

**In re Investigation of Accident on the Chicago,
Milwaukee & St. Paul Railway, near Penfield, Mont.,
on September 4, 1913.**

November 12, 1913.

On September 4, 1913, there was a head-end collision between two freight trains on the Chicago, Milwaukee & St. Paul Railway, near Penfield, Mont., resulting in the death of two employees and the injury of two employees.

This Commission cooperated with the Railway and Public Service Commission of the State of Montana in the investigation of this accident. After investigation, the Chief Inspector of Safety Appliances reports as follows:

The western sub-division of the Rocky Mountain Division of the Chicago, Milwaukee & St. Paul Railway where this accident occurred, is a single track line extending between Three Forks and Deer Lodge, Montana, a distance of 112.3 miles. On that portion of the line where this accident occurred, trains are operated under the automatic block signal system, the signals being of the three position, upper-quadrant, semaphore type.

The trains involved were regular westbound freight train No. 73 and an eastbound work train. Train No. 73 consisted of 43 empty freight cars and a caboose, hauled by engine No. 3517 and was in charge of conductor Pirnie and enginemen Barton. The work train consisted of a caboose and one ballast car. It was hauled by engine No. 3511 and was in charge of conductor Cosgrove and enginemen Gannon.

The accident occurred on a descending grade of about 1.00 per cent, in a deep cut, the walls of which were approximately 50 feet high, at the west end of an 8 degree curve. At the time of the accident, train No. 73 had just come to a stop. The work train was running at a speed of about 6 miles per hour. The damage to equipment was slight and the only car derailed was the caboose of the work train. The two employees killed were riding on the east end of the ballast car; they were crushed between this car and the caboose. At the time of the accident the weather was clear.

On the date of the accident train No. 73 left Three Forks, Mont., the eastern terminal of this sub-division, at 9:45 a.m., two hours and fifteen minutes late. It was delayed en route on account of trouble with a defective engine tank and did not arrive at Donald, 55 miles from Three Forks, until 5:15 p.m.

At 1:05 p.m., conductor Cosgrove of the work train received order No. 71 at Janney, a station 5½ miles west of Donald, directing his train to work between Janney and Donald until 7:00 p.m., regardless of train No. 73. The train dispatcher stated that when this order was issued he did not believe that train No. 73 would be able to reach Donald before 7:00 p.m.

However, train No. 73 made better time than was expected, and arrived at Donald at 5:18 p.m., as before stated. Upon arrival at Donald conductor Pirnie received order No. 71, and as this order required his train to remain at Donald an hour and forty-five minutes for the work train he communicated with the dispatcher and endeavored to have the order changed; but as the dispatcher was unable to reach conductor Cosgrove he stated to conductor Pirnie that he could give him no help.

Previous to this time the work train had left Janney to unload ballast in a tunnel between Donald and Penfield. Conductor Cosgrove had placed a flagman at Janney with written instructions to hold everything there until the return of his train to that point. The dispatcher got this flagman on the telephone and placed him in communication with conductor Pirnie at Donald. Conductor Pirnie was informed by the flagman that the work train had gone into a tunnel between Donald and Penfield to unload gravel. Conductor Pirnie asked the flagman if it was the intention of conductor Cosgrove to come to Donald with his train, and the flagman replied that so far as he knew it was not.

At 1:05 p.m., the dispatcher issued order No. 72 directing the operator at Donald to hold train No. 73 for orders, and at 5:22 p.m., subsequent to conductor Pirnie's telephone conversation with the flagman of the work train, the dispatcher issued order No. 70 annulling order No. 72. The annulment of order No. 72, released train No. 73 and left it free to go except for the requirements of order 71. Conductor Pirnie then decided to leave Donald with his train under protection of a flag. Train No. 73 departed from Donald at about 5:28 p.m., and had proceeded about $3\frac{1}{2}$ miles when the collision occurred; sometime between 5:50 and 5:55 p.m.

Upon arrival at Penfield, 1.5 miles west of Donald, train No. 73 stopped and set out a helper engine. At Penfield there is a side track about 3,500 feet long, and at each end of this siding there is an automatic block signal. Upon arriving at the east end of this siding the signal was found in the clear position. The helper was out at this point, and the train then proceeded to the west end of the siding, where the signal was found in the caution position. About 1,400 feet west of the west switch at Penfield there is an 8° curve to the right, approximately 1,000 feet long. Proceeding westward from this curve there is about 3,300 feet of straight track, followed by a 4° curve to the right 300 feet long. Then comes 800 feet of tangent succeeded by 800 feet of 6° curve to the left. There is then about 1,100 feet of straight track followed by an 8° curve to the right 400 feet long. The collision occurred at the west end of this latter curve, about 450 feet east of the entrance to tunnel No. 13, and about 300 feet east of an automatic block signal which was in the danger position at the time.

Engineman Berton of train No. 73 stated that after noting the caution signal at the west end of Penfield siding he pulled

down slowly around the first curve and stopped his train on the straight track. The flagman was then started ahead of the train. There is a tunnel 1,171 feet long in this straight track, and after the flagman had proceeded through this tunnel and disappeared from view engineer Barton started his train. He said that he ran his train slowly through the tunnel, and almost came to a stop on the 8th curve west of the tunnel. He then released the train brakes and let the train move slowly around the curve. After rounding the curve the speed of his train increased to about 8 miles per hour, and he then noticed that he was catching up to the flagman. As soon as he saw the flagman he made a service application of the brakes, but before the speed of the train decreased materially the engine overtook the flagman, who mounted the pilot. The engine was then on the 9th curve east of tunnel 13. He continued to reduce speed after overtaking the flagman, and had proceeded about 5 or 6 car lengths further around the curve when he saw the work train coming out of the tunnel. He immediately applied the brakes in emergency and his train was stopped when the collision occurred. Engineer Barton said he thought it was safe to flag against the work train, but admitted that he crowded the flagman too close. He said that when he saw he was catching up with the flagman he did not apply his brakes in emergency for fear of breaking his train in two.

Conductor Pirnie stated that his train arrived at Donald at 5:15 p.m., and after receiving order 71 the dispatcher connected him with conductor Cosgrove's flagman at Janney. He said the flagman told him that Cosgrove's train was in the tunnel between Penfield and Donald unloading gravel, and was going back down to the stone shovel. He asked the flagman if he was sure the work train was not coming to Donald, and said the flagman told him it was not. He then instructed his head brakeman to flag against the work train and proceeded. His statement of the manner in which the train followed the flag agrees with the statement of engineer Barton. He said that he could see the danger signal at the east end of tunnel 13 just before the engine overtook the flagman on the curve east of the tunnel, and he told engineer Barton to stop on the curve before reaching the block signal and wait until the flagman had gone way ahead. The train was at that time moving about 8 miles per hour, and just then they overtook the flagman. Almost immediately thereafter the work train came out of the tunnel. He said that his reason for flagging from Donald was to avoid the delay of waiting until 7 p.m. and he inferred from what the dispatcher said that he wanted him to flag. He admitted that he made a mistake in getting too close to the flagman nearing the point of the accident.

Conductor Cosgrove of the work train received order No. 71 at Janney at 1:05 p.m. and left that station with his train 5 minutes later. After unloading gravel in a tunnel between Penfield and Donald the work train proceeded to Donald and went on the siding for the purpose of allowing some trains to pass. At this time conductor Cosgrove sent flagman Daly back to Janney on a west-bound helper engine with written instructions to hold

everything at Janney until the return of the work train to that point or until he was otherwise instructed.

After passing the trains at Donald the work train proceeded west toward Janney as far as tunnel 13 which is located between Penfield and Janney and unloaded gravel in the tunnel. The train then backed down to a spur track located east of Janney and set off all its cars with the exception of one ballast car and the caboose. After loading some laborers on those cars, the train started back towards Donald at 8:40 p.m., pushing the cars ahead of the engine.

About 2,300 feet east of the spur track where these cars were set out, there is an automatic block signal which is about 2,500 feet east of the entrance to tunnel 13. This automatic signal is located on straight track and can be seen from a train approaching from the east for a distance of approximately 1,800 feet. When the work train approached this signal it was found in the danger position and engineman Gannon reduced speed and brought his train almost to a stop before reaching it. Conductor Congrove who was in the caboose ahead of the engine, gave the engineer a signal to proceed, and upon receiving this signal, the engineman disregarded the block signal and proceeded with his train.

The work train ran through the tunnel, which is 314 feet long, at reduced speed, but upon emerging from the tunnel engineman Gannon opened the throttle and increased the speed of his train, at which time train No. 73 was discovered only about 400 feet distant.

Conductor Congrove stated that he did not observe the automatic signal west of tunnel 13. He had been employed on this division for about five years, but said he was not very familiar with the location of the automatic blocks. When the engineman reduced speed for the purpose of stopping at the signal conductor Congrove looked ahead, and noting some section men working about the track he thought the engineman was stopping for that reason, and observing that the track was clear he gave a signal to come ahead. He said his train was running about ten miles per hour when it entered tunnel 13. The engineman then reduced speed, but increased it again as soon as the train emerged from the tunnel, and was running about 7 or 8 miles per hour when he first saw train No. 73. He then applied the emergency brakes in the caboose and the speed of his train had been reduced to about five or six miles per hour when the collision occurred. He said he understood the block signal rules and knew that when finding a signal in the danger position he was required to wait five minutes before proceeding into the block under protection of a flagman, but he entirely overlooked the signal west of the tunnel.

Engineman Gannon stated that he brought his train to a stop when he saw the automatic signal at danger, and just as he stopped he received a signal from the conductor to come ahead. He took this to mean that it was all right to proceed. He said that it was customary when stopped by a red signal to proceed

immediately on "somebody's" signal, and when asked if he did not understand that he was supposed to send a flagman ahead when stopped by an automatic block signal in the danger position he replied that he did not know what provisions the conductor had made, but he considered the conductor's signal as sufficient authority for him to come ahead; he thought that provision had been made and that it was all right to proceed. He said that he was running about 6 miles per hour when the collision occurred. He did not see train No. 73, but the fireman called to him to stop and he at once applied his brakes in emergency.

Dispatcher Hayden, who was on duty at the time of the accident, stated that orders 71 and 72 were transferred to him when he came on duty. Train No. 73 arrived at Donald and conductor Pirnie and engineman Barton signed order 71 at 6:22 p.m., and at the same time they received order 99 which annulled order 72. Conductor Pirnie inquired if he would have to remain at Donald until 7 p.m., and was informed that that was all that could be done for him, as conductor Cosgrove could not be reached. Conductor Pirnie then asked where Cosgrove was, and the operator at Janney, who was on the 'phone, said that Cosgrove's flag was there. The dispatcher then instructed the operator at Janney to connect conductor Pirnie with Cosgrove's flagman, and they talked with each other on the dispatcher's 'phone. After this conversation, to which the dispatcher said he did not pay attention, conductor Pirnie again asked the dispatcher if he would have to remain at Donald until 7 p.m., and the dispatcher replied that he did not see how he could do otherwise unless he walked as on the orders he had he could not ride. The dispatcher said he did not tell conductor Pirnie to flag, and offered him no encouragement to anything other than abide by his orders.

Flagman Daly stated that in his conversation with conductor Pirnie he told Pirnie that conductor Cosgrove had instructed him to hold everything at Janney until the work train returned to that place, and so far as he knew it was not going to Donald.

The direct cause of this accident was the failure of conductor Pirnie and engineman Barton of train No. 73 to remain at Donald until the fulfillment of order No. 71, or until they had received orders from proper authority permitting them to proceed. Their initial violation of the rules was aggravated by poor judgment in running their train at a rate of speed which prevented the flagman from keeping a sufficient distance in advance to protect it properly.

Contributing materially to the accident was the action of conductor Cosgrove and an insura Cannon of the work train in running their train past an automatic block signal in the danger position, in violation of the rules.

Previous to August 14, 1916, the automatic block signal rules in force on this division required a train to stop before

reaching a signal in the danger position, and after waiting one minute, if the signal did not change to the clear or caution position in the meantime, it was permitted to proceed to the next signal in advance under the protection of a flagman. Special order No. 235, addressed to conductors and engineers, issued by the superintendent of this division on August 19th, revised this rule so as to require that a flagman be sent ahead immediately when a train was stopped by an automatic signal in the danger position, the train not to follow the flag until after the expiration of five minutes, unless the signal changed to clear or caution in the meantime.

Conductor Congrove was familiar with this special order, as he had read it and signed for it. Engineman Gannon, however, knew nothing about the order, as he had never seen it nor signed for it, although it had been posted on the bulletin board for 16 days previous to the accident. Had this rule been obeyed by the crew of the work train the accident would undoubtedly have been averted.

Special time card rule No. 1 requires engineers and conductors to examine all bulletin boards and train registers before starting out on their runs. This rule was evidently ignored by engineman Gannon. This engineman had been running an engine on this division for about two years but he had never been examined on the automatic block signal rules, and had never seen a book containing such rules. He said that in a general way he knew what the rules required, but was unable to say how his knowledge was obtained.

Superintendent Holchuir stated that when special orders, like order No. 233, were posted on the bulletin board both engineers and conductors were required to receipt for them. It was the duty of the chief dispatcher to know that these receipts were obtained, and until he heard engineman Gannon testify that he knew nothing about this order and had never seen the block rules he supposed that his receipt for the special order had been obtained but upon checking the matter up with the chief dispatcher he found that this was not the case.

This investigation disclosed an inexcusable lack of supervision by the operating officers of this division. No proper effort was made to insure that employees understood and obeyed the rules. That this condition prevails quite generally on the Chicago, Milwaukee & St. Paul Railway is indicated by the prevalence of similar lax methods which were found to exist on other divisions of that railroad in connection with investigations of previous accidents, notably the head-end collision at Corliss, Wis., on December 9, 1911, and the rear-end collision at Odessa, Minn., on December 13, 1911. In the reports on these collisions, attention was specifically called to these unsafe operating methods, and especially in the report on the Odessa wreck wherein it was said that "steps should be taken at once to see that employees have a working knowledge of the rules, and that they obey them." This admonition has apparently had little effect upon the responsible managing officers of this railroad.