

In re investigation of an accident which occurred on the Chesapeake & Ohio Railway near Sharon Ky., on December 8, 1917.

January 17, 1918.

On December 8, 1917, there was a derailment of a passenger train on the Chesapeake & Ohio Railway near Sharon, Ky., after which the train collided with the rear end of a freight train, the accident resulting in the death of 4 employees and injury of 4 employees. After investigation, the Chief of the Bureau of Safety reports as follows:

The accident occurred on the Lexington District of the Sharon Division, which extends from Lexington, Ky., to Ashland Ky., a distance of 187.7 miles. From Lexington to Netherland, a distance of 1 mile, it is a double-track line, while the remainder of the division is single track. Train movements are governed by time-table and train orders, no block signal system being in use.

On the day of the accident, eastbound passenger train No. 24 consisted of locomotives 97 and 99, 1 mail and express car, 1 combination car, 2 day coaches, 1 divided car and a Pullman sleeping car, and was in charge of Conductor Kentner and Enginemen Watkins and Lewis. This train left Lexington at 10.15 p.m., one hour and 41 minutes late, and passed Netherland at 10.30 p.m. About 400 feet west of the Netherland telegraph office is Walton Avenue street crossing. When in about the center of this crossing, the rear pony-track wheels of the leading locomotive derailed and ran on the ties a distance of approximately 3 miles when they came in contact with the west switch of the Sharon passing siding. The locomotives then were completely derailed and swerved to the north, colliding with eastbound freight train extra 653 which had taken the siding to allow train No. 24 to pass. The second derailment and collision occurred at 10.39 p.m. while train No. 24 was running at a speed estimated to have been between 25 and 40 miles an hour. At the time of the accident snow was falling, about 9 inches being on the ground, and the temperature was between 3 and 4 degrees below zero. The wind was blowing about 25 miles an hour.

The switch at the place of the accident was the only facing point switch that train No. 24 came in contact with after being derailed at Walton Avenue, although it had passed over two trailing point switches. There was a seven-foot guard rail in front of the facing point switch at Sharon and marks on the end of it show where the pony-track wheel struck it and drove it against the switch point, the switch point being driven back 10 inches. Both locomotives of train No. 24 left the track and headed northward across the Sharon siding, striking the caboose of extra 653 and turning on their right sides nearly clear of the main line. The mail and express car also headed directly north from the main

line with the west end abutting against the ties; this car fell off its trucks but remained almost upright on the ground. The combination car tipped over on its side, to the south of the main line. The first coach remained upright on the roadbed with both trucks on the rail, while one wheel of the second coach was derailed. The two ^{new} cars of the train remained on the track. The caboose of extra 563, which was standing about 10 feet in the clear of the clearance post of the switch, was completely demolished when struck by the leading locomotive of train No. 84, and the box car adjacent to the caboose was also demolished.

Walton Avenue crossing, at which point the initial derailment took place, intersects the railroad where the track has a curvature of 2 degrees to the south, this curve beginning 1,400 feet west of the crossing and ending 400 feet east thereof. Following the curve westwardly, there is a tangent three-fourths of a mile in length, a $1\frac{1}{2}$ -degree curve to the south, 1,300 feet in length, a tangent $1\frac{3}{8}$ miles in length, a $1\frac{1}{2}$ -degree curve to the north about 2,600 feet in length and then the track is tangent for 350 feet to the west switch of the passing track at Sharon. The grade at this switch is practically level, but approaching it from the west the grade is about .5 per cent ascending.

The track is laid with 85-pound rails, 35 feet in length, single spiked inside and outside to an average of 30 oak ties to the rail with about 8 inches of rock ballast; rails are joined with 4-hole angle bars but no tie plates are used except on curves of 3 degrees or more. The surface, alignment and general maintenance of the track is very good.

No planks are used at the Walton Avenue street crossing, and as there is considerable traffic over it, and as the ballast is filled up level with the tops of the rails, the snow and ice formed a solid mass along the tops of the rails. On the night of the accident the snow and ice was from two to four inches deep over the rails.

There was no indication of anything falling from the train and causing the derailment, and there was no evidence of anything dragging from the train. All of the wheels were inspected subsequent to the accident and all of the equipment carefully inspected, but nothing was found that might have contributed to the derailment. Three breaks were found in the pony-truck frame, however, which evidently were the result of the derailment, all being in the upper part of the frame.

Locomotives 97 and 99 are of the 4-4-2 type, having a total weight of 181,500 pounds each. The pony trucks have 33-inch wheels and were stayed by chains to the pilot beams and also to the engine frames. At no time from Walton Avenue crossing to the Sharon switch did the pony-truck wheels on locomotive 97 diverge further than about 12 inches from

the rails, but seemed to bounce up and down, often missing several ties.

Section Foreman Fert, who is in charge of the section on which the initial derailment took place, stated that on the night of the accident he had all of his men at work cleaning switches and crossings, but that he did not have men enough to take care of them all and none of his men had cleaned the crossing at Walton Avenue. His section is $3\frac{1}{2}$ miles in length and consists of 17 miles of track.

Section Foreman Harris, who has charge of the section where the final derailment and collision occurred, stated that on the morning following the accident, he walked from the wreck to the Walton Avenue crossing and traced the marks of the flanges in the snow along the rails the entire distance. His section is 6 miles in length and he has an average of 5 men in his gang. He said that this was sufficient for his section and that he did not find it necessary on the night of the accident to have any of his men on duty, having had all his switches and crossings cleaned during the day.

Car Foreman Mock stated that he inspected the track on the morning after the accident and found the marks of the flanges in the snow, beginning in about the middle of the Walton Avenue street crossing. From this place the marks made were easily distinguished and could be readily followed through the snow. He stated that he followed the marks to the new yard office and then stopped, as he met the supervisor who had followed the marks from the wreck.

Fireman Graves, who had just gone off duty at the time of the accident stated that he got on the leading locomotive of train No. 24 at Lexington and rode to Walton Avenue; that the train slowed down to between 6 and 8 miles an hour in order to let him off, and that he got off on the engineman's side but noticed nothing was wrong nor felt any bumping of any kind while getting off. He said that he stood on the crossing and watched the entire train pass, looking especially for any defect that might exist in the train, but observed none.

The statements of Trainmaster Watkins, who was riding on train No. 24 at the time of the accident, and the statements of engine crew of the second locomotive differ as to the speed of the train at the time it collided with extra 083, Mr. Watkins giving it as 40 miles an hour and the engine crew as 25 miles an hour. Trainmaster Watkins and Engineman Lewis both stated that Engineman Watkins, of the leading locomotive, did not make any emergency application of the brakes until the Sharon switch was reached, at which time he evidently received his first intimation of something wrong.

The facts gathered in connection with this investigation clearly indicate that the accident was caused by the formation of a solid mass of snow

and ice on the Milton Avenue street crossing, resulting in the derailment of a pony-truck wheel on the leading locomotive. How it was possible for this train to run three miles after being derailed without attracting the attention of the engineer is a fact that cannot be explained.

Engineer Watkins entered the service of the Chesapeake & Ohio Railway as fireman in August, 1891, and was promoted to engineer in August, 1899. At the time of the accident he had been on duty 2 hours and 30 minutes after a period off duty of 15 hours.