

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
CHICAGO GREAT WESTERN RAILROAD AT HARLAN,
IOWA, ON NOVEMBER 16, 1919.

December 13, 1919.

On November 16, 1919, there was a rear-end collision between two freight trains, on the Chicago Great Western Railroad, at Harlan, Iowa, resulting in the death of 1 employee. After investigation of this accident the Chief of the Bureau of Safety reports as follows:

The accident occurred on the Twentieth District of the Western Division of the Chicago Great Western Railroad, which district is a single-track line, over which trains are operated by time-table and train orders. No form of block signal system is in use, but trains running in the same direction are required to keep 10 minutes apart.

The point of accident is located within the yard limits of Harlan, about 6,300 feet east of the western yard limit board. Beginning at this board and proceeding eastward the track is straight for 5,700 feet, followed by a 4-degree curve to the left about 1,050 feet long, the accident occurring on this curve about 600 feet from its western end. From the yard limit board the grade varies from .7 per cent to .2 per cent descending for eastbound trains for a distance of 5,750 feet, the track then being practically level for the remainder of the distance to the point of accident. Beginning at a point about 2,000 feet east of the yard limit board and continuing beyond the point of accident, there is a passing track on the left side of the main track. There is also a stock track on the left of the passing track in the vicinity of the point of accident and 6 stock cars were standing on this track at the time of this accident, the western end of this cut of cars being 265 feet east of the beginning of the curve. Due to this fact, a caboose located at the point of accident could not be seen from the fireman's side of a locomotive approaching from the west until within 550 feet of it. From the engineman's side of an approaching locomotive the range of vision around the curve was restricted to 230 feet. The weather at the time of the accident was clear.

The trains involved in this accident were the first and second sections of regular eastbound freight train No. 60, en route from Council Bluffs, Iowa, to Oelwein, Iowa.

Train 1st No. 60, in charge of Conductor Peerce and Engineman Miller, consisted of locomotive 241, 32 loaded cars and a caboose. It left Council Bluffs at 10:25 p. m., November 15th, and arrived at Harlan, 43.5 miles east of Council Bluffs, at about 1:20 a. m., November 16th. The train came to a stop

on the main line at Harlan; the locomotive was uncoupled for the purpose of taking water and was returning to couple to the train again when the caboose was struck by train 2d No. 60.

Train 2d No. 60 was in charge of Conductor Sprau and Engineman Stockwell and consisted of locomotive 267, 34 loaded cars and a caboose. This train left Council Bluffs at 11:15 p. m., November 15th, 50 minutes later than the first section, and at 1:30 a. m., while traveling at a speed estimated to have been from 3 to 8 miles an hour, collided with the rear end of train 1st No. 60.

The caboose of the first section, which was of wooden construction, was telescoped by the car immediately ahead of it for almost its entire length and was practically demolished. The car ahead of the caboose was also badly damaged. The second car ahead of the caboose had its right wheels derailed, but remained upright and was only slightly damaged; the third car ahead of the caboose was demolished. The locomotive of the second section of train No. 60 was only slightly damaged, and none of the cars of this section was damaged. The employee killed was a fuel supervisor who was asleep in the caboose of the first section.

Engineman Miller, of train 1st No. 60, stated that his train left Council Bluffs at 10:25 pm, stopped at Minden, about 19 miles from Harlan, from 7 to 10 minutes to take water, and while he did not look at his watch, he thought the train arrived at Harlan at about 1:25 a. m. On arrival at Harlan he uncoupled his locomotive and went for water, leaving his train on the main track according to the usual custom at this point. He stated that his train was of average length and that the caboose stood approximately where cabooses of trains usually stand when their locomotives are taking water at Harlan. He further stated that he had overtaken trains standing at this place on previous occasions and had never experienced any difficulty in stopping behind them. He said the collision occurred while he was returning to the train with his locomotive after having taken water; he estimated that about 7 minutes elapsed between the time his train first stopped at Harlan and the time of the collision.

Conductor Pierce, of train 1st No. 60, stated that his train arrived at Harlan between 1:10 and 1:20 a. m., and that he and the rear brakeman immediately left the caboose to look over the train. When he got off the caboose he noticed that the marker and cupola lights were burning. He looked at a hot box near the rear end of the train, which he left for the rear brakeman to fix, and proceeded toward the head end of the train. When he had gone about two-thirds of the length of the train he heard the second section of train No. 60 approaching and saw his rear brakeman, who was on top of the train, start toward the rear

giving stop signals. Up to this time he had not seen or heard anything of train 2d No. 60 since he left Council Bluffs, nor did he see or hear anything at this time that would cause him to think that the second section was approaching at too high a rate of speed. He further stated that in his opinion he was entirely protected by rule 93, which provides for trains occupying the main track within yard limits without protection except against first class trains and which places the responsibility for rear-end collisions upon the crew of the approaching train.

Rear Brakeman Hehren, of train 1st No. 60 stated that the train stopped Minden for water and as this station is not protected by yard limit boards he threw off a lighted fusee 1-1/2 miles west of Minden and another fusee one-half mile west of that place. The next stop was at Harlan and the train was left on the main track in the usual position while the locomotive was uncoupled and went for water. When the stop was made he noticed that the markers on the train were burning and he then started forward to look over the train. He found a hot box on the ninth car from the rear end, which he stopped to fix, and was on top of the train getting ice for the hot box when he heard the whistle of the second section and saw the rays of the approaching headlight. He thought the train was approaching too fast, the speed being 6 or 8 miles an hour in his opinion, and he started over the top of the train toward the rear, giving stop signals with his lantern, but was unable to attract the attention of the engine crew. He thought the train was about 15 car lengths distant when he first began giving his stop signals. He had not seen train 2d No. 60 anywhere between Council Bluffs and Harlan.

Engineman Stockwell, of train 2d No. 60, stated that after making air-brake tests his train left Council Bluffs at 11:15 p. m. His first stop was at Minden to take water, and the train being delayed there from 5 to 7 minutes. He did not see any fusees burning on or near the track approaching Minden and he did not see the first section of train No. 60 at any point between Council Bluffs and Harlan. He stated that his average speed between these points was 17 or 18 miles an hour and that he expected to find the first section occupying the main track at Harlan with its rear end at about the point where the collision occurred. He stated that he passed the yard limit board at a speed of 12 or 15 miles an hour and then reduced the speed to 7 or 8 miles an hour by a further brake-pipe reduction of 10 or 12 pounds. He then partially released the train brakes and applied the straight air. At about the time his locomotive passed the west passing track switch he instructed his fireman to get up on his seat and look ahead around the curve and after the fireman was in position he released more of the brakes. The fireman told him that the track ahead was clear and he then fully released all of the train brakes but did not release the straight air. At that time he was about 4 or 5 car lengths west of the west end of the curve and he estimated

the speed of his train at 5 or 6 miles an hour. When within about 3 car lengths from the first section his attention was attracted to the train ahead by the head brakeman, an inexperienced man, who was making peculiar motions with his hands. The engineman stated that he immediately applied the brakes in emergency and reversed the engine and at about the same time the fireman called to him to stop. He could then see only one marker and the cupola light on the caboose ahead. He said he did not get full braking power from the emergency application of the brakes for the reason that only 30 or 40 seconds had elapsed from the time he released the brakes, and the brake pipe and auxiliaries had not had sufficient time fully to re-charge; also that the brakes on the rear of the train did not have time to apply fully before the collision occurred. He estimated the speed of his train at the time of the collision at 2 or 3 miles an hour. He said he was leaning out of his cab window, looking ahead, and he thought he could have seen the caboose of the first section from his side of the locomotive a distance of only 6 or 7 car lengths. Engineman Stockwell stated further that he was familiar with rule No. 93 placing responsibility for collision within yard limits on the approaching train, but that he was relying on the information given him by the fireman that the track ahead was clear. He said the fireman could see much farther from the left side of the cab than he could from his own side. He had considered the fireman a competent man and thought he should have been able to see the caboose of the first section sooner than he did, providing his eyes were not affected by putting a in a fire just previous to looking ahead. Engineman Stockwell said that he did not see the stop signals said to have been given by the rear brakeman of the first section.

Fireman Goslin, of train 2d No. 60, stated that when his train reached the west passing track switch at Harlan he was told by the engineman to get up on his seat and watch ahead and he did so. Just before this he had looked into the fire box, and while he did not realize it at the time, he thought his eye-sight must have been temporarily impaired thereby. He told the engineman that all was clear ahead; he thought he could see about 9 car lengths. In his opinion the speed of his train was 7 or 8 miles an hour when he first saw the train ahead, it then being only about 2 to 5 car lengths away, and he saw all three lights on the caboose at the same time. He then called to his engineman to stop. Fireman Goslin further stated that he had satisfactorily passed the eye-sight examination, but had never been examined on the operating rules and had never been supplied with a book of rules. He had only been employed as a fireman for one week, previous to which he had been a brakeman, and he was not accustomed to looking out into the dark after having worked on the fire.

Head Brakeman Thomas, of train 2d No. 60, stated that on the approach of his train to Harlan he was riding on the fireman's side of the locomotive, looking back for a signal and

for that reason did not see the first section of train No. 60 until the fireman called out to the engineman to stop. Brakeman Thomas further stated that he had never read over the book of operating rules.

Conductor Sprau, of train 2d No. 60, stated that an air brake test was made by car men before his train left Council Bluffs at 11:15 p. m. The first stop made by the train was at Minden where water was taken. He said he rode in the cupola of the caboose and at no point between Council Bluffs and Harlan did he see the first section of train No. 60. In his opinion the speed of the train was reduced to about 7 miles an hour passing the west switch of the passing track at Harlan, at which station he expected his train would overtake the first section. He estimated the speed at the time of the collision at about 3-1/8 miles an hour and he said he noticed that the air gauge in the caboose indicated 30 pounds pressure after the collision. Conductor Sprau was also of the opinion that the caboose light on the first section could have been seen by the fireman a distance of 15 or 16 car lengths if the fireman had been looking ahead around the curve.

Car Foreman Moran stated that before the departure from Council Bluffs of the trains involved in this accident they were both inspected as to safety appliances, air brakes and running gear, and that a proper air test was made on each train. Both trains left Council Bluffs with all air brakes in working order.

This accident was caused by the failure of Engineman Stockwell, of train 2d No. 60, to operate his train under proper control within yard limits, in accordance with rule No. 93, reading as follows:

"Yard limit boards will be placed at certain stations designated in the time-table.

"Within yard limits the main track may be used, protecting against first-class trains. All other trains must approach and move within yard limits under control and prepared to stop. Responsibility for accident will rest with the approaching train."

Engineman Stockwell gave as his reason for releasing the train brakes the fact that the fireman told him the track was clear. This statement was made by the fireman when the engine was about at the west passing track switch, a distance of approximately 4,000 feet from the point of collision, and was a correct statement of the conditions as viewed from that point, the markers on the caboose then not being visible. In view of the fact that his train was still some distance from the curve, and that he expected to find the rear end of the first train near the point where the collision occurred, Engineman Stockwell was negligent in not so manipulating his brakes as to enable him to bring his train to a stop when required.

Fireman Goslin attributed his failure to see the markers on the caboose until within a very few car lengths of them to the fact that he probably had been temporarily blinded by looking into the fire box. His range of vision of the caboose ahead was restricted to about 14 car lengths, and by the time his engine reached this point he had been looking ahead for at least half a minute. It would seem that in this period of time his eyes would have become accustomed to the darkness and that had he been maintaining a proper lookout he would have been able to see the markers as soon as they came within his range of vision. Had he done so, it is probable that he would have been able to warn the engineer in time to have enabled him to stop his train.

Engineman Stockwell entered the service of the Chicago Great Western Railroad as fireman in October, 1908, and was promoted to engineman in September, 1913. His record was good. Fireman Goslin entered the service in April, 1910, resigned in December, 1918, and was re-employed in November, 1919. His record was clear.

Timetable rule No. 12 reads as follows:

"Trains running in the same direction must keep ten minutes apart. (Exception to Rules 86 and 91.)"

Operating rule No. 91 reads as follows:

"Unless some form of block signal is used, trains must keep at least ten minutes apart, except in closing up at stations."

Between the terminals of the district on which this accident occurred, a distance of 83.9 miles, Harlan is the only telegraph office which is open at night, and under these conditions it is manifestly impossible for train crews to comply with the requirements of these rules. The timetable rule does not permit trains to close up at stations, and except when the first train is running on a schedule, it is entirely impracticable for employees to comply literally with the requirements of timetable rule No. 12, as they have no means whatever of knowing when the preceding train passed a given point. This is an example not only of the impracticability of certain timetable and operating rules which are contained in current timetables and rulebooks, but also of the deficiency of the timetable and train order system of operation, as compared with the block system.

It is noted in this case that both the fireman and the head brakeman on train 2d No. 60 were inexperienced men and neither of them had been examined on the rules in effect, the head brakeman not having even read them.

The safety of railroad operation depends fundamentally

upon having clear, specific and workable operating rules in effect, and upon having employees properly instructed as to their requirements. In order to avert accidents on this line in future, the Chicago Great Western Railroad Company should immediately take measures to remedy the unsafe conditions and practices disclosed by the investigation of this accident.

At the time of the accident the crew of train 2d No. 60 had been on duty about 3-1/2 hours after a period off duty of about 12 hours.

DWL