

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

---

REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

---

ACCIDENT ON THE  
CHICAGO, ROCK ISLAND & PACIFIC RAILWAY

---

JEFFERSON, OKLA.

---

DECEMBER 30, 1935

---

INVESTIGATION NO. 2029

SUMMARY

---

Railroad: Chicago, Rock Island & Pacific  
Date: December 30, 1935  
Location: Jefferson, Okla.  
Kind of accident: Derailment  
Train involved: Passenger  
Train number: 31  
Engine number: 900  
Consist: 6 cars  
Speed: 25-40 m.p.h.  
Track: Single track; tangent and level  
Weather: Dark and foggy  
Time: 4:02 a.m.  
Casualties: 5 injured  
Cause: Broken rail

January 24, 1936.

To the Commission:

On December 30, 1935, there was a derailment of a passenger train on the Chicago, Rock Island & Pacific Railway at Jefferson, Okla., which resulted in the injury of five passengers.

#### Location and method of operation

The accident occurred on Sub-division 45 of the Oklahoma Division, which extends between Caldwell, Kans., and El Reno, Okla., a distance of 108.3 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by time table and train orders, no block-signal system being in use. The accident occurred at a point 3,182 feet west of the station at Jefferson; approaching this point from the east, there is a 1° curve to the left 1,142 feet in length, followed by tangent track for a distance of 5,314 feet, the accident occurring on this tangent at a point approximately 544 feet from its western end. The grade is level at the point of accident. There is a passing track 5,276 feet in length which parallels the main track on the south.

The track is laid with 90-pound rails, 39 feet in length, with 34 treated ties to the rail length, single-spiked and fully tieplated; from 4 to 5 rail anchors are used to each rail. The track is ballasted to a depth of 10 inches, consisting of 6 inches of burnt gumbo and 4 inches of crushed-rock screenings, and is maintained in good condition. The maximum allowable speed for passenger trains is 65 miles per hour on tangent track.

It was dark and somewhat foggy but clearing at the time of the accident, which occurred about 4:02 a.m.

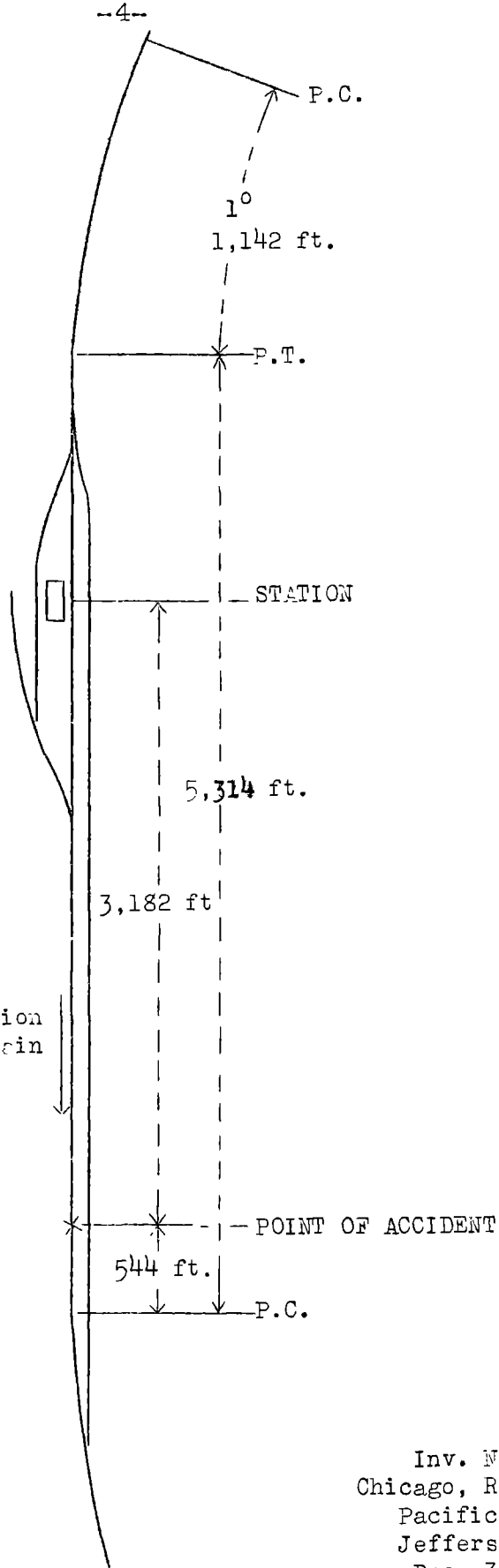
#### Description

Train No. 31, a west-bound passenger train, consisted of 2 baggage cars, 1 combination mail and baggage car, 1 coach, 1 chair car and 1 Pullman sleeping car, all of steel construction, hauled by engine 900, and was in charge of Conductor Strandberg and Engineman Hillman. This train departed from Caldwell, Kans., 24.2 miles east of Jefferson, at 3:25 a.m., on time, and stopped at the station at Jefferson, leaving there at 3:59 a.m., 2 minutes late, according to the statements of the members of the crew, and was derailed by a broken rail at a point slightly more than one-half mile beyond while traveling



--4--

○ Caldwell, Kans.
24.2 mi.
◆ Jefferson, Okla.
0.6 mi.
✕ Point of accident
83.5 mi.
● El Reno, Okla.



Inv. No. 2029  
Chicago, Rock Island &  
Pacific Railway  
Jefferson, Okla.  
Dec. 30, 1935

at a speed estimated to have been between 25 and 40 miles per hour.

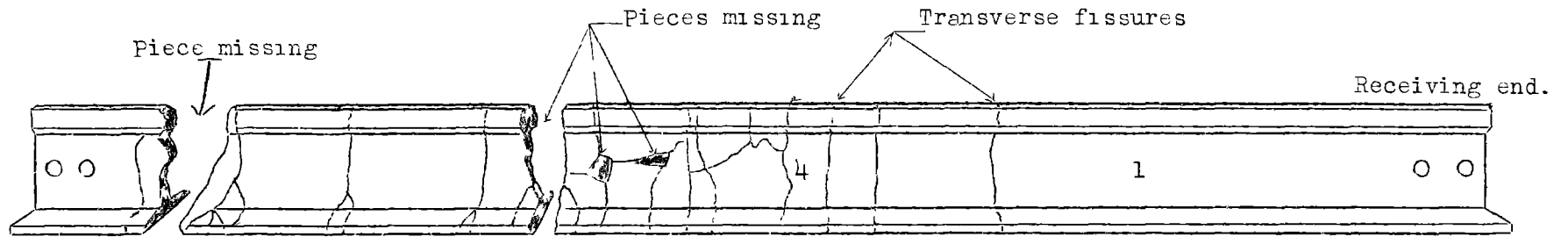
The engine, tender, the first three cars and the front truck of the fourth car were not derailed, but the rear truck of the fourth car and the fifth and sixth cars were derailed to the left. The fourth car stopped about 430 feet beyond the point of derailment with the fifth car immediately behind it, between the main and passing tracks. The sixth or rear car turned over on its left side on the passing track about 93 feet behind the fifth car.

#### Summary of evidence

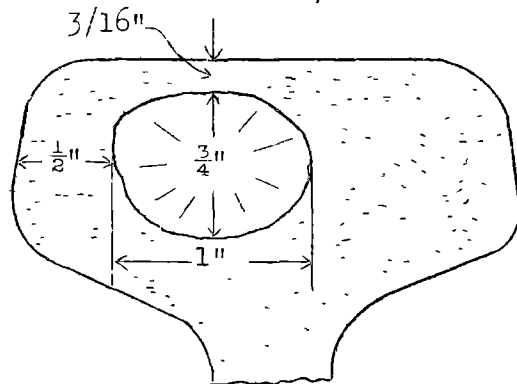
Engineman Hillman stated that after making the station stop at Jefferson his train had attained a speed of between 35 and 40 miles per hour when he felt a slight jerk as though the air line had parted, and by the time he looked at the air gauge the brakes had applied and he shut off steam. After the accident he went back and found a broken rail on the left side of the track; a portion of the receiving end of the rail was still in the track and the surface of the fracture had a bright appearance. He inspected the engine and also the cars that remained on the track and found nothing that might have contributed to the cause of the accident. He stated that while it had been foggy, it was beginning to clear up at the time of the accident and that his headlight was burning brightly, giving him a good view of the track, but he did not see anything wrong. He felt nothing unusual as his engine passed the point of derailment, and said that when operating Train No. 32 east-bound, the last train to pass over this track prior to the accident, he did not notice anything unusual in the track conditions. Engineman Hillman stated that his train was given the usual inspection at Caldwell, and that the brakes had been tested and were reported to be working properly. The statements of Fireman Meador practically corroborated those of the engine-man; he also stated that he heard the air whistle blowing about the time the brakes were applied in emergency.

Head Brakeman Fields stated that he was in the fourth car when it started bouncing on the ground; he immediately jumped up to apply the air brakes but on finding that the air valve was in the other end of the car he pulled the air whistle cord.

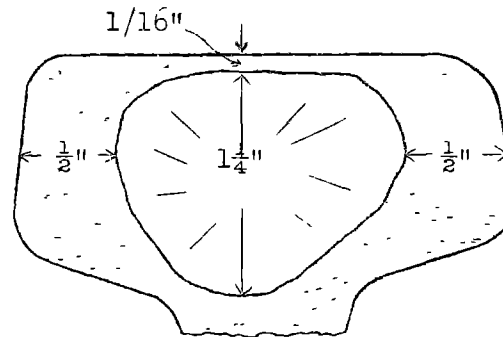
Conductor Strandberg stated that he was in the front end of the fourth car when he felt the rear end of the car jerk, as if it had run over something, and it then dropped to the ground. After the accident he inspected the track closely but did not see any marks of any kind east of the broken rail nor did he find anything that might have dropped from the train.



Illinois Steel Co. 9020 A.R.A. section - Rolled 1926 Heat #50588 "D Rail



Receiving end piece # 4



Leaving end piece # 1

Flagman Hollon, who was in the rear car, stated that the first intimation he had of anything wrong was when the car became derailed. He estimated the speed of the train at the time of the accident to have been between 25 and 30 miles per hour.

Section Foreman Schadd, in charge of the section on which this accident occurred, stated that he arrived at the scene about 5:15 a.m., and on examining the track he found that the first break in the rail was at the leaving end of a 13-foot section, this fracture disclosing a transverse fissure which covered about 75 percent of the area of the head. The balance of the rail was broken into pieces varying in length from 2 inches to 4 feet, which in his opinion was the result of the accident; there were no marks of any kind on the track east of the first break. Section Foreman Schadd stated that he worked on this track on December 26, tightening bolts and inspecting the rails as he went along, and last patrolled the track prior to the accident on December 28, at which time he noticed nothing wrong.

Roadmaster Sturdevant stated that on his arrival at the scene of the accident he found that in addition to the transverse fissure in the leaving end of the 13-foot section, which was the receiving end of the rail, there also was a transverse fissure at another point, covering an area of about 20 percent of the head of the rail. The initial fissure, in his opinion, covered an area of from 80 to 85 percent; it had not reached the outer surface of the rail, and therefore could not have been detected by visual inspection. The rail was broken into 31 or more pieces, with several pieces missing. There were no marks on the track east of the broken rail and it was his opinion that the rail failed under the train. Roadmaster Sturdevant stated that about once each year a Sperry detector car is operated over this track, and that the last trip prior to the accident was on March 22, 1935, at which time no defects were found in the immediate vicinity of the point of accident, although a transverse fissure was found at a point about 9/10 mile east thereof and another one about 10 miles east thereof. The track had been worked on at various times during the months between April and September and was in good condition. On November 11, a split web was found in a 110-pound rail, and Roadmaster Sturdevant stated that he immediately told the section foreman to reissue the instructions to watch the rails at all times for defects, as at that time they expected to tighten bolts and could examine each rail as they went along.

The rail involved was in the left or south side of the track; it was a 90-pound rail, 39 feet in length, rolled in November, 1926, by the Illinois Steel Company at the Gary Plant,

heat No. 50588-5-D, ARA section 9020, and was laid in the track in 1927. The first break occurred 13 feet 1/2 inch from the receiving end and disclosed a transverse fissure covering an area of 80 percent of the head of the rail, extending to within 1/16 inch of the top surface; there also were smaller fissures at three other locations. The first marks on the ties were at a point 14 feet west of the first break, near the gauge side of the right rail, and on the outside of the left rail at a point 18 feet from the point of break; these marks continued diagonally across the track for a distance of approximately 66 feet, the right mark being entirely between the rails and ending near the inside of the left rail, while the left mark ended near the outside of the right rail of the passing track. There were no other wheel marks on the ties, although there were flange marks on the various pieces of broken rail, while the track itself was torn up to such an extent as to make the identification of marks exceedingly difficult. There were no marks of any kind east of the broken rail.

#### Discussion

Examination of the track after the accident disclosed that the rail had been broken into numerous pieces, approximately 30 of which were recovered, and that four of the fractures were due to the presence of transverse fissures. The largest of these fissures was at the first break, approximately 13 feet from the receiving end of the rail, covering an area of about 80 percent of the head and extending to a point 1/16 inch from the top surface of the rail; another fissure covered an area of about 20 percent of the head of the rail, while the others covered about 10 percent.

#### Conclusion

This accident was caused by a broken rail.

Respectfully submitted,

W. J. PATTERSON,

Director.