

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN
ACCIDENT ON THE SPOKANE, PORTLAND & SEATTLE RAILWAY
NEAR SPEARFISH, WASH., ON AUGUST 13, 1933.

December 15, 1933.

To the Commission:

On August 13, 1933, there was a derailment of a freight train on the Spokane, Portland & Seattle Railway near Spearfish, Wash., which resulted in the death of 2 trespassers and the injury of 10 trespassers.

Location and method of operation

This accident occurred on the First Subdivision of the Vancouver Division, which extends between Vancouver and Wishram, Wash., a distance of 96.1 miles, and is a single-track line over which trains are operated by time table and train orders, no block-signal system being in use. The accident occurred at a point about 4,100 feet west of the west passing-track switch at Spearfish; approaching this point from the east, there are a number of curves and short tangents followed by a 30° curve to the left 1,327 feet in length, including spirals, the accident occurring on this curve at a point about 1,020 feet from its eastern end. The grade for west-bound trains is slightly descending, it being 0.1 percent at the point of accident.

In the immediate vicinity of the point of accident the track is in a deep rock cut. It is laid with 90-pound rails, 39 feet in length, with an average of 23 ties to the rail length, and is equipped with 12 to 14 modified Fair rail anchors to each rail length. No spikes have been driven in the angle-bar slots, thus leaving the joints free. The track is ballasted with pit-run sand and gravel to a depth of 16 inches, and is well maintained. Special time table instructions restrict the speed of freight trains to 40 miles per hour.

The weather was clear and exceptionally hot, with temperatures up to 112° at the time of the accident, which occurred about 4:15 p.m.

Description

West-bound freight train extra 534 consisted of 62 cars and a caboose, hauled by engine 534, and was in charge of Conductor Johnson and Engineman Babcock. This train departed from Wishram, 7.7 miles east of Spearfish, at 3:57 p.m., according to the train sheet, and was derailed after passing Spearfish while traveling at a speed estimated to have been about 35 miles per hour.

The rear trucks of the thirty-eighth and fortieth cars were derailed, but the thirty-ninth car remained on the track and all three of these cars remained with the front portion of the train, which stopped 2,223 feet beyond the point of derailment. The following 15 cars were derailed and stopped in various positions, many of them being demolished. The trespassers killed and injured were riding in a box car which was among those derailed.

Summary of evidence

Engineman Babcock stated that as the engine passed through the cut he noticed nothing unusual; the track did not appear to be rough, and the first intimation he had of anything wrong was when the air brakes applied. He was working steam at the time and the train was traveling at a speed of about 35 miles per hour. Fireman Ohlemeyer, and Head Brakeman Nelson, who was also riding on the engine, stated that they noticed nothing wrong as the train rounded the curve on which the accident occurred.

The first intimation that Conductor Johnson had of anything wrong was when Brakeman Sullivan warned him to hold on. His examination of the equipment and track after the accident led him to think that the accident was due to a sun kink. He saw no indication of poor track; he found no brake beams down, and no broken flanges or broken wheels that could have caused the accident. A broken wheel was found under one of the cars, but this break appeared to have been a result of the accident. Conductor Johnson said the train had been inspected and the air brakes tested by the car inspectors before leaving Wishram. It also appeared from his statements that he had been over this portion of the road earlier in the day, riding in a caboose, and at that time had not noticed anything wrong. The statements of Brakeman Sullivan brought out nothing additional of importance.

Section Foreman Wilson, in charge of the section on which this accident occurred, stated that for several days prior to the accident he had been working on the track east of the point of derailment and had to pass over the track where the accident occurred twice daily. He had patrolled the track from Granddalles, which is about at mile post 94, to mile post 101 and return between the hours of 11 a.m. and 3:30 p.m. on the day of the accident, which occurred near mile post 97, and on passing through the cut on his return trip he observed that the rails were tight due to expansion, and he heard a booming sound, indicating that the rail was running, but the track did not appear to be out of line; he also heard the same sound in all the other cuts. He stated that the engineman of train no. 3, which arrived at Grandalles about 4 p.m., reported to him a rough spot about six poles east of mile post 97, which is where the accident occurred, and he called the dispatcher and told the latter to put out a slow order, but the dispatcher told him that he had better go down there immediately as the extra train had already left Wishram; the accident occurred before Section Foreman Wilson was able to reach mile post 97. Section Foreman Wilson further stated that on July 8 there had been a sun kink at the

west switch at Granddalles, the track conditions being about the same as they were at the point of accident, although he did not think that the weather was as hot on July 8 as it was on the day of the accident.

Engineman Barnick, of train no. 3, which left Wishram 10 minutes ahead of extra 534, stated that when he reported to the section foreman a rough spot in the vicinity of mile post 97, he told the foreman that he had also felt this spot on his east-bound trip on train no. 2 on the previous evening; it felt like a low joint.

Superintendent Votaw stated that he talked with the engine-man of train no. 1 and the fireman of train no. 4, these trains having passed over this section of track on the morning of the accident at a speed of from 40 to 50 miles per hour, and neither of them had noticed any rough spots in the track; they said that had there been rough spots they felt sure that they would have noticed them.

Roadmaster Corey stated that for a distance of 400 feet east of the point of accident the gauge varied from 4 feet 8 $\frac{1}{2}$ inches to 4 feet 8 $\frac{3}{4}$ inches, with an elevation of 4 $\frac{1}{4}$ inches. The rail was tight for a distance of 12 rail lengths east of the cut, due to the extreme heat, with some expansion showing beyond that point to the east, but during the hot spell which existed at the time of the accident he had not seen any signs of wavy or kinked track to indicate pressure approaching the danger point. The track was in good condition, having been worked on in May of that year, and on August 1 and 2 an average of four new ties to the rail length were placed on this curve. The section on which this accident occurred consists of 12 miles of track with the section foreman in charge and one laborer to assist him. Formerly two laborers had been employed, but about 1 week before the occurrence of the accident the force had been reduced to one laborer, and in extremely hot or stormy weather the section foreman is required to patrol the track daily. The force of laborers was cut on this particular section in preference to cutting some other section where there were six laborers, because of the fact that the track was in such good condition. Roadmaster Corey stated that in the absence of mechanical defects in the cars, or a broken rail, he believed that the accident was caused by a sun kink due to the extreme hot weather. He further stated that in the 13 years he had been on this district he had never before observed a sun kink that did not result immediately following some work done on the track, in most cases while the track was still skeletonized, but had never before experienced a sun kink where the track was fully ballasted and had not been disturbed at any time during the hot period. He stated that the sun kink referred to by the section foreman occurred where the section men were working and that the track had not been properly back-filled with ballast.

Assistant Superintendent Witchel, who formerly was chief engineer, said he had considered this track to be sufficiently strong to withstand a temperature of 110°, it having been subjected to such temperatures at various times since its construction, and where the track structure is entirely adequate for the service in which used he said he did not know of any protective measures which could be taken against sun kinks other than track patrols.

Conclusions

It is believed that this accident was caused by the buckling of the track under the train due to the extreme heat prevailing at the time.

The temperature was said to have been from 106° to 112°, which would be increased at the point of accident by the fact that the track was laid in a deep rock cut. The section foreman had patrolled the track a short time prior to the occurrence of the accident and found that the rails had expanded and heard a booming sound which indicated that they were creeping, although the track was not then out of line. The engineman of a passenger train, however, which departed from Wishram 10 minutes ahead of the extra, reported to the section foreman on arriving at Granddalles that there was a rough spot in the vicinity of the point of accident, and the section foreman in turn called the dispatcher and asked him to issue a slow order, but extra 534 had already departed from Wishram. Whether or not the condition noted by this engineman had anything to do with the accident is not known, and it is to be noted that the engine crew of extra 534 felt no irregularities in the track and also that the engine and first 37 cars passed over the track before the derailment occurred. The track was in good condition and appeared to be well maintained, while examination of the equipment disclosed no defects that could have caused the accident, and it is believed that any kink in the track which might have developed must have taken place under the train.

Respectfully submitted,

W. P. BORLAND,

Director.