

## INTERSTATE COMMERCE COMMISSION

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REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ILLINOIS CENTRAL RAILROAD AT CHICAGO, ILL., ON FEBRUARY 4, 1923.

March 5, 1923.

To the Commission:

On February 4, 1923, there was a rear-end collision between a freight train and an express train on the Illinois Central Railroad at Chicago, Ill., resulting in the death of one employee, and the injury of two employees. This accident was investigated in conjunction with a representative of the Commerce Commission of the State of Illinois.

Location and method of operation.

This accident occurred on that part of the Chicago Terminal Division extending between Chicago and Matteson, Ill., a distance of 27.93 miles, at the point of accident this is an eight-track line over which trains are operated by timetable, train orders, and an automatic block-signal system. The accident occurred at 48th Street, approaching this point from the south there is a 45-minute curve to the left 4,980 feet in length, the accident occurring on this curve at a point about 200 feet from its northern end. The grade from 51st Street to 47th Street is 0.62 per cent descending for northbound trains, after which it ascends slightly to 43rd Street. The tracks are numbered, from west to east, 1 to 8, inclusive, and the accident occurred on track 4, which is the northbound through passenger track.

The automatic block signal involved, signal 4-62, is a color light signal, located on a bracket pole just east of track 4 and near 51st Street, about 1,600 feet south of the point of accident, the indications are red and green, for stop and proceed, respectively. Under the rules and instructions, when a train comes to a stop in clear weather, in automatic block signal territory, within the Chicago Terminal, flagmen are required to go back, properly equipped, a distance of only from 30 to 60 feet. Owing to a city ordinance, whistle signals are not given for flagmen to go out, or recalling them within city limits, the whistle being sounded only in case of emergency, or in acknowledgment of stop signals. The weather was clear at the time of the accident, which occurred at about 1.23 p.m.

### Description.

Northbound freight train extra 1633, known as the Stock Yards Transfer, en route from Wildwood to the Union Stock Yards, consisted of 28 cars and a caboose, hauled by engine 1633, and was in charge of Conductor Brow and Engineman Riordan. As the signal at 43rd Street governing cross-over movements to the tracks of the Chicago Junction Railway, on which the Union Stock Yards are located, was not displaying a clear indication, and in order to avoid stopping on the incline leading to this railway, extra 1633 was brought to a stop with its rear end just south of 48th Street. Within a few seconds after stopping at this point, the rear of the train was struck by train second No. 10.

Northbound express train second No. 10 consisted of 6 refrigerator cars, 5 deadhead Pullman sleeping cars, and a caboose, hauled by engine 1147, and was in charge of Conductor Peterson and Engineman Johnson. This train passed signal 4-62 in the stop position and collided with extra 1633 while traveling at a speed variously estimated to have been between 7 and 20 miles an hour.

Engine 1147 was partly derailed and slightly damaged. The caboose of extra 1633 was demolished, while the four rear cars were damaged, one being practically destroyed. The employee killed was the conductor of extra 1633, who was in the caboose.

### Summary of evidence.

Just before extra 1633 was brought to a stop at 48th Street, Flagman Woods was standing in the door of the caboose, looking back, and saw train second No. 10 rounding the curve in about the vicinity of 53rd Street. He thought then that it was not going to stop at signal 4-62, and gave it a signal, he got off his own train just before it came to a stop, and ran back violently waving flag signals to the fireman, then crossed to the engineman's side, and had gotten back about 10 or 12 car lengths when the engine passed him, at which time he stated it was working steam and traveling at a speed of about 35 miles an hour. Flagman Woods further stated the cab windows on engine 1147 were closed, and he did not see anyone in the cab, his flag signals were not answered, nor did he notice any application of the air brakes. Flagman Woods also stated he was looking at signal 4-62 when the caboose of his train passed it, and at that time it was displaying a stop indication. The first knowledge any of the other members of the crew of extra 1633 had of anything wrong was when the accident occurred.

Fireman Broomfield, of train second No. 10, said he got on his seat box in the vicinity of 56th or 57th Street, and called the signal at 54th Street as displaying a clear indication. There was a train on track 3 at the 53rd Street station and on notifying the engineman, the latter applied the air brakes, but the fireman then said the train was moving and the engineman released the brakes. When about at 53rd Street the fireman called signal 4-62 as displaying a clear indication and then put in a fire. The engineman then saw the signal when about 10 car lengths distant, and he also said it was displaying a clear indication, at about the time the engine passed it he asked the fireman about the indication of the signal at 47th Street, and on again looking out the fireman saw the rear end of extra 1633 and called to the engineman that there was a train ahead. Engineman Johnson thought the fireman meant the preceding train was at 47th Street and had made a brake-pipe reduction of about 7 or 8 pounds when the fireman called again, and the engineman placed the brake valve in the emergency position and reversed the engine. The engineman and fireman jumped when about four car lengths from the caboose, at which time the speed, according to their estimates, was between 12 and 15 miles an hour. Shortly after the accident, Engineman Johnson went back to signal 4-62 and it was then displaying a stop indication. Fireman Broomfield further stated he was positive he had not confused signal 4-62 with the signal for track 6, about 200 feet south of signal 4-62. He also stated that after notifying the engineman that there was a train ahead he saw the flagman, apparently two or three car lengths from the caboose, while Engineman Johnson estimated this distance to have been about one car length. The statements of the various members of the crew of train second No. 10 were to the effect that the air brakes had worked properly at all points en route.

Air Brake Engineer Streeter stated that he arrived at the scene of accident at about 2.30 p.m., and at that time the air brakes on engine 1147 and its tender were still applied, the piston travel on the engine being  $3\frac{1}{2}$  inches, while on the tender it was about  $6\frac{1}{2}$  or 7 inches, indicating that the engine and tender brakes were in good condition and had not leaked off during this period. A test was made of the air brakes on the cars in train second No. 10, subsequent to the accident, and they worked properly throughout the train. He expressed the opinion that owing to the previous service application, made just prior to the accident, apparently only a heavy service application was obtained at the time the brake valve was moved to the emergency position.

Signal Engineer Morgan stated that immediately after the accident signal 4-62 was tested and worked properly.

Tests disclosed that with an engine of the same type as engine 1147, a clear view can be obtained of signal 4-62 from the engineman's side of a northbound engine for a distance of 650 feet, while from the fireman's side it can be seen for 2,600 feet.

#### Conclusions.

This accident was caused by failure properly to observe and obey automatic block-signal indication, for which Engineman Johnson and Fireman Broomfield are responsible.

Fireman Broomfield was positive that signal 4-62 was displaying a clear indication when he observed it. Engineman Johnson, at one point in his testimony, said he took the fireman's word for it to a certain extent, but he also stated he saw the signal and was positive it was displaying a clear indication when his engine passed it. On going back to look at it after the accident, however, he found it to be displaying a stop indication, the flagman of extra 1633 also stated that it was displaying a stop indication when the rear of the extra passed it. Under these circumstances, and in view of the fact that examination and test failed to disclose anything wrong with the operation of this signal, it is believed that it was displaying a stop indication at the time train second No. 10 approached, and that for some reason this indication was not properly observed by the engine crew.

The occurrence of this accident in broad daylight, under favorable weather conditions, and with an automatic block-signal system in use, involving the failure of an experienced engine crew, once more directs attention to the necessity for automatic train control. The use of such a device undoubtedly would have prevented this accident.

Both members of the engine crew of train second No. 10 were experienced men. The fireman had a clear record, but attention is called to the fact that the engineman had been disciplined on several occasions for responsibility in connection with collisions, and for other serious infractions of operating rules. The members of the two crews had been on duty from 3½ to 4½ hours, after off-duty periods of from 8½ to 16 hours.

Respectfully submitted,

W. P. BORLAND,

Director.