INTERSTATE COMMERCE COMMISSION

WASHINGTON

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REPORT NO. 3444

TEXAS AND NEW ORLEANS RAILROAD COMPANY

IN RE ACCIDENT

NEAR HUMBLE, TEX., ON

DECEMBER 14, 1951

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SUMMARY

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| Date: | December 14, 1951 |
| Railroad: | Texas and New Orleans |
| Location: | Humble, Tex. |
| Kind of accident: | Derailment |
| Train involved: | Passenger |
| Train number: | 27 |
| Engine number: | 626 |
| Consist: | 7 cars |
| Estimated speed: | 50 m. p. h. |
| Operation: | Timetable and train orders |
| Track: | Single; tangent; vertical curve |
| Weather: | Misting |
| Time: | 6:23 a. m. |
| Casualties: | 24 injured |
| Cause: | Broken rail |

INTERSTATE COMMERCE COMMISSION

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REPORT NO. 3444

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

TEXAS AND NEW ORLEANS RAILROAD COMPANY

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February 18, 1952

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Accident near Humble, Tex., on December 14, 1951, caused by a broken rail.

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REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On December 14, 1951, there was a derailment of a passenger train on the Texas and New Orleans Railroad near Humble, Tex., which resulted in the injury of 19 passengers, 1 Pullman employee, 1 person carried under contract and 3 train-service employees.

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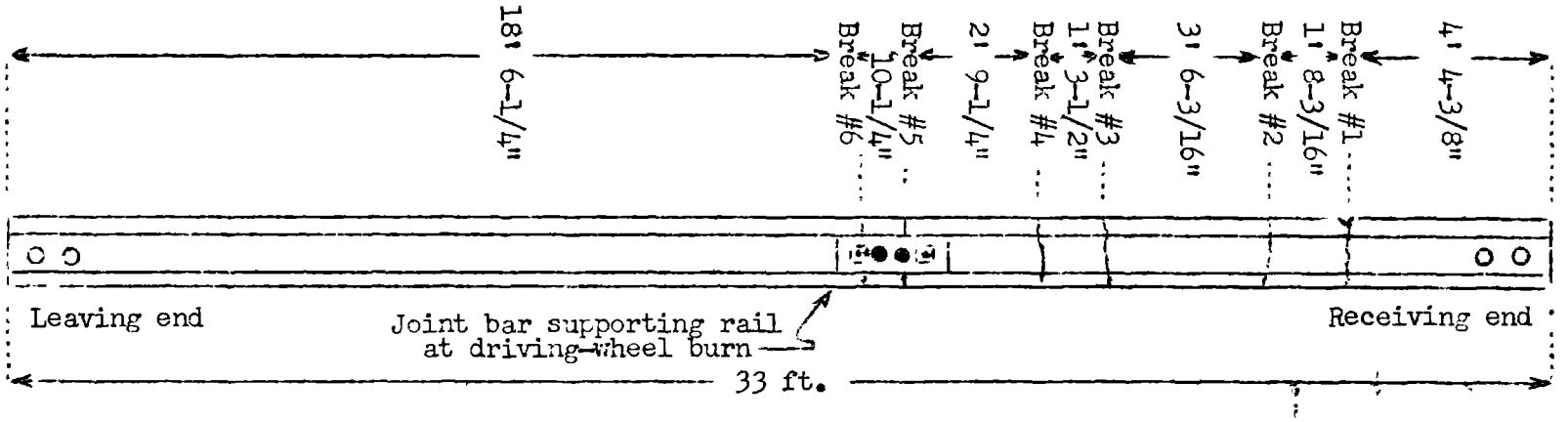
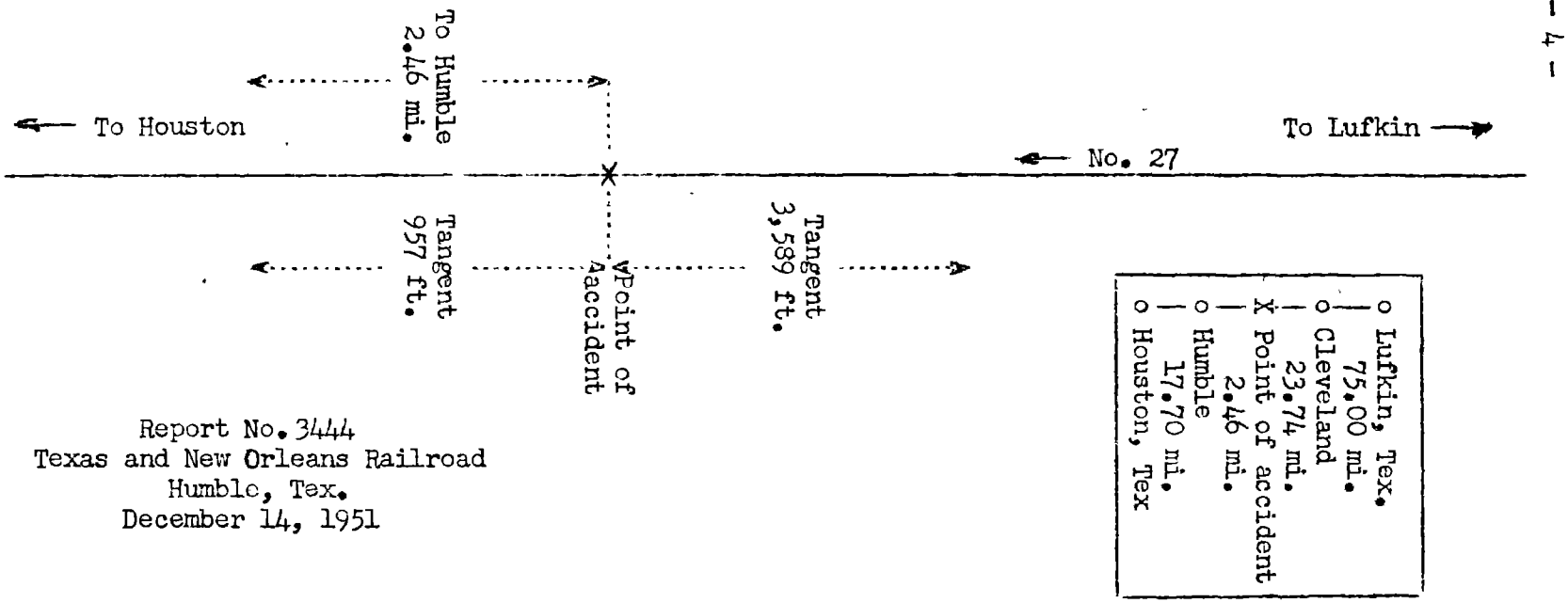
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.




Sketch showing broken rail - north side of track




Report No. 3444
Texas and New Orleans Railroad
Humble, Tex.
December 14, 1951

## Location of Accident and Method of Operation

This accident occurred on that part of the Lufkin Subdivision extending between Lufkin and Houston, Tex., 118.9 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. The accident occurred on the main track at a point 98.74 miles west of Lufkin and 2.46 miles east of the station at Humble. From the east there is a tangent 3,589 feet to the point of accident and 957 feet westward. The grade varies between 0.82 and 0.85 percent descending westward throughout a distance of 2,000 feet, then there is a vertical curve 455 feet to the point of accident and 245 feet westward.

In the immediate vicinity of the point of accident the track is laid on a fill about 10 feet in height. The track structure consists of 90-pound rail, 33 feet in length, relaid in November, 1940, on an average of 18 creosoted ties to the rail length. It is fully tieplated, single-spiked, provided with 4-hole 24-inch joint bars, fully bolted and an average of 6 rail anchors per rail length. It is ballasted with gravel to a depth of 6 inches below the bottoms of the ties.

The maximum authorized speed for passenger trains is 50 miles per hour.

## Description of Accident

No. 27, a west-bound first-class passenger train, consisted of engine 626, a 4-6-2 type, one mail-storage car, two baggage cars, one baggage-mail car, one coach, one chair car and one sleeping car, in the order named. All cars were of conventional steel construction. None of the cars was equipped with tightlock couplers. This train departed from Lufkin at 5:35 a. m., 10 minutes late, departed from Cleveland, the last open office, 23.74 miles east of the point of accident, at 5:49 a. m., 7 minutes late, and while moving at an estimated speed of 50 miles per hour the rear truck of the fourth car and the fifth to the seventh cars, inclusive, were derailed at a point 2.46 miles east of the station at Humble.

Separations occurred between adjacent units from the fourth to the seventh cars. The engine stopped 1,332 feet west of the point of derailment. The rear truck of the fourth car was derailed to the right and stopped on the track structure. This car leaned to the north at an angle of about 30 degrees.

The fifth car stopped on its right side, with the front end 410 feet west of the point of derailment and 12 feet north of the track, and the rear end 33 feet north of the track. The sixth car stopped on its right side at the bottom of the fill and about 34 feet north of the track. The seventh car stopped on its right side, with the front end 32 feet north of the track and the rear end 24 feet north of the track, and 204 feet west of the point of derailment. The fifth, sixth and seventh cars were considerably damaged and the fourth car was slightly damaged.

The conductor, the front brakeman and the flagman were injured.

It was misting at the time of the accident, which occurred about 6:23 a. m.

## Discussion

No. 27 was moving on tangent track at a speed of about 50 miles per hour, in territory where the maximum authorized speed was 50 miles per hour, when the derailment occurred. The brakes of this train had been tested and had functioned properly when used en route. The headlight was lighted brightly. The engineer and the fireman were maintaining a lookout ahead from their respective positions in the cab of the engine. The members of the train crew were at various locations throughout the cars of the train. The engineer, the fireman and the conductor said that the train was riding smoothly before the derailment occurred. The flagman, who was in the rear car, said that when the derailment occurred he attempted to open the conductor's valve but the car overturned before he could take effective action.

Examination of the equipment of No. 27 disclosed no condition that would have caused the derailment. There was no indication of dragging equipment or of an obstruction having been on the track. Examination of the track disclosed that the surface, gage and alinement were adequately maintained for the maximum authorized speed in this territory.

After the accident occurred, a broken rail was found on the north side of the track at the point of derailment. This rail was broken into seven pieces. Breaks occurred at points 4 feet 4-3/8 inches, 6 feet 9/16 inch, 9 feet 6-3/4 inches, 10 feet 10-1/4 inches, 13 feet 7-1/2 inches and 14 feet 5-3/4 inches from the receiving end of the rail. The first piece of the rail remained in place and bolted to the

adjoining rail east of the point of accident. The second piece was found about 70 feet west of the point of accident and 49 feet north of the track. The third to the sixth pieces, inclusive, were moved outward and lay near the ends of the ties. The seventh piece remained bolted to the next rail and was found in the embankment under the shoulder of the fill. At break No. 1 the west end of the first piece was battered down 3/16 inch and the east end of the second piece was battered down 5/8 inch. The batter on the rail ends at the first break indicates that the rail was broken by a previous train and that the other breaks occurred during the derailment of No. 27. At the first break there was a driving-wheel burn on the top of the head of the rail. Under this burn there was a progressive fracture, which covered 48 percent of the cross-sectional area of the head of the rail. This fracture had progressed through the web and into the base. It could not have been visually detected before the complete break occurred. There were driving-wheel burns on the head of the rail at each of the other breaks but examination disclosed no evidence of fracture from this cause. The east end of the third piece of the rail was flange-marked near the gage side of the head. The base of this piece of the rail was chipped by the heads of some of the spikes when this piece was overturned during the derailment. Inspection of the right front wheel of the front truck of the fourth car disclosed an indentation on the flange and an abrasion about 2-3/8 inches long and 1/8 inch deep in the tread of the wheel. The right rear wheel of this truck was similarly marked. These marks corresponded with the marks on the rail. Apparently the wheels of the front truck of the fourth car dislodged the second piece of the rail and then struck and displaced the third piece of the rail.

The roadmaster last inspected the track in this vicinity the day before the accident occurred, and no defective condition was observed. This section of the track was last inspected by the section foreman from a track motor-car 3 days before the accident occurred, and no defective condition was found. An east-bound freight train passed over the point of derailment about 1 hour before the accident occurred. The members of the crew of this train said that their train rode smoothly in the vicinity of the point of accident and they observed no unusual or defective condition of the track.

The rail involved was rolled by the Tennessee Coal and Iron Company in May, 1919, and bore heat number 37528-J. A rail-defect detector car was last operated over this territory on August 28, 1951, at which time 13 defective rails were found on the 12-mile maintenance-of-way section

on which the accident occurred. The tape used for recording purposes on the rail-defect detector car indicated that the rail which failed in the instant case was defective at each of seven driving-wheel burns on the rail. The car was stopped at that point and observation of the rail was made by the operator. However, the rail was not marked for removal and no subsequent tests were made. Joint bars were applied by the section foreman at a driving-wheel burn 13 feet 7-1/2 inches from the receiving end of the rail, but joint bars were not applied at the burn where the first break occurred.

## Cause

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

Dated at Washington, D. C., this eighteenth day of February, 1952.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.