

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE PENNSYLVANIA RAILROAD NEAR CONDIT, OHIO, ON AUGUST 18, 1929.

December 4, 1929.

To the Commission.

On August 18, 1929, there was a derailment of a passenger train on the Pennsylvania Railroad near Condit, Ohio, which resulted in the injury of 200 passengers, 1 person carried under contract and 3 employees.

Location and Method of operation.

This accident occurred on that part of the Akron Division extending between Rufson and Joyce Ave., Columbus, Ohio, a distance of 142.1 miles, in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table, train orders, and a manual block-signal system. The accident occurred at a point approximately 1 1/2 miles north of Condit, approaching this point from the north the track is tangent for a distance of almost 8 miles, while the grade at the point of accident is 0.7 per cent descending for southbound trains.

The track is laid with 100-pound rails, 30 feet in length, with an average of 17 ties to the rail-length, and is ballasted with gravel to a depth of about 18 inches. Rail anchors are used and the track is about 90 per cent vicolated. At the time of the accident the shoulders of the roadbed had been plowed off preparatory to reballasting and resurfacing, although ballast had not been dumped along the track.

The weather was clear at the time of the accident, which occurred at about 11.42 a. m.

Description

Southbound passenger train No. 614 consisted of one combination baggage and passenger car, five coaches, one Pullman parlor car, four coaches and one Pullman parlor car, all of steel construction and in the order named, hauled by engines 7142 and 7271, and was in charge of Conductor Buch and Engineeran Murtough and Osborn. The train left Orrville, 21.9 miles north of Condit, at 9.47 a. m., 12 minutes late, passed Centerac, 5.2 miles from Condit, at 11.38 a. m., eight minutes late, and was approaching Condit when it was derailed while traveling at a speed estimated at about 30 miles per hour.

Engine 7142 came to rest 1,488 feet south of the initial point of derailment, with its tender derailed. Engine 7271 and its tender were derailed and turned over on their right sides, coming to rest 765 feet south of the point of derailment. The first six cars and the forward truck of the seventh car were also derailed, but remained upright.

Summary of evidence.

Engineman Martough, of the leading engine, stated that he inspected his engine at Akron and also at Millersburg, these points being located 106.2 and 58.2 miles, respectively, north of Condit. The brakes were tested before leaving Akron and again after picking up cars at Orrville, and they functioned properly en route. He noticed no unusual riding of the engine and his first knowledge of anything wrong was when he heard a peculiar sound under the tender and upon looking back he noticed an unusual motion of the tender, as if the rear truck was derailed, and he immediately applied the brakes in emergency and opened the sanders. He said the train was drifting at a speed of about 60 miles per hour at the time of the derailment, and in his opinion this was a safe speed in that vicinity. Engineman Martough estimated that the tender contained 20,000 pounds of coal and 18 or 20 inches of water, which he did not think would have a tendency to cause it to sway with the second engine pushing it. After the accident he examined the tender and trucks but did not find anything which could have contributed to the cause of the accident.

Fireman Johnson, of the leading engine, stated that he looked over the engine at the initial terminal but did not know to what extent the engineman had inspected it. The brakes were tested and worked satisfactorily en route, while he noticed no rough handling of the train, or any unusual motion of the engine. When he heard a noise he looked back and noticed that the rear truck of the tender was derailed, and at that time the front end of the tender rode as if the forward truck was on the rails. After the accident he inspected the tender trucks, but discovered nothing wrong, and on going back and examining the track he failed to find any indication of dragging equipment.

Engineman Osborn, of the second engine, stated that he made a careful inspection of his engine and also made a terminal test of the brakes before departing from Cleveland.

Upon arrival at Akron, cars were picked up and another engine coupled to the train, after which the brakes were again tested. The leading engine man handled the train after leaving the latter point and in his estimation it was operated in a satisfactory manner. His own engine was not swinging more than was to be expected, and from his position he did not observe any unusual motion of the leading engine or tender until he saw gravel flying from under the tender and then the rear of the tender swung out of line with the track. He estimated the speed at the time of the accident at 60 miles per hour, which was not excessive under the track conditions existing in that locality.

Fireman Wagner, of the second engine, stated that cars were picked up at Akron and Orrville and that the brakes were tested before leaving each place. He was riding on his seat box when approaching the point of accident but did not notice any swaying of the leading engine or its tender, and his first intimation of trouble was when he saw dust flying under the tender of that engine, at a point about two coach-lengths in advance of where his own engine became derailed. His estimate as to the speed agreed with the estimates made by the two engine men.

The statements of Conductor Buch, and Brakemen Wile, Turner, and Levering, were to the effect that they noticed no unusual handling of the train and that there did not appear to be any undue rocking of the train prior to the accident. They estimated the speed of the train at the time of the accident at not more than 60 miles per hour.

Section Foreman Clewell stated that he has been in charge of the section on which the accident occurred for a period of two years and during that time he has not received any complaints or reports regarding track conditions in the vicinity of the point of accident. He rode over this portion of the track on his motor car during the evening of August 17, and noticed nothing unusual. There is a soft place in the track north of the point of accident, and the track in that vicinity was raised about two weeks previous to the derailment, this part of the track was also found in good condition when he passed over it on his motor car.

Supervisor Kauffman stated that he last walked over this section of track about eight days prior to the derailment, and last rode over it on a train on August 16, and on neither occasion did he notice anything wrong. To the best of his knowledge, he had never known of any soft places in the track in the vicinity of the point of accident; in fact, he had never known of any kind of trouble, and he said that in his opinion the condition of the track did not cause

or contribute to the cause of the accident. Supervisor Kauffman further stated that while making track measurements subsequent to the accident, he found a three-fourths inch nut lying along the west side of the track about 8 feet from the rail and 7 or 8 feet south of the point of derailment. This nut showed no evidence of rust, but was in a crushed or flared condition, indicating that apparently it had been run over.

An examination of the track made by the Commission's inspectors subsequent to the accident disclosed that no repairs of any kind were made at the initial point of derailment, and their observations indicated that there was very little spring of the track under passing trains, and it seemed to be maintained fairly well. No marks were found to indicate that some part of the equipment had been dragging. The first mark was about 10 feet from the leaving end of a rail on the west side of the track. This mark was about one-fourth inch from the gauge side of the rail, was slightly diagonal, about $1\frac{1}{2}$ inches in length, and had the appearance of having been made by the curved edge of a nut. The second mark was about 6 feet farther south and was a flange mark on top of the west rail, beginning about 1 inch from the outside edge and continuing southward for about $6\frac{1}{2}$ feet to where the wheel dropped off the rail on the outside. At this point there was a corresponding flange mark on a tie on the inside of the east rail. These marks continued on the ties a distance of approximately 18 feet to where the west wheel passed off the ties. The mark between the rails worked inward as far as the center of the track and then continued in that position for a distance of 300 feet, beyond which point the track was torn up for a distance of 400 feet.

The flanges and treads of all tender wheels of the lead engine were found in fair condition and all wheels in proper gauge, with no excessive lateral wear at the journal bearings. Measurements taken for side-bearing clearances of both trucks showed the forward truck had approximately $5/8$ inch clearance and the rear truck $1/4$ inch clearance. There were no bolts missing from the engine, and no evidence of any spare nuts having been riding loose on the engine or tender. A bolt used to secure the brake-beam safety cross tie rod of the front tender truck was missing, but this appeared to have been sheared off as a result of the accident. All brake bears, hangers and safety supports on both the engine and tender were still in place. The brake shoe on the right No. 1 wheel of the leading tender truck was missing, but this was found some distance south of the first marks of derailment and showed no evidence of having been dragged or run over.

Conclusions

This accident appears to have been caused by a nut lying on the running surface of the west rail.

A nut was found along the track a short distance from the initial point of derailment. This nut was for a $\frac{3}{4}$ inch bolt and was $\frac{3}{4}$ inch thick and $1\frac{1}{4}$ inches square, one side of it was flattened and elongated, and it appeared to have recently been on a bolt to the extent of about three threads, while the remaining threads were rusty. The beveled edge compared with the mark found on the rail at the point of derailment and one side of it fitted the ball of the rail when placed over the mark. The other side of it fitted the right No. 1 wheel of the tender truck of the leading engine and at a like mark found on the tread of the wheel. This mark was diagonal in shape and in the same relative position as the mark on the rail. A bolt was found to be missing from the forward truck of the leading engine tender, but this bolt not only was of slightly larger diameter than the nut found at the point of accident, but it appeared to have been sheared off as a result of the accident. The reason for the presence of this nut on the rail could not be ascertained, although it is possible that it could have been riding loose on some part of the engine.

The employees involved were experienced men and at the time of the accident they had not been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

J. P. BORLAND,

Director.