

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED  
AT THE CROSSING OF THE NORTHERN PACIFIC RAIL-  
WAY AND THE GREAT NORTHERN RAILWAY AT SEDRO-  
WOOLLEY, WASH., ON JANUARY 31, 1918.

March 19, 1918.

On January 31, 1918, a freight train on the Northern Pacific Railway collided with a Great Northern passenger train standing on the intersection of those railways at Sedro-Woolley, Wash., which resulted in the death of 5 passengers and injuries to 15 passengers and 3 employees. After investigation, the Chief of the Bureau of Safety submits the following report.

The fourth district of the Cascade Division of the Great Northern Railway, on which this accident occurred, extends between Anacortes and Rockport, Wash., a distance of 53 miles. That part of the Northern Pacific Railway involved is the second subdivision of the Seattle Division extending from Seattle to Sumas, Wash., a distance of 128 miles; is single track running north and south without block signals; and the trains thereon being operated by time-table and telegraphic train orders.

About 500 feet north of the crossing on which the accident occurred is the Northern Pacific stop-board 207 feet west of this crossing is the Great Northern stop-board. North of this board and inside the angle formed by the intersection of the main lines of the Great Northern and Northern Pacific Railways, and intercepting the line of vision between trains on the respective main lines, are located the sectionmen's tool house and a two-story foundry building. Within this angle is an interchange track leading west from the Northern Pacific main line and connecting with a Great Northern industry track. At the time of the accident this interchange track was filled with box cars which also obstructed the view between eastbound and southbound trains approaching the crossing. Arc lights located at the street crossings near the railroad tracks, together with lights in adjacent buildings lessened the relative brilliancy of the headlights on southbound locomotives.

Approaching Sedro-Woolley on the Northern Pacific Railway, there is a descending grade of about one per cent from mile post 91 to the point of collision, a distance of 4.2 miles, the last 3,000 feet of which is straight track running almost north and south. Beginning at mile post 89 and about 2.2 miles northwest from the point of collision, and proceeding southward, the track is on a 3-degree curve to the left extending south and east a distance of about 1,530 feet. This is followed by a tangent about 2,180 feet in length running

almost east and west, which is followed by two curves to the right, 1° 8' 30" and 1° 30' respectively, 2,375 feet in length, which in turn are followed by a 2° 30' curve to the right 2,500 feet in length, which connects with the 3,000-foot tangent above referred to, which continues on and beyond the crossing of the Great Northern and Northern Pacific Railways at the point of collision. About 340 feet south of the northern end of this tangent is located the yard limit board which is about 1,000 feet north of where it crosses Moore Street, and 1,554 feet north of the 800-foot board. The crossing at the point of accident is not protected by an interlocking plant, signal tower, signalman or gates.

Relative to such crossings the laws of the State of Washington provide that:

All railroads \* \* \* shall cause their trains to come to a full stop at a distance not greater than five-hundred feet, before crossing the tracks of another railroad, crossing at grade.

Rule 98 of the Northern Pacific Railway Company provides as follows:

Trains must approach the end of double tracks, junctions, railroad crossings at grade, and draw-bridges, prepared to stop, unless the switches and signals are right and the track is clear. Where required by law trains must stop.

The trains involved in the accident were Great Northern eastbound passenger train No. 280, consisting of engine 103, combination mail and baggage car 390, smoking car 3136, and first-class coach 3224, all of wooden construction, in charge of Conductor Corrigan and Engineman Naser, en route from Anacortes to Rockport, and Northern Pacific southbound freight train No. 676, consisting of engine 1673, 29 loaded cars, and one empty car making a total of 1,520 tons, in charge of Conductor Heald and Engineman Hall, en route from Sumas to Seattle.

When Great Northern train No. 280, due at Sedro-Woolley at 7.26 p.m., approached Sedro-Woolley, it stopped on the west side of the Northern Pacific crossing a few feet west of the 207-foot stop board. Before the train started over the crossing the engineman, in accordance with a rule of the Great Northern Railway Company, gave two blasts of the whistle. The track then being clear ahead and nothing appearing to indicate the approach of any train over the Northern Pacific main line, the train proceeded. When the locomotive had cleared the crossing and just as the tank was going over, the

fireman, who was on the north side of the engine, noticed the headlight of the locomotive of the Northern Pacific train No. 676 about 800 or 900 feet away, coming south and called to the engineman, who was on the south side of the engine looking out for any northbound train, to "Hurry." Before the passenger train had time to clear the crossing it was struck by the locomotive of train 676, which at the time was running at a speed of from 12 to 20 miles an hour. The accident occurred at 8:20 p.m., at which time it was dark, the weather being cold and partly cloudy, but not foggy.

The locomotive of the freight train struck the rear coach of the passenger train, uncoupling it from the smoking car and breaking the coach into two pieces which remained held together by the truss rods and were carried forward by the engine, sweeping into the Northern Pacific depot, tearing away one side of it. The engine continued on beyond the depot, which is 135 feet from the crossing, a distance of 247 feet, where it stopped, or a total of 382 feet after coming in contact with the passenger coach. Neither the locomotive nor any of the cars of train 676 were derailed.

Northern Pacific train No. 676 left Sumas at 3:30 p.m. and at 5:05 p.m. arrived at Wickersham, Wash., 11.8 miles north of Sedro-Woolley. At this point 22 cars were picked up and placed into 676. After the train had been coupled up on the siding Engineman Hall, upon receiving the signal from Brakeman Macdonald, tested the air brakes. Thereupon the train pulled out onto the main line and departed at 7:10 p.m. The next and only stop before reaching the scene of the accident, was at Prairie, a siding about 10 miles north of Sedro-Woolley, from which point it departed at 7:55 p.m. and, as before stated, ran into the passenger train at 8:20 p.m.

Conductor Heald, of train 676, stated that before leaving Wickersham regular test of the air brakes was made to determine whether the brakes were working all the way to the rear of the train. Approaching Delvan, a siding about 2.5 miles north of Sedro-Woolley, the train slowed down from a speed of from 25 to 30 miles an hour, to about 15 miles per hour. The next application of the air was about one mile farther on, near Wild's Spur. Conductor Heald stated further that the last air-brake application noticed by him was when the train was stopping at Sedro-Woolley, at which time the air took hold all right. The air pressure as shown by the gauge when the train left Wickersham and when at Prairie was 70 pounds. He also stated that when the train stopped he was standing in the aisle of the caboose, and while waiting for the train to pull into the station he again looked at the gauge and noticed that there was no air pressure registered. He then got out on the ground and examined a hose and found that there was no air in the train line. The rear brakeman, who had been riding with him

in the caboose, pulled the bleeder wire on two cars which showed that there was air in the auxiliary reservoirs. The brakes on these cars at that time were set. He then proceeded on down toward the engine when he learned for the first time that there had been an accident. He further stated that so far as he knew there was nothing defective in the air brakes on the train. At no time in making the trip from Wickersham was there any trouble in keeping the normal air pressure, nor did he hear any whistle by the engineman calling for the use of hand brakes when approaching Sedro-Woolley, although he had heard the engine whistle when it was sounded for highway crossings.

Rear Brakeman Macdonald, of train 676, stated that at Wickersham, and when he was three cars ahead of the caboose, he signalled the engineman to test the air brakes, and that the brakes were working. When approaching Sedro-Woolley and when near the west switch at Delvan, he noticed the first application of the air brakes. The next application was made when the train was going around the curve onto the straight track north of Sedro-Woolley. At this time he was in the cupola of the caboose and as the brakes were applied he said he saw the fire flying from the wheels and that he thought the train was under the engineman's control, the train having slowed down to about 15 or 20 miles an hour. He further stated that he observed the air pressure on the caboose gauge at various times and that at all times it indicated 70 pounds. Several times after leaving Wickersham he heard the whistle of the locomotive but at no time did he hear a whistle for brakes. When the train came to a stop at Sedro-Woolley he did not know an accident had happened until he went over to the front end of the train.

Brakeman Ringer, of train 676, stated that from Prairie to the yard limit board he rode on the fireman's seat box on the engine. When he arrived at the yard limit sign he got down into the gangway between the engine and tender. The first application of the air brakes that he noticed was when the train was coming into Delvan, at which time the speed was reduced from 20 miles to about 15 miles an hour. The next application was on the curve coming into Sedro-Woolley at about 15 miles an hour, when the train seemed to be under perfect control of the engineman. After rounding the curve and coming onto the straight track the engineman sounded the crossing whistle, two long and two short blasts. He said that while standing in the gangway ready to get off the train upon its arrival at the depot, his attention was called to the Great Northern train by the engineman's saying, "There is the Great Northern," at which time the sparks began to fly from the side of the wheels of the engine, and the engineman began sounding the whistle for brakes. The train was then going

between 15 and 20 miles an hour and had reached the vicinity of Moore Street. The engineman continued to call for the brakes from this point, where another application of the air brakes was made, until the passenger train was struck. Brakeman Ringer stated further that he thought the train was under the control of the engineman and that he would be able to stop it at the stop-board and that he remained on the engine until it came to within 60 or 70 feet of where it struck the passenger train, before he jumped onto the ground.

Engineman Hall, of train 676, stated that approaching Sedro-Woolley he made the first application of the brakes north of Delvan, and about one mile farther, on the curves south of Delvan, made a second application which consisted of a reduction followed by a release and a second reduction, and that the results from these applications were satisfactory. The next application was made a short distance down the straight track after coming off the last curve, at which time the brakes did not take hold as they should. This consisted of a 15-pound reduction and was made when the train was nearing the yard limit board, about 2,600 feet north of the point of collision, the speed of the train being about 25 miles an hour. Seeing that the brakes were not taking proper hold, and after the train had gone about 20 car lengths from the point where the 15-pound reduction had been made, without releasing the brakes he made an emergency application, but without any decided effect. At this time he observed, however, that the engine brake was working and that sparks were flying from the brake shoes. He was then nearing the 800-foot board, 1,100 feet from the point of accident, and realizing that he would not be able to stop he began sounding the whistle for brakes, and to use sand on the track. It was about this time that he saw the Great Northern train coming onto the crossing. He stated that he made no attempt to reverse his engine for the reason that the brakes on the engine were strong and if the engine were reversed the effect would be to cause the engine wheels to skid and thereby lessen the power of the brakes. He stated further that before making the last reduction the air gauge indicated the normal pressure of 70 pounds, and that the main reservoir pressure was 120 pounds. About 20 or 25 minutes after the accident he said that he examined the train, finding no air in the train line and the angle cock on the 22nd car from the front partly turned, not enough, however, to prevent the passage of the air to the rear of the train, but sufficiently he thought to restrict the braking power. He did not think, however, that this condition materially affected the efficiency of the brakes for the reason, as stated by him, that on the first two applications of the brakes, the second of which was heavier and consisted of two reductions, there was nothing unusual in the operation of the brakes. The only suggestion that he could offer as to the cause of the accident was that, at some time subsequent to the second application of the brakes, some one

riding on the train may have turned an angle cock, but that he saw no one who might have done this.

Fireman Livesley, of train 676, stated that when the train stopped at Prairie the air seemed to work all right; that the same was true when passing Delvan; and that on the curves before coming onto the straight track north of town, enough air was used to steady the train. He said that in making all applications prior to coming onto the straight track the brakes seemed to work all right. He stated also that immediately before the train struck the passenger train he felt the brakes taking hold and slowing down the train, and that at the time of the collision his train was not making more than 12 miles an hour.

J. Firtsimmons, trainmaster of the Northern Pacific Railway Company, stated that after the accident he made an inspection of the train and looked for anything that might have been wrong with the braking power but found nothing. He examined the angle cocks and found one near the rear end of the train with a bent handle that looked as if it might be partly turned so as to interfere with the passage of the air through the train line. However, upon close investigation he ascertained such not to be the case. He also tested the air in the auxiliary reservoirs on a number of the cars by pulling the bleed rods. Each car so tested contained sufficient air that if applied in the brake cylinder it would have stopped that particular car when going at a speed of 20 miles an hour. There was nothing that he could discover from his inspection of the train that indicated there was anything wrong with the braking power.

The direct cause of the accident was the failure of Engineman Hall to bring the speed of his train under control a sufficient distance north of the stop-board governing this crossing to enable him to bring it to a stop in accordance with rule 98 of the Northern Pacific Railway Company, which requires that on approaching a crossing at grade the train shall be prepared to stop if the track is not clear. He also failed to comply with the State Law of Washington which provides that all trains must be brought to a stop before crossing the tracks of another railroad at grade.

The only excuse offered by Engineman Hall for his failure properly to control the train, was that subsequent to the second application of the brakes, some person might have turned an angle cock and thus closed the train line. However, the investigation made by the trainmaster shortly after the accident, clearly established the fact that nothing of this character occurred. There was nothing found wrong with the train line,

but on the contrary this investigation disclosed the fact that all the way down the 1% grade leading to the crossing when the accident occurred, the action of the air brakes was normal and satisfactory.

Engineman Hall had been in the railroad service seventeen years; had been an engineman fourteen years; was thoroughly familiar with the physical conditions on the division between Seattle and Sumas; and previous to the time involved, had never had trouble in making stops at the crossing at Sedro-Woolley.

At the time of the accident, the crew in charge of train 676 had been on duty 12 hours and 50 minutes.