

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE ATLANTA, BIRMINGHAM & ATLANTIC RAILROAD NEAR PARKWOOD, ALA., ON OCTOBER 3, 1925.

January 13, 1926.

To the Commission:

On October 3, 1925, there was a derailment of a freight train on the Atlanta, Birmingham & Atlantic Railroad near Parkwood, Ala., resulting in the death of three employees.

Location and method of operation.

This accident occurred on that part of the Birmingham Division ^{extending} between Lineville and Birmingham, Ala., a distance of 104.2 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time-table and train orders, no block-signal system being in use. The derailment occurred at the entrance to a rock cut, about 25 feet in height, at a point 3,676.5 feet east of the east switch of the passing track at Parkwood. Approaching the point of accident from the east there are several short curves and tangents, followed by a 50° curve to the left 815.8 feet in length, the accident occurring on this curve at a point 414 feet from its eastern end. The grade for westbound trains is ascending, varying from 0.6 to 1 per cent, being 0.8 per cent at the point of derailment. The track is laid with 80-pound rails, 33 feet in length, with an average of 18 or 20 ties to the rail-length, single-spiked, tie-plated on curves, and ballasted with slag and cinders to a depth of from 6 to 12 inches; four-hole angle bars are used. Under special rules in the time-table, engines backing up will not exceed a speed of 15 miles an hour.

The weather was clear at the time of the accident, which occurred at about 10.58 a.m.

Description.

Westbound freight train extra 103 consisted of four cars and a caboose, hauled by engine 103, backing up, and was in charge of Conductor Parsons and Engineman Harden. At Pelham, 7.9 miles east of Parkwood, copy of train order No. 16, Form 31, was received, reading as follows:

"Eng 103 run Extra Pelham to Elyton".

This order was made complete at 10.27 a.m., and the train departed from Pelham at 10.33 a.m., according to the train sheet, and on reaching a point approximately 0.7 mile east of the east switch at Parkwood was derailed while traveling at a speed estimated to have been about 15 miles an hour.

The tender, engine, the first car, and the forward truck of the second car in the train were derailed on the outside of the curve, the engine coming to rest against the wall of the cut. The rear end of the tender was $203\frac{1}{2}$ feet from the initial point of derailment. The employees killed were the engineman, fireman, and brakeman.

Summary of evidence.

Conductor Parsons stated that as soon as train order No. 16 was made complete at Pelham, at 10.27 a.m., he obtained it and ran from the office to the engine and told Engineman Harden that their train could make Falliston Junction, 2.7 miles west of Pelham, for train No. 82, a scheduled second-class eastbound train, and the engineman replied that as he did not have to take water they probably could go to Parkwood for that train, which is due at Parkwood at 11.05 a.m. Engineman Harden started the engine and read the order and after proceeding about five or six car lengths Conductor Parsons got off the engine and boarded the caboose. The train slowed down before passing over Acton Crossing, 1.6 miles west of Pelham, and stopped for about one minute at Helena to take on a small supply of coal, the contents of two two-wheel dump cars being put on the tender by the coal-chute men. When passing Falliston he looked at his watch, saw it was 10.38 a.m., and gave Engineman Harden a proceed signal, since his train had 22 minutes, over and above the clearance time of five minutes in which to reach Parkwood, 5.2 miles west of Falliston Junction, which could be done without exceeding the speed limit of 15 miles an hour for engines backing up. Approaching the point of derailment Conductor Parsons was riding in the cupola of the caboose; he looked at his watch, then looked out of the window to ascertain his location and at this time saw the tender leave the track, thus fixing the exact time of the derailment at 10.58 a.m. At first he said the speed could not have been over 20 miles an hour, and when Questioned closely on this point he reduced his estimate to 15 miles an hour.

Flagman Bailey stated that the speed was not excessive en route, that the engineman operated the train carefully around curves, and he estimated the speed at the time of the derailment to have been about 15 miles an hour. Immediately after the accident he ran westward to protect against train No. 82 and after flagging that train he proceeded eastward to protect the rear of his own train, and on reaching a point about 900 feet east of the point of accident he found a side bearing on the north side of the track which later proved to have dropped from the forward truck of the tender of engine 103.

Section Foreman Cox stated that he was working at a point about 2 miles east of the point of accident when extra 103 passed, moving at a speed he estimated to have been about 20 miles an hour. He arrived at the point of accident at about 12.30 p.m. and made an examination of the track, but found nothing that in his opinion would have caused the accident, although less than a rail-length east of the point of accident there was a swinging joint and several swinging ties, while the track was open preparatory to being filled with ballast. The last time he inspected this piece of track on foot was about a week prior to the accident, at which time he corrected a swinging joint, about two rail-lengths east of where the accident occurred.

Roadmaster Mims stated that the joint in question had a swing of about $\frac{1}{2}$ inch, but notwithstanding this swing, on a curve, he considered the track good for scheduled speed. Roadmaster Mims admitted that the track was not maintained in first-class condition, owing to shortage of labor.

General Foreman Smith stated that he inspected engine 103 on the day prior to the accident, at which time repairs to the tender were being made. A patch had been applied to the right side of the forward truck bolster, which was broken, the defect extending from the bottom of the forward channel across the top of the bolster for about 75 per cent of its width, necessitating the removal of the right side bearing and the center casting. A butt strap was applied to the full width of the top surface of the bolster, and also on the angle of the bolster on the front side; the strap applied on the top extended beyond the center plate to the left. When replaced, the center casting and the right side bearing were higher than formerly was the case, owing to the thickness of the patch, and it was then necessary to shim up the left side bearing to obtain the proper clearance. While jam nuts were ordinarily used to secure bearings and shims, yet in this instance, owing to the construction of the bearings, it was necessary to use single nuts; he said that the ends of the bolts

should have been burred to prevent the nuts from coming off, even if they worked loose, and that he had been informed this had been done. He further stated that had the left side bearing been properly bolted in place and the threads of the bolts burred, it would have been hardly possible for it to have become detached, and he was unable to account for its displacement.

Engine Carpenter Gray stated that on the day prior to the accident he spliced the front bolster of the tender by applying a patch $\frac{1}{2}$ x 12 x 42 inches to the top of the bolster, the patch extending from the outside of the right side bearing toward the left for a distance of about 5 inches beyond the center casting, and he also riveted a strap $\frac{1}{2}$ x 4 inches on the side where the angle had been broken. The shims placed under the left side bearing to secure the proper clearance consisted of two pieces of iron $\frac{1}{4}$ and $\frac{1}{2}$ inch thick. The bearing was secured with bolts $\frac{3}{4}$ inch in diameter, to which were applied single nuts and the threads of the bolts were then cut with a chisel. Engine Carpenter Gray stated that he inspected the tender at about 7 or 8 a.m. on the day of the accident, found nothing wrong, and was unable to account for the side bearing becoming detached immediately prior to the occurrence of the accident.

Examination of the track showed that the leading tender wheel on the fireman's side of the tender climbed the outside rail of the curve and ran on top of this rail a distance of 15 feet before it dropped off on the ties on the outside of the rail, where it continued for an additional distance of 20 feet before running off the ends of the ties. At a point 55 feet farther to the westward there was a mark on the north wall of the cut, apparently made by contact with the left rear corner of the tender. The opposite wheels dropped to the ties on the gauge side of the south rail at a point 14 feet west of where the first marks appeared on the north rail.

Measurement showed that the superelevation of the outer rail was $3\frac{3}{4}$ inches at the point where the first wheel climbed the rail, while at the first three joints east of that point the superelevation was 4 inches, tapering off gradually to the tangent track at the end of the curve. It was found, however, that about a rail-length east of the point of derailment there was a joint which went down about $\frac{3}{4}$ inch as an engine passed over it. The gauge at the point where the wheel mounted the rail was $\frac{7}{8}$ inch open; 10 feet east of that point it was $\frac{9}{16}$ inch open and 20 feet to the eastward it was $\frac{1}{4}$ inch open, while 30 feet to the eastward the gauge was $\frac{1}{4}$ inch tight. It was also observed that there were a great many spikes which were loose or not properly holding.

Conclusions.

This accident is believed to have been caused by the defective condition of the front tender truck, coupled with irregularities in the track.

It was not definitely ascertained how the left side bearing became detached, but the absence of this side bearing undoubtedly caused the tender to rock more than usual, and it seems probable that the low joint found about a rail length east of the first marks of derailment, coupled with the loss of the side bearing and the irregularities in gauge immediately preceding the point of accident, caused the tender to rock to such an extent as to result in the derailment. There was a question as to whether or not the speed restriction of 15 miles an hour for engines being operated backing up was being properly observed; the distance the equipment ran after the accident tended to the belief that this limit might have been exceeded, but in the absence of anything else to support this belief and in view of the unsatisfactory condition both of track and equipment, it is not believed that excessive speed was a factor in causing the accident.

The evidence indicated that there were not enough section men to maintain the track properly, and that about all that could be done with the force available was to make repairs to the worst places and then do the best they could with the rest of the track. Such a situation is not conducive to the safe movement of trains, and measures toward eliminating this condition should be taken as quickly as possible.

The employees involved were experienced men; at the time of the accident they had been on duty less than 3½ hours, after having been off duty 14 hours or more.

Respectfully submitted,

W P. BORLAND,

Director.