

**In re investigation of an accident which
occurred on the Texas & Pacific Railway
near Shamrock, La., July 18, 1917.**

August 15, 1917.

On July 18, 1917, there was a derailment of a troop train on the Texas & Pacific Railway near Shamrock, La., which resulted in the death of one soldier and the injury of nine soldiers, three Pullman porters and two trainmen. After investigation of this accident the Chief of the Division of Safety reports as follows:

The Marshall sub-division of the Eastern division of the Texas & Pacific Railway, on which this accident occurred, is a single track line extending from Marshall, Texas, to Boyce, La., a distance of 141.5 miles, over which train movements are governed by the time table and train orders, no block signal system being in use.

Eastbound troop train, special No. 293, consisted of locomotive 293, 2 baggage cars, 11 Pullman sleeping cars and a caboose, in charge of Conductor Mead and Engineman Morey. This train left Marshall at 9:05 a. m., 40 minutes late, left Marthaville, 91 miles east of Marshall, at 12:32 p. m., and was derailed at a point about 3.8 miles east of Marthaville and near Shamrock, at about 12:40 p. m., while running at a speed variously estimated to have been from 15 to 40 miles an hour.

The track at point of derailment extends in a straight line eastward and westward, and is laid on a three-foot fill with a grade slightly descending eastward for a distance of 6.6 miles, the grade at point of derailment being about one fourth of one per cent. The track consists of 75-pound steel rails, 30 feet in length, staggered joints, single spiked inside and outside, with about 20 untreated cypress ties under each rail. Tie plates are applied to all new ties. Sandy dirt is used for ballast and the grade, surface and alignment of the track are in fair condition.

Locomotive 293 and the first five and last two cars of the train were neither derailed nor damaged, but the other seven cars of the train were derailed and eighth, ninth, tenth and eleventh cars turned over and came to rest on the left hand side of the track on their sides and were rather severely damaged, these cars having skidded forward about 35 feet after turning over. All of the cars were of wooden construction except the seventh car in the train, which had steel sides, and the twelfth car, which had steel sides and under-frame. One soldier jumped out of the car window and was caught under the car and killed when it fell over on its side. The weather at the time was clear and very warm.

The first indications of derailment were marks on the base of the right hand or south rail on the inside of the rail, about 1354 feet east of bridge 255-D, these marks continuing along the base of rail for a distance of about 420 feet. On this side of the track practically all the angle bar bolts were sheared off on the inside of the rail and the spike heads were mashed down for this entire distance. The north rail, at a point opposite the first marks on the base of the south rail, began spreading to the north, the angle bars breaking at its east end and the following ten rails on the north side of the track were dragged down the embankment by the overturned cars. Beginning at a point about ten feet east of the point of derailment and continuing for a distance of about 330 feet, all the ties were practically destroyed, and in repairing that portion of the track, 140 ties and 12 rails were used. The south rail remained on the ties and in general line with the remainder of the track.

Conductor Wood, of special 293, stated that his train left Marshall at 9:05 a. m. and was derailed at 12:40 p. m. while running at a speed of 14 or 15 miles an hour. He stated that he did not have any orders to run slowly over the piece of track where the accident occurred, but his train had reduced speed before crossing bridge 255-D, located about one-fourth of a mile west of point of derailment. He was riding in the cupola of the caboose and the first intimation he had of an accident was when he saw the cars ahead begin to turn over on the north side of the track. After the accident he examined the track and found that the wheels had dropped off on the inside of the north rail and pushed that rail outward. He noticed that new ties had been placed in the track and found that there were ten new ties on the north side and five new ties on the south side of the track in which there were no spikes, while some were without tie plates, all of these ties being about one-third of a rail length east of where the track began to spread. From the marks on the ties he believed that the train was derailed where he found the new ties without spikes and near the rail joint, and in his opinion the accident was caused by the track being unsufficiently spiked, allowing it to spread and derail the train.

Engineman Morey, of special 293, stated that after leaving Marthaville he passed a slow flag about a quarter of a mile west of bridge 255-D and reduced the speed of his train to 8 or 10 miles an hour when crossing that bridge. After crossing the bridge he began working steam and thought the speed of his train was about 14 miles an hour when it was derailed. The first he knew of the derailment was when he felt the train jerk, and upon looking back he saw that the train had broken in two, at which time he immediately shut

off steam. In passing over this track he did not notice any unusual roughness, but after the derailment he examined the track and noticed that the new ties had not been spiked and at the rail joint, where the track began to spread, he found two new ties that had not been spiked on either end. In his opinion the accident was caused by the spreading of the track, due to insufficient spiking.

William Harrell, the negro in charge of the section of track on which this accident occurred, stated that on the morning of the accident he and the section crew began working about 30 feet east of the rail joint where the derailment occurred, putting in new ties, and had worked a little over 30 feet west of that joint, or a total distance of over 60 feet, and they had quit work a few minutes after 12 o'clock and eaten their dinner. He was uncertain as to the number of new ties that had been put in place there but thought there were 19, and although all of these new ties had not been spiked, he believed that the track was in safe condition when he left it shortly after noon. The tie under the center of the joint and the tie immediately east thereof were spiked, and of the new ties put in place at least every second one was spiked. There were about 20 ties under the rail east of that joint, 7 or 8 of them being new ones, and in his opinion 12 or 13 of these 20 ties were spiked; he did not spike all of the ties because he did not have a sufficient number of tie plates with him, although he had a sufficient number in the tool house. He stated that he did not put out any slow flags to protect the track where he was working because the bridge foreman who was repairing bridge 255-D had placed slow flags on either side of him and he thought that was sufficient protection, and furthermore he intended to keep the track in such condition at all times that a slow flag would be unnecessary. He stated that he believed that, on account of the extreme heat, the rail expanded and became so tight that it buckled under the train, thus causing the accident.

The four negro section men working with Section Foreman Harrell stated that they had been removing old ties and putting in new ones on the day of the accident, and that the greatest number of new ties put in any one place was five and about one-half of the new ties put in place were spiked, while some spikes were pulled from the old ties on the north side of the track and re-driven. They stated that only enough dirt had been placed under the new ties to raise them up to the rail but it had not been tamped; but before leaving for dinner the track was lined up and left in a safe condition. They were all of the opinion that the accident was caused by the rail expanding on account of the heat and buckling under the train.

Bridge Foreman Jackson stated that on the day of the accident he was working on bridge 255-D, about one-fourth of a mile west of point of accident, and when he left his work about 12 o'clock and went to dinner, he walked over the track that was being repaired and noticed that it was out of alignment and thought it was in an unsafe condition. When he saw the section men still working on it he did not pay any more attention to it, thinking that they would put it in safe condition before leaving it.

Trainmaster Ayers stated that he arrived on the scene at about 5:45 p.m. on the day of the accident and immediately made an examination of the track, and from the wheel marks he believed that the north rail had spread and allowed the wheels to drop on the ties at rail joint. He found the center tie under this joint spiked, but the first tie on either side thereof was not spiked. The next tie east was spiked, the next seven ties were not spiked, and next tie was spiked, and the next four ties, all new, were not spiked. He found the north rail pushed outward and about a half rail length east of the joint it was entirely off the ties, but the south rail did not appear to have been disturbed. He stated that east of the rail joint he found 12 unspiked ties under the north rail. In his opinion the accident was caused by the north rail spreading.

Assistant Engineer Naylor stated that he examined the track at point of derailment and from the marks on the ties the first indication of a spread rail was at a point 7 1/2 feet west of the rail joint on the north rail. At a point 5.2 feet west of this joint a splinter had been cut from the inside of the ball of the rail and 3 feet west of this joint were similar marks on inside of south rail. Three feet east of this joint the inside of the north rail had been spiked, 4.6 feet east of that joint there was a spike on the outside of that rail, 11.6 feet from this spike the rail was fully spiked, on both sides, and 8.3 further east the rail was fully spiked. For the first 24.6 feet east of the rail joint mentioned the north rail was held in place by spikes placed in four ties. At the second tie east of this joint there was one spike on the inside of the north rail and at the third tie there was one spike on the outside of the same rail, and there were no more spikes holding that rail for a distance of 11.6 feet, while for a distance of 19 feet there was only one spike. He considered the north rail east of the joint insufficiently spiked to be safe and thought the accident was caused by the track spreading.

Section Foreman McDonald, in charge of the section of track adjoining the section where the derailment occurred, stated that he arrived on the scene of accident about 1:20 p. m., made an examination of the track and noticed that several new ties had been placed in the track, two or three being put in each place, while at one place there were seven or eight. He noticed that several of these new ties had not been spiked and on account of the hot weather and the danger of the track buckling, he did not believe that the ties were properly spiked or had enough dirt around them to make the track safe.

This accident was caused by the track spreading under train 293 on account of not having been sufficiently spiked or filled in with dirt between the ties, thus allowing the rail, which had been expanded by the heat and become tight, to push outward when the weight of the train was placed upon it.

An examination of the first car derailed showed that the rim of the leading wheels of the front and rear trucks on the right hand or south side had severely chafed the ball of the rail and showed indentations which were evidently caused by the rims striking the angle bar bolts and shearing them off. From this evidence it is believed that the south wheel of the front truck of the sixth car was the first to be derailed, dropping off on the inside of the south rail and pushing the north rail outward.

While there is some conflict in the testimony as to the condition of the track at the time of the derailment, it is certain that a number of new ties had been put in place at this point and that the track was not in a safe condition for the operation of trains over it, for which Section Foreman Harrell is responsible. Although he claims that the slow flag at bridge 255-D was sufficient protection for the piece of track upon which he was working, the track was not safe for a train to pass over it even at low speed, and in any event he should have protected it by a flagman, instead of relying upon the flag at bridge 255-D.

Section Foreman Harrell has had about 17 years' experience as extra gang and section foreman, practically all of this time being spent in the employ of the Texas & Pacific Railway. None of the train crew had been on duty in violation of the hours of service law, and their records are good.