INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE GREAT NORTHERN RAILWAY AT ST. PAUL, MINN , ON JANUARY 9, 1928.

March 20, 1928

To the Commission:

On January 9, 1928, there was a side collision between a Chicago, St Paul, Minneapolis & Omaha Railway express train and a Chicago Great Western Railroad passenger train on the tracks of the Great Northern Railway at St. Paul, Minn , resulting in the death of one employee and the injury of three employees.

Location and method of operation

This accident occurred on the First Subdivision of the St Cloud Division, extending between St Paul and Clearwater Junction, Minn , a distance of 12.18 miles, in the immediate vicinity of the point of accident the Great Northern Railway is a four-track line over which trains are operated by time-table, train orders and an automatic block-signal system The tracks are designated from north to south, as the westbound passenger track, the eastbound passenger track, the westbound freight track and the eastbound freight track The accident occurred within yard limits at a crossover located about 1¼ miles west of St. Paul Union Station or approximately 587 feet east of Westminster interlocking tower; this crossover connects the westbound passenger track with the eastbound passenger track At a point 52.6 feet west of the west switch of the crossover, this switch being located on the westbound track, there is a wye switch, facing-point for westbound movements, which connects the westbound track with the east leg of a wye, this wye track curving for westbound movements to the right, toward East St. Paul, while the westbound track curves to the left, toward Minneapolis At a point about 1,300 feet west of the wye switch just referred to,at Mississippi Street, a track known as the west leg of the wye leads off the westbound track to the north and connects with the east leg of the wye, the switch leading to the west leg of the wye is a trailing-point switch for westbound movements

Approaching the crossover from the east on the Great Northern Railway, the westbound passenger track is tangent for a distance of 947 feet, followed by a compound curve to the right 723 feet in length varying in curvature from 2° 23' to 4° 40', the accident occurring on this curve at a point approximately 660 feet from its eastern end, where the cur-

vature is at its maximum. Approaching from the west, around the east leg of the wye, there is a compound curve to the left, the last portion of which, 1,100 feet in length, has a curvature of 5° 10', this curve ends at the switch connecting the east leg of the wye with the Great Northern westbound passenger track, 52 6 feet west of the west crossover switch The grade at the point of accident is 1.535 per cent ascending for westbound trains

The signals and switches of the interlocking plant within which the accident occurred are electrically operated from Westminster Tower. The home signal governing westbound movements on the passenger track is located approximately 565 feet east of the west switch of the crossover on which the accident occurred, the signal indications governing the through route are displayed by lamps located 16 and 18 feet above the rails, while those governing the diverging route to the east leg of the wye are 4 and 6 feet above the rails The distant signal is 910 feet east of the home signal, the indications displayed by this signal, and also by the home signal, are red and yellow, for stop and proceed, respectively, and both of them are connected with the automatic block-signal system so as to operate as block signals. Eastbound movements from the east leg of the wye are governed by a home signal, and also a derail, located 394 and 329 feet, respectively, west of the wye switch. The indications displayed by this signal govern movements either to the eastbound passenger track or to the eastbound freight track of the Great Northern Railway, there is no distant signal used in conjunction with this signal. In the tower there is a small light above each of the levers; when burning, these lights show that the particular signal is in the normal position, but when the lever has been reversed for the purpose of clearing a signal the lever light is extinguished. If one of these lights should burn out, the signal to which it is connected could not be cleared until repairs had been made.

The switches and signals are so arranged that when the route has been lined for a movement from the east leg of the wye to the eastbound passenger track it is impossible for the indication of the home signal on the westbound passenger track to be changed from stop to proceed without first changing the route, which in turn can not be done if it is occupied. The westbound distant signal can be seen by an engineman a distance of 1,300 feet and by a fireman a distance of 1,500 feet, the engineman's view of the home signal is unobscured while the fireman's view is good until cut off by the curvature of the track when about 325 feet from the signal

The weather was clear at the time of the accident, which occurred at about 7.41 p m

Description

Eastbound CSTPM&O express train No. 514, running as G.N. train No. 852, consisted of one mail car, one express car, one coach, and one combination car, in the order named, hauled by engine 514, and was in charge of Conductor Williams and Engineman Callan. The first three cars were of all-steel construction, while the fourth car was of wooden construction. This train departed from Minneapolis, 10 5 miles west of St Paul, at 7 20 p.m , on time, and at Mississippi Street it was diverted from the eastbound passenger track to the west leg of the wye, proceeded around that leg, and then started a back-up movement around the east leg of the wye track, it being intended to back up as far as the westbound passenger track, then through the crossover to the eastbound passenger track and then continue the back-up movement into the station. The train backed past the signal on the east leg of the wye, which was displaying a proceed indication, entered on the westbound passenger track, and was backing through the crossover to the eastbound track at a speed estimated to have been between 12 and 15 miles per hour when the rear car was cornered by the engine of CGW passenger train No. 17.

Westbound CGW passenger train No. 17, running as G.N. train No. 793, consisted of one mail and baggage car, three coaches, and one cafe parlor car, in the order named, hauled by engine 910, and was in charge of Conductor English and Engineman Moore. The first car was of steel-underframe construction, the second car was of steel construction, and the remainder were of wooden construction This train left St Paul Union Station at 7.35 p.m , on time, passed the westbound distant signal, which was displaying a proceed indication, passed the westbound home signal, which apparently was displaying a stop indication, and struck the rear car of the CStPM&O express train as it was backing through the crossover

None of the equipment of CGW train No. 17 was derailed, although the front end of the engine was considerably damaged. The rear car of CStPM&O train No 514 had its north side torn out and was overturned while the car ahead of it was damaged and also partly overturned. The employee killed was a brakeman of CStPM&O train No. 514.

Summary of evidence

Engineman Callan, of CStPM&O train No. 514, stated that when his train started the back-up movement, around the east leg of the wye, he could not see the interlocking signal governing the movement through the crossover, due to the high bank on the inside of the curve He saw the indication of the signal when the rear end of the train was within

about seven or eight car-lengths of the signal, it was then displaying a proceed indication and he called its indication to Fireman Heaberling. The first intimation Engineman Callan had of anything wrong was when the air brakes were applied from the rear end of the train just before the accident occurred, at which time the speed was between 12 and 13 miles per hour. Engineman Callan also said that the air brakes were tested before the back-up movement was started as required by the rules, and that they were being controlled from the tail hose at the rear end, by a pilot, while making the back-up movement toward the station. The statements of Fireman Heaberling practically coincided with those of Engineman Callan. Due to injuries received by them in the accident, statements were not taken from the other surviving members of the crew of CStPM&O train No. 514

Engineman Moore, of CGW train No. 17, stated that the distant signal was displaying a proceed indication when he passed it and that he then saw the home signal displaying a stop indication. The speed of his train at this time was about 17 or 18 miles per hour, and he said that on reaching a point about half-way between the distant signal and the home signal, or just east of the overhead bridge at Lafayette Avenue, the indication of the home signal governing the through route changed from stop to proceed. The fireman called its indication and then got down and started to put in a fire, and while going under the bridge the smoke from the engine hid the home signal from his view and continued to do so until after the signal had been passed. He said he took it for granted, however, that the signal could not be changed back to the stop position after the route had been given to him, although he did ask the fireman if the latter was sure he had seen the signal change from stop to proceed. Engineman Moore said that he then began to look around the curve to the left and that he did not see CStPM&O train No. 514 backing in from the wye on the right until the rear end of that train appeared directly in front of him, not more than 25 or 50 feet distant, he at once applied the air brakes in emergency and had almost brought the train to a stop when the accident occurred. Engineman Moore further stated that the headlight on his engine was burning properly and there was nothing wrong with the air brakes. Engineman Moore knew that proceed signals could not be given for conflicting routes, but he was of the opinion that the route could have been taken away directly in front of his train and then have been given to the train backing from the wye and through the crossover. Engineman Moore was last examined as to vision, color sense and hearing on June 23, 1927, he said that he passed the examination satisfactorily and was certain that at the time of the accident he did not become confused as to the colors displayed by the signals

Fireman Evans, of CGW train No 17, stated that after calling the yellow indication displayed by the distant signal he put in a fire On reaching a point about half-way between the distant signal and the home signal he got up on his seat box, saw the yellow indication displayed for the through route by the home signal, called it, and then got down and put in another fire, he was unaware of the presence of the CStPM&O train until he saw the markers on the rear of that train just as the two trains were coming together. Fireman Evans said that the air brakes on his train were applied in emergency just prior to the accident and that the train had been brought almost to a stop when the accident occurred It also appeared from his statements that he did not see the indication displayed by the home signal change from red to yellow, it being yellow when he first saw it. After the accident Fireman Evans walked back with the brakeman and observed that the home signal was displaying a red or stop indication Fireman Evans was also examined as to vision, color sense and hearing on June 23, 1927. Conductor Englin and Brakeman Helmbrecht were unaware of anything wrong prior to the accident. Brakeman Helmbrecht estimated the speed of his train to have been about 25 miles per hour just prior to the accident and said that he went back immediately after the accident and noticed that the home signal was displaying a stop indication

Towerman Hoffman, on duty at Westminster tower at the time of the accident, stated that when the annunciator notified him of the approach of CStPM&O train No. 514, he lined the crossover route for that train, thereby making it unnecessary for that train to stop on the east leg of the wye; at this time the lever light for the westbound home signal was lighted, indicating that that signal was burning and displaying a red or stop indication. Towerman Hoffman also stated that an indicator in the tower warns him of the approach of a train on the westbound passenger track as soon as the head end of the train passes the westbound distant signal and that after the route has been lined for a westbound main-track movement, and the train has passed the distant signal, the route becomes locked and it can not then be taken away from the westbound train and a conflicting route set up for another train, although it would be possible to change the indication displayed by the westbound home signal from yellow to red, a more restrictive indication. Towerman Hoffman said that at the time the indicator in the tower showed that CGW train No. 17 had passed the westbound distant signal the rear end of CStPM&O train No. 514 was just going by the wye-track home signal, it was then too late to make any changes in the switches or signals in favor of the CGW train

Conclusions

This accident was caused by the failure of Engineman Moore and Fireman Evans, of CGW train No. 17, properly to observe and obey signal indications.

Engineman Moore was certain that he saw the indication of the home signal change from red to yellow when the engine had reached a point about half-way between the distant signal and the home signal, while Fireman Evans maintained that the home signal was displaying a yellow or proceed indication when he first observed it and that he called its indication to the engineman. Engineman Moore admitted that he did not see the indication after this time, as smoke obscured it from view and continued to do so until after the signal had been passed. The interlocking plant, however, is so arranged that conflicting routes or signals can not be given, nor can a route or signal be taken away from a train after it has started through the interlocking plant. Tests made after the accident showed that the signal apparatus functioned only as intended, and that there was nothing which could have caused the display of a false clear indication. Under these circumstances it is clear that the westbound home signal was displaying a stop indication and that for some reason this stop indication was not properly observed and obeyed by Engineman Moore and Fireman Evans.

Engineman Moore entered the service as engineman on April 1, 1895, while Fireman Evans entered the service March 27, 1908; their records are good. All of 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. BORLAND,

Director