INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3299

MISSOURI-KANSAS-TEXAS RAILROAD COMPANY
OF TEXAS

IN RE ACCIDENT

NEAR SPARKS, TEX., ON

OCTOBER 28, 1949

SUMMARY

Date:	October 28, 1949
Railroad:	Missouri-Kansas-Texas of Texas
Location:	Sparks, Tex.
Kind of accident:	Derailment
Train involved:	Freight
Train number:	Extra 329 North
Engine number:	Diesel-electric units 329C and 329A
Consist:	44 cars, caboose
Speed:	51 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Single; 4° curve; 0.99 percent descending grade northward
Weather:	Clear
Time:	2:50 a. m.
Casualties:	1 killed; 2 injured
Cause:	Broken wheel

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3299

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

MISSOURI-KANSAS-TEXAS RAILROAD COMPANY OF TEXAS

January 17, 1950

Accident near Sparks, Tex., on October 28, 1949, caused by a broken wheel.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On October 28, 1949, there was a derailment of a freight train on the line of the Missouri-Kansas-Texas Railroad Company of Texas near Sparks, Tex., which resulted in the death of one trespasser, and the injury of two trespassers.

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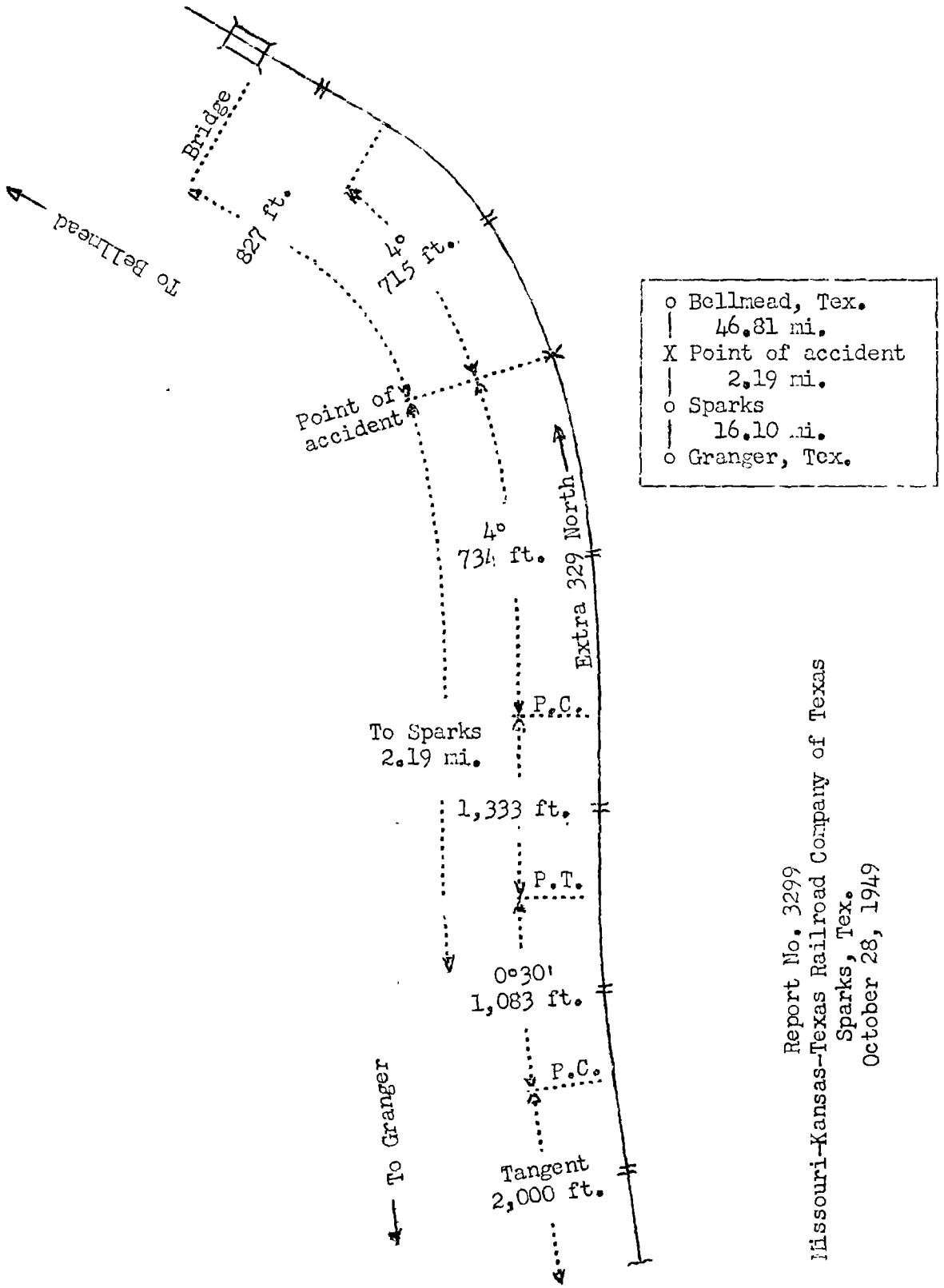
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Report No. 3299
Missouri-Kansas-Texas Railroad Company of Texas
Sparks, Tex.
October 28, 1949

Location of Accident and Method of Operation

This accident occurred on that part of the San Antonio Division extending between Granger and Bellmead, Tex., 65.1 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred on the main track 18.29 miles north of Granger and 2.19 miles north of the station sign at Sparks. From the south there are, in succession, a 0°30' curve to the right 1,083 feet, a tangent 1,333 feet, and a 4° curve to the left 734 feet to the point of accident and 715 feet northward. The grade for north-bound trains is, successively, 0.08 percent ascending 2,600 feet, level 900 feet, and 0.99 percent descending 1,915 feet to the point of derailment and 485 feet northward.

The track structure consists of 112-pound rail, 39 feet in length, laid new in 1945 on an average of 24 treated ties to the rail length. It is fully tieplated with double-shoulder tie plates, double-spiked outside and single-spiked inside, and is provided with 4-hole head-free joint bars 24 inches in length, and 12 rail anchors per rail length. It is ballasted with crushed stone to a depth of about 21 inches under the ties. In the immediate vicinity of the point of accident the track is laid on a fill about 13 feet in height.

The maximum authorized speed for the train involved was 55 miles per hour, but it was restricted to 40 miles per hour on the curve on which the accident occurred.

Description of Accident

Extra 329 North, a north-bound freight train, consisted of Diesel-electric units 329C and 329A, coupled in multiple-unit control, 44 cars and a caboose. This train departed from Smithville, Tex., its initial terminal, 79.6 miles south of the point where the accident occurred, at 11:30 p. m., October 27, departed from Granger at 2:29 a. m., October 28, and while it was moving at a speed of 51 miles per hour the third to the thirty-second cars, inclusive, and the front truck of the thirty-third car were derailed at a point 2.19 miles north of the station sign at Sparks.

The Diesel-electric units and the first and the second cars remained coupled and stopped with the front of the first Diesel-electric unit 1,496 feet north of the point of derailment. The third car was derailed to the right and stopped on its left side 347 feet north of the point of derailment, with its front end 50 feet and its rear end 68 feet east of the center-line of the track. The fourth to the thirty-second cars, inclusive, stopped in various positions on or near the track within a distance of 870 feet immediately north of the point of derailment. The ninth, tenth, and eleventh cars were slightly damaged. The third, fifth, sixth, eighth, twelfth, thirty-first, and thirty-second cars were badly damaged. The other derailed cars were destroyed. The thirty-third car remained coupled to the rear portion of the train and was not damaged. A steel bridge located 827 feet north of the point of derailment was somewhat damaged. The casualties occurred in the twenty-ninth car.

The weather was clear at the time of the accident, which occurred at 2:50 a. m.

H.W.C.X. 40917, the third car of Extra 329 North, is an all-steel covered hopper car built in 1947. It was loaded with bulk cement weighing 155,600 pounds. The nominal capacity of the car is 140,000 pounds, and the maximum load limit is 157,000 pounds. At the time of the accident the gross weight was 208,500 pounds. The trucks were equipped with cast-steel bolsters and double-truss cast-steel side frames. The front wheels of the front truck were 850-pound single-plate bracketed cast-iron wheels. They were cast in 1946.

Discussion

As Extra 329 North was approaching the point where the accident occurred the speed was 51 miles per hour, according to the speed-recording device with which the first Diesel-electric unit was equipped. The enginemen and the front brakeman were in their respective positions in the control compartment at the front of the first Diesel-electric unit, and the conductor and the flagman were in the cupola of the caboose. The Diesel-electric unit and the caboose were riding smoothly. The train had been inspected at Smithville, and the members of the crew had observed the train as it passed over various curves after it left Smithville. No indication of defective equipment had been observed. The first that the members of the crew became aware of anything being wrong was when the brakes became applied in emergency.

Examination of the track after the derailment occurred disclosed no indication of dragging equipment or of any obstruction having been on the track. Throughout a distance of 734 feet immediately south of the point of accident, the maximum variation in gage between two adjacent stations, measured at rail joints and centers, was 1/8 inch, and the maximum variation in superelevation was 1/4 inch. At the point of derailment the gage was 4 feet 8-1/2 inches, and the superelevation was 6 inches. Starting at a point 93.2 feet south of the point of derailment a series of nicks appeared on the gage side of the head of the east rail. These nicks were heavy and distinct a distance of about 9 feet. Immediately north a series of similar, but lighter, nicks continued a distance of 84.2 feet on the gage side of the head of the rail, then continued diagonally on top of the rail a distance of 12.1 feet to the outside of the rail. About 40 pieces of broken flange were found between the rails opposite the series of heavy nicks. It is evident that the nicks were caused by the breaking up of the flange as the wheel revolved. The lighter marks apparently were made by the jagged edges of the breaks at the throat of the flange. A mark appeared on a tie plate on the outside of the east rail 4.2 feet north of the point where the wheel dropped outside the rail. Immediately north of this mark, the ties bore marks indicating that one pair of wheels had become derailed to the east. These marks continued in line with the track a distance of 256.3 feet northward. From this point northward the track was destroyed throughout a distance of 595 feet.

Inspection of H.W.C.X. 40917 after the accident occurred disclosed that approximately 96 percent of the flange of the east front wheel of the front truck was broken from the wheel. The remaining portion of this flange was worn almost to the condemning limit of the carrier, but the companion wheel showed very little flange wear. It could not be determined if any part of the broken flange had reached the condemning limit. Examination of the rear pair of wheels of this truck disclosed that they were worn in a similar manner. This indicated that both east wheels of this truck had a tendency to bear heavily against the rail. The side bearings indicated that the weight of the body and the lading of the car had been properly distributed. The stenciled tape size of the wheels of this truck was 40. Actual measurements of the front pair of wheels disclosed that the wheel with the broken flange was one and one-half tape sizes, or approximately

3/16 inch in circumference, smaller than its companion wheel. Measurement of the side frames of the truck disclosed that the frame on the east side was 3/32 inch shorter than the frame on the opposite side. However, this is within the prescribed limits of the carrier. The carrier reported that laboratory analysis of the wheel with the broken flange indicated that the metal in the wheel was normal and that the chill was not excessive.

Under the conditions present, when H.W.C.X. 40917 entered the 4° curve to the left sufficient force was exerted against the flange of the east front wheel of the front truck of this car to cause failure of the flange.

Cause

It is found that this accident was caused by a broken wheel.

Dated at Washington, D. C., this seventeenth day of January, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.