

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING
AN ACCIDENT ON THE WABASH RAILWAY NEAR NORBORNE, MO.,
ON NOVEMBER 29, 1932.

January 11, 1933.

To the Commission:

On November 29, 1932, there was a derailment of a freight train on the Wabash Railway near Norborne, Mo., which resulted in the death of one trespasser and the injury of one trespasser.

Location and method of operation

In the vicinity of the point of accident a single-track line of the Atchison, Topeka & Santa Fe Railway parallels a single-track line of the Wabash Railway, the two being operated as a joint double-track line. The Wabash track serves as the eastbound main, and it was on this track that the accident occurred. Trains are operated by time-table, train orders, and an automatic block-signal system. The accident occurred at a point approximately $1\frac{3}{4}$ miles east of Norborne, approaching this point from the west, the track is tangent for approximately 9 miles, and for some distance beyond that point, while the grade is slightly undulating, being 0.03 per cent descending for eastbound trains at the point of accident.

The track is laid with 110-pound rails, 39 feet in length, with an average of about 22 hardwood ties to the rail-length, fully tie-plated, single-spiked, and is ballasted with rock to a depth of about 12 inches.

The weather was clear at the time of the accident, which occurred about 10.45 a.m.

Description

Eastbound Wabash freight train No. 90 consisted of 95 cars and a caboose, hauled by engine 2804, and was in charge of Conductor Epperson and Engineman Cannon. This train departed from Kansas City, Mo., at 9.14 a.m., and entered the joint track at Camden Junction, 21.6 miles west of Norborne, at 10.13 a.m., 1 hour and 21 minutes late, passed Norborne at 10.43 a.m., and was derailed shortly afterwards while traveling at a speed estimated to have been between 35 and 45 miles per hour.

The engine and first car became detached from the balance of the train and stopped several hundred feet beyond the initial point of derailment. The second to the twenty-first cars, inclusive, the sixtieth car, and the sixty-sixth and sixty-seventh cars were derailed, while the sixty-first car buckled and the four cars following it were demolished. The second car stopped bottom up on the north side of the track, and the following 19 cars were piled up within a space of 273 feet. The twelfth car contained gasoline which ignited during the derailment, setting fire to the wreckage.

Summary of evidence

Road Foreman of Engines Smith stated that he was handling train No. 90 on the day of the accident, the engineman being unfamiliar with the territory, brakes were tested before leaving Kansas City, and the only time they were used after leaving that point was while approaching Camden Junction when the speed was reduced to 12 or 15 miles per hour in order to pass through a crossover. He watched the train closely while rounding curves but noticed nothing wrong, the train appearing to be riding smoothly, but upon reaching a point about 2 miles east of Norborne, and while traveling at a speed of 35 or 40 miles per hour, the train parted, he immediately looked back and saw the cars derailing. He did not make any examination to ascertain the cause of the accident, being busy with other duties.

Brakeman Burton stated that he rode the engine from Kansas City to the point of accident and observed the performance of the train en route but at no time did he see anything unusual, there being no smoke to indicate hot boxes or brakes sticking. The section men along the track were watching and gave signals and the agent and operator at Norborne were on the station platform watching the train.

Conductor Epperson stated that while the train was en route it was watched very closely from both sides by the flagman and himself. Approaching the point of accident he was riding in the cupola of the caboose and his first knowledge of anything wrong was when the brakes were applied, upon looking at the air gauge he noticed the pressure was gone and on again looking ahead he saw the cars piling up. He was unable to examine the wreckage on account of the fire but found part of a broken wheel near where the rear end of the train stopped. Conductor Epperson also said that it was the custom for the agent or operator at each station to be on the platform and observe trains as they pass and the rules require that either the flagman or conductor be on the platform or in the cupola of the caboose to see what signals they give, on this particular trip that rule was complied with and at every station passed, including Norborne, a proceed signal was given.

Division Engineer Crowe stated that the first marks found on the track were on top of the north or left rail, beginning approximately 1 mile west of Norborne. The marks were very light and extended across the entire top of the rail and were about one-fourth inch wide. Corresponding marks were in evidence eastwardly from that point at intervals of approximately 9 or 10 feet and they increased in width up to a maximum of 2 inches. The marks were not very deep except in two or three places immediately west of the point of derailment. It was his opinion that the accident was caused by a broken wheel.

Wrecker Foreman Gelker stated that from the location and position of the body of the second car, Wabash 8941, on the north side of the track, with one of its trucks half buried in the dirt about two car-lengths from the car, it appeared to him that this was the first car to be derailed. After this truck was picked up he examined it and found a broken wheel on the dead lever side of the truck, and he thought that the broken wheel was the leading wheel of the leading truck. One other broken wheel was found in the wreckage but this wheel could not have made the marks found on the rail west of the point of derailment.

Division General Car Foreman Kennedy stated that Wabash car 8941 was received at Kansas City from the Kansas City Southern Railway loaded with rock weighing 118,700 pounds, the loaded capacity of the car being 135,400 pounds. He arrived at the scene of accident at 1.45 p.m., and after seeing the truck from this car with the rim of one of the wheels broken off, he walked back along the track as far as the mile board west of Norborne and in this distance picked up 14 or 15 small pieces of the rim, none of which showed an old defect or overheating, nor did the wheel and brake shoe opposite the broken wheel show evidence of overheating. He also examined the portions of flange which were broken from the wheel and they did not indicate that the flange was sharp. It was his opinion that the original fracture was a cold break, and a small one, and that as the wheel rotated other small portions broke out until in the aggregate a considerable portion of the flange had been broken away.

Freight Car Foreman Foley examined the truck, which was of the arch-bar type, but found no defect other than the broken wheel. This wheel was made by the American Car and Foundry Company and was a cast iron double plate wheel, 33 inches in diameter, date cast 7-23-18, cast No. 82818. The hub and plate were intact, but the rim or tread was broken off all the way around its circumference except about 8 inches. On account of the car body being scorched in the fire following the accident the last date of the cleaning of the brake cylinder and triple valve was obliterated, and when the triple valve was taken apart it showed evidence of having been very hot so that its condition prior to the derailment could not be determined.

Car Inspector Yoder, who was on duty at Kansas City when wabash car 8941 was received in the yard, said he closely inspected all of the cars received and noted no exceptions to this car, which afterwards was the second car in train No. 90.

Car Foreman Searo, located at Kansas City, stated that car inspectors are instructed to make a close inspection of all cars received in interchange, as was the case with Wabash 8941, the cars are then classified, after which they are made up into trains, and then an air-brake inspection is made. When train No. 90 was ready to depart he assisted other car inspectors in looking over the train after the brakes were applied and also after they were released, and this test showed that the brakes were functioning properly. The train started, however, before the full inspection had been completed subsequent to the release of the brakes, but he watched the greater portion of the train as it pulled by him and there was no indication of brakes sticking. The statements of Car Inspectors Wilson, Hansen and Strong indicated that they assisted in inspecting the brakes on train No. 90, and that between the four inspectors the entire train was watched for sticking brakes as it departed from the yard.

Conclusions

This accident was caused by a broken wheel.

According to the evidence the train was inspected and an air-brake test made before it left Kansas City and there appeared to have been no unusual occurrence during the trip until the train was suddenly derailed. An examination of the track disclosed that the first mark was on the north rail approximately 1 mile west of Horborne, and on portions of the track from this point eastward similar marks were found on the same rail at uniform intervals of about $8\frac{1}{2}$ feet, followed by considerable spaces not so marked, indicating that the broken portion of the wheel did not come in contact with the rail at each revolution. Several pieces of flange and tread of the wheel were found between the first mark and the point of derailment, these having been broken laterally across the rim and not showing any indication of having been overheated, but instead they appeared to be the result of new fractures. It was evident that this wheel had been under the second car in the train, and that it began to fail some distance from the point of derailment, the fragmentation continuing until the wheel was broken to such an extent that it finally left the track, resulting in the derailment of the train.

Respectfully submitted,

W. P. BORLAND,

Director.