INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY CONCERNING AN ACCIDENT ON THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC RAILROAD AT GLADWIN, IOWA, ON JULY 21, 1933.

November 20, 1933.

To the Commission:

On July 21, 1933, there was a derailment of a freight train on the Chicago, Milwaukee, St. Paul & Pacific Railroad at Gladwin, Ia., which resulted in the death of four trespassers.

Location and method of operation

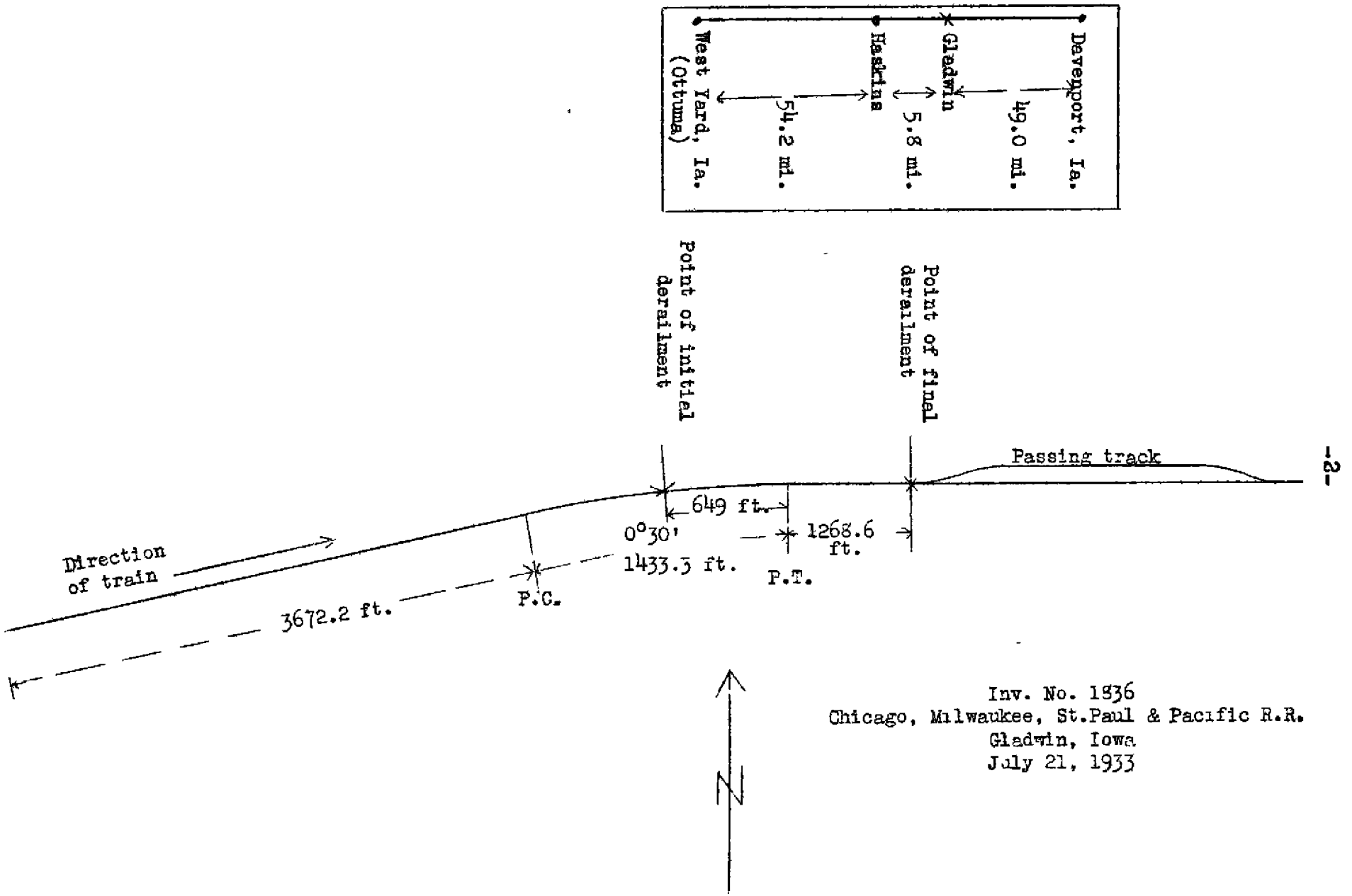
This accident occurred on the West Yard-Davenport Sub-Division of the Kansas City Division, which extends between West Yard, near Ottumwa, and Davenport, Ia., a distance of 109 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time table, train orders, and a manual block-signal system. The passing track at Gladwin is 2,716.5 feet in length and parallels the main track on the north, the initial point of derailment being at a point 1,917.6 feet west of the west passing-track switch. Approaching this point from the west, the track is tangent for a distance of 3,672.2 feet, followed by a 0°30' curve to the right 1,433.3 feet in length and then tangent track extending to the west switch, a distance of 1,268.6 feet and for a considerable distance beyond that point, the intial derailment occurred on the curve at a point 649 feet from its eastern end and the final derailment occurred at the frog of the west switch. The grade is generally descending for east-bound trains, being 0.735 percent at the point of accident.

The track is laid with 90-pound rails, 33 feet in length, with an average of 20 hardwood ties to the rail length, single-spiked, about 50 percent tieplated, and is ballasted with gravel to a depth of about 12 inches, rail anchors also are used. The track is maintained in fair condition. The maximum speed permitted for freight trains is 50 miles per hour.

The weather was clear at the time of the accident, which occurred about 11 a.m.

Description

East-bound freight train extra 8623 consisted of 71 cars and a caboose, hauled by engine 8623, and was in charge of Conductor Ruckman and Engineman Turgeon. This train departed from West Yard, its initial terminal, 60 miles west of Gladwin, at 8 a.m.,



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left Haskins, 5.8 miles west of Gladwin, at 10:45 a.m., and was approaching the station at Gladwin when it was derailed while traveling at a speed estimated at 50 miles per hour.

The forty-first to the sixty-sixth cars, inclusive, were derailed, the forty-first car stopping on its left side about 100 feet east of the other derailed equipment, the following 24 cars were piled within a space of about 400 feet, 23 of them being destroyed by fire.

Summary of Evidence

Extra 8623 left West Yard with a helper engine on the head end and another on the rear end. Engineman Turgeon stated that after coupling his engine to the train at West Yard the leading helper engine made a terminal test of the brakes, but this test was made before the train was pulled ahead and changes made on the rear end. The engineman on the leading engine controlled the brakes to Rutledge, 4.1 miles west of West Yard, at which point the helper engines were cut off, leaving the brakes set, and they then were released by Engineman Turgeon. The brakes were not used to reduce speed at any point after leaving Rutledge except in making three additional stops, no difficulty being experienced in making these stops. As the grade was slightly descending approaching Gladwin he allowed the train to drift and had just started to work a small amount of steam in preparation for the ascending grade beyond that point when the accident occurred, the brakes immediately applying in emergency. He estimated the speed at the time of the accident at 50 miles per hour. Engineman Turgeon had looked back along the train while it was rounding the curve on which the accident occurred but had not seen any excessive dust coming from beneath the train, neither did the cars appear to be rolling more than usual.

Fireman Phleger noticed nothing unusual while descending the grade west of Gladwin; he inspected his side of the train as it rounded a curve to the left located more than 1 mile west of the curve on which the accident occurred.

Head Brakeman Houston stated that he did not inspect the train before leaving West Yard, but at Rubio he inspected 40 or 45 cars on the rear end of the train, and again made a partial inspection as the train pulled by him at Haskins but did not see any defects, he also looked over the train while running, particularly rounding curves. Approaching the point of accident he was riding on the engine and did not notice any unusual swaying of the engine or cars.

Conductor Ruckman stated that the only switching performed after he reported for duty was when the outbound engine pulled the forward portion of the train ahead so that they could couple on the fill-out before leaving the yard. A test of the brakes

was made, but this was simply a road test, and the only inspection the train received before departing was made by the rear brakeman who walked down one side of the incoming train to cut off the inbound caboose and then walked back along the other side there being no regular car inspectors located at West Yard. Conductor Ruckman was sitting at the conductor's desk in the caboose when the accident suddenly occurred, without his having any warning that there was anything wrong. After the accident he examined the track west of his train for a distance of about 10 or 12 car lengths and there met the section foreman, who informed him that the first marks of derailment appeared just west of an undergrade crossing, located about 1,800 or 2,000 feet west of the passing track. He further stated that the cars in a train usually roll badly while rounding the curve coming into Gladwin, and in his opinion this is caused by the train being bunched, with practically no pressure on the drawbars, on account of the descending grade. From the condition and position of the forty-first car after the accident he thought that this car was the first to be derailed, to the best of his knowledge this car was loaded with loose salt, which he did not think could have shifted unless the car received a severe jolt. He did not find any defects about this car that might have existed prior to the accident.

Rear Brakeman Culbertson stated that before the train left West Yard he walked along the full length of the train on one side, crossed over and walked back along the other side, inspecting the cars, but noticed no defects. After the brakes were applied he had opportunity to observe the piston travel on about half of the train and found that it ranged from 4 to 8 inches, which was about the same as is usually found on freight trains at Ottumwa. He also inspected a few cars at Rutledge while the helper engine was being cut off, made another inspection at Rubio, and saw the entire train at Haskins. He was riding in the cupola of the caboose, on the inside of the curve, and from his position he ordinarily could have seen the full length of the train, but dust was flying from the roadbed so thick that he could not see that far. While rounding the curve, he did not notice any unusual rocking of such of the cars as he could see and he had no opinion as to what caused the accident.

Car Foreman Linehan arrived at the scene of the accident about 8 hours after its occurrence and made an examination of the track for some distance west of the derailed equipment. Flange marks appeared on the ties for a distance of about 2,000 feet westward, where a mark showed on top of the rail for about 16 feet and then dropped off on the outside. An inspection of the forty-first car, CB&Q 132658, loaded with bulk rock salt, revealed that about 8 inches of flange was broken from the rear wheel on the right or south side of the rear truck, but he thought this flange was broken after the truck was derailed as there were no marks on the rail or ties to indicate that the flange had been

broken previously. This car was equipped with 12-inch center plates and rocker type side bearings, which showed no indications of being defective. It was his opinion that this truck was the first to be derailed and that it was caused by the car rocking on the curve. Car Foreman Linehan said there are no car inspectors at West Yard, although three men are employed at that point for emergency service and are regularly assigned to the repair tracks.

Car Foreman Clark arrived at the scene of accident at 3:45 a.m., July 22, and after making a close inspection of CB&Q car 132658 he decided this was the first car to be derailed. One of the trucks was badly damaged by fire, and while a portion of the flange of one of the wheels in the rear truck was broken he thought this occurred during the final derailment. This car was received in interchange at Kansas City on July 20 in good condition, with no bad-order record against it, and that was the last time the car had been inspected by car inspectors prior to the accident.

Roadmaster Barnoske stated that he made a trip over the track in the vicinity of the point of accident about 2 hours prior to its occurrence and found no condition that would require any speed restriction less than the 50 miles per hour provided for freight trains. There had been no rain in that locality during the previous two or three weeks, nor any other extraordinary condition that would affect the track. He considered the general condition of the track as being fair.

Instrumentman Low stated that the first marks of disturbance were two flange marks on top of the north rail about 1/8 inch apart. The first flange mark was 5/8 inch from the gauge side of the rail and extended diagonally across the rail a distance of 15.3 feet to the point where the wheel dropped off the rail on the outside of the curve, the other began about the center of the running surface, east of the first-mentioned mark, and continued on the rail a shorter distance before dropping off on the outside. The first mark of derailment on the opposite side of the track was a flange mark on a tie on the inside of the south rail 5.9 feet east of where the wheel dropped off of the north rail. The marks on the ties then continued about 9 inches from the rails, and parallel to them, to the switch where the final derailment occurred. The gauge of the track for a distance of 12 rail lengths west of the point where the first mark appeared on the rail varied from gauge to $\frac{1}{4}$ inch wide, and the superelevation varied from 1 inch to $2\frac{1}{4}$ inches. The standard superelevation for this curve is 1 inch and this was the elevation at the joint a few inches west of where the first flange mark appeared on the north rail, the gauge at this point was 4 feet 8 5/8 inches.

CB&Q box car 132658 was built in July, 1917, and was last overhauled in June, 1929. It was equipped with arch-bar trucks, and had double roller side bearings attached to the body bolster and flat bearing surfaces on the trucks.

Conclusions

The cause of this accident was not definitely ascertained.

According to the statements of the train crew they had no knowledge of anything wrong until the derailment occurred. The first marks of derailment were flange marks on top of the north rail of the curve which continued diagonally across the rail until they passed off on the outside; east of this point there were flange marks on the ties paralleling the rails and extending to the west passing-track switch, where the final derailment occurred, a distance of approximately 2,000 feet. It was thought these marks were made by a trailing pair of wheels, but it was not determined whether they were under the front or rear truck of the car. An examination of CB&Q box car 132658, the forty-first car in the train, subsequent to the accident disclosed that part of the flange was broken from the rear wheel on the south side of the truck, but the opinion was advanced that this flange was broken during the derailment; no other defects were found about this car that could have contributed to the cause of the accident. From the position of the derailed equipment, however, it seemed probable that one of the trucks of CB&Q car 132658 was the first to be derailed. The condition of much of the derailed equipment could not be determined as 23 cars were destroyed by fire. The gauge was uniformly maintained but the elevation on the curve was not uniform and it is possible that this irregular track condition, with the train traveling at a speed of 50 miles per hour, caused the car to rock sufficiently to result in the derailment.

The investigation developed that CB&Q car 132658 was received at Kansas City, 264.3 miles from the point of accident, and afterwards passed two terminals where no regular car inspectors are on duty, the only inspection the car received during that interval being by trainmen; it also appeared that no terminal test of the air brakes was made at West Yard and that it was not customary to make such a test. While the lack of inspection by competent car-inspection forces at terminals may not have contributed directly to the cause of the accident in this case, it would appear that the operation of trains for considerable distances without being properly inspected and at a maximum speed of 50 miles per hour is not a safe practice.

Respectfully submitted.

W. P. BORLAND

Director.