

In re Investigation of an accident which
occurred on the Lehigh & New England
Railroad near Northampton Junction,
Pa., August 24, 1916.

On August 24, 1916, there was a derailment of a freight train on the Lehigh & New England Railroad near Northampton Junction, Pa., which resulted in the death of 3 employees. After investigation of this accident, the Chief of the Division of Safety reports as follows:

The Nazareth Branch of the Lehigh & New England Railroad, on which this accident occurred, is a single track line, over which train movements are governed by time-table and train orders. The accident occurred within yard limits, where rules require yard locomotives, second and third class and extra trains to move prepared to stop, expecting to find the main or any other track occupied. The maximum speed of trains on this railroad is restricted by time-table rule No. 15, reading as follows:

*MAXIMUM SPEED of first class and extra passenger trains is fixed at 35 miles per hour, and of all other trains at 25 miles per hour on the main line and all branches except on the Nazareth Branch between Northampton Junction and Bushkill Junction, where the MAXIMUM for all trains is fixed at 15 miles per hour***."

The accident occurred between Northampton Junction and Bushkill Junction. Rule No. 15 provides further that locomotives running tender foremost, light or with train, shall not exceed the speed of 15 miles per hour at any point. On the day of the accident there was still another speed restriction on the movement of the train involved, by reason of track repairs being made, warning track signals having been placed at points 1,860 feet east and 700 feet west of the point of accident, to define the restricted territory.

Westbound freight train No. 55, consisting of locomotive 58 and 2 cars, left Pen Argyl at 8.32 a.m., en route to Martins Creek, and at Benders Junction 23 cars were picked up. Another locomotive, No. 55, was placed on the head end of the train at this point, while locomotive 58 was used as a helper near the rear of the train. At Bath Junction more cars were picked up, while others were set out, and when the train departed from Bath Junction, at 10.58 a.m., it consisted of locomotive 55, 29 cars, helper locomotive 58 and 12 additional cars in the rear of locomotive 58. The train was in charge of Conductor Parry, with Enginemen Lee on the leading locomotive and Enginemen Asheey on the helper locomotive. The helper locomotive was being operated backing up, due to the fact that the turntable at Martins Creek is not large enough to permit turning at that point. The leading locomotive to Martins Creek returns from

that point as the helper, whereas the helper locomotive to Martins Creek is the leading locomotive returning. The train stopped at a point about 1-3/4 miles west of Bath Junction and locomotive 55 took 3 cars to Northampton Junction, set them out and returned to the train, and that portion of the train between the two locomotives, then consisting of 26 cars, was moved by the two locomotives with the entire crew, except Flagman Merribue, who was left with the remaining 12 cars and caboose; the head end of the rear section of the train was then standing about 1,800 feet east of the point of derailment. The 26 cars were hauled to the Nazareth water tank, the helper locomotive, No. 58, cutting off just east of Dexter Hill summit. It then returned to the 12 cars, coupled to them and, proceeding westward, was derailed at 11.45 a.m.

Approaching the point of accident from the east the track is straight for 1,300 feet, followed by a 3-degree curve approximately 800 feet in length, in about the middle of which the derailment took place. The grade for about 2,300 feet approaching the point of accident is approximately 1.1 per cent. descending for westbound trains, while the accident occurred at the beginning of a 1.2 per cent. ascending grade, 800 feet in length. The weather at the time was clear.

The track is laid with 90-pound rails, 33 feet in length, on about 18 oak ties to the rail. Two inside spikes are used on one end of each tie and two outside spikes on the opposite end. No tie plates or rail braces are used on the curve at the point of accident. The ballast consists of cinders to a depth of about 8 inches. The track maintenance was good; the gauge and elevation were regular throughout the curve, and there were no signs of any spreading or creeping of the rails.

The first indications of the derailment were flange marks of the tender wheels on the right rail, which continued for a distance of 27 feet before dropping off on to the ties. Just beyond the initial point of derailment is a switch leading to a brickyard track and the tender followed down this track, while the engine followed down the main track, turning over on its right side and coming to rest 216 feet from the initial point of derailment. Five gondola cars piled over the engine. The track was practically undisturbed, with the exception of one rail which was forced out at the point where the engine overturned. The entire train crew, at this time consisting of an engineman, fireman and flagman, was killed.

Locomotive 58 is of the Mother Hubbard type, having the cab over the boiler. The weight of the engine without the tender is 190,000 pounds and with the tender 330,000 pounds. The tender has a capacity of 14 tons of coal and

6,000 gallons of water. The general condition of the engine was good, and the gauge of the wheels was found to be correct. The flange on the right back driving wheel, however, was worn to the condemning limit. The wheel flanges on the right side of the front tender truck were also worn, but not to the condemning limit, while the flange of the front wheel of the rear tender truck was slightly worn. After the derailment all brake rigging, including beams, hangers, shoes, keys, etc., were intact, but somewhat distorted, due to the derailment. All four corners of both trucks were secured to the underframe of the tender by safety chains.

Members of the crew of the leading portion of train No. 55 stated that they noticed nothing unusual in riding over the place where the rear section of the train was derailed, and it was also stated by members of that crew, who had ridden on locomotive 58, that they had never noticed that this locomotive had any unusual rolling motion.

Section Foreman Rissmiller, who was renewing ties in this vicinity, stated that at the time of the derailment he was 700 or 800 feet east of the point at which it occurred. In his judgment the train was running at a speed of 25 miles an hour at the time, which seemed to him not unusual or more than ordinary for that train. He thought, however, that the speed of 25 miles an hour was too fast to be traveling between the warning track signals set out by him. He stated that he noticed no unusual rolling motion of the locomotive as it passed him. The engineman was standing up and waved to him as he passed by. Section Foreman Rissmiller further stated that he watched the train and after it had gone some distance beyond him he saw its derailment. He immediately went to the scene and found the driving wheels still revolving and the engine exhausting steam. He stated that he gauged the track after the derailment and found it to be exactly right.

Yardmaster McCarty stated that on the day of the accident he was performing his duties at Northampton Junction when he heard a noise and upon looking down the track saw the train had been derailed. He stated that they always ran the second part of this train with the locomotive backing up and that generally it is run at a speed of 20 or 25 miles an hour.

Engineer Maintenance of Way Gilerest stated that he found the track to be regular in every way after the accident and the only opinion he could form as to the cause of the derailment was that the speed may have been excessive.

Engine Inspectors Williams and Sanderwek stated that they personally inspected the running gear of locomotive 58 prior to its departure from Pen Argyl on the day of the accident and found same to be in safe and serviceable condition.

Master Mechanic Wyman stated that locomotive 58 was inspected before leaving Pen Argyl, and further stated that if enginemen on previous trips had reported any defects at all in the condition of this locomotive, they were of a minor nature, and no extensive repairs had recently been made to it. He stated that locomotive 58 has two wheels under the tender with worn flanges, but that they were not down to the limit. The flanges were being watched with the intention of removing them as soon as they had reached the condemning limit. He stated that these two wheels were on the right hand side of the tender, the opposite side from which the tender left the track. The other wheels under the tender were in first class condition, the wheel which was in the lead at the time of derailment having recently been replaced after having the tire repaired. Master Mechanic Wyman also stated that the flange of the right back driving wheel was worn to the limit and that it had been the intention to remove it that day.

While it was impossible definitely to determine the direct cause of this accident, it is believed that the maximum speed limit of 15 miles an hour was being exceeded, resulting in the tender rocking to such an extent that its wheels mounted the rails, and that when these wheels came in contact with the switch leading from the main track the engine was overturned.