

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NASHVILLE, CHATTANOOGA & ST. LOUIS RAILWAY AT CITICO JUNCTION, TENN., ON JULY 14, 1924.

August 25, 1924.

To the Commission:

On July 14, 1924, there was a derailment of a freight train on the Nashville, Chattanooga & St. Louis Railway at Citico Junction, Tenn., which resulted in the death of one employee.

Location and method of operation

This accident occurred on that part of the Atlanta Division extending between Atlanta, Ga., and Chattanooga, Tenn., a distance of 136.8 miles, Hills Park and Craven Yard being the southern and northern termini for freight trains, respectively. In the vicinity of the point of accident, which occurred about 2½ miles south of Chattanooga, this is a single-track line over which trains are operated by timetable and train orders, no block-signal system being in use. Approaching this point from the south the track is tangent for about 3 miles while the grade is practically level. The track is laid with 80-pound rails with about 20 ties to the rail length; the plates and four rail anchors to each rail are used. The track is ballasted with crushed stone and is well maintained. The weather was clear at the time of the accident which occurred about 12.35 a.m.

Description

Northbound third-class freight train No. 52 consisted of 55 cars and a caboose hauled by engine 629 and was in charge of Conductor Townsend and Engineman Price. This train left Hills Park at 5.30 p.m., and after having proceeded about 132 miles the train was brought to a stop at Boyce by means of the conductor's emergency valve when fire was discovered flying from the wheels of a car about the middle of the train. After an inspection of the car had been made the train started and had proceeded about 1 mile when while running at a speed of about 20 miles an hour the 26th car in the train was derailed on account of a crooked wheel and causing the derailment of nine cars immediately following it.

Eight of the ten cars which were derailed were overturned, two of which were demolished. The employee killed was the conductor.

Summary of evidence

The first mark of derailment was a light mark across the top of the west rail; this was followed by similar marks which became deeper. About 200 feet beyond the first mark, flange marks appeared on the ties between the rails together with light marks on the ends of the ties on the west side of the track which marks, together with scored and broken ties and disturbed ballast, continued for nearly a mile until the general derailment occurred.

The car involved, Central of Georgia 7055, of the steel underframe type, was built in September 1913 and was last repaired on July 5, 1934, at the Savannah shops of the Central of Georgia Railway. The car was equipped with Scullen pedestal type trucks, the truck at the "B" end bearing the inscription "A S F Co G". An inspection of the car disclosed flange marks on the side and center sills on the east side of the car and the side sill on the west side was bent outward and upward at the "B" end caused apparently by the truck wheels coming in contact with the car body prior to the general derailment. The broken wheel, a 33-inch cast-iron wheel, No. 278, weight 750-pounds, was made by the Ramapo Foundry & Wheels Works on September 12, 1922, for the Central of Georgia Railway, and was the leading wheel of the forward truck on the fireman's side at the "B" end of the car. Inspection disclosed that a sector comprising approximately one-fourth of its area was broken out of the wheel. No flat spots or snell outs were discernible on the wheel and the appearance of the cast iron was good. Incipient heat cracks were present in the fragments which were detached from the rim of the wheel and all appeared of recent formation and probably occurred on the run when the wheel was broken. The brake shoe which fitted the broken wheel and unquestionably was the one which belonged to the broken wheel showed a rough surface indicating it had been sticking. The mate wheel which was also made by the Ramapo Iron Works was in good order.

Flagman King said he did not know whether or not an air brake test of the train had been made before leaving Hills Park but as the air was on in the caboose he assumed that proper inspection and test of the air brakes had been made. He said he rode in the caboose and when the train stopped at Vinings he made an inspection of the rear portion of the train and found nothing wrong. Approaching Boyce he was riding on the right side of the caboose and in passing

the engine of a train standing on a siding at that point he heard a warning shout and upon looking out he saw fire flying from the wheels of a car about the middle of the train and reported it to the conductor who opened the emergency valve bringing the train to a stop. Flagman King also said the conductor directed him to go back with his flagging equipment and protect against a following passenger train. The conductor then went up along the right side of the train and Flagman King said he had gone back about 25 car lengths when he heard a whistle signal recalling him and started back towards the train but saw a proceed signal given and concluded that the conductor intended that he should remain out and protect the train and he did not learn of the accident until later.

Brakeman Robinson said he rode on the engine leaving Hills Park and when a stop was made at Vinings he went back along the train making an inspection until he met the rear brakeman and then crossed over the train and returned to the engine, finding nothing wrong. A stop was made at Rogers coaling station and he again went back along the train making an inspection and met the conductor who reported a hot journal about 35 cars from the engine which Brakeman Robinson treated but said he did not detect any brakes sticking or hot boxes on any of the other cars and expressed the opinion that had there been a brake sticking on any of the cars he would have discovered it. He also said he inspected the train at Adairsville and at Tilton but detected nothing wrong. A short stop was made at Dalton and the train did not again stop until the air brakes were applied from the rear end of the train at Boyce when he again went back along the train until he met the conductor who told him that a brake was sticking on the 26th car and remarked that he was sorry that they had stopped for it would not have caused any trouble before they got in. Upon making an inspection of the car he found a brake shoe bearing on the rear wheel of the forward truck of the car on the engineman's side of the train which was red but not excessively hot, he said he did not cross to the opposite side to inspect the wheels on that side. The conductor bled the air off the car but Brakeman Robinson did not know whether or not he cut out the air brake. Shortly afterwards the conductor gave a proceed signal and they both boarded the car on which the brake had been sticking and rode on top, the train proceeding without waiting for the flagman to come in, and were riding in this position when the forward end of the car was derailed after having proceeded about 1 mile and at which time he estimated the speed to have been about 20 miles an hour. Both started giving stop signals and ran back to the car immediately following. Brakeman Robinson said he descended the side ladder on the car and closed an angle cock and upon

hearing the brakes applying then crossed over the car and was descending the side ladder when the general derailment occurred.

Special Patrolman Orr said he boarded the train at Hills Park and for the greater portion of the trip he rode on top of the train and had occasion to go around the train during the several stops that were made en route but noted nothing unusual. Approaching Boyce he was riding in the cupola of the caboose and when the stop was made at that point he followed the conductor forward along the right side of the train and when the train started a few minutes later he boarded the train and rode on top and was in this position when the accident occurred. Patrolman Orr said he did not at any time detect the odor of hot wheels or journals.

Engineman Price and Fireman Webb said their first intimation of the accident was when the brakes were applied in emergency at the time of the derailment while running at a speed of about 20 miles an hour. Both said they had looked back along the train frequently but had noticed nothing unusual in the operation of the train nor had they detected any fire flying. Engineman Price said the air brakes were tested at Hills Park and the car inspector reported all brakes working properly. At Graysville, 12 miles south of the point of accident, he made two applications of the air brakes which seemed to work properly, no trouble being experienced with the air brakes en route and proper air pressure was maintained at all times.

Wrecking Foreman Walker said he arrived at the scene of the derailment about two hours after its occurrence and after the main track had been cleared which was about four hours after the accident he made an inspection to determine the cause of the accident and found the leading truck wheel on the fireman's side broken on Central of Georgia car 7055. He said the wheel was still hot and expressed the opinion that the brake had been sticking for some time, causing the brake shoe to come in contact with the wheel until it became hot and broke. He also said the wheel bore no evidence of defects or flat spots.

Subsequent to the accident the triple valve on this car which is of the K-2 type was tested at Cravens shop and found to be in good condition. With the exception of a worn packing leather the air brake equipment was also found to be in good condition. General Car Foreman Harris said the air brake auxiliary reservoir bore stencil marks indicating it had been cleaned at the Central of Georgia shop at Savannah on July 5, 1934. He further said that upon inspecting the car he found the branch pipe and angle cock had been destroyed and he was unable to determine whether or not

the air brakes were cut out before the accident. He attributed the cause of the wheel breaking to excessive heat due to a brake sticking.

Foreman McCoy said the car in question was on the repair track at Hills Park on the day prior to the accident, having been shopped for slid flat wheels on the R. & L 3 wheels and with Car Inspector Daniel he gauged the wheels and finding the wheels within the condemning limit and as no other flat spots were found on the remaining wheels he passed the car as satisfactory. Car Inspector Daniel and General Foreman Carman said they were present when the repair track air test was made and at that time the brakes worked properly and showed no indication of sticking. Car Inspector Clements said he made the air brake test on train No. 52 before its departure from Hills Park at which time the brakes applied and released promptly, showing no indication of a defective triple valve. Air Brake Machinist Bell said he inspected the air brake appurtenances on engine 659 after the accident and found them to be in good condition.

Conclusions

This accident was caused by a broken wheel due to excessive heating which resulted from the air brakes sticking.

The investigation disclosed that inspections of this train were made at several points en route and that the brakes on the derailed car were not found sticking until the last stop prior to the derailment, at that time the brakes on this car were sticking and it was noted the wheels were hot, particularly the right rear wheel of the leading truck. According to the brakeman's statement, however, no inspection was made of the wheels on the opposite side of the car, one of which afterwards broke, had such an inspection been made the condition which resulted in the derailment might have been discovered in time to have prevented the accident.

At the time of the accident none of the members of the crew had been on duty in violation of any of the provisions of the hours of service law.

Respectfully submitted,

W. P. BORLAND

Director.