

October 11, 1916.

IN RE INVESTIGATION OF ACCIDENT ON THE KANSAS CITY,
MEXICO AND ORIENT RAILWAY OF TEXAS NEAR WERTZON,
TEXAS, ON SEPTEMBER 9, 1916.

On September 9, 1916, there was a derailment of a passenger train on the Kansas City, Mexico & Orient Railway of Texas near Wertzon, Texas, which resulted in the death of 2 employees and the injury of 1 employee. After investigation of this accident, the Chief of the Division of Safety reports as follows:

Westbound passenger train No. 1, en route from San Angelo, Texas to Alpine, Texas, consisted of locomotive 504, 1 baggage and mail car, 2 coaches and 2 Pullman cars in the order named, and was in charge of Conductor Robertson and Engineman Mooney. This train is scheduled to leave San Angelo at 11.10 a. m. but on the day of the accident it left there at 12.05 p. m., 65 minutes late, left Wertzon, Texas, 28.36 miles west of San Angelo, at 1.24 p. m., and at about 1.30 p. m. was derailed at a point 1.36 miles west of Wertzon while running at a speed of about 20 miles an hour.

The division on which this accident occurred is a single-track line and trains are operated by time-card rights and train orders transmitted by telegraph; no block-signal system is in use. The track is laid with 70-pound steel rails, 33 feet in length, single-spiked, without tie-plates or rail braces, with an average of 20 oak ties under each rail. The track is ballasted with about six inches of limestone, sand and gravel. From the depot at Wertzon the track is straight

for a little over a mile, followed by a $1\frac{1}{2}$ -degree curve to the right, 2,076 feet long, with a superelevation of $1\frac{7}{8}$ inches. The derailment occurred on this curve about 350 feet from its west end. The weather at the time was clear.

The derailment occurred on the outside of the curve. The locomotive turned over on its right side and came to rest at the bottom of a five-foot fill, fouling the main line; the tender turned bottom-side up, almost parallel with the track, and behind the locomotive, with its front trucks crosswise the track just ahead of the baggage car, and the rear trucks down the embankment on the left side of the track about opposite the head end of the baggage car. The train came to rest with the head end of the baggage car derailed and about 35 feet in advance of the locomotive. The engineman and fireman were killed in the accident.

An examination of the track approaching the point of accident from the east showed the first indication of derailment to be a flange mark on the ball of the left, or south rail, beginning about four feet from east end of rail, and continuing on top of rail for a distance of about 20 feet. This mark then diverged to the left, indicating that the wheels dropped off the rail at this point, and marks on the ties showed that the wheels continued on the ties for a distance of 15 feet. The flange mark made by right wheel of the derailed truck continued in a general line with track, about two feet from and on inside of south rail, for a distance of about 50 feet, where another wheel mark appeared on inside

of and near the north rail. From this point to where the tender turned over, a distance of 104 feet west, both marks appeared to be made by the same truck in a skewed position. From this latter point to a point near the head end of engine, or about 100 feet, no wheel marks or indentations could be found on ties or rails, except a raked place on the end of the ties, apparently caused by the tender dragging on its side.

Locomotive 504 and the tender were badly damaged. The only damage to train equipment was slight damage to the baggage car, and the damage to track consisted of 24 broken ties.

Conductor Robertson stated that he had orders to run as slow between San Angelo and Big Lake as safety required; that the train was derailed about a mile west of Hertzon at 1.30 p. m., while running at a speed of 18 or 20 miles an hour. He stated that there was no unusual jer; that he saw the dust flying and thought something was derailed, and on looking out saw the engine had turned over. He further stated that he could not see any defects in the track, or any thing else that could have caused the accident.

Brakeman Neeko stated that he was sitting in the front end of the first coach when the accident occurred; that he thought the train was running about 20 miles per hour. He stated that he felt an emergency application of the air but believed it was not applied until after the engine broke loose from the train. After the accident he examined the track, but could not see anything that could have caused the derailment.

Section Foreman Walton stated that the general condition of the track where the accident occurred was good. He said that some of the gauge was in one-half inch and some was out one-half inch, but that the track was not low or out of line at any place. He stated that he did not make any investigation as to the cause of the derailment, but did not think that the irregularity in the gauge had anything to do with it.

Roadmaster Baxter, who has charge of the Second District, stated that he made an examination of the track and that the irregularity in surface was about three-fourths of an inch, and that the track was in pretty good alignment. He stated that there was a low rail on north side, about 1 1/2 rails east of where the wheel mounted the rail, it being about 1 inch low, and that the joint on the same side one-half rail east of point of derailment was swinging from one-half to three-fourths of an inch. He stated that the condition of the ties was good, that the roadbed was in good condition, and that he considered the track safe for a speed of 30 miles per hour.

Superintendent of Motive Power Hertsheimer stated that he made an examination of the derailed engine and from the mark on the front wheel he believed that the derailment was caused by something being on the track. He stated that he examined the engine and found the lateral to be about 1-1/16 inch, which he did not consider excessive. He said that the engine was last generally overhauled in the Wichita shops about the last of October or November, 1914. In his opinion the engine was entirely derailed before it turned over.

Master Mechanic Kyle stated that engine 204 had been

taken into the shop principally for tank work. New male and female center plates were applied, tank bolsters were reinforced with steel plates, and the tank trucks were put in good running conditions. He stated that the back engine boxes had about 1-3/16 inch lateral, the main boxes five-sixteenths inch and the engine trucks about three-fourths inch lateral. He further stated that he made an examination as to the cause of the derailment, but did not arrive at any definite conclusion, but in his opinion Engineman Mooney had occasion to go out on the running-board of the locomotive for some purpose, and the tender began to rock and he was not at his brake-valve to steady the engine. He thought that the rear tender truck left the track first, as he could not see any indication of the engine ever having been on the ground. In his opinion the rear tender truck was derailed first, and the derailed tender turned the engine over, but could give no explanation as to the cause of the derailment.

General Foreman Ziller stated that engine 504 and tender had been repaired and made ready for service the morning of September 5th. He stated that temporary hub plates were applied to the back drivers when in the shop, and that babbitt metal was used in the recesses of the hub of the left back driving wheel, and that a continuous babbitt ring was applied on the right back driving wheel journal in order to make the lateral equal on both sides. He stated further that prior to the locomotive leaving San Angelo on the morning of the accident he inspected the engine and found that this babbitt

was still in the left back hub of the wheel. He stated further that when it was in the shop it had been found necessary to reinforce the tender bolsters and apply new male and female center castings, and that it was in first-class condition when it left the shop.

The tender of engine 804 has a capacity of 7,000 gallons of water and 12 tons of coal, and at the time of derailment was full of water and nearly full of coal. The cistern is 22½ feet long, 5 feet 5 inches high, and the coal pit flanges extend 17 inches above the cistern, making the cistern at coal pit location 6 feet 10 inches high. The height from rails to bottom of cistern, at rear of tender, is 51 inches. The height from rail to top of cistern is 8 feet 3 inches, and from rails to top of coal flange 11 feet 1 inch. No side bearings are applied on front truck of tender. The center castings are applied below the tank frame, and the distance from tank frame to bolsters on front truck is 9½ inches and on rear truck 10½ inches. These conditions apparently make the tender top-heavy when filled with coal and water, as was the case at the time of this derailment.

Investigation disclosed that this tender was derailed four times between August 2 and August 19, 1915. On August 22d, engine 804 was taken into the shop "mostly for tank work", according to the statement of Master Mechanic Kyle, and was turned out for service on September 5th, only four days previous to this derailment. In view of this record, it is believed that this tender was susceptible to derailment to a greater degree than

usual, and when the low spot and swinging joint in the track just east of the point of derailment was encountered, the rear tender truck was thrown off the track, causing the engine to be derailed in turn.

The employees in charge of train No. 1 were experienced and competent men and had been on duty 1 hour and 45 minutes at the time the accident occurred.