

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 3072  
ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY  
REPORT IN RE ACCIDENT  
NEAR REPUBLIC, MO., ON  
FEBRUARY 7, 1947

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SUMMARY

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Railroad: St. Louis-San Francisco  
Date: February 7, 1947  
Location: Republic, Mo.  
Kind of accident: Derailment  
Train involved: Passenger  
Train number: 4  
Engine number: 1518  
Consist: 8 cars  
Estimated speed: 70 m. p. h.  
Operation: Signal indications  
Track: Single; tangent; 0.80 percent ascending grade eastward  
Weather: Clear  
Time: 6:14 p. m.  
Casualties: 1 killed; 14 injured  
Cause: Broken rail

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3072

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

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

March 4, 1947

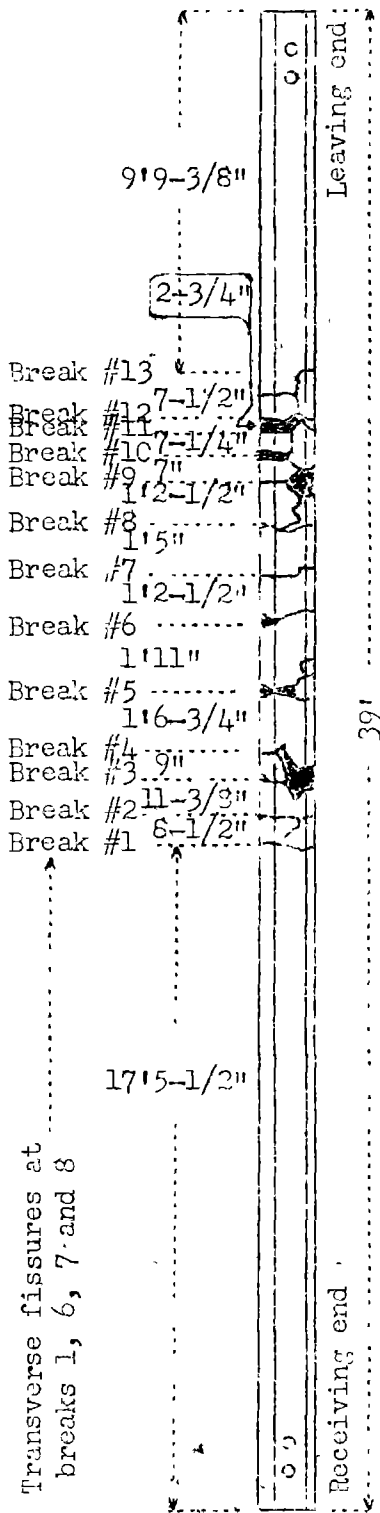
Accident near Republic, Mo., on February 7, 1947, caused  
by a broken rail.

REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

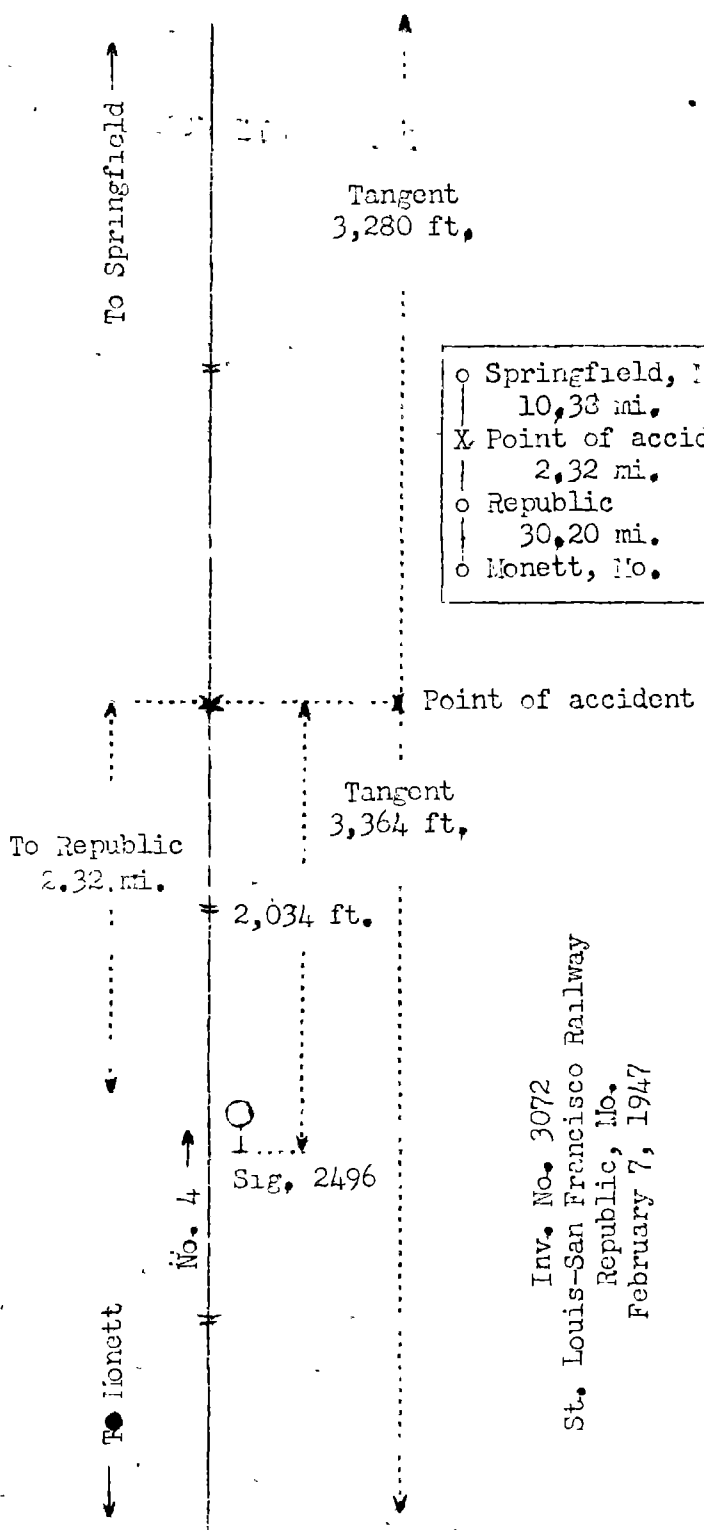
On February 7, 1947, there was a derailment of a passenger train on the St. Louis-San Francisco Railway near Republic, Mo., which resulted in the death of 1 passenger, and the injury of 12 passengers and 2 Pullman employees.

<sup>1</sup>  
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.



Shaded portions indicate missing fragments

Sketch showing broken rail - north side of track



- o Springfield, Mo. 10.38 mi.
- X Point of accident 2.32 mi.
- o Republic 30.20 mi.
- o Monett, Mo.

Inv. No. 3072  
 St. Louis-San Francisco Railway  
 Republic, Mo.  
 February 7, 1947

### Location of Accident and Method of Operation

This accident occurred on that part of the Eastern Division extending between Monett and Springfield, Mo., 42.9 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by signal indications. The accident occurred on the main track 32.52 miles east of Monett and 2.32 miles east of the station at Republic. The track is tangent throughout a distance of 3,364 feet immediately west of the point of accident and 3,280 feet eastward. The grade is 0.80 percent ascending eastward.

The track structure consists of 110-pound rail, 39 feet in length, laid new during July, 1930, on 23 treated ties to the rail length. It is fully tieplated, single-spiked, provided with 4-hole angle bars 24 inches in length, and an average of 6 rail anchors per rail length. It is ballasted with chat to a depth of about 16 inches. The involved rail section was manufactured by the Tennessee Coal, Iron and Railroad Company in April, 1930. The brand was 11025RE, Number 817028519.

Automatic signal 2496, governing east-bound movements, is 2,034 feet west of the point of accident. This signal is of the color-light type and is continuously lighted.

The maximum authorized speed for the train involved was 70 miles per hour.

### Description of Accident

No. 4, an east-bound first-class passenger train, consisted of engine 1518, a 4-8-2 type, one baggage car, one mail-baggage car, one baggage car, one passenger-baggage car, two coaches, one cafe-lounge car and one sleeping car, in the order named. The first car was of steel-underframe construction, and the remainder of the cars were of all-steel construction. This train departed from Monett, the last open office, at 5:40 p. m., 5 minutes late, passed Republic, passed signal 2496, which displayed proceed, and while it was moving at an estimated speed of 70 miles per hour the fifth to the eighth cars, inclusive, were derailed.

The engine and the first four cars remained coupled and stopped with the front of the engine 1,980 feet east of the point of derailment. The derailed cars remained coupled and stopped on the roadbed, north of the track and practically in line with it, with the front of the fifth car 925 feet west of the rear of the fourth car. The fifth, sixth and seventh cars remained practically upright, and were slightly damaged. The eighth car stopped on its left side, and was considerably damaged.

The weather was clear at the time of the accident, which occurred about 6:14 p. m.

### Discussion

No. 4 was moving on tangent track at a speed of about 70 miles per hour, in territory where the maximum authorized speed was 70 miles per hour, when the derailment occurred. The enginemen were maintaining a lookout ahead. The members of the train crew were in various locations throughout the cars of the train. The last automatic block signal west of the point where the derailment occurred displayed proceed. Prior to the time of the accident, the engine and the cars had been riding smoothly, and there was no indication of defective equipment or track, nor of any obstruction having been on the track. The first that any member of the crew knew of anything being wrong was when the brakes became applied in emergency as a result of the derailment.

After the accident a broken rail was found on the north side of the track. This rail was broken through the head, the web and the base at 13 locations. The first break occurred 17 feet 5-1/2 inches east of the receiving end of the rail. The receiving ends of the first break, and the fourth, fifth, sixth, eighth and ninth breaks, respectively, 28-7/8 inches, 47-5/8 inches, 70-5/8 inches, 102-1/8 inches and 116-5/8 inches eastward, were battered. At breaks Nos. 1, 6, 7 and 8, there were transverse fissures which covered, respectively, 18 percent, 6 percent, 5 percent and 10 percent of the cross-sectional area of the head of the rail. None of these fissures extended to the surface of the rail. The remaining portions of the breaks were new. The second, fourth, sixth, ninth and twelfth breaks occurred between ties, the fifth and eleventh breaks occurred at the eastern edges of ties, and the remainder occurred over ties. Apparently the failure of the rail at the location of the transverse fissures occurred when the front portion of the train passed over the rail, then the pieces between these breaks were forced out of normal alignment, and the derailment occurred. The other breaks evidently occurred as a result of the derailment.

The track involved was last inspected by the section foreman about 9 hours before the derailment occurred, and no defective condition was observed. A rail-detector car was last operated over this territory on July 23, 1946. This test did not disclose any defect in the rail in question.

### Cause

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

Dated at Washington, D. C., this fourth day of March, 1947.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL, Secretary.