

IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE
UNION RAILROAD AT MUNHALL, PA., ON JULY 14, 1919.

August 9, 1919.

On July 14, 1919, there was a derailment of a transfer freight train on the Union Railroad at Munhall, Pa., which resulted in the death of 1 employee. After investigation of this accident, the Chief of the Bureau of Safety reports as follows:

The Union Railroad does a transfer business with numerous railroads as well as with various industrial plants, in and about Pittsburgh, Pa., and has about 200 miles of trackage. The road is principally double track and train movements are directed by signals at interlocking stations, communication being by telephone. No book of rules or time-table is published; Bulletin No. 719, issued June 2, 1911, restricting the speed of all trains to 15 miles an hour, is the only instruction in effect at the present time.

The accident occurred on what is known as "The Carrie Furnace Branch," the point of accident being located at the north end of Carrie Furnace or Rankin Bridge, which spans the Monongahela River. The railroad is double tracked across this bridge. Approaching the point of accident from the south the track is straight for a distance of 800 feet, leading to a switch where the tracks divide and curve both to the right and left, forming a wye. The main tracks bear to the left on a 2-degree 11 $\frac{1}{2}$ -minute curve. It was at this switch that the accident occurred.

The track at the point of accident is laid with 100-pound steel rails, bolted to metal I beams, about 18 inches apart. The switch consists of a Johnstown switch-stand manufactured by the Loraine Steel Company and is operated by a ground lever, throwing horizontally with the track. The switch-stand is located between the northbound and southbound main tracks, back of a hot-metal-protection partition, which is between the two tracks. The stand extends above the partition for the purpose of holding a switch lamp at night, but no banners are used in daylight. This switch-stand is 10 feet from gauge side of west rail, and the top of the stand is 6 feet 10 inches from the ground. The weather was clear.

The train involved consisted of locomotive 115, 11 ladle cars loaded with molten slag and a caboose, and was in charge of Engineman Ridley and Conductor Cameron. The train was en route from Carrie Furnace to Taylor, a distance of 8 miles. The caboose was on the forward end and the cars were being pushed ahead of the locomotive, which was the practice of handling these trains, the reason being that upon arriving at Taylor the cars can be placed in a position to be more readily unloaded. The train was derailed at about 1.45 p.m.

As a result of the derailment, Conductor Cameron was killed. The caboose and the ladle car next to it were the only cars derailed. The caboose came to rest 104 feet north of the point of the switch on the south leg of the wye, with the north end of the body resting upon the truck but off center, while the truck was entirely out from underneath the south end and the body rested on the ground. The ladle car was crosswise

between the two legs of the wye, resting against a watchman's shanty 105 feet north of the point of the switch; the following cars remained on the rails of the north leg of the wye.

Switchtender Hook, who was on duty at the north end of Rankin Bridge, stated that he was standing at the watchman's shanty and saw the transfer train as it approached. He went to the switch, threw it for the north leg of the wye, the normal position being for the south leg, latched it by putting his foot on the lever, as he always did on account of the switch closing hard, and then gave signal to the conductor, who was standing on the caboose platform, to come ahead. He heard the conductor answer the signal with the air whistle and heard the engineman answer the conductor's signal with the engine whistle. He stated that after throwing the switch he did not look to see if switch point was set properly to the west rail; neither did he make it a practice to look at switch points each time he operated a switch. He stated that after throwing the switch he stepped over between the rails of the southbound track. He estimated the speed of the train as it approached to be about 10 miles an hour, about the usual speed at that point. He further stated that he made an examination of the track and switch after the cars had been pulled back after the derailment and found that the switch point was not close up to the west rail leading to the south leg of the wye; he also stated that a piece was broken out of switch point about 8 inches from the point of rail. He stated further that the last movement over this switch was about 15 or 20 minutes prior to the time of the derailment, at which time a double-header passed over the switch and it operated properly at that time.

Engineman Ridley stated that before leaving Carrie Furnace, all air-brakes on the train were operating and that upon arriving on Rankin Bridge, he received signal from the conductor to proceed and was not running over 6 miles an hour when he noticed the caboose and first ladle car derail. He immediately applied the brakes and reversed his engine. He stated that the conductor did not apply air-brakes from the head end. He further stated that after the train was pulled back off of the switch points, the switch was set for the north leg of the vye, but he observed no defect about the switch.

Fireman Shane stated that at the time of the derailment he was putting coal on the fire and the first he knew of the accident was when the engineman attracted his attention by applying the brakes and calling to him.

Cinder Ladle Dumper Esik, who was riding on the caboose at the time of the accident, stated that he saw Conductor Cameron sound the air whistle in answer to the switch tender's signal and said the train was not moving much faster than a walk at the time. He also said that the leading wheels of the caboose were the first to leave the rails. The conductor told him to jump, at the same time doing so himself.

Traveling Car Inspector Good stated he made an inspection of the caboose after the accident, gauged all flanges and wheel checks and found them all to be in good condition and meeting all the requirements of his inspection.

Engineer Maintenance of Way Woolley stated he arrived at the scene of the accident shortly after the derailment and

made an examination of the switch, had the top casting removed and found that the bolt which holds the top gear of the throwing device to the switch-stand staff had been broken and a piece broken out of the switch point. He said the pin or bolt which holds gear casting secure, being broken out of staff, permitted the rod connecting the stand to the moveable points of switch to move in the gear casting without changing the operating lever.

An inspection was made of the broken piece of the bolt that holds the top gear casting to the crank shaft, with the switch stand box, and it showed evidence of one end having been broken for some time, one part of which could not be found; the other fracture was a new break and at a shoulder where the bolt had considerable wear. There was also found a piece 9 inches long broken out of the west switch point, 6 inches from the end of the point. On the end of the switch point there were marks as though the flange of a wheel had come in contact with same, which makes it quite evident that the switch point was not tight against the bed rail when train struck it.

The cause of this derailment was a broken bolt in switch-stand. The breaking of this bolt permitted the switch point to spring away from the bed rail, leading to the south leg of the wye, which evidently allowed the flange of the leading pair of wheels on the caboose to open the switch far enough to let the caboose and first ladle car go down south leg of wye. The remainder of the train evidently started down the north leg of wye, remaining on the track, and causing the caboose and first car on south leg of wye to derail.

While the defective bolt in the switch-stand was badly sheared, its condition could not have been discovered without first removing the top casting of box of switch-stand. The point of the switch rail showed considerable wear, but no record could be found telling when it was laid in the track; neither could any records be found as to when the switch-stand had been placed at this point, nor of repairs made to same.

Switchtender Hook is responsible in a measure for this derailment in that he failed to observe the position of the switch point after setting the switch for the north leg of the wye.

Switchtender Hook entered the service of the Union Railroad Company as yard clerk in April, 1919, and was made switchtender on June 18, 1919. He had had several years previous experience as brakeman and fireman.

DWL.