

In re investigation of the derailment of an Oregon-Washington Railroad & Navigation train on the Chicago, Milwaukee & St. Paul Railway near Kent, Wash., on May 3, 1918.

June 1, 1918.

On May 3, 1918, there was a derailment of an Oregon-Washington Railroad & Navigation passenger train operating over the tracks of the Chicago, Milwaukee & St. Paul Railway near Kent, Wash., which resulted in the death of 2 employees. After investigation the Chief of the Bureau of Safety reports as follows:

That part of the Chicago, Milwaukee & St. Paul hallway upon which this accident occurred is a single-track line over which trains are operated by automatic block signals, time-table and train orders.

The derailed train was westbound passenger train No. 563, enroute from Seattle, Wash., to Portland, Ore., and consisted of locomotive 1745, 1 refrigerator car, 2 baggage cars, 2 coaches and 4 sleeping cars, in charge of Conductor Harned and Engineman Elliott. This train left Seattle at 11.15 p. m., left Kent, 16.4 miles west of Seattle, at 11.50 p. m., and was derailed at Thomas Spur, 1.7 miles west of Kent, at 11.54 p. m., while running at a speed of about 45 miles an hour.

The engine truck was derailed and torn from the engine; the driving wheels left the track and the engine ran on the roadbed about 375 feet, turned over to the west, and stopped on its right side, at an angle of about 45 degrees with the track and with its rear toward the track. The tender turned over and lay upside down partially on the track west of the engine; the refrigerator car stopped crosswise the track opposite the rear of the engine, one of the baggage cars was thrown to the west side of the track and the other one lay across the track, while two of the following cars were partially derailed. The engineman and fireman were killed.

The first mile west of Kent the track is straight, then there is a one-degree curve to the right about 600 feet long, then 2,300 feet of tangent to the point of derailment. The track is practically level, and at point of derailment is laid on a 10-foot fill. It consists of 85-pound steel rails, 33 feet in length, with 19 or 20 ties under each rail, tie plated and ballasted with about 30 inches of gravel. The track was in good condition. The weather at the time was clear.

An examination of the track disclosed that about six miles east of Thomas Spur there were marks on the cattle guards and crossing planks which had been made by something dragging under the train, and these marks were on all the

cattle guards and crossings up to point of accident. Just before reaching the yard at Kent there was a mark on the cattle guard and crossing planks about five inches wide, and there was a similar mark on a guard stringer on a bridge about 440 feet east of point of derailment. All of the marks just described had apparently been made by the pedestal tie bar on the right hand side of the engine track which had dropped down.

The first indications of derailment were flange marks on top of the rail on the left hand side of the track, beginning at a point 33 feet 2 inches west of the switch point at Thomas Spur, and these marks extended westward 2 feet 5 inches. About 40 feet west of the switch point there were flange marks on the ties 12 inches inside the right hand rail which were made by the engine truck wheels on the right hand side of the locomotive when they left the rail, these marks being about 6 feet 10 inches west of the point where the pedestal tie bar came in contact with the turnout rail of the switch; 12 feet 2 inches farther west there were flange marks on the ties 8 inches inside the right hand main rail which were made by the driving wheels, these marks extending to the wreckage. About 52 feet west of the switch point the left hand rail adjoining the switch frog on its eastern end was turning over to the south and heavy flange marks extended nearly the entire length of the rail. The pedestal tie bar was torn off at this point and was found opposite the frog between the guard rail and the right hand main rail. The broken bottom part of the spring hanger was found about 20 feet west of the frog lying just outside the left hand rail.

Engine Inspector O'Shaughnessy stated that before it left the roundhouse at Argo, Wash., on the day of the accident, locomotive 1745 was placed over the pit and he went under it and carefully examined the running gears with an electric light, but found nothing wrong. He said it would have been impossible to discover a fracture in the spring hanger that broke as it was within the equalizers and it was not possible to see the upper part of the hanger. Frequently the spring hangers are covered with grease and dirt and fractures are not easily discovered, and if the fracture be on the inside of the hanger it could not be seen by an examination from the outside.

Lloyd Taylor stated that he was under locomotive 1745 before it left the roundhouse at Argo on May 3d putting waste in the oil cellars, looked at the spring hangers and they apparently were all right.

Division Foreman Watson stated that he examined the track after the accident and for some distance east of the point of derailment he noticed marks on the cattle guards and crossing planks, which apparently had been made by something

dragging under train 563, and the marks were deeper the nearer he got to point of derailment. In his opinion the engine truck spring hanger on the forward end and right hand side broke and dropped down on the pedestal tie bar, causing it to bend down, and he thought the latter made the marks on the cattle guards and crossing planks. When the train reached the switch at Thomas Spur the pedestal tie bar came in contact with the turnout rail of the switch, threw the engine trucks out of line and derailed the engine. From the marks previously described he was of the opinion that the pedestal tie bar was bent down about one-half inch below the top of the rail and continued to bend down further as the train proceeded. He said the spring hanger broke where it had been welded and he noticed that there was a flaw about 3/16 inch wide extending across the hanger where the scarf of the weld had not knitted.

Assistant Express Messenger Grimm stated that when his train stopped at Kent he looked forward and saw the engine man with a torch inspecting the right hand side of the locomotive near its front end. Shortly thereafter the engine man climbed back into the cab and the train proceeded at its usual speed of about 40 miles an hour.

The direct cause of this accident was the breaking of the spring hanger on the right hand side of the front engine truck which allowed the pedestal tie bar to bend down and engage the turnout rail of the switch at Thomas spur and derail the train.

The pedestal tie bar which dropped down and derailed the train was 1 x 4 inches, and was attached to the truck about 5 inches inside the gauge of the track and about 4-1/2 inches above the top of the rail. The space between the bottom part of the spring hanger and the pedestal tie bar varies from 1-1/2 to 2 inches.

The investigation disclosed that the spring hanger broke about 2 inches below its hub and about 2 inches above the eye for the gib; the break was through an old weld which contained a flaw 3/16 to 1/4 inch deep extending the full width of the hanger where the metal had not properly knit together in welding. On account of its location on the locomotive the flaw could not have been discovered by diligent inspection.