

July 15, 1912.

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IN RE INVESTIGATION OF ACCIDENT ON THE  
CHICAGO & ALTON RAILROAD,  
June 8, 1912.

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On June 8 there was a derailment on the Chicago & Alton Railroad near Shirley, Illinois. Although five cars were derailed no one was killed and only a few people were injured. After investigation into the cause of this accident the Chief Inspector of Safety Appliances reports as follows:

The division on which this accident occurred is a double track line, and train movements are governed by automatic block signals. The derailment occurred on a fill about 16 feet high. The rails are 30 feet long, weighing 80 pounds per yard. The track is poorly ballasted. It is straight for several miles in each direction from the point of derailment, and there is a descending grade of nearly  $1/2\%$  for south-bound trains.

Train No. 1, known as "The Alton Limited," was bound from Chicago, Illinois, to St. Louis, Missouri. It was in charge of conductor Corey and engineman Webster. It consisted of one mail car, one combination car, one coach, one chair car, one dining car and three sleeping cars, hauled by engine No. 633. This train left Bloomington, Illinois, at 2:52 P.M., six minutes late, passed Shirley at 3:08 P.M., and was derailed at about 3:12 P.M. at a point two miles south

of Shirley. The tender of the engine and the first four cars were entirely derailed, some of them plunging down the embankment. The forward trucks of the dining car were also derailed.

The fill on which this derailment occurred was put in during the year 1910. With the exception of a slight out, it is about 2 miles in length. It has never been permanently ballasted, a thin layer of gravel being used. This was not sufficient to keep the track in proper condition, and since that time cinders have been used to maintain the surface. It is said to be the intention to ballast this track with rock ballast during the present season. The ties were found to be in poor condition. The number required to repair the damage caused by the derailment was 374. On June 12, after the track had been repaired, 133 bad ties were removed from the track within a distance of 66 rail lengths south of the scene of the accident. An examination showed that there were many low joints, while the surfacing was irregular the entire distance from Shirley south to Funk's Grove, a distance of 4.1 miles.

The section foreman in charge of this section has had six years' experience as a section hand, and about four months experience as foreman. The records of the company show that there has been a daily average of 2-2/3 men employed in this section, in addition to the foreman, during the six months preceding the date of the accident. During

three months of this time, however, little track work could be done on account of bad weather conditions. At the present time there are only two men on this section, in addition to the foreman. This section embraces 7 miles of main track and a little more than 1 mile of side track.

Examination of the track showed that the derailment began at a point where there was a depression in the east rail of  $5/8$ " for a distance of 14 feet. It was in about the center of this low spot that the first wheel mark appeared on the top of the rail, the flange making a distinct mark for a distance of 30 feet. The wheel then dropped off on the east side of the rail and ran along on the ties for about 30 feet, making a clean cut mark of a single flange on each tie, and gradually leading off to the east until the west wheel was running along the middle of the ties. The marks then indicate that the safety chain on the truck had become tight, dragging the pair of wheels. It was about at this point that the truck began to break the ties and tear up the track. The marks were such as would be made by a four wheel truck. The only four-wheel trucks on the train were under the tender, and it is apparent that the forward tender trucks were the first to leave the rails. Examination of the wheels showed the metal to be clear and polished as if having run through gravel. They were of proper gauge, and their condition in no way contributed to the derailment.

This train traveled the distance between Bloomington and the point of derailment, 7 1/2 miles, in 14 minutes, or an average speed of 32 miles per hour. This speed was in conformity with train order No. 1116, issued May 15, 1912, which required that south-bound trains reduce speed to 35 miles per hour between Bloomington and Funk's Grove. The average scheduled speed of train No. 1 between Bloomington and the point of accident is a little more than 40 miles per hour.

The cars in this train were of wooden construction. They were built in the most modern manner, however, and possessed exceptional strength. To this can doubtless be attributed the fact that none of them were materially damaged and no fatalities occurred.

This accident was caused by the wheels of the forward tender truck mounting the east rail at a low spot in the same.

The men in charge of this train were obeying order No. 1116, limiting the speed of south-bound passenger trains to 35 miles per hour. It would appear, however, that this speed limit was too high for the existing track conditions.