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IN RE INVESTIGATION OF ACCIDENT WHICH OCCURRED ON THE CHESAPEAKE & OHIO RAILWAY NEAR BARBOURSVILLE, W. Va., ON OCTOBER 28, 1914.

On October 28, 1914, there was a derailment on the Chesapeake & Ohio Railway near Barboursville, W. Va., which resulted in the injury of 9 passengers, 3 Pullman employees and 2 employees of the railroad. After investigation of this accident, the Chief of the Division of Safety reports as follows:

This part of the Chesapeake & Ohio Railway is a double track line, train movements being protected by the automatic block signal system. The track is laid with 100-pound steel rails, 33 feet in length, with about 18 ties under each rail, single spiked and rock ballasted. No tie plates or rail braces are used on curves of 3 degrees or less. This accident occurred on a curve of 2 degrees and 30 minutes leading to the left, the train having passed over about 625 feet of this curve when it was derailed. The grade is practically level and the super-elevation of the curve is 4 inches. The track at this point is on a fill of about 18 feet. The weather was clear.

The train involved in this derailment was westbound passenger train No. 1, en route from Fort Monroe, Va., to Chicago, Ill. At the time of the accident it consisted of 1 combination car, 1 coach and 3 Pullman sleeping cars, hauled by locomotive No. 178, and was in charge of Conductor Schweickert and Engineman Freutel. Train No. 1 passed Scott, W. Va., at 6.21 A.M., 8 minutes late, and at about 6.47 a.m. was derailed at a point about one-quarter of a mile east of Barboursville while running at a speed estimated

to have been about 50 miles per hour.

The locomotive and forward trucks of the combination car were not derailed. The rear trucks of the combination car and both trucks of the coach were derailed, both cars remaining at the top of the embankment. The three Pullman sleeping cars turned over to the right and went down the embankment. None of the equipment was seriously damaged.

The first marks of derailment were about 625 feet west of the beginning of the curve, at which point the outside rail had spread sufficiently to allow the wheels of the rear truck of the coach to drop down to the ties on the inside of the inside rail of the curve, the first marks being upon an angle bar on the inside of the rail, the bolts of which were sheared off by the derailed wheels. The next three adjoining rails on the inside of the curve turned over. The right hand wheels then crossed the outside rail, running upon the ties for a distance of about 215 feet, beyond which point the track was torn up by the derailment. The locomotive and first two cars came to a stop at a point about 1500 feet beyond the initial point of derailment.

Examination of the track showed that at the point where the wheels dropped inside the rail, 7 out of 8 ties were defective, while the spikes on the outside of the outside rail had been pushed outward. The ties showed that the spikes had been set and re-set in the endeavor to keep proper gauge and alignment. The ties were worn by the base of the rail to such an extent as to permit the rail to turn slightly when the weight of a train was upon it,

without pushing the rail out at the base.

Section Foreman Mallory, in charge of the section adjoining that on which the accident occurred, testified that he reached the scene of the derailment about 20 minutes after its occurrence. The bolts at the rail joint had been sheared off on the inside of the rail, this being the first sign of derailment. Opposite this point he found that the spikes holding the outside rail had been pushed outward from 1½ inches to 2 inches; the rail itself had sprung back in line.

Engineman Freutel stated that the speed of this train at the time of derailment was between 45 and 50 miles per hour. He felt a jerk and as he looked out of the window the air brakes applied in emergency.

Section Foreman Kelly, in charge of the section on which the derailment occurred, stated that he had worked on the track at the point of derailment during the preceding week, spiking, gauging and aligning the same.

Tool Car Foreman Smith stated that he found nothing wrong with the trucks of the cars composing train No. 1, except broken rigging and pedestals, while Master Mechanic Butler stated that he found all tires and flanges to be in good condition, all wheels in proper gauge, and no defects of any kind existing with respect to the trucks.

This accident was caused by the spreading of the outside rail on the curve, thus allowing the wheels running on the inside rail to drop down on the ties. Beyond the initial point of de-

railment the outside rail remained in line, thus pushing the derailed wheels against the inside rail, resulting in the turning over of the three succeeding rails on the inside of the curve. That the derailment was due to track conditions seems to be clearly established by the fact that the ties removed from the track were not in good condition and were badly base worn, while the spikes had been set and re-set in the endeavor to keep the track in line until their holding powers had been materially weakened. This is also further evident from the fact that at the time of the derailment the spikes on the outside of the outside rail were pushed outward in some places as much as 2 inches.