

## INTERSTATE COMMERCE COMMISSION.

## REPORT OF THE CHIEF OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE COLORADO &amp; SOUTHERN RAILWAY AT MARNEL, COLO., ON AUGUST 27, 1922.

October 9, 1922.

To the Commission:

On August 27, 1922, there was a rear-end collision between two freight trains on the Colorado & Southern Railway at Marnel, Colo., resulting in the injury of 1 employee.

## Location and method of operation.

This accident occurred on that part of the Southern Division extending between Southern Junction and Walsenburg Junction, Colo., a distance of 46.6 miles; this is a double-track line, owned jointly by the Colorado & Southern Railway and the Denver & Rio Grande Western Railway, over which trains are operated by time-table and train orders, under the supervision of the Colorado & Southern Railway; the operating rules also provide for a form of manual block signal system, following movements being authorized by permissive cards. The accident occurred just south of the south switch of the northbound passing siding at Marnel; approaching this point from the south there is a 1-degree curve to the right 1,782 feet in length, followed by more than two miles of tangent, the accident occurring on this tangent at a point 2,838 feet from its southern end. The grade for some distance on either side of the point of accident is 1 per cent descending for northbound trains. Although there are two cuts, 991 and 363 feet in length, the northern ends of which are located 1,550 and 3,720 feet south of the point of accident, respectively, a clear view of the point of accident can be obtained for a distance of 3,168 feet. Under Special Rules and Instructions, contained in Time-table No. 3, effective June 5, 1922, all northbound freight trains must stop at Marnel and thoroughly inspect train. Permissive cards are issued at open offices when the preceding train is 10 minutes or more ahead, but has not reached the next open office. The weather was clear at the time of the accident, which occurred at 5.40 a. m.

## Description.

Northbound Denver & Rio Grande Western freight train extra 1133 consisted of 65 cars and a cabooses, hauled by engine 1133, and was in charge of Conductor Smith and Engineman Stoops. This train stopped at Marnel, for the

purpose of an inspection of the train in accordance with the rules, and after standing at this point for 50 minutes, the delay being due to the fact that there were 27 overheated journals in this train, the rear end was struck by extra 908.

Northbound Colorado & Southern freight train extra 908 consisted of 42 cars and a cabooses, hauled by engine 908, and was in charge of Conductor Schuyler and Engineman Roche. At Trinidad, the initial terminal, the crew received copy of train order No. 490, Form 31, reading in part as follows:

"900 Class Engs will not exceed  
a speed of 18 miles per hour be-  
tween Southern Jct and Trinidad \*\*\*, "

This train left Walsenburg, 36.4 miles from Marnel, at 3.15 a. m., according to the train sheet, and 2.40 a. m., according to Conductor Schuyler, departed from Lascar, 19.8 miles from Marnel and the last open telegraph office, at 4.50 a. m., according to the train sheet, and 4.20 a. m., according to Conductor Schuyler, and while traveling at a speed estimated to have been 10 or 12 miles an hour collided with extra 1133.

Engine 908 came to rest on its left side, across the southbound main and passing tracks, out was only slightly damaged, 12 cars in this train were demolished, as were the cabooses and 2 rear cars in extra 1133, while 4 other cars in the train of extra 908 were considerably damaged.

#### Summary of evidence.

At Trinidad, the initial terminal, the air brakes on the four cars then composing the train of extra 908 were tested and worked properly, other cars were picked up en route and the air-brake system worked properly throughout until in the vicinity of Walsenburg, approaching this point speed was reduced, however, on endeavoring to recharge the train line it was discovered the excess pressure head of the pump governor had become inoperative and the brake pipe could not be recharged sufficiently to stop the train until after it had passed the water tank located at that point. At Walsenburg Engineman Roche repaired the air pump, and further delay was encountered by pulling out a drawbar on the cabooses while switching, making it necessary to turn the cabooses and also to cut out the cabooses brake and leave

the air gauge in the caboose inoperative. It was expected that extra 908 would fill out to 80 cars before leaving Walsenburg, but on account of the delay, and the desire to complete the trip within the provisions of the hours of service law, the train departed with only 42 cars and a caboose. On account of the comparatively short train, no retainers were turned up. Engineman Roche stated the air pump worked properly on leaving Walsenburg, and no trouble was experienced in making stops en route. A stop was made at Lascar for the purpose of allowing overheated journals to cool, and setting out two cars, and the train departed from this point more than  $3\frac{1}{2}$  hours behind extra 1133, without having received a permissive card, which should have been issued in view of the fact that extra 1133 had not reached the next open office, Southern Junction, 10.7 miles beyond Marnel. The air brakes held properly when applied at various points between Lascar and Marnel. Approaching the curve south of Marnel a 15-pound brake pipe reduction was made in preparation for the usual inspection stop. Engineman Roche intending to stop between the switches and not expecting to find a train there, inasmuch as he had not received a permissive card at Lascar, the last open office. This application seemed to take effect. According to Engineman Roche, at the time of this application the brake pipe pressure was 70 pounds, while the speed was about 18 miles an hour. On seeing the rear end of extra 1133, he made an additional reduction of 20 pounds, the interval between these two reductions had been sufficient for the pressure to equalize, two torpedoes were then exploded, and he opened the sanders and placed the brake valve in emergency position. The engine crew, together with the head brakeman, estimated the speed of the train at the time of the accident to have been between 10 and 12 miles an hour. Engineman Roche's statements as to when he first saw the rear end of extra 1133 were conflicting, and those of the fireman and head brakeman added nothing on this point. The engineman thought the two torpedoes were exploded about 10 car-lengths north of the first cut south of Marnel, or about 1,150 feet from the point of accident, Fireman Jones, together with Head Brakeman Cooley, who was riding on the left side of the first car at the time the torpedoes were exploded, stated the torpedoes were encountered in the immediate vicinity of the north end of this cut.

Conductor Schuyler said nothing unusual was noticed in the handling of the train between Walsenburg and Marnel. He thought the train had the required percentage of operative air brakes leaving Walsenburg, although no definite inspection was made at that point. After the accident he looked over some of the cars, and stated none of these had less than 6 inches or more than 9 inches piston travel. Members of the crew of extra 908 stated the first they saw of Conductor Smith, who did the flagging for extra 1133 on this occasion, was at the point of accident within a short time after its occurrence.

Approaching Marnel, Conductor Smith, of extra 1138, instructed Flagman Vanpelt to assist in the inspection of the train and other necessary work when the train made the designated stop at Marnel, saying he would assume the rear end flagging duties. He stated that at mile post 136, located 4,092 feet south of the point of accident, a lighted fusee was thrown off, after which he dropped off and placed two torpedoes on the curve at a point about 8 telegraph poles or a quarter of a mile south of the whistling post, which is located 2,541 feet south of the point of accident, then walked to the whistling post, and remained at that point. When extra 908 approached, he flagged them from this point, Engineman Roche sounding two blasts on the whistle in answer to his flag signals and the torpedoes. He had heard an air-brake application made at the time the whistle signal was sounded, and another as the engine passed him, at a speed of 15 or 18 miles an hour, and as the speed of the train did not seem to be reduced, he realized it was not going to be stopped in time to avert an accident. Therefore, he immediately started running toward Marnel, and he said the caboose of extra 908 was about opposite him when the collision occurred. Conductor Smith considered that he fully complied with the rules in regard to flagging, having flagged numerous trains from the point at which he was located in this instance, and no trouble was experienced in bringing trains safely to a stop. The crew of extra 1133, however, thought the flagman should be on the curve south of the whistling post.

Flagman Vanpelt, of extra 1133, said the conductor got off in the vicinity of the whistling post and that later he saw the conductor standing on the tangent track north of the curve. While working around his train, Flagman Vanpelt heard two blasts of a whistle, apparently sounded in acknowledgment of signals; at this time he could see the smoke of the approaching train but the engine had not yet come into sight.

Dispatcher Crispell said he should have issued a permissive card to extra 908 at Lascar, on account of extra 1133 still being within the territory between Lascar and Southern Junction, and offered no excuse for his failure to do so. It also appears from his statements that the train-order board at a station is cleared by the operator on the authority of the train dispatcher.

It will be noted that there is a material conflict in the evidence on two points, the location of the flagman and the time consumed by extra 908 in traveling from Lascar to the point of accident. As to the location of the flagman, it was stated by the engineman, fireman and head brakeman of extra 908 that they saw nothing of him prior to the occurrence of the accident, the engineman said two torpedoes

were exploded 10 car-lengths north of the first cut south of Marnel, which would indicate they were located about 1,150 feet from the point of accident, while the head brakeman and fireman said they were near the cut, or about 1,550 feet from the point of accident. On the other hand Conductor Smith claims he placed torpedoes 8 telegraph poles south of the whistling post, and that he flagged the approaching train from the vicinity of the whistling post, which is 2,541 feet from the point of accident, and he also stated that when the engine of extra 908 passed him the engineman was not looking out.

As to the time consumed by extra 908 in traveling the distance of 19 miles from Lascar to the point of accident, it appears from the statements of Conductor Schuyler that his train left Lascar at 4.20 a. m., and collided with extra 1133 at 5.40 a. m., while the operator at Lascar said that the train did not leave that point until 4.50 a. m. There seems to be no question as to the time of the occurrence of the accident, and if the operator's statement is correct then extra 908 traveled the distance of 19 miles in 50 minutes, or at an average speed of 22.8 miles an hour. According to Conductor Schuyler's statement, his train consumed 1 hour and 20 minutes in traveling this distance, an average speed of 14.3 miles an hour. Conductor Schuyler's statement is supported by the statement of the engineman that it was 4.30 a. m. when he looked at his watch after leaving Lascar; and Conductor Smith, of extra 1133, estimated that extra 908 was moving at a speed of 15 or 18 miles an hour when it passed him.

#### Conclusions.

This accident was caused by the failure of Dispatcher Crispell to issue a permissive card notifying the crew of extra 908 that extra 1133 was ahead of them, the failure of Conductor Smith, of extra 1133, properly to protect his train by flag, and by the failure of Engineman Roche, of extra 908, either to maintain a proper lookout or properly to control the speed of his train.

Extra 1133 left Walsenburg considerably more than 3 hours ahead of extra 908 and had Dispatcher Crispell issued a permissive card to the crew of extra 908 at Lascar, which is 16.6 miles from Walsenburg, then they would have known that extra 1133 was being materially delayed and was still in the territory between Lascar and Southern Junction, a distance of 30.5 miles. Inasmuch as Marnel is prescribed in the time-table as a point where all northbound freight trains are stopped for inspection, it seems reasonable to assume that had he received a permissive card Engineman Roche

would have used greater caution in approaching Marnel and would have been prepared to stop short of the station.

Engineman Roche said that while trouble with the air pump had been experienced at Balsenbourg, he had had no difficulty with it after leaving that point; that the air-brake system worked properly, stopping the train at Lascar without difficulty and controlling the speed of the train at various points en route, also that the train-line pressure was 70 pounds when he made the first application of the air brakes approaching Marnel. Under these circumstances, with no air-brake trouble of any kind, it seems apparent that Engineman Roche either failed properly to control the speed of his train, or else failed to maintain a proper lookout and did not see the flagman of extra 1133 or the rear end of extra 1133 until too late to avert the accident.

The flagging rule of this railway provides in part that the flagman shall go back a sufficient distance to insure full protection. Even if Conductor Smith's own statements are accepted as being correct, it is not believed that he was furnishing proper protection under the circumstances. There is a long descending grade approaching Marnel, and the air brakes have to be used continually in order to control the speed of a train; under these circumstances, when a train standing where extra 1133 was standing, with its rear end south of the south switch, and with a long curve half a mile distant, it is necessary for the flagman to go back an unusual distance to warn an engineman of an approaching train in time to enable him to bring his train to a stop before reaching the point at which trains usually stop for the inspection prescribed by the rules. Had Conductor Smith gone back about 1,000 feet beyond where he said he placed the torpedoes, he would have been visible a distance of about 1 mile and there would have been ample opportunity for an approaching train to be brought to a stop.

All of the employees involved were experienced men. At the time of the accident the crew of extra 908 had been on duty 14 hours and 40 minutes, while the crew of extra 1133 had been on duty 9 hours and 5 minutes, previous to which both crews had been off duty more than 8 hours.

Respectfully submitted,

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Chief, Bureau of Safety.