

INTERSTATE COMMERCE COMMISSION.

- - - - -

REPORT OF THE CHIEF OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE PENNSYLVANIA RAILROAD AT BRILHART, PA., ON JUNE 7, 1922.

June 28, 1922.

To the Commission:

On June 7, 1922, there was a derailment of a passenger train on the Pennsylvania Railroad at Brillhart, Pa., resulting in the death of 1 employee, and the injury of 7 passengers and 8 employees.

Location and method of operation.

This accident occurred on that part of the Baltimore Division extending between Baltimore, Md., and Wago Junction, Pa., a distance of 66.7 miles, which in the vicinity of the point of accident is a double-track line over which trains are operated by time-table, train orders, and a manual block-signal system. The accident occurred 700 feet east of overhead bridge 52.54, or about 475 feet west of the station at Brillhart; approaching this point from the east, there is a 4-degree curve to the right 465 feet in length, then 980 feet of tangent, followed by a 4-degree curve to the right 2,040 feet in length, the accident occurring on this curve at a point 900 feet from its eastern end. Except for a short section of practically level track, the grade is slightly descending for westbound trains for a distance of more than a mile, being 0.30 per cent at the point of accident. The track in this vicinity is laid with 100-pound rails, 33 feet in length, tie-plated, triple-spiked, with an average of about 18 treated hardwood ties to the rail-length, and ballasted with crushed rock about 12 inches in depth. The weather was clear at the time of the accident, which occurred at about 8.53 p.m.

Description.

Westbound passenger train No. 975 consisted of 1 mail car, 1 combination car, 1 coach, 1 dining car, 1 parlor car, and 3 Pullman sleeping cars, in the order named, all of all-steel construction, hauled by engine 1387, and was in charge of Conductor Love and Engineman Akemurst. This train left Hanover Junction, 6.1 miles east of Brillhart, at 8.45 p.m., 5 minutes late, passed "BI" Block Station, 1,910 feet from the point of accident, at 8.52 p.m., about 3 minutes late, and was derailed while traveling at a speed estimated to have been between 40 and 45 miles an hour.

-2-

Engine 1387, together with its tender, was derailed to the left, struck the south abutment of the overhead bridge, headed back to the westbound track, and came to rest on its right side against the right embankment, just beyond the bridge, approximately 875 feet from the point of derailment, both tracks were completely torn up for about 400 feet of this distance. The first five cars were also derailed, but remained upright on the roadway. The employee killed was the fireman.

Summary of evidence.

Between the station and overhead bridge at Brillhart, Engineman Akehurst felt the engine give a slight jerk, at which time the train was drifting; he looked back to see if there was anything wrong, and as he did so, Fireman Brinsfield informed him the engine was derailed, then he saw fire flying from beneath the right rear wheel of the engine truck, and immediately applied the air brakes. Engineman Akehurst was of the opinion that the derailment was caused by something dragging beneath the engine, and stated that on previous occasions he had found the tie-rod disconnected on engines of this type, he estimated the speed of the train at the time of the accident to be 40 miles an hour. None of the other members of the train crew knew of anything wrong until the accident occurred.

Freight Trainmaster Watkins arrived at Brillhart about 2 hours after the accident occurred, at which time he found the ballast disturbed, and marks on the ties, extending from "BI" Block Station to the point of derailment, apparently caused by something dragging, he was of the opinion that the tie-rod dropped, and in dragging over the roadbed, some ballast, or other foreign substance, was thrown on the rail, causing the derailment.

Engine 1387 was of the 4-6-2 type, class K-2, having a total weight of 297,000 pounds, a driving-wheel base of 13 feet 10 inches, and a length of 47 feet 7 inches. The engine trucks on this type of engine are equipped with tie-rods, extending across the engine truck behind the leading wheels, and are used to overcome lateral movement in the brake shoes, these rods are made of 1-inch iron, with an eye-hole in each end, by which it is fastened to the brake hanger with a 7/8 inch bolt, secured by nut and cotter key. An examination of the engine truck disclosed the left front brake shoe tie-rod bolt missing, and the tie-rod bent U shape; neither the eye-hole that remained in the hanger, nor the one at the detached end of the tie-rod, showed any evidence of strain or distortion, as would probably have been caused had the rod been torn off as a result of the accident, also, the lug of the hanger which engages the tie-rod was in good condition.

-3-

A careful search was made for the missing bolt, cotter key, and nut, without result.

The first wheel marks appeared on the ties at a point 478 feet north of the station at Brillhart, at which point there were slight impressions in the ties, apparently caused by the rear wheels of the engine truck only being derailed, these marks extended for a distance of 462 feet, at which point they were lost in the general destruction of the track. The safety chains broke, allowing the truck to turn. Although there was a slight diagonal mark about 14 inches in length on the outside rail, at the point where the engine truck wheel crossed, it did not have the appearance of a mark such as would be made by the flange of a truck wheel mounting the rail.

Assistant Road Foreman of Engines Germill stated that on a previous occasion, while riding on an engine of the type involved, he discovered one of the brake-head tie-rods down, and on that occasion ballast had been thrown on the rails.

Conclusions.

This accident is believed to have been due to the brake head tie-rod becoming detached from its hanger at the left side of the engine truck, dragging on the roadbed, and throwing ballast, or other foreign substance, on the rail, resulting in the derailment of the rear wheels of the engine truck.

Apparently the cotter key and nut came off the bolt while train No. 975 was en route, then the bolt worked out, and as there was no additional safety support attached to the brake head tie-rod, such as a safety chain, to keep the rod from dropping in the event of its becoming detached from the hanger, the tie-rod dropped to the roadbed.

All of the employees involved were experienced men. At the time of the accident the engine crew had been on duty less than 3 hours and the train crew less than 9 hours, previous to which they had been off duty 16 hours or more.

Respectfully submitted,

W. P. BORLAND

Chief, Bureau of Safety.