

**In re Investigation of accident which occurred
on the Denver & Rio Grande Railroad near
Cotopaxi, Colo., November 12, 1917.**

January 3, 1918.

On November 12, 1917, there was a rear-end collision between two troop trains on the Denver & Rio Grande Railroad near Cotopaxi, Colo., which resulted in the death of 3 soldiers and the injury of 16 soldiers and 3 employees. After investigation of this accident the Chief of the Bureau of Safety reports as follows:

The second district of the First Division of the Denver & Rio Grande Railroad extends between Salida and Pueblo, Colo., a distance of 95.76 miles; that part on which the collision occurred is a single track line over which train movements are governed by time-table and train orders.

Eastbound troop train 2d No. 16 consisted of 6 baggage cars, 9 Pullman sleeping cars, 6 Pullman tourist cars and a caboose, hauled by locomotive 1001, and was in charge of Conductor Schmeltzer and Engineman Greenman. It left Salida at 1.56 a.m., and about 4.30 a.m. came to a stop behind eastbound passenger train 1st No. 16, the locomotive of which train was removing bad order cars from the rear end of eastbound freight extra 1134. When train 2d No. 16 came to a stop its locomotive was approximately 2,981 feet west of Cotopaxi station. After being delayed there about an hour it started forward, had moved about 500 feet and was traveling about 4 miles an hour when it was struck by train 3d No. 16.

Eastbound troop train 3d No. 16 consisted of 3 baggage cars, 3 Pullman sleeping cars, 1 C.C.&St.P. sleeping car, 3 Pullman tourist cars, 6 box cars loaded with government supplies, and a caboose, hauled by locomotive 1177, and was in charge of Conductor Kemp and Engineman Bowsher. This train left Salida about 3.00 a.m. and arrived at Swissvale, the last open telegraph office, 7.11 miles beyond Salida and 18.3 miles from Cotopaxi, at 3.20 a.m. It was held there by the dispatcher until he could get into communication by bell signal with the operator at Cotopaxi, the office at that place not being open at night, and learn what was delaying trains 1st and 2d No. 16; it left Swissvale at 4.50 a.m., and collided with the rear end of train 2d No. 16 near Cotopaxi at 5.33 a.m., while traveling at a speed of about 10 or 15 miles an hour.

Behind the caboose of train 2d No. 16 there was a combination mail and baggage car, which was being used as a hospital car. As a result of the collision this car forced the caboose against a Pullman car ahead, tearing away the superstructure of the caboose. The combination car itself telescoped the Pullman car about half its length. The weather at the time of accident was clear.

In the vicinity of the accident the track follows the course of the Arkansas River, the grade being about 1 per cent. descending eastward. Beginning at Mile Post 193, 1-1/3 miles west of Cotopaxi, and proceeding eastward the track is tangent for 725 feet; then there is a compound curve to the left 1,600 feet in length, which is of 3 degrees for 1,000 feet, then of 5 degrees for 600 feet, followed by 150 feet of tangent track to the point of collision. Proceeding eastward from the point of accident the track is tangent for about 100 feet, followed by a 5-degree curve to the right about 700 feet in length. Approaching the point of accident the view from an eastbound train was limited to 750 feet on the fireman's side of the locomotive and 350 feet on the engineer's side, there being an embankment and rock bluff on the inside of the curve.

Engineman Greenman, of train 2d No. 16, stated that his train left Salida at 1.55 a.m., in accordance with an order to run three hours late Salida to Pueblo. He stated that his train stopped behind train 1st No. 16 west of Cotopaxi at 4.30 a.m., in such a position that he thought the rear end could be seen for 15 or 20 car lengths from the rear; that he whistled out the flagman. After his train had stood there about an hour, an engine standing on a passing track whistled a signal for his train to proceed; he called in his flagman, started the train forward, and after it had moved about 7 or 8 car lengths it was struck by train 3d No. 16.

Conductor Schmelzer, of train 2d No. 16, stated that when his train stopped near Cotopaxi he instructed his flagmen to go back and protect the train, and that he immediately started back. He said that he then went forward to the station and at 5.20 a.m., after getting "Complete" on an order, came out and tried to give his engineman a signal to proceed, but on account of trees and other obstructions he was not able to do so, and had the engineman on a train standing on a passing track whistle his engineman a proceed signal. He stated that his engineman then whistled for the flagman to come in; and after about four minutes the train started forward. He also stated

that it is not in accordance with the rules for a flagman to be called in before the train starts, when a passenger train is due, but that he was not close enough to talk to the engineman; and figured that the engineman would run the train down to the station at Cotopaxi so that the rear end could be seen for at least a quarter of a mile from a following train, then stop and call in the flagman. He said that his flagman had been with him about a month and he had always found him first class in every respect.

Flagman Lewis, of train 3d No. 16, stated that his train stopped on the curve west of Cotopaxi; and that he grabbed his red lantern and two red fuses, and had gotten down to the ground before the train had quite stopped. He stated that he thought he had three torpedoes on his lantern, but when he got back he found that he only had one; he put down that one, went back a little farther and built a fire, about 8 or 10 telegraph poles from the rear of his train; and that from that point he could see back about a mile. He said that he could not see the rear end of his train from the place where he was flagging, because of the rock bluff and a cut. He stated that he did not go back as far as required by Rule 99, because he could then have reached a point where he could not have been seen so well as where he was. He further stated that after he had been out about an hour he was called in, and he thought his train must have been given more time on the following train; that he then lighted a 10-minute red fuse and stuck it in a tie in the middle of the track, opposite the point where he had built the fire, and where it could be seen from a following train; and that it burned properly. He said that he then started to run toward the train, stopped and picked up the torpedoes he had previously placed on the track; and that he picked it up because he thought that probably the following train would not pass over it for some time and it would cause that train needless delay in proceeding under flag protection until it met something. Flagman Lewis stated that he consumed about five minutes in running back to his train, which began to move before he reached it, and that he boarded the caboose, turned about and saw the reflection of the headlight on the engine of train 3d No. 16, and jumped through a window. He said that after the accident the engineman of train 3d No. 16 told him that he had not seen the fuse. Flagman Lewis stated that about 40 minutes after the accident he, accompanied by a military officer and another man, went back to look for the fuse; that before starting he told them where the fuse would be found, and when they got back they found it lying about three feet east of the point where he had said it would be. He stated that it was about half burned and the top was broken off as if the

fussee had been struck by the pilot of a locomotive. He said that after he was called in, before the accident occurred, he looked back when he stopped to pick up the torpedo and the fussee was still burning. Flagman Lewis stated that he took a written examination on the book of rules on July 10th, and that his conductor had given him a circular letter to all train and enginemen, instructing them to use every possible precaution in the movement of troop trains. Flagman Lewis stated that when leaving Felida he had a supply of torpedoes, and while he did not count them he usually had at least 25.

Engineman Bowsher, of train 3d No. 16, stated that he stopped at Swissvale at about 3.15 or 3.18 a.m., went to the telegraph office and the operator told him that trains 1st and 2d No. 16 had not yet passed Cotopaxi so that his train was to be held there until they did pass Cotopaxi, and his train therefore was run in on the siding; at 4.30 a.m., the conductor came up on the engine with an order that his train was to meet westbound passenger train No. 15 at Fernleaf, the same place at which trains 1st and 2d No. 16 were to meet it, and his train at once left Swissvale. He stated that when approaching the mile board west of Cotopaxi the speed was about 10 miles an hour; he was expecting to find a train at Cotopaxi to which he was to deliver an order, and when he rounded the curve he saw the rays from an electric headlight which he thought was from that train, on the side track; at almost the same time he saw the rays of his own headlight shining on the windows of the cars in train 2d No. 16. Engineman Bowsher stated that he applied the brakes in emergency and jumped from the locomotive. He stated that he did not see any red light when approaching the point of accident; and that a piece of fussee which he saw after the accident had not been burned, but had been broken.

Fireman Burgess, of train 3d No. 16, stated that he had been in the employ of the Denver & Rio Grande Railroad only nine days; that approaching the point of accident he was sitting on his seatbox looking ahead; but that he saw no fussee in that vicinity.

Conductor Kemp, of train 3d No. 16, stated that the speed of his train was about 10 miles an hour approaching the point of collision. He also stated that after the accident the flagman of train 2d No. 16 handed him part of a fussee, but there was no indication of its having burned.

Flagman Porter, of train 3d No. 16, stated that immediately after the accident he started back to flag; that he saw the place where the flagman of train 2d No. 16 had

built a fire, four or five feet from the track, but that he did not see any burned or used fussee.

Trainmaster Wilcox, who sat riding in the caboose of train 3d No. 16 when the accident occurred, stated that the piece of fussee which the flagman of train 1d No. 16 claimed he found after the accident was about three-fourths the full length of a fussee; this piece had the appearance of having been broken. He said it was produced at a military Court of Inquiry relative to the cause of the accident, and was retained by the officer in charge. Trainmaster Wilcox stated that it was his opinion that if the flagman of train 3d No. 16 had left the torpedo on the rail, which he claimed to have put down and later picked up, the accident would have been averted. He considered that flagman a first class employee.

Dispatcher Brown, located at Pueblo, stated that trains 1st and 1d No. 16, which were to meet westbound passenger train No. 15 at Fernleaf, 3.06 miles east of Cotopaxi, were delayed so long at Cotopaxi that he decided that train No. 15 would not have to wait much longer at Fernleaf if he were to allow train 3d No. 16 to proceed and also meet train No. 15 there; and he therefore permitted train 3d No. 16 to leave Swissvale.

Rule 69, of the operating rules of Denver & Rio Grande Railroad, reads 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 torpedoes on the rail, 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; but if a passenger train is due within ten minutes, he must remain until it arrives. When he comes in he will remove the torpedo nearest to the train, but the two torpedoes must be left on the rail as a caution signal to any following train. At night he will also leave a green fussee burning on the track. If there is not a clear view for one-fourth mile to the rear of train, the train must stop before calling in the flagman, and move ahead at a speed of not less than four miles per hour until it reaches a point where the view is unobstructed for one-fourth mile in its rear.

This accident was caused by the failure of Flagman Lewis, of train 1d No. 16, properly to protect the rear of his train. He stated that when he started back he supposed that he had three torpedoes on his lantern, but when he got back he found he had only one; and that he did not go back any farther than he did because he considered that there he could best be seen from a following train. He also claimed that when he was called in he lighted a red fuse and left it burning on the track; and on his way back to his train he picked up the torpedo he had placed on the track, because he thought that a train following some time later might needlessly be delayed in proceeding under flag protection after striking it. As for the fuse, while Flagman Lewis stated that after the accident he found a piece of the fuse and it was half burned, yet all the other employees he saw it stated that it had not burned, but was only broken; and the engineer and fireman of train 3d No. 16 stated that they did not see any fuse burning as their train approached the point of accident. The failure of Flagman Lewis to see that he was properly supplied with torpedoes before starting back to flag, and his action in picking up the only torpedo he had placed on the track, as well as his failure to comply with Rule 92 and remain out to flag in view of the fact that the third section of his train was overdue when he was called in, represented inexcusable negligence on his part.

A contributing cause of the accident was the fact that Enginemen Greenman, of train 2d No. 16, permitted in his flagman to be moving his train to such a position that a clear view of the rear end could have been had for one-fourth mile.

Flagman Lewis entered the service of this railroad as brakeman July 17, 1917, and had a clear record.

At the time of accident the train crew of train 1d No. 16 had been on duty 4 hours 33 minutes, and the engine crew 4 hours 13 minutes. The train crew of train 3d No. 16 had been on duty 4 hours 5 minutes and the engine crew 3 hours 43 minutes. The shortest period off duty of any member of the crews involved, prior to starting on this trip, was 11 hours 10 minutes.

W.F.B.