IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RAILROAD AT HOSPERS, IOWA, ON AUGUST 10, 1920.

September 11, 1920.

On August 10, 1920, there was a derailment of a passenger train on the Chicago, St. Paul, Minneapolis & Omaha Railroad at Hospers, Ia., which resulted in the death of 2 employees and 1 trespasser, and the injury of 9 passengers, 6 employees and 1 trespasser, After investigation of this accident the Chief of the Bureau of Safety reports as follows:

This accident occurred on that part of the Western Division extending between St. James, Minn., and Sioux City, Ia., a distance of 147.7 miles; this is a single-track line over which trains are operated by time-table, train orders, and a manual block-signal system. At Hospers there is a long passing track on the north side of the main track known as the west passing track, and another passing track on the south of the main track, leading from the house track and between the house track and the main track, known as the short passing track. The accident occurred at the eastern end of the short passing track. Approaching this point from the east the track is tangent a distance of 2,488 feet extending to the house track switch; there is then a turn-out to the left on a curve of 7° 30' this turn-out being about 85 feet in length, a few feet of tangent, and a turn-out to the right on a 9-degree 30-minute curve; the derailment occurred at the west end of the second turn-out. The passing track is laid with 60-pound rails, 15 ties to the rail length, single-spiked, and ballasted with cinders; at turn-outs rail braces are used on about one-third of the ties. The general condition of the passing track as to gauge, ties, and spiking, was not good. At the time of the accident the main line and the west passing track were blocked by a derailed freight car, making it necessary for trains to use the short passing track, the switches being lined for a movement through the passing track. The weather at the time of the accident was clear.

Westbound passenger train No. 5 consisted of 1 express car, 1 combination mail and baggage car, 1 baggage car, 1 smoking car, and 2 coaches, hauled by engine 375, and was in charge of Conductor Peterson and Engineman Hedding. At Worthington, Minn., the crew received copies of three train orders and a block release card. Among these train orders was train order No. A-99, form 31, reading as follows:

> "Car derailed on west passing track at Hospers blocking main line trains will use the short passing track room for 15 cars on east end long passing track and 12 cars on west end, short passing track lined up for main line".

Train No. 5 left Worthington at 3 p.m., 32 minutes

late, passed Sheldon, Ia., 7.9 miles from Hospers and the last open telegraph office, at 4.17 p.m., 34 minutes late, and at about 4.30 p.m. was derailed on the short passing track at Hospers while traveling at a speed variously estimated to have been from 30 to 50 miles an hour.

The engine came to rest on its left side on the south side and clear of the passing track, 187 feet beyond the point of derailment, with its front end 10 feet and its rear end 40 feet from the center of the passing track. The tender came to rest bottom up at right angles to and clear of the passing track with its front end close to the rear end of the engine and its rear end near the passing track. The express car came to rest on the passing track about opposite the engine and tender and was practically demolished. The next two cars and the forward truck of the smoking car were derailed, these cars remaining upright; the principal damage to these cars was to the running gear. The employees killed were the engineman and fireman.

Conductor Peterson said he delivered train order No. A-99 to Engineman Hedding at Worthington, and the engineman told him that he was familiar with the tracks and would go through the short passing track. Both he and the engineman understood that the switches were lined for a movement through the passing track. Conductor Peterson was riding in the baggage car approaching Hospers, but said he did not hear the engineman sound the station whistle, and his first knowledge of anything wrong was when the air brakes were applied in emergency just before the train entered the passing track. Conductor Peterson had made no attempt to reduce the speed of the train, which he estimated to have been from 30 to 40 miles an hour, depending upon the engineman properly to control the train for the movement through the passing track. Conductor Peterson's theory was that the engineman might have been overcome by heat and that the fireman had applied the brakes.

Baggagemaster Johnson, Rear Brakeman Rafferty and Head Brakeman Schaefer, verified the conductor's statement about the engineman not whistling when approaching Hospers, while the head brakeman also said that he saw the conductor give the order to the engineman at Worthington. The estimates of the two brakemen as to the speed were practically the same as that of the conductor's, while the baggagemaster estimated the speed approaching Hospers to have been about 50 or 55 miles an hour. All of these employees thought the brakes were applied in emergency at or just before the train reached the house track switch.

The section foreman, with some of the members of the section crew, were working at the derailed box car, which was about 650 feet west of the switch; they did not remember hearing the engineman whistle until just after the engine

entered the passing track and before it turned over, when two or three short blasts were sounded. Their opinion was that the train was going too fast to enter the passing track, the section foreman saying that he thought high speed was the cause of the accident, as the ties under the second turn-out were pushed about 4 inches out of line.

Agent Jarman was the only person who claimed to have heard the engineman sound the whistle approaching Hospers; he said this was done when the train was about one-half mile distant, traveling at what he thought was a high rate of speed, 35 or 40 miles an hour. He also heard two short blasts of the whistle just before the train was derailed. Operator Johnson thought the train was approaching at a high rate of speed, but said she did not remember whether or not the whistle was sounded at any time.

Roadmaster Donahue said that the short passing track was safe for a speed of not over 8 miles an hour; 10 miles an hour is the speed allowed under operating rule 98-A-2, which reads as follows:

> "The speed of a train moving over a crossover turn-out from main track to a siding, or to diverging route at junctions, must not exceed ten miles per hour"

Roadmaster Donahue said that he had been over the passing track a short time previously, and while some of the ties had been in service for some time he considered the track to be in average condition for a passing track, where the speed should not be over 10 miles an hour. Rule 1012, which comes under the heading "Track, Bridge and Building Department" reads in part as follows:

> "When track is in bad order or work is to be done which will render it unsafe for trains to pass at their usual speed, a green and red flag must be placed on engineman's side of track at least three-quarters of a mile (twenty-four telegraph poles) in either direction".

In this particular case the train dispatcher was handling movements through the passing track, and Roadmaster Donahue said that under these circumstances he did not consider it necessary for the section foreman to have placed slow flags in position. The section foreman said that he had not been notified by the dispatcher that trains were going to be operated through the short passing track, but that before train No. 5 arrived the switches were lined for the movement through the passing track, and he knew that train No. 5 was going to be so operated. Roadmaster Donahue found no indication of spread rails, and expressed the opinion that a speed of 25 miles an

hour would have been sufficient to derail a train at this turn-out. The roadmaster also stated that the switch target had been painted within 2 weeks, and by test it was found that when lined for the passing track the target was visible 1,000 feet, while the indication of the target was visible about 600 feet, the range of vision being so limited on account of the fact that there are some buildings west of the switch, and in line with it, which make it difficult for an engineman to observe the target as easily as would otherwise be the case.

Dispatcher McSteen said he considered Worthington to be the most practicable point at which to issue train order No. A-99, which was addressed to all westbound trains, as all trains had to stop and register at that point, while some of the trains were not scheduled to stop at Sheldon, the last telegraph office east of Hospers, and also because in the case of freight trains stopping at Sheldon to receive orders it would be necessary for them to cut street crossings.

The only marks of derailment were flange marks on two ties on the left side of each rail, the track west of these marks being torn up and practically destroyed for a distance of about 220 feet. Measurements of the gauge between the switch and the point of derailment showed it to vary from 4 feet 8½ inches to 4 feet 9-1/8 inches. Measurements made of that part of the short passing track west of the wreckage showed that the gauge was from ± inch to 1½ inches wide at various points.

This accident was caused by the failure of Engineman Hedding properly to observe a train order and to operate his train at a speed not exceeding 10 miles an hour as required by rule 98-A-2 when entering the passing track.

Train order No. A-99 stated that the short passing track was "lined up for main line". While this particular part of the train order is ambiguous, the evidence indicates that the crew of train No. 5 understood that the short passing track was to be used as a main track, and that the switches had been lined accordingly; the preceding part of the order also clearly stated that the main track was blocked. In view of this fact, and also in view of the fact that the brakes were not applied until about the time the train entered the switch, although the switch target indicated that the switch was lined for the passing track, it is impossible to state definitely why Engineman Hedding failed to have his train under proper control.

Engineman Hedding was employed as a wiper in 1886, promoted to fireman in 1888, and to engineman in 1895. His record was good.

At the time of the accident the engine crew had been on duty about 4½ hours after about 22 hours off duty; the train crew had been on duty about 10½ hours, and with the exception of the conductor, who had been off duty for several days, they had been off duty about 20½ hours.