

Nov. 28, 1919

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
NORTHERN PACIFIC RAILROAD AT HELENA, MONT.,  
ON OCTOBER 1, 1919.

November 22, 1919.

On October 1, 1919, there was a head-end collision between a mixed train and a locomotive running light on the Northern Pacific Railroad at Helena, Mont., which resulted in the death of one employee and injury of one employee. After investigation of this accident, the Chief of the Bureau of Safety reports as follows:

The accident occurred within the yard limits of Helena, on the First Sub-division of the Rocky Mountain division of the Northern Pacific Railroad. This portion of the First Sub-division is a single-track line and within the yard limits, train movements are governed by time-table and train orders. No form of block signals is in use throughout the yard limits, although an automatic block signal system is in use on the main line outside of Helena yards. Fifth Sub-division trains use the track of the First Sub-division from Helena west to a point called Junction Switch, a distance of 10,559 feet, and then they diverge toward the south on to the Fifth Sub-division track and go to Rimini. A foot-note on the time-table of the Fifth Sub-division reads as follows:

"Fifth Sub-division trains will protect themselves against First Sub-division trains between Helena and Junction Switch."

According to this rule all Fifth Sub-division trains, including passenger trains, are required to protect against all classes of First Sub-division trains while operating within

the yard limits of Helena.

Beginning at Helena station and proceeding westward toward the point of accident, the track is straight for 1,783 feet, followed by a 1-degree curve to the right 1,150 feet in length and then 650 feet of tangent track to the point of collision. Approaching from the west, beginning at a crossing with the Great Northern Railroad, there is a 1-degree curve to the left 1,763 feet in length, followed by a tangent 9,465 feet in length to the point of collision. The western yard limit board for Helena is located about 400 feet east of the above mentioned Great Northern Railroad crossing, or about 2 miles west of the point of accident. The grade at the point of accident is about .7 per cent descending for westbound trains.

Mixed train No. 265, consisting of locomotive 360, 3 loaded box cars and 1 combination baggage car and coach, was a Fifth sub-division train scheduled to leave Helena at 8.40 a.m. on Wednesdays and Saturdays. Before leaving Helena on the morning of the accident, the conductor was given a clearance card and he asked the operator for a line-up of the trains coming into the yard. This request was communicated to the dispatcher by the operator, and he gave the following verbal line-up:

"There are two extras by G.N. crossing, and another will be by there at 8.40 a.m."

The conductor, however, denied hearing anything said about the train which was due by the crossing at 8.40 a.m. Upon the arrival at Helena of extra 1724 and light locomotive 4015, train

No. 265 left Helena station at 8.42 a.m. and at about 8.48 a.m., while running at a speed estimated to be 6 or 8 miles an hour, collided with eastbound locomotive 1725 at a point about 2,580 feet west of the Helena passenger station.

Eastbound locomotive extra 1725, in charge of Engineer Bresnan, had been operating as a helper for a westbound train from Helena to Blossberg, a distance of 20.6 miles, and was returning light to Helena. It left Blossberg at 7.28 a.m., and according to the U. S. sheet of the operator at the Great Northern Railroad crossing, it passed that point at 8.44 a.m. At about 8.48 a.m., this locomotive collided with mixed train No. 265 at a point about 2.13 miles east of the Great Northern Railroad crossing. At the time of the accident a dense fog prevailed.

When the trains collided, the head end of locomotive 265 was forced upward, the front drivers being raised from the rails, the engine-truck frames were broken and the engine frame was badly bent and broken in one place. One cylinder was broken off, and the smoke box was torn off from the boiler. The tender frame was completely demolished and the cistern straddled the boiler, tearing the cab from the boiler. The first box car in train No. 265 was destroyed, while one end of the second box car and locomotive 1725 were damaged. Engineer Sherwood of train No. 265 was killed as a result of the accident and Fireman Morsenson of locomotive 1725 was injured.

Conductor Billings of train No. 265 stated that on the morning of the accident he received a clearance card at Helena

and was told by the operator that there were two eastbound trains due. He then went to his train, gave his engineman the clearance card and told him that there were two eastbound trains due. At about that time eastbound freight train extra 1724 came in and locomotive 4015 came in directly afterwards. To make sure that these were the two trains mentioned by the operator, Conductor Billings went to the express office and telephoned to the operator at the yard office. The operator told him that these were the two trains he had made reference to and asked him to wait until he called the dispatcher. Conductor Billings stated that he held the phone until he supposed the operator had called the dispatcher and then went to his train and told his fireman that extra 1724 and 4015 were the two trains referred to by the operator. He then gave his engineman a proceed signal and his train left Helena station at 8.42 a.m. He rode in the baggage compartment of the combination car up to the point of the collision and he stated that the weather was so foggy that he was unable to see a distance of more than 300 feet. He estimated the speed of his train at the time of the accident at 6 or 8 miles an hour. He did not feel the application of the brakes prior to the collision but heard his engineman sound one blast on the whistle. Conductor Billings said he did not hear the operator say anything about the third eastbound train when he received the lineup, and nothing was said about that train when he telephoned to the operator after the arrival of the first two extras.

Fireman Barclay of train No. 265 stated that while his train was standing at Helena on the morning of the accident, Conductor Billings came to the locomotive, gave the engineman the clearance card and told him that there were two eastbound trains due. Eastbound freight train extra 1724 was then pulling by the station and locomotive 4015 followed close behind. The conductor remarked that he was uncertain as to whether the operator considered the light locomotive as the second train and the engineman suggested that he call the operator on the telephone and find out. Conductor Billings then went into the express office to telephone and on coming out gave a proceed signal. Fireman Barclay stated that his train proceeded to the west switch of the passing track and that the switchman there opened the switch and gave a signal to proceed. The weather was very foggy and the first intimation he had of the impending accident was when he heard the engineman sound one blast on the whistle, followed by a sudden jerk caused by an application of the brakes. On looking up he saw the opposing locomotive about 40 feet in front of his train and he jumped to the ground. The fireman further stated that to the best of his knowledge the train was traveling at a speed of 6 or 8 miles an hour at the time of the collision.

Head Brake man Helman of train No. 265 stated that he was riding on the fireman's seat box approaching the point of accident and on account of the heavy fog did not see locomotive 1725 until it was only about 50 feet distant. He called out to the engineman, "Here comes an engine," and at about the same

time his engineman sounded one blast on the whistle, but the head brakeman could not remember whether or not the brakes were applied.

Engineman Brennan of locomotive 1725 stated that on the morning of the accident he had running orders from Blossberg to Helena. He operated his locomotive at the usual rate of speed until he encountered fog a short distance west of the Great Northern Railroad crossing. He then slowed down so that he could see the position of the semaphore at this point, which point he claimed he passed at about 8.40 a.m. He stated that he approached the point of accident at a speed of 7 or 8 miles an hour, prepared to stop, as he expected to encounter switching locomotives in this vicinity. He first saw train No. 265 when it was only about 4 car lengths distant; he closed the throttle, but before he could apply the brakes in emergency the collision occurred. Engineman Brennan further stated that approaching Helena he was planning to reach the passing track opposite the station in time to clear westbound passenger train No. 3, due to leave the station at 8.55 a.m., and, to make sure that he had sufficient time, he compared watches with his fireman. On account of the fog he did not think train No. 265 would leave the station ahead of train No. 3. He knew that train No. 265 was due to leave Helena at 8.40 a.m. and was looking out for that train as well as switching engines and other trains and sounded his whistle repeatedly after entering the yard limits.

Fireman Moryanson of locomotive 1725 stated that his watch was about 5 minutes faster than Engineman Brennan's, and that his watch showed the locomotive as passing the Great Northern Railroad crossing at 8.42 a.m. He also stated that on account of the dense fog, acting upon instructions from the engineman, he was sitting on his seat box looking ahead and neglecting his fire, but that he did not see train No. 265 until within about 2 or 3 car lengths of it. He said that his engineman was running with what he considered due caution in a heavy fog.

Engineman Sherwood's watch stopped at 8.48 a.m. and it is reasonable to assume that at this was the exact time of the collision. If the record of the operator at the Great Northern crossing is correct, extra 1725 passed that point at 8.44 a.m. and traveled the 2.13 miles to the point of accident in 4 minutes or at a rate of 31.95 miles an hour. Engineman Brennan, however, claims to have passed the crossing at 8.40 a.m., but it is thought that the time shown by the O. S. sheet is more nearly correct, as the time is given over the wire daily and it seems doubtful that the watch of the operator could have been 4 minutes fast. Even in the event that Engineman Brennan did pass the Great Northern Railroad crossing at 8.40 a.m., as he claimed, he averaged a speed of 15.97 miles an hour between that point and the point of accident, which rate cannot be considered under control within yard limits during a heavy fog.

That Engineman Brennan was not operating his locomotive under control is further evidenced by the fact that he was

attempting to reach Helena before the departure of train No. 3, due to leave there at 8.55 a.m. His testimony shows that he was somewhat apprehensive about this and compared his watch with his fireman. If he passed the Great Northern Railroad crossing at 8.40 a.m., he had only 10 minutes in which to reach Helena and clear train No. 3 five minutes, as required by rule No. 87. It is obvious that if he had been running at a speed of 7 or 8 miles an hour it would have been impossible for him to reach Helena by 8.55 a.m., the distance being more than 2 miles.

The records show that Engineer Brennan's watch was last examined on August 5th. At 10.00 a.m., on the day of the accident, the watch of the operator at the Great Northern Railroad crossing was examined and found to be 11 seconds slow.

The damage to equipment which resulted from this collision also indicates that at least one of the trains was running at a comparatively high rate of speed. The evidence indicates that train No. 265 was running at 6 or 8 miles per hour, and in view of all the circumstances in the case it is believed locomotive 1725 was running at a considerably higher rate of speed. Rule No. 93 reads as follows:

"Within yard limits the main tracks may be used protecting against first-class trains.  
"Second and third class and extra trains (including passenger extras) must move within yard limits prepared to stop unless the main track is seen or known to be clear."

Under the timetable rule governing the operation of Fifth Sub-division trains on that part of the First Sub-division on which this accident occurred, train No. 265 was required to



protect itself against all First Sub-division trains. That a lineup of trains secured from the dispatcher does not constitute protection was recognized by the crew of this train. Merely operating under control, particularly under foggy weather conditions, does not meet the requirements of the rule specifying that protection be afforded against First Sub-division trains. While no doubt the misunderstanding between operator and conductor as a contributing factor or circumstance in this case, had the crew of train 265 provided their train with the protection contemplated by the rule, the accident would have been averted.

This accident was caused by the failure of Engineman Bresnan of extra 1725 to have his train under control within yard limits during a heavy fog, and by the failure of the crew of train 265 to provide protection for the movement of their train through the yard against superior trains.

Attention is called to the method provided for the operation of train No. 265 from Helena station to the point where it leaves the track of the First Sub-division. This method of operating trains carrying passengers within yard limits would seem to be inadequate. A larger measure of protection could be provided by the use of the block system or by the use of a double-track line through this territory.

Engineman Bresnan entered the employ of the Northern Pacific Railroad as fireman in May, 1906, and was promoted to engineman in August, 1910. His record was clear.

At the time of the accident the crew of extra 1725 had been on duty 8 hours and 18 minutes after an off-duty period of 10 hours, while the crew of train No. 255 had been on duty 1 hour and 8 minutes, after an off-duty period of 12 hours.

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