

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3469
CHICAGO & EASTERN ILLINOIS RAILROAD COMPANY
IN RE ACCIDENT
AT FARMERSBURG, IND., ON
JUNE 15, 1952

SUMMARY

Date: June 15, 1958
Railroad: Chicago & Eastern Illinois
Location: Farmersburg, Ind.
Kind of accident: Derailment
Train involved: Passenger
Train number: 8
Engine number: Diesel-electric units 1100, 1503,
and 1101
Consist: 15 cars
Speed: 79 m. p. h.
Operation: Signal indications
Track: Single; tangent; 0.54 percent
descending grade northward
Weather: Clear
Time: 5:47 a. m.
Casualties: 27 injured
Cause: Broken axle

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3469

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

CHICAGO & EASTERN ILLINOIS RAILROAD COMPANY

July 29, 1952

Accident at Farmersburg, Ind., on June 15, 1952, caused
by a broken axle.

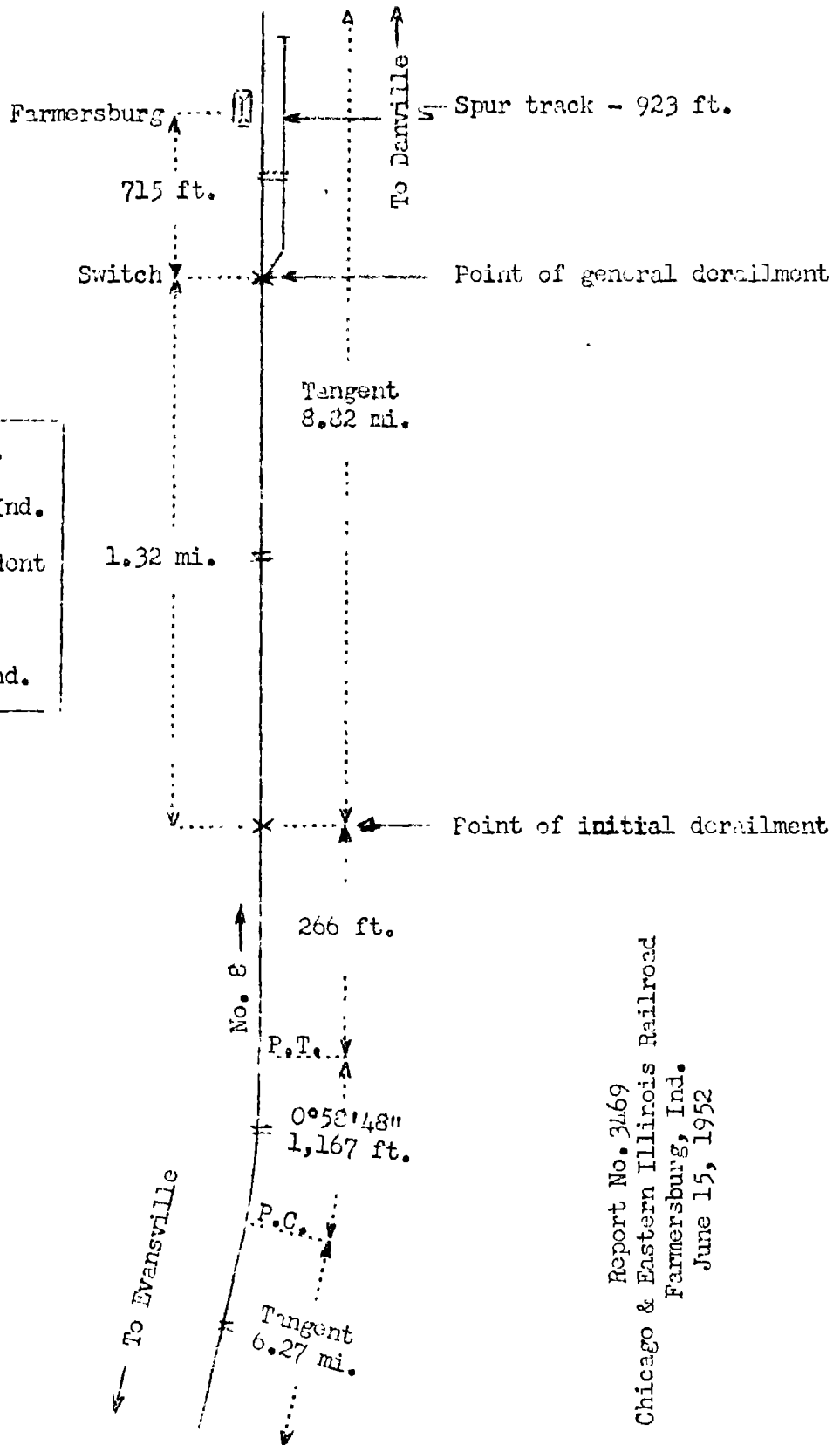
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On June 15, 1952, there was a derailment of a passenger train on the Chicago & Eastern Illinois Railroad at Farmersburg, Ind., which resulted in the injury of 21 passengers, 5 dining-car employees and 1 train porter.

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 | Danville, Ill. |
| | 69.70 mi. |
| o | Farmersburg, Ind. |
| | 1.45 mi. |
| X | Point of accident |
| | 9.35 mi. |
| o | Sullivan |
| | 83.50 mi. |
| o | Evansville, Ind. |

Report No. 3469
 Chicago & Eastern Illinois Railroad
 Farmersburg, Ind.
 June 15, 1952

Location of Accident and Method of Operation

This accident occurred on that part of the railroad extending between Evansville, Ind., and Danville, Ill., 164 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by signal indications. At Farmersburg, 94.3 miles north of Evansville, a spur track 923 feet in length parallels the main track on the east. The spur-track switch, which is facing-point for north-bound trains, is located 715 feet south of the station. The initial derailment occurred on the main track at a point 1.52 miles south of the spur-track switch at Farmersburg. The general derailment occurred at the spur-track switch. From the south there are, in succession, a tangent 6.27 miles in length, a $0^{\circ}56'48''$ curve to the left 1,167 feet, and a tangent 260 feet to the initial point of derailment and 8.82 miles northward. The grade between the initial point of derailment and the point of general derailment varies between 0.54 percent descending and 0.22 percent ascending northward.

In the vicinity of the point of accident the track structure of the main track consists of 112-pound rail, 39 feet in length, laid new in 1944 on an average of 24 treated hardwood ties per rail length. It is fully tieplated with double-shoulder canted tieplates, single-spiked, and is provided with 4-hole 24-inch joint bars and an average of 12 rail anchors per rail. It is ballasted with gravel to a depth of 12 inches below the bottoms of the ties.

The maximum authorized speed for passenger trains is 79 miles per hour.

Description of Accident

No. 8, a north-bound first-class passenger train, consisted of Diesel-electric units 1100, 1503 and 1101, coupled in multiple-unit control, one baggage-dormitory car, three chair cars, one dining car, one tavern car, three sleeping cars, one club-sleeping car, and five sleeping cars, in the order named. The third to the seventh cars, inclusive, were of lightweight steel construction. The other cars were of conventional all-steel construction. The third to the seventh cars, inclusive, and the twelfth car were equipped with tightlock couplers. This train departed from Evansville at 4:09 a. m., 44 minutes late, departed from Sullivan, 9.55 miles south of the point of accident, at 5:38 a. m., 51 minutes late, and while it was moving at a speed of about 79 miles per hour the left front wheel of the rear truck of the first

car was derailed at a point 92.85 miles north of Evansville and 1.32 miles south of the spur-track switch at Farmersburg. The entire train, with the exception of the locomotive, the front pair of wheels of the first car, and the rear truck of the rear car, was derailed at the spur-track switch.

Separations occurred between the first and the second cars and between the second and the third cars. There were no other separations between the units of the train. The locomotive stopped with the front end 3,965 feet north of the spur-track switch. The first car stopped with the front end on the track structure and the rear end 17 feet east of the track. The second car stopped with the front end 1,240 feet north of the spur-track switch and 55 feet east of the track and the rear end on the track structure. The other cars were derailed to the east and stopped approximately in line with the track. None of the derailed cars overturned. The trucks and the appurtenances below the floor level of the first to the thirteenth cars, inclusive, were somewhat damaged. The seventh to the tenth cars, inclusive, scraped the side of a freight car which was standing on the spur track, and the east sides of these cars were damaged. The fourteenth and the fifteenth cars were slightly damaged.

The weather was clear at the time of the accident, which occurred about 5:47 a. m.

The first car, N.C. & St. L. 951, was formerly a Pullman sleeping car and was converted into a combination baggage-dormitory car by the Nashville, Chattanooga & St. Louis Railway. The car is 82 feet 10 inches long between the pulling faces of the couplers. The light weight is 169,000 pounds. It is equipped with two 6-wheel trucks spaced 58 feet 6 inches between truck centers. The trucks are equipped with 5-inch by 9-inch journals, roller bearings, and multiple-wear steel wheels. A 19-inch pulley for operating an electric generator is mounted on the axle between wheels Nos. 7 and 8. At the time of the derailment this was the front axle of the rear truck.

Discussion

No. 8 was moving at a speed of about 79 miles per hour, as indicated by the tape of the speed recording device, when the derailment occurred. The enginemen were maintaining a lookout ahead from the control compartment at the front of the locomotive, the brakeman and the conductor were in the

sixth car, and the flagman was in the rear car. Prior to the time of the accident the locomotive and the cars had been riding smoothly and there was no indication of defective equipment or track nor of an obstruction having been on the track.

Examination of the track structure after the accident occurred disclosed no condition which could have caused or contributed to the cause of the accident. Marks on the joint bars, bolts, and ties indicated that a wheel had become derailed inside the west rail at a point 1.32 miles south of the spur-track switch. This wheel had continued in line with the track at a distance of about 8 inches east of the west rail from the initial point of derailment to the spur-track switch. At a point 1,765 feet north of the initial point of derailment the ties were marked by some portion of equipment other than the derailed wheel. A piece broken from a pulley was found 1,790 feet north of the initial point of derailment, and a generator belt was found 675 feet farther north. Marks on the west switch-rail of the spur-track switch indicated that the derailed wheel had struck the switch point and had been deflected to the east. The general derailment occurred immediately north of this point.

After the accident occurred, examination of N.C. & St.L. 951, the first car, disclosed that the front axle of the rear truck had broken. As a result, the left front wheel dropped inside the west rail. The axle was broken at a point $34\frac{3}{4}$ inches from the west end. Approximately 70 percent of the cross-sectional area of the break was a progressive fracture. Discoloration of the metal indicated that a fracture of a portion of the cross-sectional area had existed for some time. Lines of fracture and lighter discoloration of the metal indicated that the fracture had developed progressively until it covered about 70 percent of the cross-sectional area. The remainder of the break was new. The broken ends were battered to the extent that the point at which the fracture originated could not be determined. Laboratory analysis of the metal showed that the chemical composition of the axle was in accordance with the specifications of the Association of American Railroads. Prior to the time of the accident the point of fracture was concealed by the pulley which was mounted on the axle.

There was no mark on the axle to indicate the date or place of manufacture. The wheels were manufactured in 1948, but the owner of the car was unable to locate records which would indicate the date or place at which the wheels were

mounted. This pair of wheels, originally 36 inches in diameter, was removed from the car, turned to a diameter of 35-1/8 inches, and re-applied to the car by the Chicago and Western Indiana Railroad Company on June 3, 1952. Neither the wheels nor the pulley were removed from the axle at that time, and no defective condition of the axle was detected. This car was delivered to the Chicago & Eastern Illinois Railroad at Evansville at 3:50 a. m. on the day of the accident by the Louisville and Nashville Railroad. Inspection at the interchange point and observation of the car by members of the crew and by station employees at various points between Evansville and the point of derailment failed to disclose any defective condition.

The appearance of the metal at the break indicated that a progressive fracture had been in existence prior to the removal of the wheels for turning 12 days before the accident occurred. It is probable that this defect would have been detected and the accident averted if the generator pulley had been removed and a magnetic particle test made at the time the wheels, mounted on axle, were removed from the truck for turning.

Cause

It is found that this accident was caused by a broken axle.

Dated at Washington, D. C., this twenty-ninth day of July, 1952.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. PARTEL,
Secretary.