INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3529

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

IN RE ACCIDENT

NEAR MENFRO, MO., ON

JULY 25, 1953

SUMMARY

Date:	July 25, 1953
Railroad:	St. Louis-San Francisco
Location:	Menfro, Mo.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	Second 836
Engine number:	Diesel-electric units 603, 604, and 607
Consist:	22 cars, caboose
Speed:	55 m. p. h.
Operation:	Timetable, train orders, and automatic block-signal system
Track:	Single; 5°12' curve; 0.2 percent descending grade northward
Weather:	Clear
Time:	12:20 p. m.
Casualties:	1 killed; 38 injured
Cause:	Kinked track

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REPORT NO. 3529

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

ST. LOUIS-SAN FRANCISCO RAILWAY COMPANY

August 31, 1953

Accident near Menfro, Mo., on July 25, 1953, caused by kinked track.

REPORT OF THE COMMISSION [1]

CLARKE, Commissioner:

On July 25, 1953, there was a derailment of a passenger train on the St. Louis-San Francisco Railway near Menfro, Mo., which resulted in the death of 1 passenger, and the injury of 36 passengers, 1 passenger representative, and 1 train-service employee.

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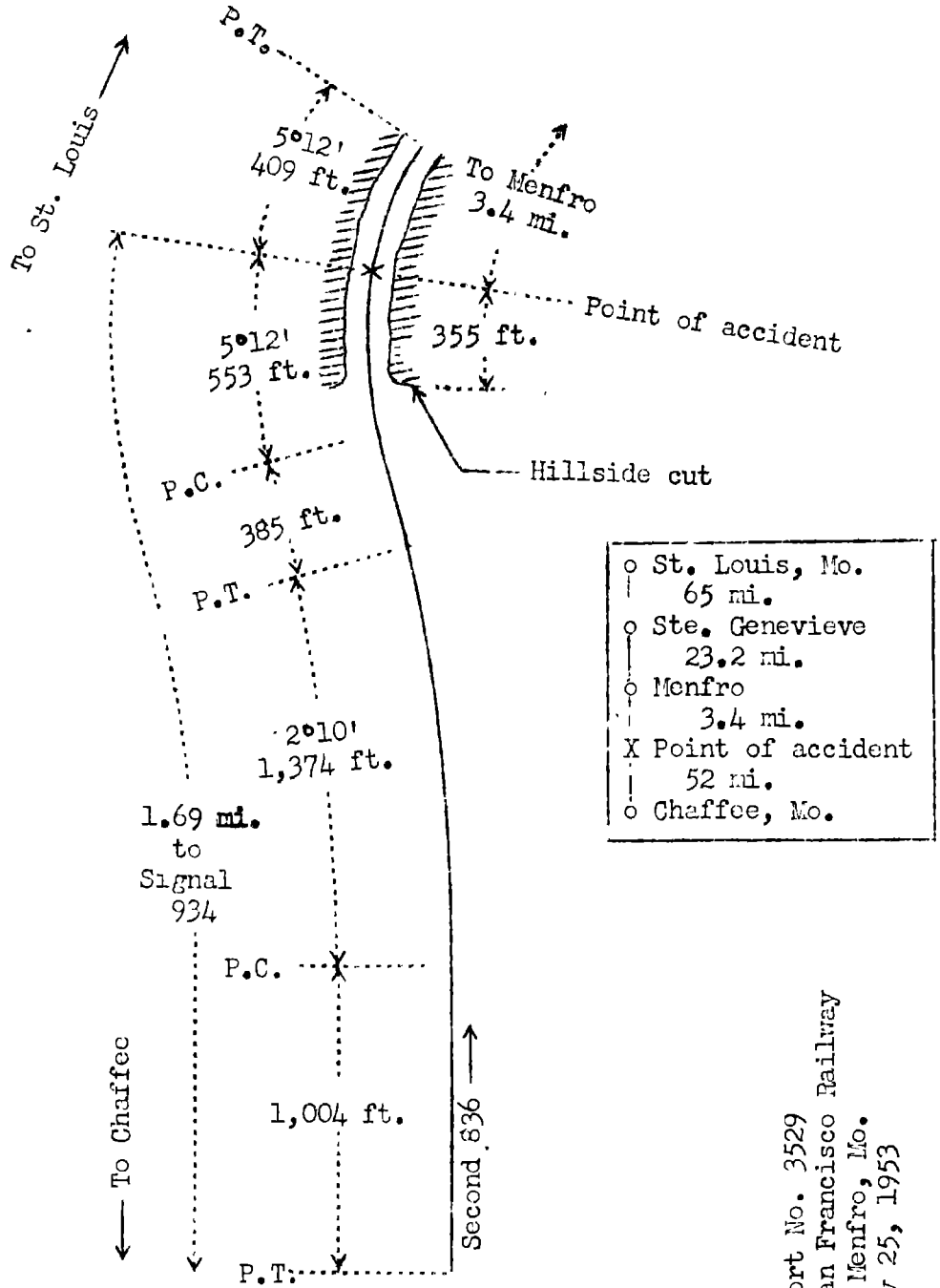
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.



Report No. 3529
St. Louis-San Francisco Railway
Near Menfro, Mo.
July 25, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the River Division extending between Chaffee and St. Louis, Mo., 143.6 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 at a point 52 miles north of Chaffee and 3.4 miles south of the station at Menfro. From the south there are, in succession, a tangent 1,004 feet in length, a 2°10' curve to the left 1,374 feet, a tangent 385 feet, and a 5°12' curve to the right 553 feet to the point of accident and 409 feet northward. The grade for north-bound trains is 0.2 percent descending a distance of 386 feet to the point of accident and 392 feet northward. The accident occurred in a hillside cut.

On the curve on which the accident occurred the track structure consists of 90-pound rail, 33 feet in length, laid on an average of 20 treated ties to the rail length. It is fully tieplated with single-shoulder canted tieplates, single-spiked, and is provided with 4-hole 24-inch joint bars and an average of 8 rail anchors per rail. It is ballasted with chatts to a depth of about 10 inches below the bottoms of the ties. At the point of accident the specified super-elevation was 6 inches.

Automatic signal 934, governing north-bound movements on the main track, is located 1.69 miles south of the point of accident.

The maximum authorized speed for passenger trains is 60 miles per hour, but it is restricted to 50 miles per hour on the curve on which the accident occurred.

Description of Accident

Second 836, a north-bound second-class passenger train, consisted of Diesel-electric units 603, 604, and 607, coupled in multiple-unit control, two baggage cars, five sleeping cars, one kitchen car, nine sleeping cars, one kitchen car, four sleeping cars, and a caboose, in the order named. The eighth car, the eighteenth car, and the caboose were of steel underframe construction. The other cars were of conventional all-steel construction. This train departed

from Chaffee, the last open office, at 10:40 a. m., 8 hours late, passed signal 934, which indicated Proceed, and while moving at a speed of 55 miles per hour, as indicated by the tape of the speed recording device, the first car, the front truck of the second car, and the fourth to the twelfth cars, inclusive, were derailed.

Separations occurred at each end of the seventh, eighth, and ninth cars. The front portion of the train stopped with the front end 1,100 feet north of the point of accident. The first car and the front truck of the second car derailed to the east and stopped in line with the track. The fourth to the sixth cars, inclusive, derailed to the west and stopped approximately in line with the track. The fourth car leaned toward the west at an angle of about 60 degrees. The seventh car stopped with the front end 354 feet north of the point of accident. The front and the rear ends of this car were, respectively, 15 feet and 33 feet west of the track. It leaned toward the west at an angle of about 45 degrees. The eighth car stopped upright and approximately at right angles to the track, with the left side of the car against the rear end of the seventh car. The ninth car stopped upright, across the track and in line with the eighth car. The tenth, eleventh, and twelfth cars stopped upright and in line, with the front end of the tenth car against the right side of the eighth car and the rear truck of the twelfth car on the track structure. The fourth to the sixth cars, inclusive, and the twelfth car were considerably damaged. The seventh to the ninth cars, inclusive, were badly damaged. Escaping gasoline in the eighth car, the kitchen car, became ignited, and the seventh, eighth, and ninth cars were further damaged by fire. The thirteenth car was slightly damaged.

The conductor was injured.

The temperature as recorded at Ste. Genevieve, Mo., 23.2 miles north of Menfro, was 96 degrees at noon on the day the accident occurred. The weather was clear at the time of the accident, which occurred at 12:20 p. m.

Discussion

As Second 836 was approaching the point where the accident occurred the speed was 55 miles per hour. The enginemen, the front brakeman, and a road foreman of equipment were maintaining a lookout ahead from the control compartment of the first Diesel-electric unit. The conductor and the

flagman were in the caboose. The employees in the control compartment of the first Diesel-electric unit said that the unit was riding smoothly and that there was no indication of defective track until immediately before the accident occurred. At that time the Diesel-electric unit lurched from side to side, and several seconds later the brakes became applied in emergency as a result of the derailment. These employees did not observe any irregularities in the alinement of the track in front of the train. The engineer thought the excessive lateral movement of the locomotive was caused by kinked track.

After the accident, a section of track about 30 feet in length on the 5°12' curve to the right was found to be deflected outward or to the left. The maximum deflection, which was about 8 inches, was located near the north end of the deflected portion of track. The west rail was canted outward throughout most of the deflected section. A broken rail was found on the east side of the track at the northward end of the deflected section. The break was new and there were no batter marks. The fractured surfaces indicated that the rail was broken by lateral stresses exerted against the gage side of the rail. North of the broken rail, the track was destroyed throughout a distance of approximately 275 feet. The first marks of derailment appeared on the track structure immediately north of the point where the broken rail was found.

Prior to the occurrence of this accident there had been no unusual displacement of the track structure in the vicinity of the point of accident. The section foreman last inspected the track in this vicinity the day before the accident occurred. A south-bound passenger train passed the point at which the accident occurred 1 hour 15 minutes prior to the time of the accident. The crew of that train said that there was no indication of defective track. An official of the railroad who examined the track structure soon after the derailment occurred was of the opinion that the track kinked as a result of high temperature.

From the unusual movement of the first Diesel-electric unit, the manner in which the equipment became derailed, the high temperature in the hillside cut, and the condition of the track structure after the derailment occurred, it is evident that the rails were compressed at the time of the accident

and that the additional force resulting from the movement of Second 836 was sufficient to cause the track to be suddenly deflected outward as Second 836 was passing over it.

Cause

It is found that this accident was caused by kinked track.

Dated at Washington, D. C., this thirty-first day of August, 1953.

By the Commission, Commissioner Clarke.

(SEAL)

GEORGE W. LAIRD,

Acting Secretary.