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NO. 3751-3800

Dept. of Transportation

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*Railroad accident investigation
Report CV.76] 3751-3800.*

U.S. INTERSTATE COMMERCE COMMISSION,

WASHINGTON

REPORT NO. 3751

TEXAS AND NEW ORLEANS RAILROAD COMPANY

IN RE ACCIDENT

AT LIBERTY, TEX., ON

MAY 19, 1957

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SUMMARY

Date: May 19, 1957

Railroad: Texas and New Orleans

Location: Liberty, Tex.

Kind of accident: Derailment

Train involved: Freight

Train number: 243

Locomotive number: Diesel-electric units 372, 411,
549, and 362

Consist: 112 cars, caboose

Speed: 28 m. p. h.

Operation: Timetable, train orders, and
automatic block-signal system

Track: Single; tangent; 0.10 percent
ascending grade westward

Weather: Clear

Time: 3:48 p. m.

Casualties: 1 killed; 1 injured

Cause: Broken journal due to overheating

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3751

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

TEXAS AND NEW ORLEANS RAILROAD COMPANY

June 26, 1957

Accident at Liberty, Tex., on May 19, 1957, caused by a
broken journal due to overheating.

REPORT OF THE COMMISSION¹

TUGGLE, Commissioner:

On May 19, 1957, there was a derailment of a freight train on the Texas and New Orleans Railroad at Liberty, Tex., which resulted in the death of one trespasser, and the injury of one trespasser.

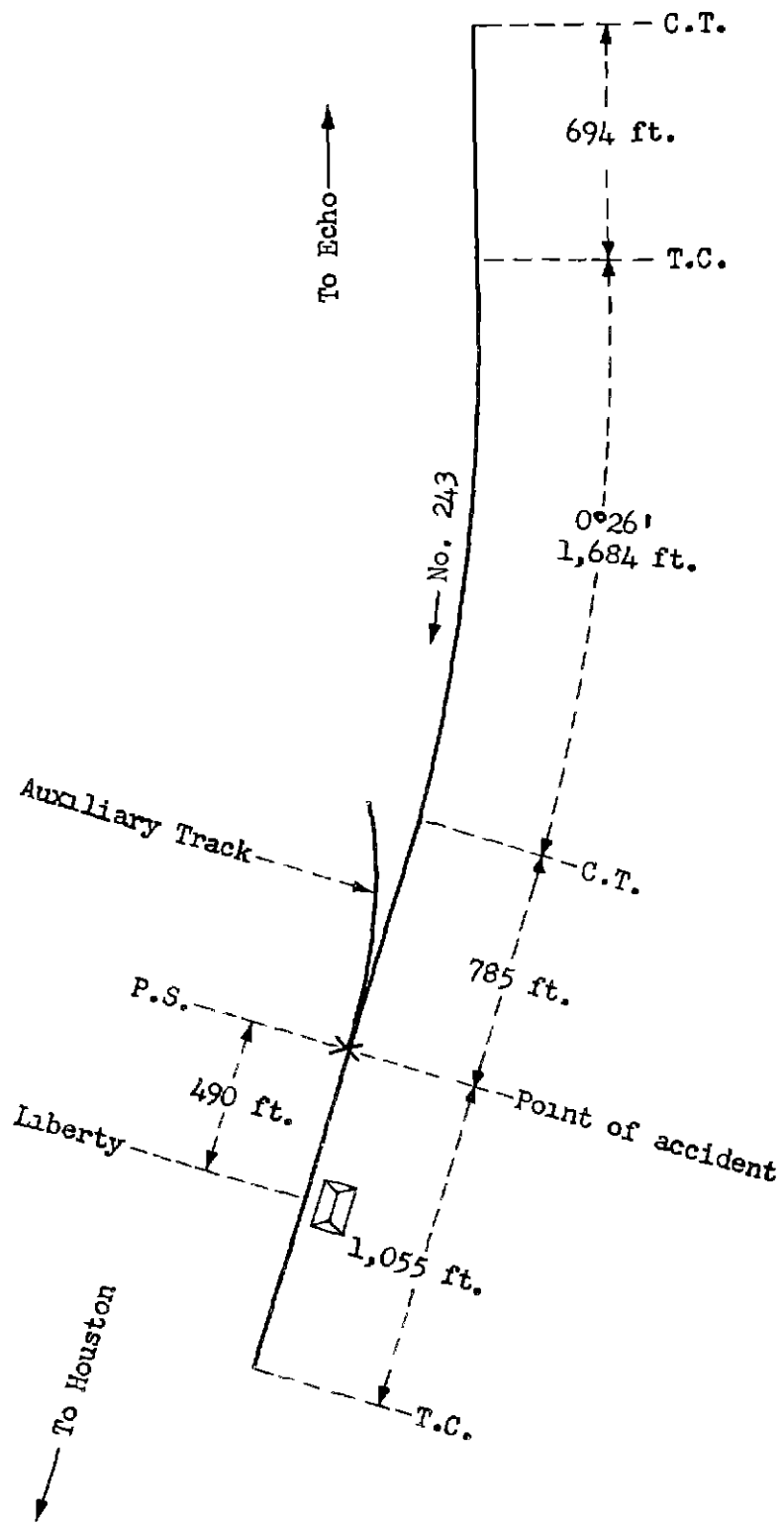
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Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Tuggle for consideration and disposition.

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| | | |
|---|---------------|---------------------|
| o | Echo, Tex. | 27.2 mi. |
| o | Beaumont | 42.2 mi. |
| X | Liberty | (Point of accident) |
| | | 41.5 mi. |
| o | Houston, Tex. | |



Report No. 3751
 Texas and New Orleans Railroad
 Liberty, Tex.
 May 19, 1957

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Location of Accident and Method of Operation

This accident occurred on that part of the Houston Division extending between Echo and Houston, Tex., 110.9 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. At Liberty, 69.4 miles west of Echo, an auxiliary track diverges from the main track toward the north. The auxiliary-track switch, which is trailing-point for west-bound movements, is 490 feet east of the station. The accident occurred on the main track at the auxiliary-track switch. From the east there are, in succession, a tangent 694 feet in length, a 0°26' curve to the right 1,684 feet, and a tangent 785 feet to the point of accident and 1,055 feet westward. The grade for west-bound trains is 0.10 percent ascending at the point of accident.

The track structure in the vicinity of the point of accident consists of 113-pound rail, 39 feet in length, laid new in December 1945 on an average of 21 treated ties to the rail length. It is fully tieplated with double-shoulder tie plates, single spiked, and is provided with 4-hole 28-inch joint bars and an average of 12 rail anchors per rail. It is ballasted with crushed rock to a depth of 8 inches below the bottoms of the ties.

This carrier's operating rules read in part as follows:

827. * * *

Trainmen must be in a position to observe their trains while running, particularly while rounding curves and approaching or leaving stations. * * *

Inspection should include running gear, bearings, brake and draft rigging. * * * Special attention must be given to hot bearings.

The locomotive and caboose of No. 243 were equipped with a two-way radio communication system.

The maximum authorized speed for freight trains is 50 miles per hour, but is restricted to 30 miles per hour in the vicinity of the point of accident.

Description of Accident

No. 243, a west-bound second-class freight train consisted of Diesel-electric units 372, 411, 549, and 362, coupled in multiple-unit control, 112 cars, and a caboose. This train departed from Beaumont, 42.2 miles east of Liberty, the last open office, at 2:52 p. m., 6 hours 52 minutes late. While moving at a speed of 28 miles per hour, as indicated by the tape of the speed-recording device, the rear truck of the thirty-eighth car, and the thirty-ninth to the fifty-fourth cars, inclusive, were derailed at the auxiliary-track switch at Liberty. The fifty-eighth to the sixty-third cars, inclusive, were derailed a short distance east of the switch.

The train stopped with the thirty-eighth car 908 feet west of the auxiliary-track switch. The derailed cars stopped in various positions on or near the track. Two of the derailed cars were destroyed, 18 were heavily damaged, and 3 were slightly damaged.

The trespassers who were killed and injured were in the forty-sixth car.

The weather was clear at the time of the accident, which occurred about 3:48 p. m.

The thirty-eighth car was N.H. 32335, an all-steel box car built in August 1944. It is 41 feet 6 inches long, 10 feet 5 inches wide, and 13 feet 11 inches high. The trucks are spaced 30 feet 9 inches between centers. The light weight, nominal capacity, and load limit are, respectively, 45,300 pounds, 120,000 pounds, and 123,700 pounds. When the accident occurred the car was loaded with bulk rice. The weight of the lading was 101,480 pounds. The trucks are of the four-wheel type with 5-1/2-inch by 10-inch journals, 33-inch 1-wear wrought-steel wheels and cast-steel side frames with integral journal boxes.

Discussion

As No. 243 was approaching the point where the accident occurred the enginemen were in the control compartment at the front of the locomotive, the front brakeman was in the control compartment at the rear of the locomotive, and the conductor and the flagman were in the caboose. As the train was moving on the curve approaching Liberty, the front brakeman observed smoke along the north side of the train in the vicinity of the thirty-eighth car. He informed the engineer

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and the conductor by use of the train radio, but before the engineer could take action to stop the train the brakes became applied in emergency as a result of the derailment.

Examination of the track after the accident disclosed that there were light marks on the north rail and the north ends of the ties throughout a distance of 650 feet immediately east of the point of derailment. These marks apparently resulted from contact with the bottom of a truck side-frame. The track was destroyed throughout a considerable distance west of the auxiliary-track switch.

Examination of the equipment after the accident occurred disclosed that the right front journal of the rear truck, at location L-3, of N.H. 32335, the thirty-eighth car, had broken, and the truck side-frame had dropped sufficiently to be in contact with the track structure. The stub of the journal had been in contact with the journal box and had worn through its top. The truck apparently became derailed when the side frame came in contact with the track structure at the auxiliary-track switch. The detached portion of the failed journal was hot when found after the accident occurred. The journal-box packing was entirely burned out of the journal box. The bearing of the failed journal had disintegrated. The journal-bearing wedge had been cut through from contact with the stub end of the journal. The other journal boxes of the car were inspected and found to be in good condition with sufficient lubrication.

The failure of the journal involved consisted of a vertical break at a point $7\frac{1}{8}$ inches inward from the collar. The specified dimensions of the journal were $5\frac{1}{2}$ inches by 10 inches. The actual diameter adjacent to the collar was $5\frac{1}{4}$ inches and at the point of failure was $4\frac{13}{16}$ inches, indicating a taper of $\frac{7}{16}$ inch. The end of the journal remaining attached to the wheel assembly was worn and ridged by contact with the journal box.

The engineer of tests of the carrier reported that the failure of the journal involved was due to thermal cracks that had progressed to a depth of about 1 inch before the journal twisted off. The laboratory analysis, according to his report, shows intergranular oxidation and cracks, copper penetration, and surface carburization. The carburized surface was an indication that oil had been present when the journal started to heat.

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The journal boxes on this car were equipped with packing retainers and were last repacked on the New York, New Haven and Hartford Railroad on June 30, 1956. The car was loaded at Amelia, 5.2 miles west of Beaumont, and was moved from Amelia to Beaumont on the day the accident occurred. The car was inspected and the journal boxes were serviced at Beaumont, and no defective condition was detected. The members of the crew of No. 243 said that they made frequent observations of the equipment of their train throughout the trip. They observed no defective condition until immediately before the accident occurred. The accident occurred on Sunday, and no passing inspection of the train was made by any employees between Beaumont and the point of accident.

Cause

This accident was caused by a broken journal due to overheating.

Dated at Washington, D. C., this twenty-sixth day of June, 1957.

By the Commission, Commissioner Tuggle.

(SEAL)

HAROLD D. McCOY,

Secretary.