INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NORTHERN PACIFIC RAILWAY AT LAKE PARK, MINN , ON NOVEMBER 20, 1926

December 24, 1926.

To the Commission:

On November 20, 1926, there was a rear-end collision between two passenger trains on the Northern Pacific Railway at Lake Park, Minn., which resulted in the death of one employee

Location and method of operation

This accident occurred on the First Sub-Division of the Fargo Division, extending between Dilworth and Staples, Minn , a distance of 105.4 miles, this being a double-track line over which trains are operated by time-table, train orders and an automatic block-signal system The accident occurred at a point about 500 feet west of the station at Lake Park, approaching this point from the west the track is tangent for a distance of 861.3 feet, followed by a 2° 24' curve to the left 2,502 feet in length and then 2,577 feet of tangent track, the accident occurring on this tangent at a point approximately 1,400 feet from its western end. The grade at the point of accident is 0.30 per cent ascending for eastbound trains

The signals involved are of the one-arm, three-position, upper-quadrant type, night indications are green, yellow and red, for proceed, caution and stop, respectively. There are five eastbound signals between Dale and Lake Park, as follows 228 8, 225 6, 224 6, 223.6 and 222 8, located 30,911, 30,118, 9,788, 4,670 and 1,100 feet, respectively, west of the point of accident. Owing to the curvature of the track, which extends through a cut just west of signal 222 8, the view of this signal is restricted to about 1,200 feet from the fireman's side and about 600 feet from the engineman's side of an eastbound engine A view of the other signals, however, could be had for a distance of at least 1 mile

The weather was clear at the time of the accident, which occurred at about 2.25 a.m

Description

Eastbound passenger train No. 8 consisted of one all-steel mail and express car, three steel-underframe baggage cars, one wooden express car, two wooden coaches, two steel-

underframe Pullman sleeping cars and one wooden business car, in the order named, hauled by engine 2166, and was in charge of Conductor Dalrymple and Engineman Qualen. This train departed from Dilworth, 30.9 miles west of Lake Park, at 1 a.m., 2 hours and 10 minutes late, and at Manitoba Junction, 7.9 miles west of Lake Park, the crew received a message to allow train No. 4 to pass them at Lake Park. Train No. 8 left Manitoba Junction at 2 06 a.m., 2 hours and 26 minutes late, and arrived at Lake Park at 2.22 or 2.23 a.m., where it was standing when it was struck shortly afterward by train No. 4.

Eastbound passenger train No. 4 consisted of two baggage cars, one mail and express car, two coaches, one tourist sleeping car, one dining car and six Pullman sleeping cars, in the order named, hauled by engines 2105 and 2156, and was in charge of Conductor Collins and Enginemen Mitdahl and Barrett All the cars in this train were of steel construction or else were equipped with steel underframes and steel sheathing Train No. 4 left Dilworth at 1.45 a.m., 36 minutes late, passed Manitoba Junction at 2 17 a.m., 31 minutes late, and collided with train No 8 at Lake Park while traveling at a speed estimated to have been between 10 and 15 miles an hour

Engine 2105 penetrated the business car on the rear of train No 8 for a distance of about 20 feet Two other cars in train No. 8 were slightly damaged, as was also the case with engine 2105 None of the equipment in either train was derailed The employee killed was the general baggage agent, who was riding in the rear car of train No. 8

Summary of evidence

Conductor Dalrymple, of train No. 8, said there were no unusual delays between Dilworth and Lake Park, his train making about the usual running time, and it was his intention to do the station work at Lake Park, which would have required from five to eight minutes, and then to pull into the siding at the switch east of the station for the purpose of clearing train No. 4. After his train stopped he alighted, and shortly afterward he noticed the flagman, who had been notified of the message to allow train No. 4 to pass, leaving the rear of the train with red and white lights and later noticed him with a lighted fusee. The first the conductor knew of the approach of train No. 4 was when he saw the reflection of the headlight around the curve in the rear of his train, but he did not see the flagman giving stop signals to the engine crew of the approaching train and did not know how far back the flagman had gone before the accident occurred.

Flagman Stewart, of train No. 8, stated that he knew train No. 4 was to pass his own train at Lake Park He was riding in the rear end of the second car from the rear of the train and upon arriving at Lake Park he immediately got off the train and started back to flag with red and white lights and a burning fusee He noticed the reflection of the headlight of train No. 4 at the time he alighted and immediately started giving stop signals as he proceeded toward the rear of his train, train No. 4 apparently was 40 or 50 car-lengths distant at that time Brakeman Stewart stated that he had gone back only one-half a car-length, or alongside the center of the rear car, when he slipped on some ice and fell At this time he heard the engineman of train No 4 give a whistle signal which he thought was an acknowledgment of his stop signals, but he arose quickly and continued toward the approaching train, he had reached a point only 10 or 15 feet from the rear of his train, however, when the engines of train No. 4 passed him, moving at a speed of 10 or 15 miles per hour He did not remember giving any more signals after falling. Brakeman Stewart further stated that he did not rely entirely upon the automatic signals for the protection of his train, and while he did not throw off a fusee as his train was approaching Lake Park yet he thought he had done all that could have been done in his effort to stop train No. 4.

Engineman Mitdahl, of the leading engine of train No. 4, stated that an air-brake test was made before leaving Dilworth, that the brake-pipe pressure was 90 pounds with a main-reservoir pressure of 120 pounds, and that no application of the air brakes was made from the time he left Dilworth until his train was just west of Lake Park He had seen train No. 8 and passenger extra 2144 depart from Dilworth eastbound and knew that both trains were running ahead of his own train, but he did not at any time know his train was to pass train No 8 at Lake Park He had been running on a clear signal indication, however, between Dilworth and Dale, but the first and second signals east of Dale were in the caution position, the third signal in the clear position, the fourth signal in the caution position and the fifth in the stop position When passing the first and second signals he partly closed the throttle at which time he says his train may have been running between 45 and 50 miles an hour, when approaching the fourth signal he entirely closed the throttle, but did not apply the brakes. He then instructed his fireman to watch for the next signal, which was signal 232.8, and as soon as the fireman saw its indication he informed the engineman that it was in the stop position, at which time Engineman Mitdahl started to make a service application of the air brakes, shortly afterward the fireman notified him that there was a train ahead and he continued moving the brake valve handle around to the emergency position Engineman Mitdahl could not estimate the speed of his train at the time

the application of the brakes was made, on account of his inexperience in fast passenger-train service; he thought, however, that the signal was passed at a speed that might have been 45 or 50 miles an hour, and at the time he finally began to apply the air brakes he was under the impression that he could stop his train before reaching the signal After the brakes had been applied, however, they did not seem to check the speed of the train as much as he had expected, but he thought that on account of his limited experience with high-speed brakes he had underestimated their braking power. He also said he did not realize the speed of his train and was of the impression that it was moving slower than actually was the case Engineman Mitdahl further stated that he had only handled passenger trains four or five times during a period of 20 years, and as he did not like this kind of service he had signed away his rights, he did not protest, however, when called for passenger service

Fireman Young, of the leading engine of train No. 4, stated that after his train passed the fourth signal east of Dale, in the caution position, he continuously watched for the following signal, which when observed apparently about 600 feet distant, was in the stop position. He immediately informed the engineman of its indication, the engineman then making a service application of the air brakes, shortly afterwards he noticed the markers of train No. 8 and notified the engineman who applied the brakes in emergency The movement of the brake valve handle from the service to the emergency positions was a continuous movement. Fireman Young thought the emergency application was made about the time his engine was passing the home signal, at which time his train was traveling about 25 miles an hour, and he estimated the speed at the time of the collision at 10 to 15 miles an hour. Fireman Young further stated that he noticed the flagman of train No. 8 about the time he saw the markers, apparently the flagman was near the rear of train No. 8 The flagman was giving stop signals with a lantern when he first observed him, and he also noticed that the flagman had a burning fusee.

Engineman Barrett, of the second engine of train No. 4, stated that the first and second signals east of Dale were in the caution position, and he estimated the speed of his train at about 45 or 50 miles an hour when passing those signals He partly closed the throttle of his engine, but there was no reduction in speed The third signal was in the clear position while the fourth signal was at caution, he almost closed the throttle and the train passed the signal at about the same speed. When approaching the following signal his fireman informed him that it was in the stop position, he looked at the air gauge to learn if an air-brake application was being made and noticed the air pressure being gradually reduced and then suddenly drop, indicating that an emergency application had been made. Shortly after

the accident occurred his engine was uncoupled from engine 2105 and an air-brake test was made. He then backed his train to Manitoba Junction, stopping to pick up his flagman, and proceeded eastward on the westbound main track to Staples, making several stops en route, and he said the brakes worked satisfactorily at all times

The statements of Conductor Collins and Brakemen James and Newell of train No 4 brought out no additional facts of importance except to indicate that the accident occurred shortly after the brakes were applied

Conclusions

This accident was caused by the failure of Enginemen Mitdahl, of train No. 4, properly to obey signal indications.

Under the automatic block-signal rules of this railway, when a signal is in the caution position an engineman is required to approach the next signal prepared to stop The first and second signals east of Dale were in the caution position yet Engineman Mitdahl passed them at a speed of between 45 and 50 miles and hour without making any effort to check the speed of his train, although he knew two other trains left Dilworth a short time before his own train departed The third signal east of Dale was in the clear position, but when passing the fourth signal east of Dale, which was displaying a caution indication, he again failed to reduce the speed of his train, merely closing the throttle and permitting his train to drift The evidence makes it somewhat doubtful as to the exact location of the train when the first application of the air brakes was made, but according to the engineman's own statement it was not until after the train had rounded the long curve to the left far enough to enable the fireman to see the stop indication of the next signal The distance from this point to the point of accident was approximately 2,600 feet, and had the engineman taken proper action at this point it should have been possible for him to have prevented the occurrence of the accident, in view of the fact that the brakes were in good condition. Engineman Mitdahl's statements indicated, however, that he was not a good judge of speed and they also indicated that he did not have an accurate idea of the braking power of passenger equipment, and it seems probable that the underlying reason for his failure to stop his train was the fact that he misjudged his speed and as a result he delayed making the brake application until too late to avert the accident.

In previous accident-investigation reports attention has been called to the failure of enginemen to begin braking when passing a signal in the caution position and today the rules of some railroads require the taking of positive action at the distant signal This is believed to be a much better practice, and the enforcement of a rule of this kind

should easily result in a train being brought under such control as to make it a simple matter to stop if necessary before passing the succeeding signal

A message had been sent to the crew of train No. 8 to allow train No. 4 to pass them at Lake Park Engineman Mitdahl did not know of these instructions, but this fact in no way relieved him of the necessity of obeying the signal indications It did, however, make it incumbent upon the brakeman of train No. 8 to pay more attention to the rear end of his train than otherwise would have been the case when making a station stop The evidence indicated that he got off promptly after his train came to a stop and started back for the purpose of warning the engineman of train No 4, which was almost within sight at that time, and under the rules this was about all that he could have been expected to do With respect to the movement of his train after it left Manitoba Junction, the train sheet shows that slightly better than schedule time was maintained and consequently there was no occasion for him to throw off fusees while en route, while there is no assurance that the throwing off of a fusee as the train was coming to a stop at Lake Park would have been of material benefit in preventing the accident since the operating rules of this railroad permit a train to pass a burning fusee at restricted speed, and therefore a fusee would not have required anything more of Engineman Mitdahl than was required by the signal indications he already had received.

Engineman Mitdahl was employed as a fireman in 1902, after about seven years' service as section laborer and engine watchman, and was promoted to engineman on January 1, 1907. While there is no question as to his experience as an engineman, his statements at the investigation clearly indicated that he should never have been used in fast passenger-train service He stated that he did not want it, that he had signed away his rights to such service, and that he had operated an engine in passenger-train service only four or five times If the circumstances were such that it was necessary to use Engineman Mitdahl, then a proper appreciation of his experience in such service should have required that the engineman with the greater passenger-train experience be placed in charge of the leading engine Occasional accidents have been investigated by this Commission in which the enginemen were found for one reason or another not to be properly qualified for the duties they were performing, and it would not seem that there is any excuse for the existence of such a condition

The question of steel cars has been discussed so often that there is hardly any need for saying more upon this subject at this time other than to point out that train No. 4

was not going at a high rate of speed when it collided with the rear end of train No 8, and it is probable that had the equipment of train No 8 been of steel construction the accident would have been of comparatively minor importance so far as casualties were concerned

Had an adequate automatic train control device been in use on this line, this accident would have been prevented

The employees involved were experienced men and at the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W P. BOPLAND,

Director