

## INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE  
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE  
TEXAS AND NEW ORLEANS RAILROAD, SOUTHERN PACIFIC  
LINES, NEAR KAUFMAN, TEXAS, ON JANUARY 16, 1923.

February 15, 1923.

To the Commission

On January 16, 1923, there was a derailment of a work train on the Texas & New Orleans Railroad, Southern Pacific Lines, near Kaufman, Texas, which resulted in the death of one employee, and the injury of one employee.

Location and method of operation.

This accident occurred on a subdivision of the Beaumont-Galveston Division, extending between Dallas and Jacksonville, a distance of 117.6 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 accident occurred at a point approximately 4.3 miles west of the station at Kaufman, between the east and west switches of what is known as the Kaufman Gunbo Pit. Approaching the point of accident from the east the track is tangent for more than a mile, while the grade for a distance of 4,900 feet is descending, varying from 0.01 to 0.82 per cent, being 0.27 per cent at the point of derailment. The track is laid with 80-pound rails, 30 feet in length, with 17 or 18 cypress, oak and pine treated ties to the rail length, single spiked, and ballasted with about 8 inches of gravel. The weather was clear at the time of the accident, which occurred at 12.15 p.m.

Description.

Westbound work extra 308 consisted of 1 empty ballast car, 1 water car, engine 808, being operated backing up, 19 empty ballast cars and a caboose in the order named in charge of Conductor Allen and Engineer Guidry, and was enroute to a gravel pit near Kleberg, 20.9 miles west of Kaufman. This train left Kaufman, according to the train sheet, at 11.55 a.m., and was derailed at a point 4.3 miles west of Kaufman while traveling at a speed estimated to have been about 15 miles an hour.

The empty ballast car ahead of the engine became uncoupled and was not derailed. The water car, tender, engine and the five succeeding empty ballast cars were derailed to the right, the engine turning over on its left side. The employee killed was the fireman.

#### Summary of evidence.

Examination of the track disclosed a slight bruise on the gauge side of the south or left rail at a point approximately 490 feet east of the cab of the derailed engine, where a flange apparently climbed the rail. Seven feet west of this point there was a flange mark on a bolt on the outside of the left rail, then a flange mark on the base of the rail, 3 feet 9 inches farther west, followed by a mark on a tie an additional distance of 3 feet 3 inches to the west. These marks on the ties continued for a distance of 120 feet to where the double flange marks began, continuing an additional distance of 150 feet before leaving the ends of the ties. The first flange mark on the right side of the track appeared on the seventh of the ties which were marked on the left side, and continued about 50 feet to where the double marks began, these continuing about 162 feet to where the track was torn up. Single flange marks again appeared near the center of the ties at the rear of the tender, which had remained coupled to the engine, and continued a distance of about 60 feet to where a wheel apparently crossed the right rail. Near the end of the tender the ends of the ties were broken on the right side, apparently by the wheels of the water car, which came to rest 83 feet beyond the tender. The bottom arch bar on the left side of the rear or east truck of the water car was broken before the train left Kaufman, and apparently this end of the car was derailed to the left, and was followed by the derailment of the forward truck to the right, damaging the track to such an extent as to cause the derailment of the following equipment.

Examination of the track for a distance of 2,000 feet east of the point of derailment indicated that there had not been any dragging equipment. Measurements of gauge and surface, for a distance 450 feet east of the first mark, showed that the gauge varied from  $\frac{1}{4}$  inch to  $\frac{23}{32}$  inch wide, while there were variations in surface from  $\frac{1}{8}$  to  $\frac{23}{32}$  inch.

Conductor Coffman, regularly assigned to the gravel run and working opposite to Conductor Allen and crew, stated that the water car came into Kaufman on the night of January 15, with Conductor Allen's train, Conductor Allen reporting

to him that it had a broken arch bar and also reporting the defect to the chief dispatcher. Conductor Coffran stated that he set this car out at Kaufman, and did not use a water car on his trip that night, as he did not consider it would be safe to run a car with a broken arch bar. Conductor Allen stated that while he knew it was not safe to use the water car, it was needed on the morning of the accident, and he therefore coupled it to his train. Conductor Allen admitted that as far as his knowledge of the condition of the air brakes was concerned, all of them might have been cut out, but he knew that the air was working through because the air gauge in the caboose showed 65 pounds pressure.

Engineman Gindry stated that no test of the air brakes was made before leaving Kaufman, but that he made a running test shortly after leaving Kaufman. He had until 12.30 p.m. to make Gastonia, 7 miles distant, for train No. 166, but he knew when he left Kaufman that there was not sufficient time to arrive at Gastonia without exceeding the speed limit of 15 miles an hour for engines backing up, and he intended backing in at the west switch at Gumbo Pit for train No. 166. He stated that the engine was drifting when he noticed dust and gravel flying from under the water car, at which time the speed was about 15 miles an hour, and he immediately pulled the handle of the automatic brake valve around, he fell as the engine was derailed, and was not certain that he moved the brake valve fully around to the emergency position, but he thought he did as the brakes seemed to hold. The condition of the arch bar on the water car had not been reported to him and he did not know it was defective.

Head Brakeman Traweck stated he had noticed the broken arch bar on the water car two or three days before the accident. Rear Brakeman Baker stated that he assisted the head brakeman in making up the train and coupling the air before leaving Kaufman, and that he looked over all of the cars, but did not notice if any brakes were cut out.

Road Foreman of Engines Howe stated that on arriving at the scene of the accident he made an inspection of the wreckage and found a broken arch bar on the south side, "A" end, of the water car, the distance between the broken ends being  $2\frac{1}{4}$  inches with no weight on the truck; this would permit the tie bar and top arch bar to bend down, lowering the bolster, to which the side bearing is bolted, and causing excessive side-bearing clearance on that side.

Chief Dispatcher McLan stated that after the message reporting the broken arch bar was received, instructions were issued directing that this car be repaired immediately. He also stated that a car set out on account of a broken arch bar can not be put in service until after proper notification by a car repairer that it is serviceable.

No test of the air brakes on extra 808 had been made before the train departed from Kaufman, and none of the members of the crew had any accurate knowledge as to their condition. After the accident the brakes were found to be cut out on six cars, excluding the derailed equipment. Tests of the air brakes on the 16 undamaged cars, the caboose not being available, showed that with an emergency application the brakes were operative on eight cars, while on only four of these were the brake shoes held tightly against the wheels.

#### Conclusions

This accident is believed to have been caused primarily by the use of a car on which there was a broken arch bar, for which Conductor Allen is responsible.

Conductor Allen had reported the defective condition of this car on the preceding day, and although the car was then set out on account of this condition, Conductor Allen returned it to service on the day of the accident knowing it had not been repaired. The result of the breaking of the arch bar would be to cause excessive side-bearing clearance, and, with the water car about two-fifths full, undoubtedly permitted it to rock to such an extent as to allow the wheels to climb the rails. It is possible that this rocking motion was aided by the irregularities in gauge and surface approaching the point of accident although at the speed at which the train apparently was being operated it is not probable that these irregularities are of great importance.

While the condition of the wreckage and the distance traveled after the first wheels were derailed would seem to indicate that the speed was higher than estimated by the employees, the tests made of the air brakes on the undamaged portion of the equipment showed that with an emergency application of the air brakes the brake shoes were tight against the wheels on only 4 cars out of the 16 cars tested. This lack of efficient air brakes constituted a flagrant violation of the law, and undoubtedly was a material factor in causing the train to travel so far after derailment.

with the exception of the engineman, the crew of extra 808 had been on duty about 2 hours, after about 13 hours off duty, the engineman had been on duty about 2 hours, after about 22 hours off duty.

Respectfully submitted,

" P. BORLAND,

Director.