

In re investigation of an accident which occurred on the Chicago, Burlington & Quincy Railroad near Smithfield, Neb., on October 15, 1916.

On October 15, 1916, there was a rear-end collision between two stock trains on the Chicago, Burlington & Quincy Railroad near Smithfield, Neb., which resulted in the death of 11 caretakers and the injury of 15 caretakers. After investigation of this accident the Chief of the Division of Safety reports as follows:

The division on which this accident occurred is a single-track line, trains being operated by time-table and train orders, supplemented by a telegraphic manual block system, which is absolute for passenger trains and light engines in the case of following movements, and permissive for all other trains in following movements. The accident occurred at a point nearly $2\frac{1}{2}$ miles east of Smithfield, and the track is tangent throughout all of this distance. The grade is alternately level and slightly descending for eastbound trains, being .25% descending at the point of accident. There was a light, misty rain falling at the time.

Second class train No. 156 is scheduled to leave Curtis, Neb., at 10.45 p. m. on Saturdays only, and at the time of the accident was being operated in three sections, the last two of which were involved in this accident. Train second No. 156 consisted of 44 cars of stock and a caboose, hauled by locomotives 1232 and 1236, and was in charge of Conductor Sawyer and Enginemen Ward and Hansen. It left Curtis, 50.85 miles west of Smithfield, the only open telegraph office between Sterling, Colo. and Holdrege, Neb., a distance of 229.55 miles, at 12.50 a. m., 2 hours and 5 minutes late. The train was delayed at Eustis, 17.66 miles from Smithfield, for a period of 20 minutes for the purpose of taking on coal and water, and at the next station, Elwood, 6.61 miles from Smithfield, there was a further delay of 20 minutes on account of fixing a hot box and cutting off helper locomotive 1236. Train second No. 156 then proceeded and was brought to a stop at a point nearly $2\frac{1}{2}$ miles east of Smithfield on account of a hot box on one of the cars. The train had been standing at this point only a few minutes when it was struck by train third No. 156.

Train third No. 156 was operated from Holyoke, Colo., to Curtis, Neb., as eastbound extra 1226 and consisted of two cars of stock and a caboose, hauled by locomotive 1226, in charge of Conductor Albro and Engineman Patten. At Grant, Neb., 19 cars of stock were picked up. The train arrived at Curtis at 12.40 a. m. at which point train order No. 67

was received, this order reading as follows:

"Engs. 1227, 1232, and 1226, run as first, second and third 156, Curtis to Holdrege."

There was also received another order together with a clearance card, Form A, addressed to the conductor and engineer, which showed the numbers of the orders which the operator had for this train and which also indicated that the stop signal was displayed for the following train. There was also received a permissive card, Form C, addressed to the engineer authorizing him to "proceed expecting to find a train in the block between this station and Holdrege," Holdrege being 72.34 miles from Curtis. Train third No. 156 left Curtis at 1.01 a. m. and at the next station, Moorefield, was flagged by a fusee from train second No. 156, and waited at that point for a period of ten minutes after the departure of the second section. At Eustis it was again delayed ten minutes by the second section and after that train had departed, a further delay of thirty minutes was encountered on account of taking on coal and water, and endeavoring to fix the electric headlight, which had failed suddenly at that point. After it was found that the headlight could not be made to work, a white lantern was placed in the headlight case and the train proceeded, colliding with the rear end of the second section east of Smithfield at about 4.10 a. m., while traveling at a speed estimated to have been about 8 or 10 miles an hour.

The impact of the collision raised the rear end of the caboose above the pilot beam of the locomotive, while the forward end of the caboose was forced under the rear end of the stock car which was immediately ahead of it, the stock car telescoping the caboose a distance of 22½ feet, or to within about 5½ feet of the rear wall of the caboose. All of the persons killed or injured were stock caretakers riding in the caboose, which was totally destroyed above the underframe. There was only very slight damage sustained by the stock car and by the locomotive of the third section.

Engineer Ward, of train second No. 156, stated that when the head brakeman, who was riding on the fireman's side of the locomotive, notified him that there was a hot box blazing on that side of the train, he shut off steam and applied the brakes, sounding the whistle signal for the flagmen to go back to protect the train just as the train came to a stop. At the time there was a drizzling rain falling, but he had no difficulty in seeing the green markers on the rear of the train whenever he looked back, and he thought that he could have seen the markers of a train ahead for a distance of 40 or 50 rods, and perhaps 60 rods, under the weather conditions prevailing at the time. The first information he had of anything wrong, was when his engine moved forward slightly, as though

the brakes on the train had been released. He then got off the locomotive, walked to the fence along the right-of-way and saw a little smoke at the rear of the train together with a green marker which he said must have been on the rear of train third No. 156. He then started back to find out what was wrong, but after going a short distance, met a brakeman who told him that the third section had collided with his train. He thought that his train had been stopped about 4 or 5 minutes before the collision occurred.

Fireman Harriman stated that Engineman Ward whistled out a flag at about the time the train came to a stop. He did not know how long the train had been standing when the collision occurred, but he thought about 2 or 2½ minutes. He also stated that at times it was possible to see quite a distance, while at other times, on account of the misty rain, it was impossible to see more than 15 or 20 car lengths.

Head Brakeman Cougher stated that after notifying the engineman of the blazing hot box he got ready to get off as soon as the train stopped in order to go back and attend to the hot box. On account of being in a hurry, and getting together the necessary tools, he did not know definitely whether or not the engineman whistled out a flag, but he said that at all other points the engineman had sounded this signal. As he got off the locomotive he saw a white lantern at the rear of the train and shortly afterwards he saw another white lantern coming from the opposite side of the train, but he did not see any red lantern. Brakeman Cougher also said that when the train was moving he could see the markers on the caboose, except when the rain was striking in his face.

Conductor Sawyer, of train second No. 156, stated that after leaving Curtis, he first saw the third section following his train when going up Moorefield Hill, Moorefield being 10.16 miles out of Curtis. He did not see the third section the next time it was close to his train, but said that at Eustis he could hear the third section coming and could see the reflection of its headlight, and that when the flagman was called in he said that he had flagged the third section. The next stop was of 20 minutes duration at Elwood, at which point the third section did not come into sight. The next stop was made east of Smithfield, on account of the hot box. At the time this stop was made he was riding on the left side of the cupola and at first he thought an air-hose had burst. When the train was felt to be slowing up, however, no fusee was thrown off as required by rule No. 99 and he did not know how to account for this failure properly to observe that rule. This rule reads as follows:

99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fuses.

When signal 14 (d) or 14 (e) has been given to the flagman and safety to the train will permit, he may return. When the conditions require he will leave the torpedoes and a lighted fuse.

The front of the train must be protected in the same way when necessary by the brakeman, or in his absence by the fireman.

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fuses must be thrown off at proper intervals.

When day signals cannot be plainly seen, owing to weather or other conditions, night signals must also be used.

Conductors and enginemen are responsible for the protection of their trains.

Flagman's signals:

Day signals - A red flag.
Torpedoes and
Fuses.

Night signals - A red light.
A white light.
Torpedoes and
fuses.

In the meantime, as the train was coming to a stop, the flagman had been getting out of the cupola, and he followed him, both of them leaving the caboose by the front door. Conductor Sawyer stated that on account of the crowded condition of the caboose, in which there were 31 stockmen, it was a difficult matter to get out of the rear door. He did not recall whether or not the engineman sounded

the whistle for the flagman to go back. Conductor Sawyer further stated that the flagman preceded him out of the door and got off on the left side, while he got off on the right side. The flagman was out of sight when he got off and as he had always been good about going back to protect the train, he assumed that the flagman had gone back for that purpose, and proceeded toward the front end of the train. When he had gone about 3 or 4 car lengths from the caboose the flagman, who had been walking forward on the left side of the train, called to him that the hot box was on that side. He then told the flagman to go back and flag and at the same time crossed over to that side of the train, going forward to assist in fixing the hot box. He thought that his train had been stopped about 1½ or 2 minutes when the collision occurred. There was a little rain falling at that time, but it did not interfere with his vision. He also said that the markers on the caboose were fairly good and were burning in the proper manner. The flagman's red lantern was on the rear platform together with the fuses. He also said that he thought there were some fuses in the cupola on the flagman's side where they could have been thrown off, if necessary, without leaving the caboose.

Flagman Talbot, of train second No. 156, stated that he knew train third No. 156 was following his train, and that after leaving Curtis he first saw the third section when going up Moorefield Hill and he stood out on the rear platform of the caboose holding a lighted fuse in his hand. At Eustis, where his train stopped for coal and water, he went back a considerable distance and stopped the third section with fuses and a red lantern, but not using torpedoes, as he was still going back when he flagged them. When the stop was made at Elwood, he went back to flag but did not see the third section. When the train slowed down east of Smithfield, preparatory to stopping on account of the hot box, he at first thought that it was going up a hill. He looked out of the rear window, but could not see any light and then got out of the cupola and started to go out of the rear door. On account of the crowded condition of the car, however, he turned around and went out of the front door, with the conductor right behind him. He stated that he got off on the left side, while the conductor got off on the opposite side and started ahead. He looked back, but could not see or hear anything, neither did he hear any whistle signal from the engineman to go back and flag, but he stated that this would not have made any difference. He also stated that the fact that he did not see any reflection of the electric headlight of the following train did not fool him. He then looked ahead and saw the blazing hot box and walked forward, calling twice to the conductor that there was a blazing hot box on the left side of the train. The conductor then came over to that side. At this time the train had

been standing about two minutes and he said that he went forward because he thought he could save time by telling the conductor where the hot box was located, and then going back to flag. After the conductor had crossed over to the left side of the train, Flagman Talbot started back toward the rear end of the caboose to get his red lantern and fuses, but the collision occurred before he could reach them. Flagman Talbot further stated that he fully understood the flagging rule and knew that in case of an unusual stop he should go back immediately, but he said that in this case he could not have prevented the accident if he had properly obeyed the rule, for the reason that he did not have time. He did say, however, that perhaps he should have thrown off a fuse when the train slowed down preparatory to stopping.

Engineman Patten, of train third No. 156, stated that after leaving Curtis he saw the second section on Moorefield Hill, and he was about 1 mile behind that train on reaching Moorefield. At Eustis he was flagged by the flagman of the second section and after that train had left Eustis, he had the head brakeman to remove the fuse from the track so that he could pull ahead and take water, after having been stopped about ten minutes. After coal and water had been taken, he worked on the electric headlight, which had just gone out. An examination made afterwards showed that the apparent cause of its failure was the collecting of some substance between the brushes and the commutator, opening the circuit. Being unable to make the headlight work, he placed a white lantern in the case and the train proceeded, after having encountered a further delay of about thirty minutes. Engineman Patten said that he was operating his train at a speed of 20 miles an hour and that he expected to find the second section at Elwood, as he knew that they would cut off the helper locomotive at that point, but he did not see anything of the train at that point. After passing Smithfield he first saw the markers of the second section when about 20 or 25 car lengths away, and as his train neared them, he could see the cupola light and the lights on the caboose platform. At this time there was a light rain falling, and he had the front window closed and was looking out of the side window. At first, judging from the location, he thought the train was moving, and he started to make a service application of the air brakes. He then changed it to an emergency application and opened the sanders. He thought the train was going to stop, but the driving wheels began to slide and the train surged ahead. When about 100 or 150 feet from the caboose he saw some one on the rear of the caboose waving a red lantern and he stated afterwards that this was done by one of the stockmen. Engineman Patten further stated that if a fuse had been burning even on the rear platform of the caboose, or if any one had waved a red lantern when they saw him coming, he would have seen the signals sooner than he would have seen the markers

and he thought he would have been able to stop his train without difficulty, saying that in spite of the weather conditions he could have stopped if he had any chance whatever, either by a fusee being thrown off or by a flagman giving stop signals. He stated that the speed of his train was about 8 or 10 miles an hour when it collided with the caboose, and he thought it would have stopped in 3 or 4 more car lengths. He also stated that the conductor told him that all of the air brakes in his train were working.

Fireman Reiber stated that he was putting in a fire when the engineman made an application of the brakes and knowing that it was an unusual place, he got up on his seat box to see what was the matter. At first he could not see anything on account of having been facing the glare from the fire box. When he first saw the lights on the caboose, he thought that they were quite a distance from him, but the engineman immediately made an emergency application of the air brakes, and he then realized that they must be close to a train ahead, and got down on the step and jumped off when he saw that the trains were going to collide. Fireman Reiber also said that he did not see any attempt being made to flag his train until he was on the steps in readiness to jump, at which time he saw someone with a red lantern on the platform. At this time he also saw some men on the ground on the left side of the caboose, but without any lights. It was afterwards developed that these men were stockmen who had gotten off the caboose when the train stopped.

Conductor Albro, of the third section, who was riding on the right side of the cupola, stated that the last time he saw the markers on train second No. 156 was at Eustis, and at that point they did not show any too brightly. He stated that prior to the collision an application of the brakes was made which did not seem to be very strong, followed almost immediately by an emergency application. As soon as this application was made he opened the cupola window and looked ahead, but could not see anything but fire flying from the wheels. He also stated that the air was working when the train was coupled together at Grant.

Flagman Dickinson stated that at the time of the accident he was riding in the cupola on the left side; he did not see the markers of the train ahead. Just before the collision occurred an emergency application of the air brakes was made. He also said that when the train was coupled together at Grant, he saw that the air was working through to the caboose and that the brakes were working on the rear cars of the train.

Brakeman Poutrie stated that the lights on the second section showed up pretty good, but he did not think that they were any too bright.

This accident was caused by train second No. 156

not being properly protected in accordance with the requirements of rule No. 99, for which Flagman Talbot and Conductor Sawyer are responsible. Both of these employees knew that the third section was following them, and on account of the delay encountered at Elwood they should have realized that there was danger of their train being overtaken. While Flagman Talbot claimed that if he had properly obeyed rule No. 99 and had gone back to flag immediately after the train stopped, he would not have had time to protect it, yet the evidence indicates that his train had been stopped from two to five minutes, and it is believed that if Flagman Talbot had taken his red lantern and fuses and started back immediately, as required by the rule, his stop signals would have been seen by the engineman of the third section in sufficient time to have enabled him to bring his train to a stop and avert the collision. In fact, the engineman of the third section stated that if any stop signal, either by red lantern or by fuse, had been given from the caboose itself, he would have seen it sooner than he saw the markers, and would have stopped his train without difficulty. There is no excuse whatever for such utter negligence in the performance of the responsible duties of a flagman, and Flagman Talbot's actions cannot be too stringently condemned, especially in view of the fact that he was an experienced man, fully acquainted with the dangers incident to the safe operation of trains. While Conductor Sawyer knew that Flagman Talbot had protected the train at other points, he should not have allowed this fact to prevent him from knowing definitely whether or not the flagman went back immediately at this particular point, especially in view of the fact that he knew no fuses had been thrown off while the train was being brought to a stop. The stop was an unusual one, at an unusual location, and he should have made it his duty to know absolutely that the train was being properly protected before trying to find out the reason for the stop.

Flagman Talbot was employed in 1911 as a brakeman and in February, 1913, was transferred to the Sterling Division, on which division this accident occurred. In 1911 he was relieved for one week on account of a reduction in force and again in 1912 he was relieved for nearly two months for the same reason. His record was clear. Conductor Sawyer was employed in 1909 as a brakeman and was promoted to a conductor in 1910. His record was good. At the time of the accident these men had been on duty about five hours, after a period off duty of about 11 hours.

The sub-division on which this accident occurred extends from Sterling, Colo., to Holdrege, Neb., a distance of 239.55 miles. In that distance there are 20 offices open only during the day time, while there is only one office, Curtis, which is open at night. This office is opened at 11.00 p. m. and closed at 5.00 p. m. the following day.

Between the hours of 7.30 p. m. and 11.00 p. m., there are no open offices on the entire sub-division. The only scheduled through trains are two local passenger trains, one in each direction, operated daily except Sunday and the schedule of these trains is so arranged that they run between Sterling and Holdrege during the day.

Eastbound train No. 156, sections of which were involved in this accident, is scheduled to originate at Curtis and leaves that point only on Saturday night. There is also a local freight train operated from Curtis to Holdrege three times each week, and another freight train from Holdrege to Curtis, four times each week. The schedules of these trains call for trips entirely in day time. From Curtis westward to Sterling, a distance of 157.21 miles, the scheduled freight service is limited to one freight train in each direction, operated three times a week, and even these trains are so arranged that they will cover most of the trip in the day time.

From the above it will be seen that the only scheduled train which operates on the sub-division at night, is train No. 156, and that train only runs once a week, and over only a portion of the division. Under these conditions it is believed that the method of train operation in vogue is sufficient for the safe operation of trains, if the rules in force are properly enforced and obeyed.