No. 130

In re investigation of accident on the Union Pacific Railroad near Hordon, Neb., March 14, 1913.

June 5, 1913.

On March 14, 1913, there was a rear end collision between two freight trains on the Union Pacific Railroad near Hordon, Neb., resulting in the death of 3 persons carried under contract and 2 employees, and the injury of 2 persons carried under contract.

The fourth district of the Nebraska Division of the Union Pacific railroad, on which this accident occurred, extends from Cheyenne, Wy., to Sidney, Neb., a distance of 102 miles. The road from Dix, Neb., a distance of 27.7 miles west of Sidney, to Mile Post 426, 11.8 miles west of Sidney, is a single track line; from Mile Post 426 to Sidney the railroad is a double track line. Throughout the fourth district of this division automatic block signals are in use, and train orders are transmitted by both telegraph and telephone.

The trains involved in this collision were extra east bound freight trains No. 504, consisting of an engine, 40 loaded cars and a caboose, with Conductor Phillips and Engineman Zalesky in charge; and No. 501, consisting of an engine, 83 loaded cars, 15 empty cars and a caboose, with Conductor Buckingham and Engineman Cameron in charge.

The collision occurred at about 4:10 am, approximately 1490 feet west of the switch at the end of the double track at Mile Post 426. The speed of extra 501 at the time of the collision was estimated at 6 miles per hour. All the persons killed and injured were in the caboose of extra 504 which was totally demolished.

From a place known as Point of Rocks, 3-3/8 miles west of Mile Post 426, the track toward the east is straight for a distance of 9508 feet; then there is a one degree curve to the south 792 feet long and from the east end of this curve to Mile Post 426 the track is straight. The collision occurred on this last stretch of straight track approximately 528 feet from the east end of the curve.

The records of the United States Weather Bureau show that at this time a severe storm was raging. At Kimball 13 inches of snow fell; at Sidney the snowfall was 6 inches, and at Lodge Pole, a station 18 miles east of Sidney an observer noted a blizzard for 24 hours and drifts 10 feet high. The following is taken from a note made by the Weather Bureau observer at North Platte, Nebr., a station 123 miles east of Sidney:

"A storm of intense energy, which developed into a regular old-fashioned blizzard, occurred on the 13th and 14th. The storm began with a light rain on the afternoon of the 13th, which turned into a very moist snow before night. The temperature during the early part of the storm was about freezing, but a cold wave moved in during the night, accompanied by high winds to gales, and an extreme velocity of 68 miles from the northwest was recorded on the 14th. The snow was piled in drifts in town of 6 to 10 feet, and at times the snow was drifting so badly that it was impossible to see objects across the width of the street. Considerable damage was done by the high winds. A large number of cattle were frozen to death or suffocated by the driving snow."

Extra 504 left Cheyenne at 6:10 pm, March 13th, and passed Dix, the last open telegraph station east of the point where the accident occurred, at 2:35 am, March 14th. Engineman Zalesky of extra 504 stated that he saw all the block signals as far east as Potter, but while running from that point to Mile Post 426, the storm grew worse and he had to watch very carefully for the signals. He thought he failed to see two of the signals between Porter and Mile Post 426. The order board at Mile Post 426 was in the stop position, and extra 504 brought to a stop when the engine had passed a few car lengths beyond the telegraph office. Upon arrival of this train at Mile Post 426 an order was received directing this train to pick up and take to Sidney a west bound engine which had nearly exhausted its supply of water. At this time the storm was very severe and Engineman Zalesky made a request to the dispatcher that his train be allowed to proceed without picking up this engine, as he stated that his train was already so heavy that it could be handled only with great difficulty under the weather conditions prevailing. The dispatcher, however, refused this request. About 10 minutes had elapsed after Extra 504 reached Mile Post 426 before the engine and the first five or six cars were cut off from the head end of the train and moved ahead to allow the disabled engine to come out of the switch at the west end of the double track and couple onto extra 504. It was while this movement was being made that the collision occurred.

Both Conductor Phillips and Rear Brakeman Credit of Extra 504 were killed in the collision. There were five caretakers of stock in the caboose of extra 504, three of whom were killed, the other two being injured. One of these men was asleep at the time the collision occurred, but the other, named Lynch, was awake and stated that after the train had come to a stop at the point where the collision occurred the brakeman went out of the caboose twice, but was not gone long on either occasion, and he did not take with him either a fusee or a torpedo. He stated that he did not hear anything said about protecting the

train at that time although something had been said about it at previous stops; this was the first stop at which either the flagman or the conductor did not go back to protect the train. Mr. Lynch stated that just before the collision occurred Conductor Phillips remarked that if the following train struck them "our debts are paid." He said that on account of the high wind and he did not hear the locomotive whistle during any part of the night.

Extra 501 left Cheyenne at 7:40 pm, March 13th, and overtook extra 504 at Dix. Engineman Cameron stated that while both trains were standing there Conductor Phillips came up to his engine and he asked Phillips to throw out fusees and put down a torpedo whenever extra 504 stopped; the conductor replied that he could do so. At Dix the crew in charge of extra 501 received an order to meet extra 510 at Potter, a station 7 miles east of Mile post 426. Upon arrival at Potter, however, an order was received directing extra 501 to meet extra 510 on the double track between Sidney and Mile Post 426 instead of at Potter. Potter was not an open telegraph station, but there was a telephone booth at that point, and the head brakeman of extra 501 received the order from the dispatcher. The dispatcher also informed him that extra 504 was going to pick up engine 510 at Mile Post 426. The head brakeman then returned to the engine and the train proceeded. In the meantime, Conductor Buckingham had come up from the caboose to the telephone booth to communicate with the dispatcher, and while he was in the telephone booth extra 501 departed leaving him at Potter.

Engineman Cameron stated that at Potter he made three stops, the first to take water, the second with the engine at the station when the brakeman received the order, and the third after he had pulled ahead to bring the caboose near the station. He stated that he sounded the whistle signal for the flagman to protect his train, and he also recalled the flagman, but he did not receive any signal from the rear end. He stated that after leaving Pine Bluffs, a station 50.9 miles west of Sidney, he could not see signals from the rear end, and the only means of communication from the rear end was the air brake system. Before leaving Potter he sounded the whistle and after waiting a few minutes he started out; he did not see the Conductor at Potter, but thought if everything was not all right the brakes would be applied from the rear end.

Engine 501 was equipped with an acetylene headlight, but on the night of the accident it froze up and a common lantern was placed in the nose light cage and used as a headlight.

Extra 501 left Dix 25 or 30 minutes behind extra 504. Engineman Cameron stated that he saw the signals as he was coming into Potter and he saw one at Point of Rocks, but after passing Point of Rocks he did not see any of the block signals; out of

16 or 18 signals between Dix and Mile Post 426 he saw only 4 or 5. Snow was flying up from the engine wheels around the cab and steam, snow and smoke so obscured the view that it was impossible for him to see the signals except at intervals when there was a lull in the storm; the cold was so intense and the wind so strong that he could not hold his head outside the cab window for long at a time. He stated that he was not depending upon the block signals for protection, but was depending upon the flagman of the preceding train.

Before reaching Mile Post 426 the engineman and head brakeman of extra 501 had used all the fusees on the engine in an effort to see mile posts and landmarks. The engineman knew where he was when the train passed over a switch at Herdon near mile post 427, and at that point he shut off steam and sounded the whistle. A block signal, No. 4272, is located a short distance east of the switch at Herdon, the engineman did not see this signal nor stop to ascertain its location, although he admitted he knew the location of this signal. The train proceeded nearly a mile past this signal; the engineman was leaning out of the cab window trying to see ahead, but he did not see the rear end of extra 504 before the collision occurred. He said he did not know that extra 510 was at Mile Post 426, as the order he held fixed his meeting point with that train between Mile Post 426 and Sidney.

Engineman Cameron stated that as his train proceeded eastward the storm grew worse, and during this storm it was impossible to see block signals ahead of the engine. Under the weather conditions prevailing he considered it unsafe for a man to start out ahead of the train to flag through a block as required by the rules. He did not tell the dispatcher of the conditions, nor did he tie up his train as he considered it the duty of the officers of the road to determine whether or not trains should stop running. He stated, however, that he wanted to tie up his train but the reason he did not ask to do so was because Conductor Phillips told him at Dix that he had asked the dispatcher to be allowed to tie up extra 504 and that he was not permitted to do so. He did not consider it good judgment to continue to run his train and when asked why he did not tie up he replied, "Well, a man has to look out for his living." He stated that at the time of the collision he was running very slowly and could have stopped within 200 feet if he had been flagged. After the accident he did not know whether his train was derailed or had struck the preceding train as he could not see as far as the front end of his locomotive.

Engineman Zalesky stated that the reason he sent the head brakeman to the office at Mile Post 426 for orders was because his clothes were wet through, owing to becoming covered with snow while he was leaning out of the cab window so as to see signals and then coming back into the cab to warm himself; he knew that if he started out in the storm his clothes would quickly freeze,

and he feared he could be unable to reach the office. He knew that the rules of the company did not permit the brakeman to receive orders but required the engineman to receive orders either from the conductor or from the operator; he believed, however, that in sending the brakeman to the office under the condition prevailing he was taking the safest course.

He did not believe the weather conditions were bad enough to warrant tying up the train, although the storm was very severe and he did not think a flagman could stay out in it more than 10 or 15 minutes. He stated that the wind was blowing a gale and the flying snow was so thick that he could not see a distance of one car length. He though the accident might have been averted if a flagman had been sent out ahead of extra 501 through the last block west of Mile Post 426, provided the flagman could have withstood the storm and had not been lost. After the accident occurred it was practically impossible for a man to make his way through the storm to the rear end of the train. When he learned of the collision he went to the office from near his engine on the double track but he said that after reaching the office he could not undertake to go to the rear end of the train under any consideration.

The fireman of extra 504 stated that the head brakeman of extra 510 started to go back to the wrecked caboose but only went a few car lengths and then returned to the telegraph office almost exhausted.

The head brakeman of extra 504 stated that he was an extra man; he had been employed by the Union Pacific Railroad for nearly a year and had had about six months' previous experience. He had made only one trip with Conductor Phillips. He knew it was against the rules for a brakeman to receive orders for the engineman but he did so acting under instructions from Engineman Zalesky. When his train stopped at Potter he went to the office and got two orders from the dispatcher. One of these orders fixed a meeting point for extra 504 and extra 510 at Mile Post 426. At that time nothing was said about picking up engine 510 at Mile Post 426. The other order gave extra 504 additional time on train No. 17, a west bound passenger train. He stated that when receiving these orders he did not identify himself to the dispatcher. At Mile Post 426 he went to the office and asked the operator for a clearance. The operator told him that the dispatcher wanted his train to pick up engine 510. He went back to the engine and so informed the engineman and then, as directed by the engineman, he returned to the office and notified the dispatcher of the conditions and the engineman's request to proceed without picking up this engine, but the dispatcher told the operator it was necessary to pick up this engine. He stated that a man could not stay out in the storm at Mile Post 426 more than half an hour without freezing to death.

The head brakeman of extra 501 stated that at Potter he received an order from the dispatcher and he also learned from the dispatcher that train No. 17 was several hours late and that extra 504 was going to pick up engine 510 at Mile Post 426. He was not positive, however, whether or not he told the engineman that extra 504 was to pick up engine 510 at Mile Post 426. The engineman asked him if he had delivered a copy of the order to the conductor and he replied that he had not. He stated that it was not unusual for brakemen to take orders over the telephone from the dispatcher and that he had done so since his second trip over the division.

The rear brakeman of extra 501 stated that at Potter he went back to protect his train a distance of about three telegraph poles; there he placed a torpedo on the rail and left a fusee, he then returned to within one car length of the caboose where he could see the rear markers, and at that distance he could not see the fusee. The storm was very severe and he did not think a man could stay out in it at one place for any considerable length of time without freezing, but a person could keep himself alive if he kept moving.

When the train left Potter he supposed the conductor was on the engine; it was impossible to see a signal from the rear end on the engine and he did not hear the engine whistle but supposed it was all right to go and he did not apply the brakes. He stated that after leaving Potter he rode in the cupola of the caboose watching for signals and he could see them by watching very carefully just as he approached them. The rear end of the train entered the block before he saw the signals so that all the signals would be in the stop position when the caboose passed them. He saw signal 4272 at Herdon and that signal was in the stop position.

After the collision occurred he went up to the head end of his train to find out what the trouble was and then went back to the rear end of his train; he stated that it took about two hours to make his way back to the rear end.

Dispatcher Burton, who was on duty at Sidney at the time of the accident, stated that he had been employed as a dispatcher on the Union Pacific Railroad for about 9 months; he had been a dispatcher for about 3 years and had had a total of about 18 years' experience in railroad service. He stated that during the night he received reports regarding weather conditions but he did not think the storm was severe enough to warrant tying up trains as his records indicated that while the trains having the smaller engines were losing time, the trains having the larger engines were making approximately running time. He stated that he talked with Conductor Phillips at Dix but nothing was said about tying up the train, and no one reported conditions as unsafe for the operation of trains; no report was made to him

that men were running signals or could not see signals. It was not his practice to ascertain who it was that called up for orders, but simply to identify the train and assure himself that it was some member of the train crew; it was customary to give orders to any member of a crew who asked for them. He said that he did not know what member of the crew of extra 501 it was who called up for orders at Potter, as he said "The engineman might ask the head brakeman to get the order for him."

Extra No. 510 was made up and started out during the storm. The train consisted of engine 510, forty-one loaded cars and a caboose, and it left Sidney at 1:10 am, taking approximately two hours to run to Mile Post 426, a distance of 11.8 miles. Conductor McConoughy stated that before starting out on this trip he made a request to the chief dispatcher and the assistant superintendent that this train be divided up as he considered it too heavy to haul against the storm, but his request was not granted. A switch engine was used to push this train out of the yard, and owing to a lack of engines at Sidney a helper engine was sent from Cheyenne with instructions to assist in hauling this train west from Kimball. When this train arrived at Mile Post 426, however, its supply of water was nearly exhausted. The dispatcher was notified of this condition and thereupon issued the order for extra 504 to pick up this engine and take it to Sidney. He stated that his reason for directing extra 504 instead of extra 501 to do this was because he desired to get engine 510 to Sidney as soon as possible and before it was necessary to kill the engine. The dispatcher stated that extra 501 was held at Kimball until extra 504 was cleared at Dix, and was also held at Dix until extra 504 was into clear at Potter. He thought that he had provided the same protection for extra 504 at Mile Post 426 when he informed the brakeman of extra 501 that extra 504 was at Mile Post 426 and was going to pick up the disabled engine at that point. He admitted that the accident could have been averted had he held extra 501 at that point until extra 504 had left Mile Post 426; but he considered it good policy to get the trains into the terminals as quickly as possible for the reason that if a train stood long at one place it could become snowed in; and he thought he had taken adequate precautions for the safe movement of the train.

The signal supervisor in charge of the signals in this district visited the scene of the accident on March 16th, and found signal 4272 in good working condition. He learned from the signalmen who were in that vicinity at the time of the accident that the amount of snow that gathered on the roundels of the signal lights was not sufficient to cut off a great percentage of the light and that the signal was in good working condition both before and after the accident.

Rule No. 504 of the Union Pacific Railroad Company reads as follows:

> When a train is stopped by a block signal, it may proceed when the signal is cleared. On single track, send a flagman in advance immediately; wait the full time indicated by special rules on the time-table after the flagman has started; and then proceed under control to the next clear signal, or, if the signal next in advance is in plain view and the track ahead is seen to be clear, proceed under control not exceeding six miles per hour. On double track, a train may proceed after waiting one minute, running under control.

The primary cause of this accident was the failure of engineman Cameron to observe and obey the indications of the block signals. It is clear that he failed to see many signals and that he proceeded without knowing the indications of these signals. There can be no doubt he was aware of the fact that he was passing these signals; on account of the severe storm, however, he did not send the flagman ahead of the train as required by the rules. Had he done this and had the flagman been able to proceed against the storm it is probable that the accident would have been averted.

Conductor Phillips and Flagman Cradit were also responsible for this accident as they failed to protect their train as required by the rules when it stopped at Mile Post 426. Rule 99 provides in part as follows:

> When a train stops or is delayed under circumstances in which it may be overtaken by another train the flagman must go back immediately with stop signals a sufficient distance to insure full protection. One-fourth of a mile from the rear of the train he will place one torpedo on the rail, continuing back one-half mile from the rear of his train, he will place two torpedoes on the rail, two rail lengths apart. He may then return to the single torpedo where he must remain until relieved by another flagman or is recalled by the whistle of his engine. When recalled, if he does not see or hear an approaching train, single torpedo will be removed (and not before), if conditions warrant, a red fusee will be displayed to protect his train while returning.
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> During foggy or stormy weather, in the vicinity of obscure curves or descending grades, or if other conditions require it, the flagman will increase the distance...

Rule 91 provides that responsibility for collision rests with the following train, but this does not relieve the leading train from protecting itself.

There can be no excuse for the failure of these employees to protect their train, as they knew that extra 501 was following their train and that it was impossible to see through the storm a distance of more than a few feet. Had the flagman or

the conductor gone back even a short distance with a lighted fusee and placed a torpedo on the rail it is probable that the accident would have been averted. In view of the severe weather conditions prevailing at this time the ordinary safe guards should not have been neglected and extraordinary precautions should have been taken.

Rule No. 304 provides that train orders must be addressed to those who are to execute them. Rule 211 provides that when a "19" order has been received and completed, the operator will personally deliver a copy to each person addressed; but when delivery to engineman will take the operator from the immediate vicinity of his office, the engineman's copy will be delivered by the conductor.

The investigation of this accident disclosed the fact that the head brakeman of both the trains involved received orders from the dispatcher by telephone, and that it was customary for brakemen to get orders for enginemen from the dispatcher and from operators. This practice is contrary to the rules of the company and can not be considered conductive to the safety of railroad operation. Under this practice it would not be difficult for any person, whether a member of a train crew or not, to receive orders and there would be no means of ascertaining whether or not those required to execute orders ever received them. It appears to have been a common practice on this road for brakemen to receive orders. While in this case the head brakeman received the order at Potter and delivered it to the engineman, he was not positive whether or not he told the engineman of that train that extra 504 was to pick up engine 510 at Mile Post 426. Had the engineman himself received the order from the dispatcher at Potter, he would have received this information at first hand, and as this information had an important bearing on the safety of his train, he might have taken extra precautions which would have prevented the accident. It is believed that the rule requiring the engineman to receive orders from operators or the conductor should be rigidly inforced.

While this accident was due primarily to the failure of the engineman to observe and obey signal indications, an additional cause being the failure of the conductor and flagman of the leading train properly to protect their train, the fact that the blizzard which was raging at that time rendered railroad operation unusually hazardous should not be overlooked. In view of this fact extraordinary precautions for the safe movement of trains should have been taken by everyone concerned in their operation. Under the extreme weather conditions existing at that time, the blizzard being so severe that the enginemen could not see the signals, it is a question whether the only safe course would not have been to tie up these trains until the storm abated.

Engineman Salesky had been in the service of the Union Pacific Railroad for about 11 years and had been an engineman for about 6 years; Engineman Cameron had been employed as an engineman by that company for about 5 years, and had been employed on other roads for about 9 years.

None of the employees involved in this accident was on duty contrary to the provisions of the hours of service law.