In re investigation of an accident which occurred on the Denver & Rio Grande Railroad at Husted, Colo., April 4, 1918.

May 19, 1918.

On April 4, 1918, there was a rear end collision between a passenger train and a freight train on the Denver and Rio Grande Railroad, at Husted, Colo., which resulted in the injury of 35 passengers, 3 railroad employees and 1 Pullman employee. After investigation of this accident the Chief of the Bureau of Safety reports as follows:

The First District of the First Division of the Denver & Rio Grande Railroad on which this accident occurred extends from Pueblo, Colo., to Denver, Colo., a distance of 119.35 miles, and at the point of accident, is a single track line over which the movement of trains is governed by time-table and train orders, no block signal system being in use.

Approaching the point of accident from the west there is a 2°30' curve to the left, 1200 feet long through a cut the east end of which is about 10 feet high on the left or inner side, then a tangent 235 feet in length on a fill. The grade is 1 per cent, ascending. The accident occurred on the tangent about 100 feet from its west end and 82 feet west of the switch leading to the passing siding. The trains involved in this accident were freight train No. 86, a third-class train en route from Pueblo, Colo., to Denver, Colo., and passenger train No. 4, a first-class train en route from Ogden, Utah, to Denver, Colo. The weather was foggy.

Train No. 86, consisting of 40 loads and 1 empty, 2,481 tons, hauled by engine 1250, in charge of Conductor Boylan, and Engineman Farley, left Pueblo, Colo. at 8.50 p.m., 5 minutes late. Engine 1158, in charge of Engineman Schoeberlin, was coupled to the rear of this train at Widefield to assist it to Palmer Lake, a distance of 31 miles. This train arrived at Husted at 9 o'clock a.m., 6 hours and 25 minutes late, and stopped on the main track east of the switch leading to the west end of the passing track, and owing to engine 1250 failing for steam, it became necessary to reduce the tonnage of the train at that point. In order to do this the rear 20 cars were cut off and

helper engine 1158 was used to pull them back on the main track west of the passing track switch with the intention of shoving them in on a storage track. After pulling the 20 cars west of the switch leading to the storage track, engine 1158 was unable to start them and in taking the slack two or three times in persistent efforts to get the cars started, the coupler of the east end of the car next to the caboose was pulled out. The head end of the train consisting of 37 cars was then set off in the east end of the passing siding by engine 1550, which was brought back on the main track and pulled the rear end of the train in on the passing track behind the head end. Engine 1158 then set the broken car off the storage track, shoving in to clear the main track and remained there until No. 1 passed at 10.47 a.m. After train No. 1 had passed helper engine 1158 was used to set off some more cars on the storage track and while doing so was struck by train No. 4 at a point on the main track about 82 feet west of the switch leading to the passing track.

Train No. 4 consisting of one mail and baggage car, one express car, two coaches, two standard sleepers, one tourist car and one diner, hauled by engines 759 and 755, coupled together, in charge of Conductor Chilvers and Engineman Gruber and Grass, left Pueblo at 9.15 a.m. on time, passed Roswell, the last open telegraph office, located 11 miles west of the point of accident at 10.43 a.m., two minutes late, and while running at a speed estimated between 25 and 30 miles per hour struck engine 1158 while handling the rear of train No. 86 at Hunted, derailing engine 759 and slightly damaging engine 755, and the equipment of No. 4, also derailing 5 cars, one of which was destroyed, in train No. 86. No. 4 was due at Hunted at 11.03 a.m. and was on time when the accident occurred between 11.08 and 11.03 a.m.

Conductor Boylan, of train No. 86, stated that on arrival at Hunted he went to the head end of his train and was told by Engineman Farley that his engine was failing for steam, and that he did not think he could make Pahaska alone. It was then decided to set off some cars to reduce the tonnage of the train. He found that in order to make the reduction it would be necessary to make three switches in setting out the least important freight. He had 20 cars cut off and pulled back on the main track by helper engine 1158 over the west switch for the purpose of switching out the unimportant loads on the reducing track, but engine 1158 was unable to start them and in taking the slack two or

three times in efforts to get them started the coupler was pulled out of the east end of the car next the caboose. He then went to the forward end of the train and had engine 1250 back the front portion of the train off on the east end of the passing siding and brought engine 1250 back on the main track and used it to pull the rear portion in on the west end of the passing siding to clear the main track, after which engine 1158 shoved the bad order car in on the reducing track and remained there until train No. 1 passed at 10:47 a.m. He stated that he knew No. 4 was due at Hunted at 11:03 a.m. and that when No. 1 passed he had 15 minutes to do the switching ahead of train No. 4. He further stated that after No. 1 passed, engine 1158 backed out of the siding and he instructed Brakeman Kirkpatrick to look out for No. 4, but received no acknowledgment from him. He stated his object in using the front brakeman to do the flagging was to get the use of the most experienced man in switching, as he could not rely on Kirkpatrick the younger man to make the switch. Kirkpatrick opened the switch for engine 1158 to back out and he opened the switch leading to the passing track. Brakeman Kirkpatrick was on the rear of the caboose when they headed into the passing track against the train. They pulled 4 cut of cars out and shoved them up on the storage track and had backed out and were shoving in again against their train on the passing siding when they were struck by No. 4. He then went back and found Kirkpatrick standing about 3 car lengths back of the engine. He asked him why he did not flag No. 4, as he had been told, and Kirkpatrick replied, that he had not heard the instructions.

Engineman Schoeberlin of helper engine 1158 stated that while waiting for No. 1 to pass, he and his fireman, and the conductor and both brakemen were in the caboose. After No. 1 passed Brakeman Kirkpatrick opened the switch and while engine 1158 was backing out over the switch, he noticed Kirkpatrick running back alongside his engine. He saw him pass the gangway of the engine and supposing that he had gone back to flag No. 4, paid no more attention to the matter of protection, but was watching his fireman for signals. Inasmuch as they were all working close together he did not sound the whistle signal for flagman to go back. After making one or two switches they backed out off the main track and were shoving in on the passing track again to get more cars when the accident occurred.

Fireman Warren, of engine 1158, stated that while reducing the train he was on the engine passing signals from the trainman to the enginemen. The weather was foggy and a light snow blowing. He was taking signals from a man on top of the train about 8 cars ahead of the engine. He could only catch the signals at intervals through the rifts of smoke and did not know whether it was the conductor or a brakeman. The last signal he saw was to "come ahead" and not over one minute later he saw No. 4 approaching and saw Brakeman Kirkpatrick running back between the engine and the stock guard.

Brakeman DeYarman, of train 66, stated that he was the rear brakeman, but was assisting in setting off the cars. At the time of the collision he was at the road crossing opposite the depot setting brakes on some cars, in accordance with the instructions of the conductor, otherwise he would have protected his train against No. 4. The weather was foggy and signals could not be seen more than 6 or 8 car lengths. He did not see Brakeman Kirkpatrick after they left the passing track.

Brakeman Kirkpatrick, of train 66, stated that he had been in the service of the railroad three months and 25 days and that he was the front brakeman. After their arrival at Husted and perhaps an hour or more before the collision occurred, he went back to the rear by order of his conductor and assisted in switching. He stated that he was on the fourth car from the engine watching for signals from the conductor, but it got so smoky that he could not see. He then got down and went out on the bank out of the smoke where he could then see the conductor coupling or uncoupling cars about 12 cars forward, and between him and the other brakeman. He stated that he knew No. 4 was about due, but that he had not been instructed to go back to flag and did not know but that the conductor had time on No. 4. He further stated that he was about four car lengths ahead of the engine when he heard No. 4 whistle for the station, and he then attempted to flag that train.

Engineman Gruber, of engine 769, the leading engine on No. 4, stated that the weather was very foggy and a flagman could not have been seen over 500 feet. He was approaching Husted between 11.02 and 11.05 a.m. There was no flagman back and he struck the freight train just west of the west switch. He jumped off just before the collision occurred and when the train stopped he was at the gangway of the second engine and then saw the flagman within 15 feet of him.

Engineman Crane, of engine 755, the second engine on No. 4, stated that they were approaching Husted at a speed of about 25 miles an hour. He corroborated the statement of Engineman Gruber with respect to weather conditions and length of vision, and further stated that there was no fusee, torpedoes or other warning given them approaching Husted.

Fireman Saunders, of engine 769, the leading engine on No. 4, stated that when his engineman sounded the whistle signal for Husted station he stopped firing and got up on the seat box. They struck no torpedoes and there was no fusee displayed, but as they approached the west switch, he saw the helper engine and the flagman at the same time about 300 feet away. He warned Engineman Gruber who applied the air brake in the emergency and they both jumped off.

This accident was caused by train 86 occupying the main track on the time of train No. 4 without protection as required by rule 99 of the operating department of the Denver & Rio Grande Railroad System, reading in part as follows:

> When a train is stopped by an accident, obstruction, or from other cause, the flagman must immediately go back with stop signals to stop any train moving in the same direction. At a point one-third of a mile from the rear of his train, he must place one torpedo on the rail; he must then continue to go back at least one-half of a mile from the rear of his train and place two, sixty feet apart (two rail lengths), when he may return to a point one-third of a mile from the rear of his train, and he must remain there until recalled by the whistle of his engine ....

Circular No. 15 issued from the office of the general superintendent under date of February 12, 1907, and made a part of the rules of the Operating Department reads in part as follows:

> The rear brakeman and flagman will make it their special and important duty to properly protect the rear of their trains in accordance with the rules, allowing nothing to interfere with the prompt and efficient discharge of this duty.
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> Conductors will be held responsible for the strict observance of these special rules by their rear brakeman and flagman.

Under this order, responsibility for the failure to provide proper flag protection and the consequent accident rests primarily with Conductor Boylan. The testimony shows that he personally excused DeYarmin, the regular flagman, from that duty at Rusted and assigned him to the duty of assisting in the switching because he could not rely on Kirkpatrick, the head brakeman, to do that work. He claims to have instructed Brakeman Kirkpatrick to "look out for No. 4." Kirkpatrick denies that such instructions were given him. Owing to the conflicting statements it is impossible to definitely determine whether or not the instructions were given. Assuming, however, that Conductor Boylan gave the instructions as claimed, the fact that he wanted neither acknowledgment nor understanding from Kirkpatrick justifies the belief that they were given in a perfunctory manner liable to have been unheard or misunderstood, and that Conductor Boylan did not take proper precaution to see that his train was properly protected.

Rule 106 of the Operating Department reads as follows:

> Trains will be run under the direction of the conductor, but the engineer will be held equally responsible for the violation of any of the rules governing the safety of trains, and they must take every precaution for the protection of their trains, even if not provided for by the rules.

Under the above rule Engineman Schoeberlin is equally responsible with Conductor Boylan for failure to see that his train was properly protected. While occupying the main track on the time of No. 4, a superior train, he neither sounded the whistle signal for his flagman to go back nor took any other precaution to see that protection was provided. Engineman Schoeberlin was extremely negligent in assuming that he was working under flag protection simply because he saw a brakeman pass the gangway of his engine during the progress of switching movements. Brakeman Kirkpatrick also shares in responsibility for failure

to protect the train. While his experience was very limited he was occupying temporarily the position of rear brakeman upon whom the duty of flagging devolves, and being aware of the fact that the conductor and flagman were engaged in switching on the time of No. 4, he is at fault in assuming that No. 4 was running late.

The conductor and enginemen responsible for this accident were experienced men and had good records. The brakeman had been in the service only three and a half months. At the time of the accident the engine crew had been on duty 11 hours and 12 minutes and the train crew 14 hours and 22 minutes.