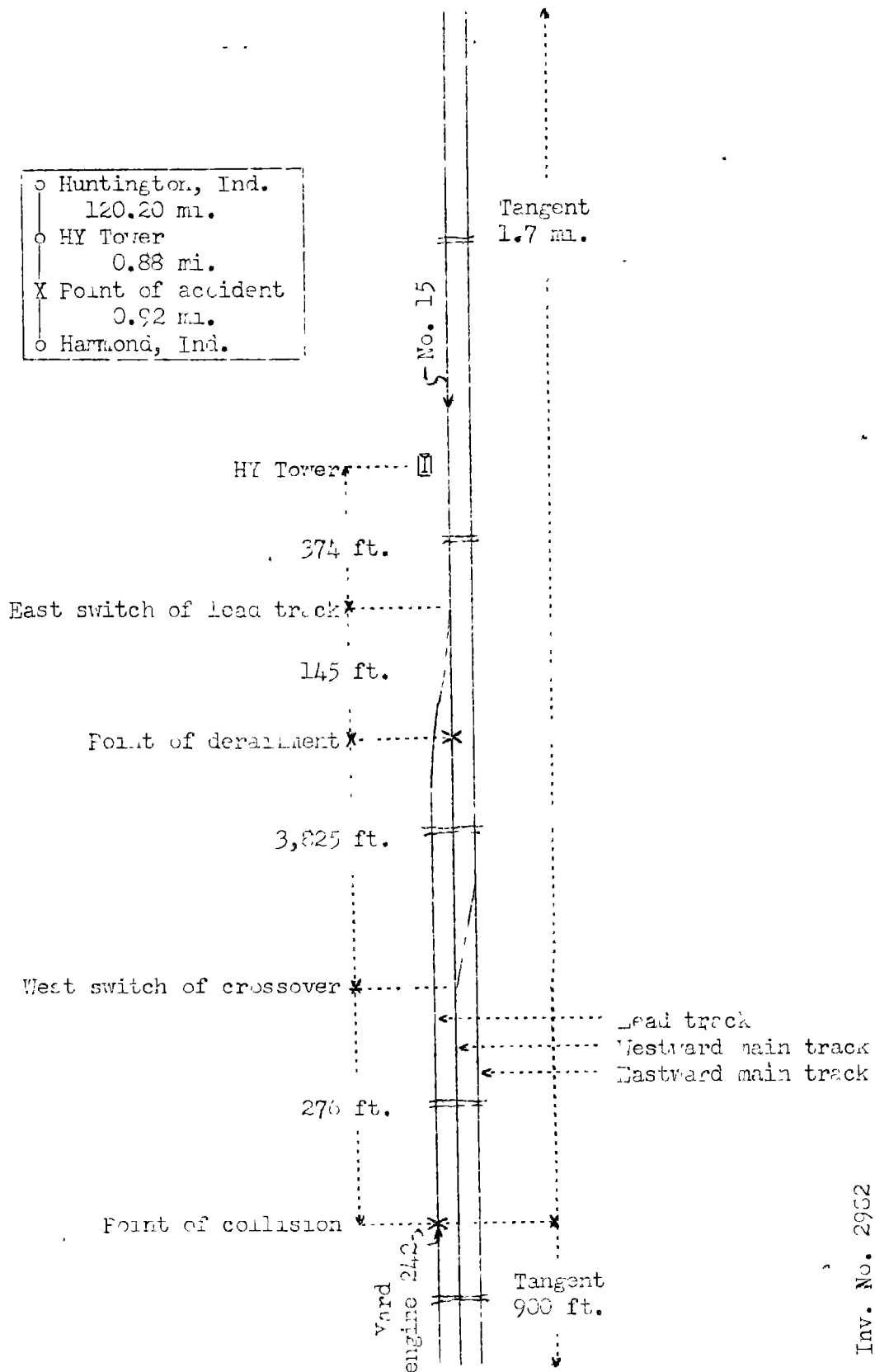
On April 4, 1946, there was a derailment of a passenger train, and a collision between derailed cars of this train and a yard engine standing on an adjacent track, on the Erie Railroad at Hammond, Ind., which resulted in the death of 1 train-service employee, and the injury of 18 passengers, 7 dining-car employees, 1 employee off duty and 4 train-service employees. This accident was investigated in conjunction with a representative of the Indiana Public Service Commission.

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<sup>1</sup>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.

To Huntington →

- Huntington, Ind. 120.20 mi.
- HY Tower 0.88 mi.
- X Point of accident 0.92 mi.
- Hammond, Ind.



← To Hammond

Inv. No. 2952  
 Erie Railroad  
 Hammond, Ind.  
 April 4, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Marion Division extending between Huntington and Hammond, Ind., 122 miles, a double-track line, over which trains moving with the current of traffic are operated by signal indications. The main tracks from north to south are the westward main track and the eastward main track. At Hammond, a lead track which connects the westward main track and a classification yard north of the main tracks parallels the main tracks on the north and is about 1 mile in length. The east switch of the lead track, which is facing-point for west-bound movement, is 1.73 miles east of the station and 374 feet west of HY Tower. The west switch of a trailing-point crossover, which connects both main tracks, is located 4,344 feet west of HY Tower. The derailment of the passenger train occurred at the frog of the east switch of the lead track and the collision occurred 4,101 feet westward. From the east the westward main track is tangent 1.7 miles to the point of collision and 900 feet westward. At the point of accident, the grade for west-bound trains is 0.32 percent descending.

In the vicinity of the point of accident, the distance between the center-lines of the westward main track and the lead track is 17 feet. In the vicinity of the east switch of the lead track, the track structure of the westward main track consists of 110-pound rail, 39 feet in length, laid on an average of 24 treated ties to the rail length. It is fully tie-plated, single-spiked, and is ballasted with crushed stone to a depth of 13 inches. The frog of the east switch of the lead track is a 110-pound, No. 15, rail-bound manganese-insert frog. The guard rail is 15 feet 9 inches in length. A flangeway opening of 1-7/8 inches in width is provided. The flangeway at the throat of the frog is 2-1/4 inches in width, and the flangeway for westward main-track movements is 1-7/8 inches in width. At the point of frog the gage of the westward main track is 4 feet 8-1/2 inches. There is no variation in the crosslevel.

Operating rules read in part as follows:

0. Employes must, as far as possible, observe all passing trains and note whether they are complete and in order; when practicable, conductors or rear trainmen of freight trains will stand on the rear platforms of cabooses and conductors or rear trainmen of passenger trains at the rear end of the train and exchange signals with other passing trains and open telegraph offices and look for signals from trackmen and other employes as they pass; should there be any indication of conditions endangering the train, or any other train, they must take such measures for the protection of trains as may be practicable.

The maximum authorized speed for passenger trains is 75 miles per hour.

#### Description of Accident

No. 15, a west-bound first-class passenger train, consisted of engine 2932, one baggage car, two coaches, one Pullman sleeping car, one dining car and one tourist car, in the order named. All cars were of steel construction. This train passed HY Tower at 5:11 p. m., on time, and was moving at an estimated speed of 40 miles per hour when the front pair of wheels of the front truck of the second car was derailed at the point of the frog of the east switch of the lead track. These wheels continued in line with the track 3,741 feet to the west frog of the trailing-point crossover, where the rear truck of the first car and the second to sixth cars, inclusive, became derailed. The derailed equipment struck yard engine 242 which was standing on the lead track at a point 360 feet west of the point of general derailment.

Yard engine 242, headed west, stopped on the lead track about 5:12 p. m., with a cut of 6 freight cars coupled ahead of the engine. Immediately afterward this engine was struck by the first and second cars of No. 15.

The engine of No. 15 stopped with the front end 390 feet west of the point of collision. The first car remained coupled to the tender and the second car. Both of these cars remained upright and practically in line with the westward main track. The rear portion of the right side sheets of the first car was torn off throughout a distance of about 15 feet. The front end of the second car was badly damaged. The third car became uncoupled at each end and stopped about 20 feet east of the second car, at an angle of about 15 degrees to the tracks, and leaned to the south at an angle of about 20 degrees. The fourth to sixth cars, inclusive, became uncoupled and stopped upright on the westward main track and parallel to it. The third to sixth cars, inclusive, were more or less damaged. The tender of yard engine 242 was overturned to the right and all wheels of the engine were derailed, but the engine remained upright on the lead track. The cab was demolished and various steam pipes were broken. The car next to the engine was derailed and damaged.

The weather was cloudy at the time of the accident, which occurred about 5:12 p. m.

The engineer of yard engine 242 was killed. The fireman of engine 242, and the fireman, the baggageman and the front brakeman of No. 15 were injured.

The second car of No. 15, Erie 2256, an all-steel coach, was built in December, 1926. It is 78 feet 7-3/4 inches long over buffer plates, and the distance between the centers of the trucks is 54 feet. It has seating capacity for 68 persons, and its light weight is 158,500 pounds. The car is provided with two trucks of the 6-wheel type, having 5-inch by 9-inch journals, and 36-inch multiple-wear steel wheels. The brake system is provided with a control valve of the UC-12-B type and two brake shoes to each wheel. The braking ratio is 90 percent of the light weight of the car. The spring arrangements consist of two sets of elliptical springs on each side of each truck and coil springs on each truck equalizer. The last repairs to this car were completed January 8, 1946, at which time the wheel and axle assembly involved were applied.

### Discussion

No. 15 was moving on the westward main track at a speed of 40 miles per hour, in territory where the maximum authorized speed was 75 miles per hour, when the rear truck of the first car and the second to sixth cars, inclusive, became derailed at a point 1 mile east of the station at Hammond. The enginemen were maintaining a lookout ahead, and the members of the train crew were in various cars throughout the train. The first the members of the crew of this train were aware of anything being wrong was when the brakes became applied in emergency as a result of the derailment. The brakes of this train had been tested and had functioned properly en route.

Yard engine 242 was engaged in switching cars to various tracks in the freight classification yard. This engine stopped on the lead track about 5:12 p. m. at a point about 360 feet west of the point where the general derailment occurred. A cut of 6 cars was coupled to the front end of the engine, which was headed west. The first any surviving member of the crew assigned to this engine was aware of anything being wrong was when the collision occurred. The engineer was killed in the accident.

There was no indication of dragging equipment, defective track or of any obstruction having been on the track. Examination after the accident disclosed that the first mark on the track structure was on the point of the frog at the east switch of the lead track. This was a distinctive flange mark on the point of frog about 3/8-inch north of the gage side of the north rail of the westward main track. This mark continued diagonally across the head of the rail immediately west of the frog and thence to the ties in a distance of 25 feet. At a point 78 feet west of the point of frog single flange marks appeared on the tops of the ties inside the south rail. Then single flange marks appeared on the tops of the ties inside the south rail

and outside the north rail throughout a distance of 3,741 feet, where a 15-inch piece was broken from the east end of the wing rail of the frog of the crossover in the westward main track. Then the general derailment occurred. These marks indicated that throughout a distance of 3,741 feet one pair of wheels only was derailed.

Examination disclosed that the right front wheel of the front truck of the second car of No. 15 had moved outward on its wheel seat  $2\frac{5}{8}$  inches. The outer surfaces of the nubs of both wheels on this axle had been worn and somewhat overheated by contact against the journal boxes. The inside face of the right No. 1 journal box had been pressed inward about  $1\frac{1}{4}$  inches and the journal bearing of the right wheel was broken near the end collar, but was intact at the inner end. This condition indicated considerable lateral pressure toward the outer end of the journal. This car had been inspected by members of the mechanical forces at Youngstown and Marion, Ohio, and Huntington, Ind., respectively, 406.5 miles, 248.5 miles and 122 miles east of Hammond, and no defective condition was observed. The members of the crew of No. 15 said that throughout the trip between Huntington and Hammond they made observations of the equipment, and observed no defective condition prior to the derailment. They received proceed signals from track forces and operators at several points, which indicated that these employees had observed no defective condition. The operator at HY Tower observed the north side of the train as it passed him. He observed sparks flying from brake shoe locations and thought the brakes were applied. He did not observe any apparent defective condition. The engineer of No. 15 said that when his train passed HY Tower the brakes were released.

The investigation disclosed that the wheels on the No. 1 axle of the front truck of the second car were worn in contour, but in serviceable condition. Measurements of the right wheel, which was loose on its seat, disclosed that the flange was  $1\frac{5}{32}$  inches in thickness, gaged at a point  $\frac{5}{8}$ -inch above the base line. From the back of the flange to the outside face of the tread the wheel was  $5\frac{11}{16}$  inches wide. The tread was 2 inches in thickness. The hub was  $6\frac{5}{16}$  inches in length. The wheel seat of the axle and the bore of the hub of the wheel were scored and distorted by rotation of the wheel on its seat, therefore, it could not be determined if the dimensions of either conformed to the specifications of the Association of American Railroads. According to data submitted by the Engineer of Tests of the Erie Railroad, the wheels involved were manufactured in August, 1943, and the chemical analysis of the metal indicated that they complied with the specifications of the Association of American Railroads for multiple-wear wrought-steel wheels. These wheels were first mounted on a second-hand axle at Hornell Shop in April, 1944. There is no



record of the mileage accumulated during this assembly. However, these wheels were removed from the first axle mounting, turned down to full tread and flange contour, then were re-mounted during January, 1946, as second-hand wheels on the present axle. This axle was manufactured in 1935 and was in compliance with specifications of the Association of American Railroads. Records indicate that the right wheel was pressed to its proper position on a single-ram hydraulic press by a pressure of 75 tons, and the left wheel by 95 tons. The specified mounting pressures for wheels of this character is between 70 and 100 tons. A pressure of 40 tons was required to press off the right wheel after the accident, and 135 tons to press off the left wheel.

Cause

It is found that this accident was caused by a loose wheel moving outward on its wheel seat, and by derailed passenger-equipment cars striking an engine standing on an adjacent track.

Dated at Washington, D. C., this thirty-first day of May, 1946.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,  
Secretary.