

No. 212
August 10, 1914.

IN RE INVESTIGATION OF ACCIDENT ON THE PENNSYLVANIA RAILROAD AT SHANNON, PA., ON JULY 23, 1914.

On July 23, 1914, there was a derailment of a passenger train on the Pennsylvania Railroad at Shannon, Pa., resulting in the death of 1 employee and the injury of 2 employees. After investigation of this accident the Chief Inspector of Safety Appliances reports as follows:

Train No. 276 consisted of 1 baggage and mail car and 2 coaches, hauled by locomotive 3263, and was in charge of Conductor O'Connor and Engineman McMahon. This train left Driftwood, Pa., at 6:10 a.m., en route to Philipstown, Pa., passed Lawsonham, the last open telegraph station east of the point of derailment at 10:04 a.m. and was derailed at a point 9,421 feet west of Lawsonham at 10:06 a.m.

Locomotive 3263 was derailed and ran a distance of 361 feet before it came to rest on its right-hand side, about 40 feet south of the track. The baggage and mail car was derailed and thrown across the track in an upright position, while the smoking car was partially derailed and sustained slight damages. The engineman was caught under the locomotive and instantly killed.

The low-grade branch of the Allegheny Division, on which this accident occurred, is a single-track line, trains being operated by the train-order and manual block system. The derailment occurred on a 9 degree curve, 210 feet in length, with a superelevation of 5½ inches, and in a 2-foot cut. The track at this point consists of 30-foot steel rails, weighing 65 pounds to the yard, and laid on 18 oak ties to the rail. The condition of the track on this curve is good.

An examination of locomotive 3263 after the accident failed to disclose any defects that could have caused the derailment. However, the axle on the forward pair of truck wheels was bent 1/8 of an inch, but this is thought to have been caused by the heavy strain to which it was subjected when the locomotive turned over. An examination of the track showed that the inside of the rail on the outside of the curve was badly worn.

Fireman Kearns stated that the engineman had shut off steam, allowing the train to drift along at a speed of about 20 miles per hour, but as soon as the locomotive left the rails the engineman applied the brakes in emergency. In his opinion the track on this curve was safe for a speed of 40 miles per hour.

Conductor O'Connor stated that his train was practically on time at all the stations between Driftwood and the point of derailment. He stated that his train ~~waited~~ waited from 1½ to 2 minutes at Brockville, New Bethelton, and Lawsonham in order to avoid leaving these stations ahead of schedule time. After leaving Lawsonham he was engaged in taking up tickets when he felt the emergency brakes being applied, at which time the speed of

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Locomotive 3263 was derailed and ran a distance of 321 feet before it came to rest on its right-hand side, about 40 feet south of the track. The baggage and mail car was derailed and thrown across the track in an upright position, while the smoking car was partially derailed and sustained slight damages. The engineman was caught under the locomotive and instantly killed.

The low-grade branch of the Allegheny Division, on which this accident occurred, is a single-track line, trains being operated by the train-order and manual block system. The derailment occurred on a 9 degree curve, 912 feet in length, with a superelevation of $5\frac{1}{2}$ inches, and in a 2-foot cut. The track at this point consists of 33-foot steel rails, weighing 55 pounds to the yard, and laid on 15 oak ties to the rail. The condition of the track on this curve is good.

An examination of locomotive 3263 after the accident failed to disclose any defects that could have caused the derailment. However, the axle on the forward pair of truck wheels was bent $\frac{1}{8}$ of an inch, but this is thought to have been caused by the heavy strain to which it was subjected when the locomotive turned over. An examination of the truck showed that the inside of the rail on the outside of the curve was badly worn.

Fireman Kearns stated that the engineman had shut off steam, allowing the train to drift along at a speed of about 20 miles per hour, but as soon as the locomotive left the rails the engineman applied the brakes in emergency. In his opinion the track on this curve was safe for a speed of 40 miles per hour.

Conductor O'Connor stated that his train was practically on time at all the stations between Driftwood and the point of derailment. He stated that his train ~~waited~~ waited from $1\frac{1}{2}$ to 3 minutes at Brockville, New Bethelton, and Lawsonham in order to avoid leaving these stations ahead of schedule time. After leaving Lawsonham he was engaged in taking up tickets when he felt the emergency brakes being applied, at which time the speed of

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his train was about 30 miles per hour. He did not think the engineman was running his train any faster than he usually did.

Between Red Bank and New Bethlehem, which includes the section of track upon which this accident occurred, passenger trains are by rule restricted to a speed of 40 miles per hour. Other than this rule there is no speed restriction on the 9 degree curve where the derailment occurred. The schedule time of train No. 276 over this portion of the road is approximately 35 miles per hour. Division Superintendent Parker stated that the schedule speed of train No. 276 was predicated on track and operating conditions prevailing between New Bethlehem and Red Bank, and that he relied upon the judgment of his enginemen in rounding sharp curves.

While it is impossible definitely to state the cause of this derailment, it is believed to have been due to excessive speed in view of track conditions existing on the 9 degree curve where it occurred. The superelevation on this curve was approximately $\frac{3}{8}$ inches, which on curves of that radius is not considered safe for speeds in excess of 30 miles per hour. The inside of the head of the outside rail on this curve was badly worn away, indicating excessive flange pressure on the rail head. This condition leads to the belief that speeds too high for the existing condition of the track were common on this curve.

Evidence with respect to the speed of train No. 276 at the time of derailment is conflicting. Fireman Kearns placed it at 20 miles per hour, Brakeman Proctor said 25 and Conductor O'Connor estimated the speed at 30 miles while Baggageman Beale could not say how fast the train was running. The evidence, however, is that train No. 276 on this trip had exceeded schedule speed between stations and the distance the engine traveled after leaving the rails leads to the belief that the train was running at a greater speed than 30 miles per hour when the derailment occurred.

Engineman McMahon and Conductor O'Connor were both experienced men who were familiar with conditions on this portion of the road.