INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2842

THE SOUTHERN PACIFIC COMPANY

REPORT IN RE ACCIDENT

NEAR COLFAX, CALIF., ON

NOVEMBER 8, 1944

SUMMARY

Railroad:	Southern Pacific
Date:	November 8, 1944
Location:	Colfax, Calif.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	First 87
Engine number:	4176
Consist:	18 cars
Estimated speed:	In excess of 55 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Double; 10° curve; level
Weather:	Clear
Time:	5:10 a. m.
Casualties:	9 killed; 206 injured
Cause:	Excessive speed on snarp curve

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2842

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

THE SOUTHERN PACIFIC COMPANY

January 4, 1945.

Accident near Colfax, Calif., on November 8, 1944, caused by excessive speed on a sharp curve.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On November 8, 1944, there was a derailment of a passenger train on the line of the Southern Pacific Company near Colfax, Calif., which resulted in the death of 8 passengers and 1 train-service employee, and the injury of 194 passengers, 1 passenger aide, 1 train-service agent, 5 dining-car employees, 2 train porters and 3 train-service employees. This accident was investigated in conjunction with a representative of the Railroad Commission of California.

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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.

Inv. No. 2842
Southern Pacific Company
Colfax, Calif.
November 8, 1944

Location of Accident and Method of Operation

This accident occurred on that part of the Sacramento Division extending westward from Sparks, Nev., to Sacramento, Calif., 156.4 miles. In the vicinity of the point of accident this was a double-track line over which trains moving with the current of traffic were operated by timetable, train orders and an automatic block-signal system. The accident occurred on the westward main track 105.75 miles west of Sparks, at a point 2.55 miles west of the station at Colfax. In this vicinity the eastward main track followed a route approximately one-half mile to the south of the westward main track. From the east on the westward main track there were, in succession, a tangent 299 feet in length, a 6°10' curve to the right 594 feet, a tangent 683 feet, a 9°06' curve to the right 982 feet, a tangent 17 feet, and a 10° curve to the left 315 feet to the point of accident and 1,306 feet westward. The grade for west-bound trains varied between 0.425 percent and 1.655 percent descending 2.36 miles, then it was level 0.18 mile to the point of accident and some distance westward.

On the curve the track structure consisted of 131-pound rail, 39 feet in length, laid on 24 treated ties to the rail length. It was fully tieplated, double-spiked, provided with 4-hole angle bars, 8 rail anchors per rail length, and was ballasted with crushed stone to a depth of 8 inches. The maximum superelevation on the curve was 4-1/4 inches, and the gage varied between 4 feet 8-1/2 inches and 4 feet 9 inches. The superelevation at the point of derailment was 4 inches and the gage was 4 feet 9 inches.

Time-table special instructions prescribed the maximum authorized speed for the train involved between Truckee and Loomis, respectively, 65.3 miles east and 28.2 miles west of Colfax, as 35 miles per hour on tangents and 30 miles per hour on curves. Speed-limit signs were located at the eastern and western limits of this territory.

Description of Accident

First 87, a west-bound first-class passenger train, consisted of engine 4176, a 4-8-8-2 type, two baggage cars, nine coaches, one dining car and six coaches, in the order named. All cars were of steel construction. This train departed from Sparks at 12:55 a. m., 22 minutes late, departed from Colfax, the last open office, about 5:04 a. m., 19 minutes late, and while it was moving at a speed estimated to have been in excess of 55 miles per hour the engine and the first 10 cars were derailed.

The engine stopped on its right side, north of the track and practically parallel to it, with the front end 234 feet

west of the point of derailment. The tender, which became separated from the engine, and the first 5 cars stopped north of the track, the sixth to the eighth cars, inclusive, stopped in various positions across the track, and the ninth and tenth cars stopped upright on the roadbed and in line with the track. The engine and tender were considerably damaged, the first 8 cars were badly damaged and the ninth car was slightly damaged.

It was clear at the time of the accident, which occurred about 5:10 a. m.

The engineer was killed. The conductor, the front brakeman and the baggageman were injured.

Engine 4176 was a single expansion articulated mallet engine of the 4-8-8-2 type. The cab was located at the front end. The total weight of the engine in working order was 639,800 pounds, distributed as follows: Engine truck, 76,300 pounds; driving wheels, 514,800 pounds; and trailer truck, 48,700 pounds. The diameters of the engine-truck wheels, driving wheels and trailer-truck wheels were, respectively, 33 inches, 63 inches and 36 inches. The tender was rectangular in shape and equipped with 6-wheel trucks. Its weight when loaded was 390,900 pounds. The wheelbase of each driving unit was 16 feet 11 inches long. The distance between the center of the engine truck and the center of the No. 1 driving wheels was 9 feet 6 inches. The distance between the two driving-wheel units was 10 feet 9 inches. The total length of the engine wheelbase was 44 feet 7 inches, and the total length of the engine and tender was 125 feet.

Discussion

First 87 had just traversed a curve of approximately 9° to the right and was moving on a 10° curve to the left when the engine and the first 10 cars were derailed. The engine overturned and stopped 234 feet beyond the point of derailment. The maximum authorized speed on the curve was 30 miles per hour. As the train was approaching the point where the accident occurred the members of the train crew were in various locations throughout the cars of the train. The cars had been riding smoothly, and the first these employees knew of anything being wrong was when the derailment occurred. They were unable to give an accurate estimate of the speed of the train, or to give definite information as to whether an application of the brakes was made immediately prior to the accident. The fireman said that during a period of several minutes prior to the accident he was engaged in operating the injector and did not give any attention to the speed of the train. The first he knew of anything being wrong was when the engine suddenly lurched to the right, then the derailment occurred. He thought the rear portion of the engine

started to overturn first, and that the engineer moved the brake valve to emergency position as the engine was overturning.

There was no defective condition of the engine prior to the accident. There was no indication of dragging equipment, defective track, or of any obstruction having been on the track. The brakes had been tested and had functioned properly en route. Examination of the engine after the accident disclosed that the automatic brake valve was in emergency position, the independent brake valve was in running position, the main throttle was in drifting position and the reverse lever was latched on the quadrant in about 50 percent cut-off position. There was no condition found that would prevent the proper application of the train brakes.

The surface, alinement and gage of the track on the curve were well maintained for the maximum authorized speed of 30 miles per hour. The mechanical engineer said that the overturning speed at the point of derailment for engine 4176 was 57.35 miles per hour. It is evident that the train was moving at overturning speed, as the engine overturned to the outside of the curve without marking the rails, and slid on its right side to the point where it stopped. From Colfax to a point 1,200 feet east of the point of derailment, a distance of 2.36 miles, the grade varied between 0.45 and 1.65 percent descending. The fireman said that one brake-pipe reduction was made between Colfax and the point of accident. It could not be determined why the engineer failed to control the speed of the train in accordance with the speed restriction on the curve, as he was killed in the accident.

Cause

It is found that this accident was caused by excessive speed on a sharp curve.

Dated at Washington, D. C., this fourth day of January, 1945.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.