

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NASHVILLE TERMINALS OF THE LOUISVILLE AND NASHVILLE RAILROAD AND THE NASHVILLE, CHATTANOOGA AND ST. LOUIS RAILROAD AT NASHVILLE, TENN., ON JULY 31, 1923.

September 11, 1923.

To the Commission:

On July 31, 1923, there was a derailment of a yard engine on the Nashville Terminals at Nashville, Tenn., the derailed engine colliding with a freight train on an adjoining track, resulting in the death of three employees and the injury of five employees.

Location and method of operation.

The Nashville Terminals consist of Kayne Avenue Yard and a number of outlying yards, including the shops of the Nashville, Chattanooga and St. Louis Railroad, about 2 miles north of Kayne Avenue Yard, and the West Nashville Yard, located on a branch line about $2\frac{1}{2}$ miles beyond Shops. The accident occurred about one-half mile north of the north end of Kayne Avenue Yard, and about 500 feet south of, and within the limits of the Eleventh Avenue interlocking plant, in the vicinity of the point of accident this is a double-track line over which trains are operated by time-table, train orders, and a manual block-signal system. Approaching from the north the track is tangent for 1,622 feet, followed by a compound curve to the right, varying from $1^{\circ} 20'$ to $7^{\circ} 28'$, which is 1,697 feet in length, being $5^{\circ} 50'$ at the point of derailment, and then is tangent to the south for 1,660 feet. The grade descends to the south for over 2 miles to a point about 600 feet north of the point of accident, varying from 1.04 to 1.32 per cent, then is ascending to Kayne Avenue Yard, varying from 0.39 to 1.17 per cent, being 0.52 per cent at the point of accident. The track is laid on a fill 20 feet in height, with 90-pound rails, 33 feet in length, with 18 to 20 ties to the rail length, tie plated, ballasted with stone and gravel, and maintained in good condition. The weather was clear at the time of the accident, which occurred at 10.43 p.m.

Description.

Yard engine 629, in charge of Foreman Simpson and Engineman Ashburn, left West Nashville Yard with 24 cars at 10.10 p.m., and was derailed near the south limit of the Eleventh Avenue interlocking plant at 10.43 p.m., on account of a car

door lying on the left rail of the southbound track, the engine swerving toward the left or outside of the curve and colliding with the engine of northbound freight train No. 50, while running at a speed estimated to have been between 6 and 25 miles an hour.

Northbound freight train No. 50 consisted of 31 cars and a caboose, hauled by engine 622, and was in charge of Conductor Mason and Engineman Smith. It left Kayne Avenue Yard at 10.35 p.m., and while running at a speed estimated to have been 15 or 20 miles an hour was struck by yard engine 629.

From the point at which the car door was found on the southbound track, flange marks appeared on top of the rails extending southward 34.25 feet, then on the ties on the east side of the rails for a distance of 75.33 feet to the frog of a trailing crossover switch where the wheels again mounted the rails, from this frog, flange marks appeared at intervals for a distance of 83.58 feet to the frog of a trailing-point switch, where engine 629 was overturned and with its tender came to rest down the west bank of the fill with its ends reversed. Engine 622, together with its tender, was overturned and came to rest down the east bank of the fill. Twelve cars were derailed and more or less badly damaged. The employees killed were the conductor, engineman and head brakeman of train No. 50.

Summary of evidence.

Switchman Madden, of yard engine 629, stated that he tested the air brakes before his train left West Nashville Yard and found the air brakes on two of the 24 cars inoperative. After leaving Shops, where a helper engine was detached, he rode in the gangway of the engine on the engineman's side. He stated that the engine drifted nearly the entire distance from Shops to the point of accident, and at no time was the speed in excess of 15 miles an hour, two air-brake applications being made on the descending grade, and when a short distance south of the Eleventh Avenue Tower he saw the headlight of a northbound train and at about the same time saw an object on the southbound track about $2\frac{1}{2}$ car lengths ahead of his engine and shouted to the engineman, who applied the air brakes, reducing the speed to about 6 miles an hour and when the engine began to rock, he jumped before the collision occurred. He stated that about 15 minutes later he went back to ascertain the cause of the derailment and found a car door lying between the tracks and across the east rail of the southbound track, with about 2 feet of the corner cut off, this being about four car lengths north of the point where the engines collided. Switchman Malone stated he rode the top of the last car and estimated the speed at the time

of the accident at 20 to 25 miles an hour. Fireman McKee said he was putting in a fire when the engine began to rock and he felt the impact of the collision, but he was unable to say whether or not the engineman was working steam or estimate the speed at the time of the accident. Owing to injuries sustained, the statements of Foreman Simpson and Engineman Ashburn could not be obtained at the time this investigation was held.

Fireman Henry, of train No. 50, stated that his train left Kayne Avenue Yard at 10.35 p.m., Conductor Mason and Brakeman Thrasher riding on the engine. On nearing the Eleventh Avenue Tower, running at a speed of about 15 miles per hour, from his position in the fireman's cab he saw the headlight of engine 629 and after calling the position of a signal to the engineman, who began to work steam, he got down to throw in a fire, at about this time the brakeman shouted a warning and he did not think the engineman had time to apply the brakes before the engine seemed to raise up and then turn over. Flagman Ament said he was riding inside the caboose and the train had just cleared the yard lead track when it stopped suddenly while running at a speed of about 15 or 20 miles an hour.

Car Foreman Melody stated he arrived at the scene of the accident at 11.20 p.m., and after the rear cars of engine 629 had been pulled back he found a car door lying between the tracks about 7 car lengths north of the point where engine 629 came to rest, one corner of the door having been clipped off by the east rail of the southbound track, the outside portion of the door being underneath and from the stenciling he identified it as belonging to Louisville and Nashville car 3298. He also stated that he noticed flange marks on the rails to a point where the engine went on the ground and concluded that the derailment was due to engine 629 running over the car door, which apparently had fallen from the west side of a car passing in a northbound train. He stated that the door was of pine, of the Waggoner type, 68 inches wide and 85 inches high, single board construction, with three 10-inch battens applied horizontally, at the top, center and bottom, the sides braced the full height, making a maximum thickness of 1 5/8 inches, the remaining portion of single sheave tongue and groove construction, being 13'16 inch wide. Later the door was rehung on the car and it was found that the door rod shoes were not intact but he expressed the belief that the shoes were in place before the car was moved ~~also~~ *else* it would have fallen off in switching operations, and he concluded that the door fell off by reason of a shock which permitted the door rod shoes to disengage themselves from the door track.

Assistant Superintendent Hamilton stated that Louisville and Nashville car 3298 was received empty from the Tennessee Central Railroad on the interchange track at 10 a.m., July 31, and after inspection was accepted and moved from South Nashville Yard to Kayne Avenue Yard at 4.05 p.m., destined to West Nashville for loading, at which point it was classified over the yard hump onto track 13 and later classified over the hump onto track 36. At 10.25 p.m., yard engine 458 pulled 8 cars off track 36, including the car in question, and moved to West Nashville Yard.

Car Inspector Burkitt stated he made an inspection of this car on the interchange track and opened the door on the west side wide enough to permit him to enter the car, finding no defects, he took no exception to the car. He stated that he did not close the car door, as it was not the practice when a car was to be handled in a city movement. He also inspected the car and door after the accident and found nothing defective about them. Car Inspectors Moon and Donavon stated they inspected the cars standing on track 36, Kayne Avenue Yard, between 3.35 and 4.15 p.m., and found nothing defective on any of the cars on that track when their inspection was made.

Towerman Carter stated he was on his way to work and about 8 or 10 car lengths from the tower when yard engine 629 with a cut of cars passed southbound at a speed of about 18 or 20 miles an hour, previous to which he had noticed yard engine 458 with a cut of cars going northbound, and a short time later he heard the noise of a collision. On his way to the scene of the accident he saw a car door lying between the tracks about 15 car lengths south of the rear of the train hauled by yard engine 629. Towerman Naylor, on duty at Eleventh Avenue Tower, said yard engine 458 passed northbound at 10.30 p.m., and a few minutes later he saw a northbound freight coming, moving at a speed of about 20 miles an hour and secured a block for it, and shortly afterwards heard the noise of the collision.

Foreman Wyatt, of yard engine 458, said his engine left track 36, the engine headed south, backing with 8 cars, about 10.30 p.m., to run to West Nashville Yard, previous to which he had checked the cars for numbers and seals, and while he did not inspect the cars he saw that one or two of the doors of the cars were open and from his book record he identified Louisville and Nashville car 3298 as being the seventh car in the cut but he did not recall whether or not the door on this car was open. He estimated the speed of the cut passing Eleventh Avenue Tower at 6 or 8 miles an hour and from his position on top of the tank he did not see any obstruction on the southbound track nor did he make any check or inspection of the cars on arrival at West Nashville Yard. Switch-

man Frazier, who rode the top of the tank, and Switchman Phipps, who rode the top of the rear car, said they did not notice any obstruction on the southbound track, while the latter said that he had walked along the west side of the cars coupling the air nose and noticed nothing defective about the cars or doors.

Conclusions.

This accident was caused by engine 629 striking a car door which had fallen on the track from a car moved on an adjacent track.

The investigation developed that there was nothing wrong with the track or equipment of the trains involved, but that the door of Louisville and Nashville car 3298 fell from the car as it was passing in a cut of cars attached to northbound yard engine 458, falling between the tracks and across the east rail of the southbound track, and being run over by yard engine 629. Although no statement could be obtained from Engineman Ashburn of yard engine 629, the fact that the obstruction was on a curve probably accounts for his failure to see it in time to stop, it is also believed that the speed was considerably higher than the average of 10 miles an hour allowed under a time-table rule which requires southbound trains to use not less than 15 minutes from Shops Tower to Kayne Avenue South Yard, a distance of about $2\frac{1}{2}$ miles.

The inspectors who inspected this car while it was on yard track 36 found nothing wrong, but it seems probable that the door became disengaged from its track in one of the hump movements, resulting in its falling off when the car rounded the first curve after leaving the yard. Undoubtedly careful inspection prior to the movement of the car from Kayne Avenue Yard would have disclosed the defect, and the making of the proper repairs would have prevented the occurrence of this accident. These terminals are of considerable size, and the inter-yard hauls are frequently of considerable length, this accident emphasizes the need of giving cars so handled a thorough inspection and proper correction of existing defects before undertaking their movement.

The crew of yard engine 629 had been on duty about 7 hours and the crew of train No. 50 less than 1 hour, previous to which all of these employees had been off duty from 14 to 53 hours.

Respectfully submitted,

W. P. BORLAND

Director.