

IN RE INVESTIGATION OF A DERAILMENT WHICH OCCURRED  
ON THE LINE OF THE SOUTHERN PACIFIC COMPANY AT  
PARK PLACE, ORE , ON OCTOBER 22, 1920.

December 18, 1920.

On October 22, 1920, there was a derailment of a freight train at Park Place, Ore., which resulted in the death of 1 employee and the injury of 1 employee. This accident was investigated jointly with the Public Service Commission of Oregon, and as a result of this investigation the Chief of the Bureau of Safety reports as follows:

That part of the Portland Division on which this accident occurred is a single-track line over which trains are operated by time-table, train orders, and an automatic block-signal system. Approaching the point of derailment from the east there is a tangent 842 feet long, followed by a 10-degree curve to the right 466 feet in length; the derailment occurred on this curve 281 feet from its eastern end. The superelevation of this curve is 4 inches, while the grade in this vicinity is 1.2 per cent descending for westbound trains. A slow board restricts the speed over the curve on which this derailment occurred to 25 miles an hour for passenger trains and 18 miles an hour for freight trains. The track in this vicinity is laid with 90-pound rails, 30 feet in length, with 18 treated ties to the rail, fully tie-plated, and with 8 spikes to the tie. The track is ballasted with 9 inches of crushed rock and is in good condition. The weather at the time of the accident was slightly foggy.

Westbound freight train extra 2560, in charge of Conductor Park and Engineman Lepscatt, consisted of engine 2560, 34 cars, helper engine 2109, 13 cars, and a caboose, in the order named. This train left Brooklyn, Ore., its initial terminal, 9.6 miles east of the point of derailment, at 5.45 a. m., left Clackamas at 6.50 a. m., and while traveling at a speed of about 15 miles an hour was derailed at 7.05 a. m. at Park Place, 2.7 miles west of Clackamas.

The first indications of derailment were flange marks on the left or outside rail 281 feet west of the beginning of the 10-degree curve. These marks continued on the ball of the rail for a distance of 41 feet to where the wheel dropped to the ties. The marks continued on the ties approximately 133 feet to the point where the derailed car, which was the second car in front of helper engine 2109, turned over to the left down the embankment. The next car, the helper engine, the car immediately behind the helper engine, and the forward trucks of the next car were also derailed, the helper engine coming to rest down the embankment.

on its left side. The employee killed was the engineman of the helper engine.

The statements of the crew of extra 2560 indicated that they noticed no unevenness of the track and that their first knowledge of anything wrong was when the brakes were applied, some of them saying that they were applied in emergency. The engineman of the road engine said that he first noticed a reduction in the brake-pipe pressure of about 15 pounds, while Fireman McCarl, of helper engine 2109, said that the first thing he noticed was the action of Engineman Bair in shutting off steam, cutting in his brake valve and making an emergency application of the air brakes, the derailment occurring immediately afterwards. After the accident Engineman Lepsnatt and Fireman McCarl found a piece of wheel flange near where the first marks appeared on the ties.

Examination of the equipment showed that  $22\frac{1}{2}$  inches of the flange had been broken from the left lead wheel of the forward truck of the second car in front of helper engine 2109. This section of flange was broken into four pieces, one piece was found between the rails 85 feet east of the first mark, another piece was found on the outside of the outside rail opposite the point where the wheel mounted the rail, while a third piece was found 41 feet west of the second piece, opposite the point where the wheel dropped from the rail to the ties. An examination of this wheel showed that there was an old seam in the throat of the flange, from  $\frac{1}{4}$  to  $1\frac{1}{4}$  inches deep, and about 9 inches in length, covered by a thin layer of sound metal, rendering the defect invisible to inspection.

The wheel which failed was a 33-inch chilled-iron wheel, weighing 725 pounds, made by the Pennsylvania Railroad at Altoona, Pa., cast on September 28, 1918. The car had been received in a transfer from the Northern Pacific Terminal at Portland, Ore., on October 21, and had been inspected on two occasions, but no wheel defects were discovered. There was no evidence on the brake shoes or wheels to indicate that the brakes had been sticking. The car under which this wheel failed had a capacity of 100,000 pounds, and was carrying a net weight of 97,680 pounds of coal.

This accident was caused by a broken wheel flange.

The investigation developed that the breaking of the flange was due to a seam in the throat of the flange, the presence of which could not have been detected by inspection.

None of the crew of extra 2560 had been on duty in violation of any of the provisions of the hours of service law.