

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE DENVER & RIO GRANDE WESTERN RAILROAD NEAR GRANITE, COLO , ON AUGUST 20, 1925.

OCTOBER 8, 1925.

To the Commission

On August 20, 1925, there was a head-end collision between two passenger trains on the Denver & Rio Grande Western Railroad near Granite, Colo , which resulted in the death of 2 employees, and the injury of 96 passengers, 19 employees of the railroad company and 2 Pullman employees. The investigation of this accident was made in conjunction with representatives of the Colorado Public Utilities Commission.

LOCATION AND METHOD OF OPERATION

This accident occurred on subdivision 3 of the Salida Division extending between Minturn and Salida, Colo , a distance of 86.85 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. Eastbound trains are superior to westbound trains of the same class. Under the rules train orders on Form 19 may be used in restricting the superiority of trains, with certain exceptions. The point of accident was about 1½ miles east of Granite, the alignment of the track in each direction consisting of a series of short curves and tangents. Approaching from the east the last curve is a 4° curve to the right about 540 feet in length, followed by tangent track to the point of collision, a distance of about 350 feet, approaching from the west there is a compound curve to the left 1,178 feet in length with a maximum curvature of 12°, about 150 feet of tangent and then a 12° curve to the right 365 feet in length, followed by about 55 feet of tangent extending to the point of accident. The grade is generally ascending for westbound trains for a considerable distance in each direction from the point of accident, with the exception of a short stretch of level track in the immediate vicinity of the point of accident, the maximum grade being 1.70 per cent. The crews of approaching trains could not see each other a distance of more than 1,000 feet.

The weather was cloudy at the time of the accident, which occurred at 2.58 p. m.

DESCRIPTION

Westbound passenger train No 7 consisted of one baggage car, one private car, five sleeping cars, two dining cars, three sleeping cars, and one observation sleeping car, in the order named, hauled by engines 759 and 787, and was in charge of Conductor Conway and Enginemen Willingham and Duncan. The second, eighth, and ninth cars were of steel-underframe construction, the remainder being of all-steel construction. At Salida, 42.2 miles from Granite, the crew in charge received a clearance card, together with a copy of train order No 65, Form 19, reading as follows:

No 7 Engs 787-759 wait at Brown Canon until one thirty five 1:35 p. m. Arena one forty five 1:45 p. m. for Exa 1186 east, hold main track meet No 8 Eng 778 at Pine Creek.

Pine Creek is 5.16 miles east of Granite. Train No 7 left Salida at 1:19 p. m., 44 minutes late, and when passing Buena Vista, 16.99 miles from Granite and the last open office, the crew received a clearance card together with train orders Nos 67, 71, and 72, all on Form 19, these orders reading as follows:

No 67—

No 7 Engs 787-759 run twenty five 25 mins late Americus to Waco. Twenty 20 mins late Waco to Malta. Fifteen 15 mins late Malta to Tenn Pass.

No 71—

No 8 Eng 778 take siding meet No 7 Engs 759-787 at Granite instead of Pine Creek.

No 72—

No 7 Engs 759-787 wait at Pine Creek until two thirty six 2:36 p. m.

Train No 7 passed Buena Vista at 2:14 p. m., 34 minutes late, passed Pine Creek, and was approaching Granite moving at a speed of about 18 miles an hour when it collided with train No 8.

Eastbound passenger train No 8 consisted of one combination car, five sleeping cars, two dining cars, five sleeping cars, and one observation sleeping car, hauled by engine 778, and was in charge of Conductor McGary and Engineman Claie. The seventh and eighth cars were of steel-underframe construction, the remainder being of all-steel construction. On the arrival of this train at Tennessee Pass, 23.68 miles from Granite, the crew in charge received a clearance card, together with copies of train orders Nos 56, 65, 69, and 72, all on Form 19. Train order No 65 was worded the same as the train order of that number delivered to the crew of train No 7. Train orders Nos 56, 69, and 72 read as follows:

No 56—

No 8 Eng 778 wait at Tenn Pass until one forty 1:40 p. m. Keddar one forty seven 1:47 p. m. Malta one fifty six 1:56 p. m. Snowden two two 2:02

p m Kobe two seven 2 07 p m Granite two fifteen 2 15 p m Riverside two twenty eight 2 28 p m Buena Vista two thirty nine 2 39 p m Nathrop two forty nine 2 49 p m Arona two fifty nine 2 59 p m Brown Canon three eight 3 08 p m Belleview three thirteen 3 13 p m

No 69—

No 8 Eng 778 run twenty 20 mins late on order No 56 Tenn Pass to Salida

No 72—

No 8 Eng 778 run thirty five 35 mins late on order No 56 Tenn Pass to Salida

A copy of train order No 71, previously quoted, had been put out by dispatcher to the operator at Tennessee Pass for the crew of train No 8, but this order was not delivered. Train No 8 departed from Tennessee Pass at 2 19 p m, 3 hours and 29 minutes late on its time-table schedule and 39 minutes late on train order No 56, received a clearance when passing Malta, passed Granite at 2 55 p m, 3 hours and 11 minutes late on its time-table schedule and 40 minutes late on train order No 56, and collided with train No 7 at a point east of Granite while traveling at a speed estimated to have been about 30 miles an hour.

Engine 759, the lead engine of train No 7, was derailed, but remained in an upright position, with its own tender, together with engine 787, on top of it, none of the cars in train No 7 was derailed or seriously damaged. Engine 778 and the first four cars in train No 8 were derailed, but remained upright. All of the engines were considerably damaged. The employees killed were the fireman of train No 8 and the fireman of the second engine of train No 7.

SUMMARY OF EVIDENCE

According to Operator Rehklaun, on duty at Tennessee Pass, he received train orders Nos 56, 65, 69, 71, and 72, all of these being for delivery to the crew of train No 8. The first four of these orders were separated ready for delivery when he received train order No 72, and after receiving this order, directing train No 8 to run 35 minutes late on train order No 56, he decided to file train order No 69, which directed No 8 to run 20 minutes late, but through error he took out the copies of train order No 71, threw away the carbon copies, and filed the original. He then filled out the clearance from the orders he then had on hand, entering on it the numbers of those orders, and he said that he read off the numbers from the clearance card when repeating them to the dispatcher, reading them from right to left, that is, in the following order 72, 69, 65, and 56, and he said he did not include train order No 71 among those numbers which he repeated to the dispatcher. He said he

received the dispatcher's O K to the clearance and that he did not know train order No 71 had not been delivered until the dispatcher called him on the telephone at about the time the accident occurred. Operator Rehklau further stated that he intended to file train order No 69 without receiving instructions to do so, and that this had been done so often in previous cases as to make it almost a matter of regular procedure. He admitted that the proper way would have been to have had the order annulled by the dispatcher. In this connection he made the statement that the dispatcher made the remark, "You are not giving them both of those run-late orders," or words to that effect, and that he replied in the negative, this conversation, however, was after he had filed the order.

Dispatcher Smith, on duty at the time of the accident, said that previous to that day the telegraph office at Granite had been closed at 1 p m, that when he came on duty at 8 a m that day the dispatcher he was to relieve was extremely busy, and that he himself sat down to work without going through the bulletins, etc, and therefore did not know that the hours of the office at Granite had been changed, as a result of which the office would be open until 4 p m his first knowledge of this fact being when the operator at Granite called him on the telephone for some purpose which he did not recall. Shortly afterwards he gave Operator Berger, on duty at Granite, a train order for delivery to the crew of train No 7, this being at about 2 25 p m, but told him not to hang out the yellow flag used to indicate that there are orders on Form 19 to be delivered to the crew of an approaching train, inasmuch as train No 8 was going to take the siding and meet train No 7 at that point, and he was afraid that if the engineman of train No 8 saw the yellow flag displayed he would conclude that the meeting point had been changed and would approach the station on the main track instead of entering the passing track at the west switch. Dispatcher Smith also told Operator Berger to let him know when train No 8 arrived and that he would tell him when to hang out the yellow flag for train No 7. Sometime later Operator Berger called him on the telephone and said he had heard the whistle of train No 7, and he told the operator that it must have been train No 8 as train No 7 had not had time to reach Granite. Operator Berger then told him train No 8 was approaching on the main track and inquired if he should stop it, and Dispatcher Smith said he at once told the operator to place the train-order board in the stop position and to go out and stop the train, his first idea being that the crew of train No 8 had overlooked that part of their meet order requiring them to take the siding. Shortly afterwards Operator Berger returned to the telephone and told him he thought he had stopped the train, saying he had placed

the train-order board in the stop position and also had given the flagman of train No 8 an emergency stop signal. In the meantime Dispatcher Smith called Operator Rehklau at Tennessee Pass, asked him if he had given train order No 71 to the crew of train No 8, and at this time found that the crew did not have the order.

While Operator Rehklau said that in reading the numbers of the orders to the dispatcher he read them in the following order 72, 69, 65, and 56, yet in the dispatcher's train-order book the numbers of the orders appeared as follows 71, 72, 69, 65 and 56. Dispatcher Smith said the dispatchers endeavored to have the operators give the numbers in numerical order, beginning with the highest number, and when asked how train order No 71 appeared in his train-order book preceding train order No 72 he replied that he copied the numbers exactly as repeated by Operator Rehklau and that in his opinion the operator had separated from the other orders the one which he thought was train order No 69 but which was actually train order No 71 and placed it on top of the others, intending to ask the dispatcher for an annulment, and then when reading the numbers to the dispatcher preparatory to clearing the train he read the number of this order first followed by the others. He also said Operator Rehklau made the remark that he had one order which was going to be annulled. Dispatcher Smith further stated that ordinarily when orders are not to be delivered to trains an annulment order is issued to the operator, but that he had known of a few cases where such annulment orders were not issued. He did not recall any conversation with Operator Rehklau in which he suggested to the operator in any way that train order No 69 should be filed.

When asked why he did not put out train order No 71 at the meeting point, Dispatcher Smith said it was because he did not know the office at Granite was open. As a matter of fact, however, there was ample opportunity, had he so desired, of giving the order to the operator at Granite after he ascertained that the office was open, and it developed that during the 12 years he had been employed as a dispatcher he had never used the so-called middle order and that, although he had never brought this matter to the attention of the management, yet Mr Carter, a trainmaster, had inspected the train-order books and had never taken exception to the failure to use the middle order.

Tennessee Pass is a registering station as well as a point at which trains are inspected, and under such circumstances trains are likely to be at that point for a period of several minutes. Dispatcher Smith was asked why, in view of this fact, it would not have been an additional safeguard to have used an order on Form 31 when

changing the meeting point between trains Nos 7 and 8, thereby still further restricting the rights of the superior train, and he said it might have been an additional safeguard, and when asked if it would not have prevented the accident he said it might have gone a long way in that direction, but that under the new book of rules, which took effect on March 1, 1925, he felt he was carrying out the wishes of the management in issuing the order on Form 19 and that the rules were put in effect for the primary purpose of using orders on Form 19 wherever possible in order to save the time which would be required were it necessary to obtain signatures to train orders written on Form 31

Dispatcher Olsen, on duty in the office with Dispatcher Smith, said that by means of the loud speaker with which the office is equipped, he was able to hear enough of what the operator at Granite told Dispatcher Smith to realize that there was something wrong, and on inquiring as to the nature of the trouble he was told that train No 8 had passed its meeting point with train No 7. After a very short delay Dispatcher Smith asked him to call the chief dispatcher, and on returning to the room with the chief dispatcher they looked at the train-order book and the record of the clearance received by train No 8 at Tennessee Pass, Dispatcher Smith having called attention to the clearance with the remark that he did not see how the difficulty arose, since the train-order book showed that train No 8 had received a copy of train order No 71. Dispatcher Olsen said train order No 71 was the first to be listed and that he did not notice anything to indicate that the writing was not in the same handwriting, or that anything had been added to what was originally written in the book.

Chief Dispatcher Hulse said he looked at the train-order book almost immediately after entering the room and found that the numbers of the orders were shown in the book, and apparently there was nothing wrong with the manner in which train No 8 had been cleared at Tennessee Pass. Mr Hulse said it was the practice, when not desirable to give an order to the crew of a train after it had been issued to the operator, to annul the order by an order addressed to the operator. Mr Hulse said he had heard a dispatcher tell an operator to file an order, and that whenever he had heard such instructions given he had criticized the dispatcher very severely. One of the duties of the chief dispatcher is to check train-order books, but Mr Hulse said it had been several months since he had performed this duty as there had been other duties which occupied all of his time. Whenever such checks had been made in the past he had failed to find evidence of negligence on the part of Dispatcher Smith, and he considered the latter to be a competent dispatcher. Chief Dispatcher Hulse was aware of the fact that the middle order

was not used but had never objected to this failure to obey the rules simply for the reason that it was not customary to use this order. On the day of the accident the Denver office inquired as to whether or not instructions were in effect to use the middle order and then told him to place such instructions in effect immediately. He considered the middle order to be a precaution which should be exercised wherever possible and to be the only precaution they had which would guard against an error such as the failure of an operator to deliver an order, but he further stated that in the majority of cases a middle order could not be used even if desired on account of the fact that the meeting points were at blind sidings.

Operator Berger, on duty at Granite, said he received the train order for delivery to the crew of train No 7 and was instructed not to display the yellow flag until train No 8 was into clear. When train No 8 approached Granite the engineman sounded the whistle and Operator Berger told the dispatcher train No 7 was coming, the dispatcher at once said it was train No 8, and on looking westward Operator Berger saw the rear portion of train No 8 as it passed around a curve. As he had no orders for train No 8 he at once cleared the train-order board. Operator Berger said he then looked eastward to watch for the approach of train No 7, as he had an order to deliver to that train, and when the engine of train No 8 reached the station he turned and looked in that direction and then saw that the train was on the main track instead of on the passing track. Operator Berger said he at once notified the dispatcher of this fact and also told him it did not appear that the train was going to stop and inquired if he should stop the train, to which the dispatcher replied in the affirmative. Operator Berger said he at once restored the train-order board to the stop position and then ran out of the door to the station platform. By this time the rear portion of the train was passing the station and with his hand he gave an emergency stop signal to the flagman, who was on the lower steps at the head end of the rear car. Operator Berger said the flagman looked at the train-order board and then looked at him as he gave the stop signal, after which the flagman went up the steps into the car, and the operator said this action on the part of the flagman made him feel certain that the train was going to be stopped. After the accident Flagman Willis, of train No 8, returned to the station and Operator Berger said he went to meet the flagman and asked him why he did not apply the air brakes by means of the conductor's valve, and he said the flagman replied that he was unable to do so. On returning to the telegraph office he told the flagman the train-order board had been thrown to the stop position and that he had given the flagman a stop signal and again asked him why he did not stop the train and he said the flagman again replied by saying

he was unable to do so. Operator Berger had a red flag rolled up and placed on hooks under his desk but he said he did not think about using it, devoting his attention to getting out on the platform before the entire train had passed the station. Operator Berger further stated that an inspection train had been at Granite within the past few months, at which time a trainmaster inspected the location of the flagging equipment, and he said it seemed to meet with the approval of that official.

Mrs. Berger, the wife of the operator, said she went into the station after train No. 8 had passed and that shortly afterwards Flagman Willis came back to the office, and when Operator Berger remarked to him that he felt sure the train would stop the flagman replied that he had been unable to stop it.

Flagman Willis, of train No. 8, said he was on the steps at the forward end of the rear car, that he saw the train-order board drop to the clear position before the engine reached the station, and that it was still in the clear position when he passed it, at which time the speed of the train was about 25 or 30 miles an hour while Operator Berger was inside of the office. Flagman Willis said he did not see the operator give a stop signal of any kind and after the train had passed the station he went back up the steps and closed the trap door of the vestibule. Flagman Willis did not remember any conversation with the operator after the accident except that after finding out what the difficulty was he said he asked the operator if he had the order for the two trains to meet at Granite. He denied that the operator said anything to him about placing the train-order board in the stop position or giving him a stop signal with his hands.

Engineman Clare of train No. 8, said he had an order to meet train No. 7 at Pine Creek, the first station east of Granite, that the train-order board at Granite was not cleared until his engine was close to the station, and that he then began to work steam in an endeavor to increase speed as quickly as possible. He thought the speed of his train was nearly 45 miles an hour when he first saw a puff of smoke from the engine hauling train No. 7 and he said he at once shut off steam, applied the air brakes in emergency, called to the fireman and jumped. Both Engineman Clare and Conductor McGary stated that at Tennessee Pass they received all the orders called for by the clearance card and that they knew nothing about train order No. 71.

Conductor McGary was riding in the first car in the train when passing the station at Granite and at that time he saw Operator Berger seated at his desk in the office. He did not notice any attempt made by the operator to stop the train after the engine had passed the train-order board. Conductor McGary estimated the speed of

his train at the time of the collision to have been 25 or 30 miles an hour. Brakeman DeVoss, who was riding in the same car with Conductor McGary, said he looked back when about six or seven car lengths beyond the train-order board and that at that time the board was still in the clear position. His other statements were generally the same as those of Conductor McGary.

Engineman Willingham, of the lead engine of train No. 7, was unable to make a statement at the investigation on account of injuries received in the accident. Fireman Roberts, also of the lead engine, said he had finished putting in a fire, and on getting upon his seat box he saw train No. 8 apparently only a few car lengths distant. Engineman Duncan, in charge of the second engine, said that on account of the curvature of the track he was unable to see train No. 8 approaching and that his first knowledge of anything wrong was when he felt a jar as if the air brakes had been applied, at first he thought the train had been derailed and he did not know there had been a collision with another train until he got off the engine after it had come to a stop. He estimated the speed of his train to have been about 18 miles an hour. The statements of Conductor Conway and Brakemen Corrigan and Stott, all of train No. 7, did not bring out any additional facts of importance.

Trammaster Carter said that from June, 1919, until February 16, 1925, he had been employed as supervisor of safety and fire prevention. In January, 1924, he was given instructions that when he had an opportunity he was to check the dispatchers' train-order books for the purpose of seeing whether or not train orders were being issued in accordance with the rules. It also appeared that during all of the period between January, 1924, and February 16, 1925, he reported directly to the general manager. Mr. Carter stated that he examined train-order books about once a month and that when he first began checking the books he found irregularities, which he handled in writing with the chief dispatcher, with a copy going to the superintendent, while the general manager was also notified. These reports mentioned the books checked, dates, and irregularities found to exist. He thought the last time he checked the train-order books at Salida was in January, 1925, and he said he had never found that the middle order was not being used where practicable, nor did he ever find that orders were being filed by operators without first having been annulled. He was unable to recall any specific instances of violations of rules in the transmission, receiving, or delivery of orders which he had discovered as a result of his inspections. At the time of the investigation of this accident Mr. Carter was a trammaster on a double-track division, so that he did not feel qualified to speak with regard to present violations of the rule requiring the use of middle orders.

CONCLUSIONS

This accident was caused by the failure of Operator Rehklau, on duty at Tennessee Pass, to deliver a copy of train order No 71 to the crew of train No 8, and by the failure of the responsible operating officials to enforce the rules governing the handling of train orders

Operator Rehklau had received a copy of train order No 71, changing the meeting point between trains Nos 8 and 7 from Pine Creek to Granite, when train order No 72 was received, directing train No 8 to run 35 minutes late, he decided to file train order No 69, which had directed train No 8 to run 20 minutes late, but instead of doing this he filed train order No 71 by mistake and delivered train order No 69. Operator Rehklau stated that he entered on the clearance card the numbers of the order he then had for delivery to the crew of train No 8, which were Nos 56, 65, 69, and 72, and reported them to the dispatcher, reading them in order from right to left. On the dispatcher's train-order book, however, the numbers of the orders appeared in the following order 71, 72, 69, 65, and 56. There is a direct conflict between the statements of the dispatcher and the operator as to whether or not the operator repeated the number of train order No 71 as among those he was going to deliver to the crew of train No 8. Operator Rehklau further stated that he acted on his own responsibility in filing the train order without receiving an annulment of the same and that this method had been followed on previous occasions. That this may have been true was somewhat apparent from an examination of the train-order book covering the orders issued on August 18, on which date trains were cleared at two different stations without having received orders which had been issued, which orders had not been annulled.

The rules of this railroad require that a copy of a meet order be addressed to the operator at the meeting point wherever practicable. A copy of train order No 71 was not sent to the operator at the meeting point the dispatcher not knowing that the station was open at the time this order was issued. As a matter of fact, however, it appeared from the record that that part of rule 208 requiring the use of middle orders had not been enforced for a period of several years. It further appeared that the only reason that the dispatcher did not know that the office was open was because he had not taken the trouble to look in the compartment in the desk where bulletin notices are placed daily in order that dispatchers may be kept fully informed of what is occurring. Proper enforcement of the rule

requiring the placing of middle orders probably would have prevented the occurrence of this accident.

Rule 202 requires that each train order must be given in the same words to all employees or trains addressed. When transmitting train order No 72, however, the dispatcher sent one part of it to the crew of train No 8 and the other part to the crew of train No 7, with the result that while his records of the clearances issued by the operators to the respective trains showed that they received train order No 72, yet neither crew actually received train order No 72 as it appeared in the train-order book.

Under the rules in effect prior to March 1, 1925, it was provided in the last paragraph of rule 211 that a train order on Form 19 could not be used to restrict the rights of trains. Train order No 71, however, restricting the rights of train No 8, was issued on Form 19, this being in accordance with the rules as they appear in a new book of rules which took effect on March 1, 1925. This particular rule in question, No 211-B, reads as follows:

A "19" train order may be used for restricting the superiority of a train, but the "31" order form must be used in the following cases:

- (A) As required in Rule 4-A
- (B) When necessary to restrict the superiority of a train which is at a blind siding or closed office
- (C) As required in Rule 208-A
- (D) When necessary to restrict a train which has been cleared (Rule 219)
- (E) When reducing time order
- (F) When necessary to notify trains of obstructions or extremely abnormal conditions of track or bridges
- (G) When moving against the current of traffic on double track (Train order Form R)
- (H) When using a section of double track as single track (Train order Form S)

Rule 4-A relates to the issuing of new time-tables, Rule 208-A requires the use of a train order on Form 31 when, in a single-track territory, a train order is sent to one of two opposing trains at a point where the superiority of the particular train is restricted.

The operation of trains in a mountainous country requires the highest degree of care, and when, as in this case, the railroad in question is a single-track line with no block-signal system in use, and, as stated by the chief dispatcher, the majority of the meeting points are at blind sidings, then it is a matter of absolute necessity that the dispatcher know beyond any question or doubt that train orders have been properly delivered and are thoroughly understood by those who are to execute them. Such was not the case in this instance. Had train order No 71 been addressed to the crew of

train No 8 on Form 31 it is probable that this accident would not have occurred.

Incidental to the examination of the train-order book in connection with the orders involved in this accident, several irregularities were noted which occurred on the second day previous thereto, among which, besides violations of the rule requiring the use of the middle order, were the following: The second section of a first-class train was cleared at a certain station after receiving orders, but there was nothing in the train-order book to show that it had been cleared, several orders restricting the rights of trains were put out on Form 19 at the points where such rights were restricted, whereas they should have been on Form 31, both under the former and under the present rules of this railroad. It also appeared that while train order No 6 of August 18 was addressed to train No 61 at Saluda, the train was cleared without the order, and there was nothing in the train-order book to show that the order had been annulled. The same situation existed in the case of train order No 54 of the same date issued to train No 8 at Tennessee Pass. It was also noted that on August 17 there were two different orders bearing the same number. A check was made of the train-order book covering a period of a few days in October, 1924, at a time when Trainmaster Carter was supposed to be checking these books, apparently without finding anything other than minor irregularities, this was before the new rules took effect. Within a period of five days 10 orders were issued which violated either the rule requiring the use of a middle order or the rule requiring an order to be written on Form 31 when restricting the rights of a superior train, some of these 10 orders embraced violations of both of these rules.

It would be difficult to imagine a more inherently dangerous system, or lack of system, for the operation of trains under the train-order method of operation than that which appears to exist on this railroad. The disastrous results usually attendant upon careless handling of train orders are well illustrated in the present case, and the number and character of the violations of the rules governing the handling of train orders raises a question as to whether the operating officials of this railroad have a proper appreciation of the responsibilities of their positions. While the immediate cause may be found to rest with the failure of some individual occupying a comparatively minor position, those responsible for the general conditions resulting in such failure occupy higher positions. They have the duty first to provide safe and adequate rules for the operation of trains and then to enforce obedience to those rules on the part of all con-

cerned. This was not done in this case, and for their failure they are equally responsible for the occurrence of this accident.

Had an adequate block-signal system been in use on this line this accident probably would not have occurred, an adequate train stop or train-control device would have prevented it.

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 BORIAND, *Director*