In re investigation of an accident which occurred on the Northern Pacific Railway near Marshall, Washington, on January 17, 1917.

February 12, 1917.

On January 17, 1917, there was a rear-end collision between two freight trains on the Northern Pacific Railway near Marshall, Washington, resulting in the death of 3 employees. After investigating the nature and cause of this accident the Chief of the Division of Safety reports as follows:

The trains involved in this accident were westbound extra 1693, consisting of engine 1693, 11 loaded and 34 empty cars and a caboose, and westbound extra 1545, consisting of engine 1545 and a caboose.

On the date of the accident, extra 1693, in charge of Conductor Williams and Engineman Snyder, left Parkwater, Wash., a terminal 4.5 miles east of Spokane, at 4.38 a. m., destined for Pasco. Owing to delays encountered between Parkwater and Spokane, extra 1693 did not leave the latter point until 7.00 a. m., and while running at a speed of from 12 to 15 miles per hour, at about 7.30 a. m., its rear end was struck by extra 1545.

Extra 1545, in charge of Conductor Sullivan and Engineman Schnellbacher, left Parkwater at 7.00 a. m. on the date of the accident, and about 30 minutes later, while running at a speed of 30 or 35 miles an hour, it collided with the rear end of extra 1693 at a point approximately 11 miles west of Parkwater, and 2.5 miles east of Marshall. At the time of the accident the weather was frosty, with some fog, and daylight was just breaking. The force of the collision demolished the wooden caboose of extra 1693, and the wreckage almost immediately took fire. Conductor Williams and two of his brakemen, who were in the caboose at the time, were instantly killed, and their bodies were badly burned before they could be recovered from the burning wreckage. Immediately ahead of the caboose was a steel gondola, which was derailed and thrown to the side of the track. A steel underframe ballast car ahead of the gondola was demolished, and its wooden parts were consumed in the fire which spread from the burning caboose. Six other cars at different points in the train were slightly damaged. The engine of extra 1545 was derailed, but sustained little or no damage other than a broken pilot and front end.

That portion of the road on which this accident occurred is a double track line, equipped with automatic block signals of the electric motor semaphore type, giving clear, caution

and danger indications in the upper, right-hand quadrant. Approaching the point of collision from the west, signal 5.5, located nearly 3 miles away, was in the clear position when extra 1545 passed it, and was noticed by Engineman Schnellbacher. From this point to the point of collision there is a grade of approximately 1% ascending westward. There are no deep cuts, and no bad curves to obscure the vision of an engineman. Signal 4.9, which was in the caution position when extra 1545 passed it, is located 6,562 feet west of signal 5.5, at the west end of a 3-degree curve to the right, 317 feet long, which curve is approached from the west by a tangent nearly 900 feet long. Between signal 4.9 and signal 5.5, located 5,658 feet further west, there are four short curves, the maximum being 4 degrees. Signal 5.5, which indicated stop when passed by extra 1545, is located 121 feet from the eastern end of a 2-degree curve to the right. The total length of this curve is 404 feet, and it follows a tangent 955 feet long. Following this curve is a tangent 4,144 feet long, followed by a 3-degree curve to the left 527 feet long. The collision occurred just beyond the west end of this latter curve, 4,740 feet west of signal 5.5.

Engineman Schnellbacher stated that his train left Parkwater at 7 a. m. He observed the clear indication of three automatic signals, the last one being signal 5.5. He said that he had kept his head out of the side window of the cab from the time his train left Parkwater until it reached this point, and had become chilled, due to an illness he had recently experienced. He thereupon closed the side window and endeavored to observe the signals through the front window of the cab. He stated that he was still looking for the signals when the air brakes were applied from his caboose. He said he thought the caboose had broken off, and he immediately closed the throttle and applied the driving wheel brake, the collision occurring at practically the same instant. He did not at first know what sort of an obstacle his engine had struck, but as soon as the train stopped he opened the side cab window and dropped to the ground, and then saw that he had collided with a train. He stated that the headlight on his locomotive was burning, and that the weather was foggy and slightly dark. He said that the first block signal he came to after leaving Parkwater he observed plainly as soon as his locomotive came onto straight track leading up to it. The next one he observed when probably 20 car lengths away, and the next one, which was signal 5.5, he did not see until he was very close to it, and he governed himself by its day indication. This was the last signal that he observed. He explained his failure to observe signals 4.9 and 5.5 by the statement that his vision was obscured by smoke and steam trailing down in front of the cab window, and said that when he blew the whistle, steam from it settled down in front of the cab and clouded the window. He said there was also a steam leak in the back cylinder

head and steam chest on the left hand side of the locomotive, and steam from this leak blew across the front end so that he was unable to see the rails in front of the locomotive at all times. He said he knew extra 1693 was called to leave Parkwater at 4.30, but did not expect to find it three hours later such a short distance away from its starting point.

Conductor Sullivan, of extra 1545, stated that his train left at exactly 7.00 a. m., and the collision occurred at 7.30. He noticed that extra 1693 registered out at 4.30, but did not know what time the train actually left. He said he did not notice any automatic signals, and the first intimation he had of the impending collision was when one of his brakemen who was riding with him in the cupola of the caboose called attention to the rear end of the train ahead. He opened the side window of the cupola, and saw the frame of the caboose and rear lights, and immediately called to the brakeman to open the air valve, at the same time making an effort to get at the air valve himself. One of his brakemen reached the valve and applied the brake before he could get to it. He stated that when he first saw the caboose he judged it to be about 12 or 15 car lengths away, and he noted very little decrease in the speed of his train before the collision. He said that the speed of his train was in the neighborhood of 35 miles per hour. Conductor Sullivan said that he paid no attention to the signals, but doubted that he could have seen them with the caboose windows shut, because of the smoke and steam from the engine trailing back over the cupola.

Brakeman Poole, who turned the air valve, said that he did not see the train ahead. The first notice he had of the impending collision was when brakeman Turya called attention to the caboose ahead and wondered if the engineman saw it. He said that Conductor Sullivan then stuck his head out of the window and immediately called out to pull the air valve, and he pulled it before he struck the floor of the caboose. Immediately after the collision Conductor Sullivan sent him ahead to flag. He said he did not notice any automatic signals after leaving Spokane, as he could not see them from his side of the cupola on account of steam from the engine obscuring his vision. The statements of Brakeman Turya and Cowan, who were the other members of the train crew of extra 1545, agree with the statements made by Conductor Sullivan and Brakeman Poole.

Fireman Johnston, of engine 1545, stated that he had his windows closed and side curtains down, and did not see any signals after leaving Spokane. He saw nothing of the train ahead previous to the collision. He stated that he was down on the deck fixing his fire when the collision occurred and the first he knew of it was when the fire shot out of the open fire door when the engine struck the train ahead. He said that he did not feel any application of the brakes previous

to the collision and that he always called signals to the engineer when he saw them, but after leaving Spokane on this trip he saw no signals, and Engineman Schnellbacher did not call any signals to him.

Engineman Snyder of extra 1693 stated that his train left Parkwater about 4.35, but on account of delays in going through the yard did not get away from Spokane until 7 o'clock. The first intimation he had of the collision was when the air brakes on his train applied. He closed the throttle and sounded the train break-in-two signal. It was then 7.30 a. m., there was some fog and it was not quite daylight. He stated that the automatic signals were all clear as he passed them. Helped in automatic territory he called the position of signals to his fireman as he passed them; at the time of the collision his train was running between 12 and 15 miles per hour.

The statement of Fireman Vinner of extra 1693 was essentially the same as that of Engineman Snyder, except that he did not see any signals after leaving Spokane, as he was too busy with his fire to be able to observe them.

This accident was caused by the failure of Engineman Schnellbacher to observe and obey the indication of automatic block signals 4.9 and 5.5, the former of which indicated caution, and the latter stop, when his train passed them. The fact that smoke and steam trailing in front of the cab window obscured his vision, can be no excuse for Engineman Schnellbacher's failure to observe these signals. He knew signals were placed alongside that track to govern train movements over it, and the fact that he was unable to obtain a clear view ahead should have caused him to observe extreme caution in running past signals. Yet by his own statement, he ran his engine at high speed when he could see only occasional glimpses of the track ahead, and did not even know that his engine had collided with the rear end of another train until after his train had stopped and he had got down off his engine after the accident.

Fireman Johnston is also censurable for his failure to keep a proper lookout, and obey rule 915 of the Northern Pacific Railway Company's rules relating to the duties of firemen, which reads as follows:

> "They must * * * carefully note and repeat to the engineman signals observed; approaching train order and interlocking signals, determine their indication and call same to engineman."

Engineman Schnellbacher was promoted to road engineman of the Northern Pacific Railway on January 12, 1907. He was discharged on February 12, 1912, for being partially responsible

for a head-on collision, and was re-employed on May 25, 1912, upon request of superintendent and master mechanic of the railroad.

Fireman Johnston entered the service of the Northern Pacific Railway as a fireman on July 22, 1911. He passed an examination on block signal rules on January 30, 1915, and was re-examined on rules on August 5, 1915. There is an entry against his record dated November 29, 1916, for violation of rule 915 in failing to observe the position of a home signal. At the time of this accident they had been on duty less than two hours, after a period of 13 hours off duty.