

In re investigation of an accident which occurred
on the Northern Pacific Railway near East
Helena, Mont., on December 7, 1916.

January 13, 1917.

On December 7, 1916, there was a head-end collision between a passenger and freight train on the Northern Pacific Railway near East Helena, Mont., which resulted in the death of the engineman and fireman of the passenger train and the injury of 11 passengers and 7 employees. After investigation of this accident the Chief of the Division of Safety submits the following report:

The sub-division on which this accident occurred is a single-track line. No block signal system is in use, trains being operated by time-table and train orders. The point of collision was about $1\frac{1}{2}$ miles east of East Helena. Approaching that point from the west the grade is practically level, and the track is tangent for about 1 mile, followed by a 2-degree curve to the left, 1,760 feet in length on an ascending grade of one per cent. The accident occurred on this curve, nearly 400 feet from its eastern end. Approaching from the east there is a 2-degree curve to the left, 1,160 feet in length which extends through a cut about 10 feet in depth. This curve is on a descending grade of one per cent. Following the cut there is 370 feet of tangent track and the 2-degree curve to the right on which the accident occurred, the track at this point being on a fill, varying in depth from 15 to 25 feet. At the point of accident the grade was one-half of one per cent descending for westbound trains. Both of the locomotives were equipped with electric headlights, which were burning in proper condition. The weather was clear.

Eastbound passenger train No. 282 consisted of 1 combination mail and baggage car, 1 coach, 1 Pullman sleeping car and a buffet car, hauled by locomotive No. 278 and was in charge of Conductor Driscoll and Engineman Sieb, en route from Helena to Logan, Mont. It left Helena at 9.15 p. m., East Helena at 9.28 p. m., and at 9.30 p. m. collided with westbound freight train extra 1720 while traveling at a speed estimated to have been 30 miles an hour.

Westbound freight extra 1720 consisted of 56 cars and a caboose, hauled by locomotive 1720, and was in charge of Conductor Bulow and Engineman Teters. The train left Winston, the last open telegraph office, 15.9 miles from East Helena, at 8.59 p. m. When passing the telegraph office the engine crew was given a 13m-19 order, delivered

by a hoop, advising that extra 1608, with rights over second-class and inferior trains, would leave Helena at 9.20 p. m., East Helena at 9.40 p. m., Louisville at 10.00 p. m., Placer at 10.20 p. m., and Winston at 10.30 p. m. When the engine-man received this order which in effect gave his train until 9.40 p. m. to reach East Helena for extra 1608, he overlooked passenger train No. 222. The brakeman on the steps of the caboose missed the hoop, with the result that the conductor, who was riding in the caboose, did not know what order had been received by the engine-man. He supposed that it gave his train time on train No. 222 and that he would have time to go to East Helena. The speed of extra 1720 was about 30 miles an hour when the locomotive came out of the cut, 1,230 feet from the point of accident, at which time Engine-man Teters saw the passenger train and at once applied the emergency air brakes. The speed had been reduced to about 7 or 8 miles an hour at the time of the collision.

Locomotive 278 was very badly damaged, the boiler being torn from the frame, engine trucks badly broken up and the engine frame bent in many places and the front broken off. The tender was badly crushed and was forced over against the cab, the fireman being pinned against the boiler in an upright position. The engine-man was badly injured and died within a few hours. Slight damage was sustained by the forward end of the combination mail and baggage car of the passenger train. The front end of the freight locomotive was crushed and the second, sixth and seventh cars were destroyed, while the fifth car was badly damaged and slight damage sustained by the fourth car.

Engine-man Teters, of extra 1720, stated that he overlooked train No. 222, not thinking of it until his train rounded the curve east of the tangent track and he saw the passenger train approaching. He said that he applied the emergency air brakes and opened the sanders and began whistling stop signals to attract the attention of the engine crew of the passenger train. He stated that the speed of his train was about 30 miles per hour and had been reduced to 5 miles per hour when the collision occurred. He had no idea why he overlooked train No. 222. Engine-man Teters also stated that the head brakeman told him he received proceed signals from the rear of the train at Winston, Placer and Louisville.

Head Brakeman Quinn stated that he saw the order received at Winston and that he overlooked train No. 222. The first intimation of danger was when the engine-man called out to get ready to jump, at the same time applying the emergency air brakes. Head brakeman Quinn also stated that a proceed signal was received from the rear of the train at

Winston and also at Placer, but he could not remember whether or not he told the engineman a proceed signal had been received at Louisville. He stated that the reason he did not see train No. 222, was because when approaching East Helena, there are in sight a number of street lamps which resembled electric headlights, and that it was impossible to distinguish an electric headlight from one of the street lamps.

Rear Brakeman Smith stated that when the train passed Winston, he missed the hoop containing the order and the conductor said that they would not give any proceed signals when passing stations. He said that he and the conductor were figuring on meeting train No. 222 at Louisville. The train slowed down at that point and he thought it was going to stop, but when it did not stop the conductor remarked that he resumed that the engineman had an order to meet train No. 22. His first knowledge of the approaching accident, was when the emergency air brakes were applied and he thought that the speed of the train had been reduced to 5 or 6 miles per hour when the collision occurred. Rear Brakeman Smith further stated that a proceed signal was given at Winston, before passing the hoop containing the order. After this he did not give any kind of signal to the head end of the train, no proceed signals being given at Louisville or Placer.

Fireman Grey stated that he caught the order at Winston and gave it to the engineman and then worked on the fire. He then read the order but did not understand it, it being the first order of the kind he had ever seen, and the engineman put it in his pocket. He said that he again asked for the order and the engineman explained it to him. He understood that his train was due until 9.40 p. m. to go to East Helena for extra 1608, and then began to work on the fire. The first he knew of the approaching collision was when the engineman told him to jump, at the same time applying the emergency air brakes. Fireman Grey had had only ten weeks' experience in railroad service, and he stated that while he knew at what time train No. 222 was due at East Helena on account of having lived there, yet this was the first time he had been over this part of the road at night and he had his mind on extra 1608. Fireman Grey also stated that he heard the brakeman say he received a proceed signal at Winston and at Placer, but did not remember whether or not he said there was one given at Louisville.

Conductor Bulow stated that at Townsend, 12.8 miles east of Winston, the operator told him that the dispatcher wanted his train to go to East Helena for train No.

222. When his train stopped, just east of Winston, for the purpose of cutting off the helper locomotive, he was in the caboose and stated that when ready to go the rear brake man got on top of the train and gave a road & signal. When the caboose passed the station he was inside of the caboose door, while the brakeman was on the rear steps and missed the order which the operator was attempting to deliver by hook. He stated that he did not see the train order board at all, but that the brakeman was on the steps watching it and said it was against them. After the order had been missed he went up in the cupola and remained there until the train passed Plover. He thought he saw a road signal here, but was not positive. He then went to his desk and finished some of his clerical work, having referred to the brakeman that they must have a meet with train No. 222 at East Wilson, being of the opinion that that must have been what was in the order received by the engine crew at Winston, and which was missed by the rear brakeman. When the collision occurred he did not know what was the matter and did not think about train No. 222, until he walked forward and met the lead brakeman who told him that they had collided with the passenger train. He further stated that he did not remember having had any conversation about train No. 222, except between Winston and Plover. He said that at other times he had missed orders and had either tagged his train or had gone over the train to the engine, but in this case it was cold and he did not feel well, and so made no attempt to go forward. He also said that he would have stopped the train at Louisville if he had remembered train No. 222, but he knew the dispatcher wanted his train to reach East Helena and he said that he must have thought that that was all there was going and in this way having overlooked the passenger train.

The conductor of the passenger train stated that the collision occurred almost immediately after an emergency application of the air brake had been made.

This accident was caused by error in passing the main track on the line of train No. 222, a train superior by both class and direction, for which Conductor Baker, Engineer Tetter and Head Brakeman Quinn are responsible. It appears probable that the employees on the engine were thinking of reaching East Helena before the time allowed for the departure of train 222, the train continued in the order received at Winston, while it is possible that the conductor thought an order had been received giving it train time on train No. 222. In any event, however, all three are experienced men and they offer no excuse for the negligence, any of them admitting that they had overlooked the passenger train.

Engelmann Tetens was employed as a porter's helper in October, 1903, made a fireman in December of the same year and was promoted to engineman in July, 1907. His record was good. Conductor Bulow was employed as a brakeman in 1909 and promoted to conductor in 1910. In January, 1912, he received 10 demerits for violating an improper train order, and for the dangerous operation of his train. Head Brakeman Quinn entered the service as brakeman in October, 1906, after having been out of railroad service for 10 months. He had over three years' previous experience as a brakeman.

At the time of the accident these employees had been on duty about 10 hours and 50 minutes after period off duty of 10 hours or more.