

March 23, 1914.

**Report of Investigation of Accident on the St.
Louis & San Francisco Railroad at
Nichols Junction, Mo., February 16, 1914.**

On February 16, 1914, there was a side collision between two passenger trains on the St. Louis & San Francisco Railroad at Nichols Junction, Mo., resulting in the injury of 25 passengers. The trains involved in this collision were eastbound passenger train No. 3 on the Eastern Division and northbound passenger train No. 104 on the Northern Division.

Train No. 3 was in charge of Conductor Koist and Engineer Yehley. It was hauled by engine No. 1408, and consisted of two baggage cars, one coach, one chair car, and two Pullman sleepers. The baggage cars, coach and chair car were all steel construction and the Pullman sleepers were of wooden construction. Train No. 104 was in charge of Conductor Jerny and Engineer [redacted]. It was hauled by engine No. 1087 and consisted of one mail car, one baggage car, three coaches, one cafe car, and one Pullman sleeper. The Pullman sleeper and one of the coaches were of wooden construction, all the other cars in this train were of all steel construction.

That portion of the Eastern Division of the St. Louis & San Francisco Railroad between Springfield and Monett, Mo., known as the Springfield sub-division, is a single track

line equipped with automatic block signals between Monett and Nichols Junction. On that portion of the line between Nichols Junction and Springfield, a distance of 3.7 miles, trains are operated by the staff system, the track being used by both Eastern and Northern Division trains. At Nichols Junction the tracks of the Northern and Eastern Divisions cross each other at grade, two tracks forming junction connections between the two main tracks.

On the date of this collision train No. 8 left Monett, Mo., at 10.05 p.m., 15 minutes late. The distance from Monett to Nichols Junction is approximately 40 miles. The train arrived at Nichols Junction on time at 11.10 p.m., and ran into the side of train No. 104, which at the time was pulling into the station en route to Kansas City.

Train No. 104, known as the Kansas City Express, left Springfield at 11.00 p.m., and arrived at Nichols Junction at 11.10 p.m., on time, and was struck by train No. 8 while passing the eastern Division junction switch about 200 feet south of the station. Engine 1408 on train No. 8 struck the 5th car from the engine on train No. 104, an all steel car, and turned it over at the bottom of a 10-foot fill, then cornered a Pullman sleeping car in the rear of the car first struck and turned it over in the same manner. Engine 1408 was turned over on its side. The weather at the time of the accident was clear. At the time of the collision train No. 8 was running at a speed of about 15 miles per hour.

Engineman Keithley of train No. 8 stated that the

air pump and all brake appliances on his engine and tender were in good condition. The proper terminal test was made at Monett before the train departed from that point, and the train brakes were operating properly. In addition to this terminal test Engineman Keithley made a running test of his brakes after leaving Monett and found the brakes in good condition. At Aurora, 15 miles east of Monett, a station stop was made, and at a railroad crossing a short distance east of Aurora another stop was made. At Billings, a station about 15 miles west of Nichols Junction, a stop was made and the train took siding to meet a westbound train. All these stops were made without difficulty, and no trouble was experienced in the operation of the brakes. Engineman Keithley said that on approaching Nichols he shut off steam about 1.4 miles west of Nichols Junction. From this point to Nichols Junction the track is straight and the view is unobstructed; there is a grade descending easterly varying from .06 to .75 of 1% for almost the entire distance.

The automatic block signal system between Monett and Springfield ends at a point about 3,500 feet west of Nichols Junction. At this point there is located a semaphore signal which stands normally in the caution position and is maintained in that position as an added precautionary measure for eastbound trains approaching Nichols Junction. It also denotes the end of the automatic block territory. Between Nichols Junction and Springfield all train movements are controlled by the staff system. The connecting switch between

the Northern and Eastern Division is a hand thrown switch under the control of the staff operator at Nichols Junction. Trains approaching Nichols Junction from the west en route to Springfield call for the staff with 4 short blasts of the whistle. If the track is clear and the staff is ready for delivery to the train the operator lines up the connecting switch and signals the train ahead, handing up the staff which permits the train to enter the staff district without stopping the train. A time-card rule permits a maximum speed limit of 15 miles per hour over the connecting switch in making this movement. In the absence of a signal from the staff operator all trains are required to stop before entering the staff controlled district.

Engineer Keithley stated that after shutting off steam 1.4 miles west of the point of collision he drifted to the west passing track switch, which is approximately 5400 feet west of the junction point. When he reached this switch his train was running at a speed of from 35 to 40 miles per hour. He said that at this point he made a service application of the brakes and got a short brake pipe exhaust, indicating to him that he had no brake-pipe connection to the train. When he realized that he was without proper braking power he placed his brake valve in emergency position. About this time he noticed the headlight of train No. 104 approaching the station from Springfield, and not getting any further braking power he immediately reversed his engine. He was at that time about 1000 feet east of the Junction switch, and

failing to check the speed of his train sufficiently to stop before reaching the Junction switch he and his fireman jumped off just before the collision occurred.

Statements by Conductor Koist, Brakeman Bodanske and Fireman Linthicum on train No. 3 indicate that Engineman Keithley did not at any time call for brakes nor indicate by whistling signals that the train was beyond his control. Engineman Keithley had had 11 years experience on this railroad, and for 5 years past had done considerable passenger running. He was thoroughly familiar with the road and with the operating rules. The evidence shows that prior to the time of passing the west switch on approaching Nichols Junction the train brakes were efficient. Engineman Keithley shut off at the usual point and started braking his train in the regular way. He was positive in his belief that the brake pipe was shut off, and attributed it to the safety chain on the head end of the baggage car immediately before the engine coming in contact with the handle of the angle cock and closing it. The brake equipment of this train was not damaged with respect to the brake pipe or angle cocks, one car only being derailed, and it remained in an upright position. An examination of this car at the time of the accident would have disclosed its condition. Engineman Keithley received no injuries and proceeded to Springfield shortly after the accident without making an effort to find the cause of the alleged brake failure. He returned to the scene of the accident about five hours later for the purpose of making an inspection, but

In the meantime with the exception of one baggage car all of the equipment in train No. 8 was run on east in train. The brake pipe and angle cocks on the baggage car which had been located immediately behind engine 1408 were inspected by Engineman Keithley on his return to Nichols Junction and found to be in good condition with the exception that the angle cock on the forward end of the car was loose and easy to turn.

Superintendent Biams and Master Mechanic Abbott reached the scene of the wreck within one hour and thirty minutes after its occurrence, and made a thorough inspection of the engine and train. They found nothing wrong with the brake equipment. The Commission's inspectors made a careful inspection and a thorough test of the safety chain on this baggage car. The rear end of the car was equipped with a self-locking angle cock but the forward end was equipped with a non-locking handle which was found in good condition, the handle working normal. There was no evidence that the safety chain had been striking the angle cock handle, and while there is a possibility that this might have occurred it is rather improbable.

Regarding the statement of Engineman Keithley that he reversed his engine 100 feet west of the point of collision a careful inspection of the engine tires was made, and they were found in good condition. There were no flat spots and no evidence of wheels slipping. It seems very improbable that the engine could have been reversed and operated in the back-

motion for a distance of 1800 feet at a high rate of speed with the engine brakes set without locking the wheels and leaving some evidence of same in the condition of the tires.

This collision was caused by the failure of Engineman Keithley properly to control his train while approaching Nichols Junction, knowing that under the rules he would be required to stop at that point, and in violation of Rule No. 28 of the St. Louis & San Francisco Railroad Company's Book of Rules, which reads as follows:

"Trains must approach the end of double track, junctions, railroad crossings at grade, and drawbridges, prepared to stop, unless the switches and signals are right and the track is clear. Where required by law, trains must stop."

Rule No. 715 was also not complied with by Engineman Keithley.

This rule is as follows:

"x x x Engineers must make service test of air brakes at least one mile before reaching end of double tracks, junctions, railroad crossings at grade, draw bridges, regular stops, and before ascending heavy grades."

Had Engineman Keithley complied with the requirements of Rule No. 715 he would have had ample notice that his brakes were inoperative, and could have stopped his train in time to avoid the collision. Had he given proper notice to the train crew by means of whistle signals, the train could have been stopped by means of the conductor's valve in one of the cars, in time to avoid the accident, even though the brake pipe behind the engine was closed.

The signal situation at Nichols Junction, to guard against accidents of this nature, appears to be inadequate.

The caution signal located 3500 feet west of the Junction at the end of automatic block signal territory is really no safeguard. It simply indicates that the end of automatic territory has been reached, and enables an engineman to locate his position with respect to the crossing at Nichols Junction. Nichols Junction is a busy point, 40 or 50 trains daily passing there and using the track between there and Springfield under the protection of the staff. To provide adequate protection against collisions of this nature the communicating switches at Nichols Junction should be interlocked and be provided with derail protection so that if trains failed to stop they could not come into collision with other trains at the Junction as in this case. Engineman Keithley was an experienced man and no adequate explanation can be given for his failure to perform his duty properly in this case. It is the consensus of opinion that even though the angle cock had been turned as claimed by Engineman Keithley he would still have had sufficient braking power on his engine and tender alone to have stopped his train providing he had complied with rule 713, which required him to make a service test of the brakes at least one mile from the point where he was required to stop.

None of the employees involved in this accident was working in violation of any of the provisions of the hours of service law.