IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED AT THE INTERSECTION OF THE TRACKS OF THE ILLINOIS CENTRAL AND TOLEDO, ST. LOUIS & WESTERN RAILROADS AT LERNA, ILL., ON AUGUST 13, 1921.

September 28, 1921.

On August 13, 1921, there was a side collision between a passenger train of the Illinois Central Railroad and a freight train of the Toledo, St. Louis & Western Railroad at the intersection of their tracks at Lerna, Ill., resulting in the death of 1 employee, and the injury of 4 passengers and 2 mail clerks. After investigation of this accident the Chief of the Bureau of Safety reports as follows:

Location and Method of Operation.

At the point of accident both railroads are single-track lines over which trains are operated by time-table and train orders, no block signal system being in use. The tracks of the two railroads intersect at right angles. Approaching the point of accident on the Illinois Central from the south, and on the Toledo, St. Louis & Western from the west, beginning at a point about 1 mile distant on each railroad, the track is tangent; the grade is slightly ascending on the Illinois Central, while that of the Toledo, St. Louis & Western is slightly descending. There is no interlocking plant at this point, and the only fixed signals protecting the movement of trains over this crossing are stop boards located 400 feet distant on the line of the Toledo, St. Louis & Western and 800 feet

distant on the line of the Illinois Central, it is also required by state law that all trains shall stop when approaching a railroad crossing at grade. Approaching the point of accident on each railroad, the view is considerably obscured by buildings and trees until within 100 feet of the crossing, although from a point about 160 feet south of the crossing, on the line of the Illinois Central, there is an opening which permits of a range of vision from the fireman's side of an approaching northbound engine, of a limited portion of the line of the Toledo, St. Louis & Western about 400 feet distant. The weather was clear at the time of the accident, which occurred at about 9.50 p.m.

Description.

Illinois Central northbound passenger train No. 522 consisted of 1 combination mail and express car, 1 baggage car, and 2 coaches in the order named, hauled by engine 2033, and was in charge of Conductor Trott and Engineman Quiett. It was practically on time approaching Lerna, made the usual stop about 150 feet south of the crossing, sounded two blasts of the whistle, and started to move towards the depot, located 80 feet north of the crossing. It was travelling at a speed variously estimated at between 5 and 14 miles an hour and had moved about 300 feet when the rear truck of the second car was struck on the crossing by Toledo, St Louis & Western freight train second No. 46.

Eastbound freight train second No. 46 consisted of 32 cars and a caboose, hauled by engine 194, and was in

charge of Conductor Callahan and Engineman Smith. It passed Neoga, 11 miles from Lerna and the last open telegraph office, at 9:13 p.m., 2 hours and 15 minutes late, and on reaching Lerna did not make the required stop for the crossing, colliding with the passenger train while travelling at a speed variously estimated at between 1½ and 15 miles an hour.

Engine 1o4 came to rest with its tender on the crossing, both engine and tender were derailed, but remained upright. The first car in the freight train was also derailed. Train No. 222 was broken in two between the second and third cars, both of which were derailed. The employee killed was a conductor off duty.

Summary of Evidence.

As soon as train No. 222 was brought to a stop, Engineman Quiett ascertained from the fireman that he could see no train from his side of the engine, then sounded two blasts of the whistle, and began to work steam; he knew nothing of the approach of another train until the accident occurred. When within a few feet of the crossing, Fireman Scherrerrsaw train second No. 46 approaching, but it was far enough away so that he supposed it would stop before reaching the crossing; he was unable to see how fast it was moving. He was positive that it would have been impossible for his own train to have been brought to a stop before reaching the crossing should it have been attempted at the time he first saw the freight train approaching. Both members of the engine crew estimated the

speed of their train at 5 or 6 miles an hour when the collision occurred. The conductor and flagman said their train was moving at about 5 miles an hour, while the conductor and one of the baggagemen estimated that train second No. 46 was moving at a speed of 15 miles an hour just before the collision occurred.

Engineman Smith, of train second No. 46, said he shut off steam about 75 or 80 car-lengths from the crossing and drifted to within 30 or 40 feet of it, without having made any application of the air brakes, before he saw the Illinois Central train moving across, he immediately reversed the engine and applied the air brakes in emergency, and he said he thought the brakes took hold, but the speed did not decrease, the train seeming to shove ahead, colliding with the passenger train while moving at a speed of 1½ or 2 miles an hour. He admitted that he made no attempt to bring his train to a stop before reaching the crossing, inasmuch as everything seemed to be clear. Engineman Smith further stated that a test of the air brakes had been made at the terminal at Madison, and that he had experienced no difficulty in stopping previous to reaching Lerna. He made no inquiries in regard to the condition of the air brakes at the time the test was made, and did not know whether or not he had departed with the minimum percentage of operative brakes required by law.

Fireman Bennett said the engine was from 400 to 600 feet from the crossing before the engineman closed the throttle, at which time the speed was 10 or 15 miles an hour, and that the engineman then made a service application of the air brakes, followed almost immediately by an emergency application just before the collision occurred. Fireman Bennett then went to the gangway on the engineman's side and could see the passenger train, which had not then reached the crossing. Head brakeman Knauss said the engineman shut off steam about half a mile from the crossing and when 400 feet from the crossing moved the brake valve to the lap position, but had not made any application of the brakes up to the time the brakeman got off, just before the accident occurred. Brakeman Knauss estimated the speed of his train at that time at 3 miles an hour. Fireman Bennett estimated the speed of his train at the time of the collision at 1½ to 2 miles an hour and of the passenger train at 5 or 6 miles an hour, Engineman Smith thought the speed of the passenger train was 12 or 14 miles an hour. Conductor Callahan who was riding in the caboose, thought the speed was 10 miles an hour when he felt an emergency application of the brakes. Flagman Franklin noticed an application of the brakes which caused the gauge in the caboose to drop from 65 to 60 pounds, and after the train had moved about 30-car lengths it came to a sudden stop.

A test of the air brakes of the undamaged 31 cars and caboose of train second No. 46, made soon after the accident disclosed that 4 cars had the brakes cut out, on 2 cars the brakes would not apply, and that 2 cars had 12-inch piston travel, making a total of 8 of the 32 brakes tested which were inoperative. Assuming that the brakes on the damaged car and engine were in proper working order, the percentage of operative brakes was only 77%, while the minimum percentage required by law is 85%. The inspectors who went over the train before its departure from its terminal said it was in good condition with the brakes cut out on only 1 or 2 cars.

All trains are required by rule and state law to come to a stop in advance of the crossing involved and ascertain that the way is clear and that the train can safely cross, before proceeding.

The state law provides that:

> "All trains running on any railroad in this state, when approaching a crossing with another railroad upon the same level, or when approaching a swing or draw-bridge in use as such shall be brought to a full stop before reaching same, and within eight hundred feet therefrom, and the engineer or other person in charge of the engine attached to the train, shall positively ascertain that the way is clear and that the train can safely resume its course before proceeding to pass the bridge or crossing."

Rule 98, of the book of rules of each railroad reads in part as follows:

"Trains must approach the end of double track, junctions, railroad crossings at grade, and drawbridges, with caution. Where required by rule or by law, trains must stop.*****"

In addition to the employees' statements, the statements of passengers and other witnesses were to the effect that train No. 222 was stopped for this crossing, and that train second No. 46 was not stopped.

Conclusions.

This accident was caused by the failure of Toledo, St. Louis & Western train second No. 46 to be brought to a stop before passing over the railroad crossing at grade, for which Engineman Smith is responsible.

While there is considerable conflict in the statements of the crew of train second No. 46 as to how their train was operated when approaching the crossing, they agree on the important fact that their train was not brought to a stop, as required by law and by rule, before moving over the crossing. According to Engineman Smith's own statement he made no application of the brakes approaching the crossing, and did not bring his train to a stop because the way seemed to be clear.

As previously stated, there is no interlocking plant at this crossing. Had such a plant been installed at this crossing, this accident would not have occurred.

Engineman Smith entered the service of the Toledo, St. Louis & Western Railroad as a fireman in 1905, and was

promoted to engineman in 1913. At the time of the accident the crew of train second No. 46 had been on duty about 5½ hours after 15½ hours off duty, the crew of train No. 222 had been on duty nearly 11 hours after about 13 hours off duty.