INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3058

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR BEAVER, WIS., ON

JANUARY 5, 1947

SUMMARY

Railroad:	Chicago, Milwaukee, St. Paul and Pacific
Date:	January 5, 1947
Location:	Beaver, Wis.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	9
Engine numbers:	151-159
Consist:	12 cars
Speed:	50 m. p. h.
Operation:	Timetable, train orders and manual-block system
Track:	Single; tangent; 0.13 percent ascending grade westward
Weather:	Clear
Time:	About 7. a. m.
Casualties:	30 injured
Cause:	Broken rail

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3058

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

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

February 12, 1947

Accident near Beaver, Wis., on January 5, 1947, caused by a broken rail.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On January 5, 1947, there was a derailment of a passenger train on the Chicago, Milwaukee, St. Paul and Pacific Railroad near Beaver, Wis., which resulted in the injury of 28 passengers, 1 Pullman employee and 1 train porter.

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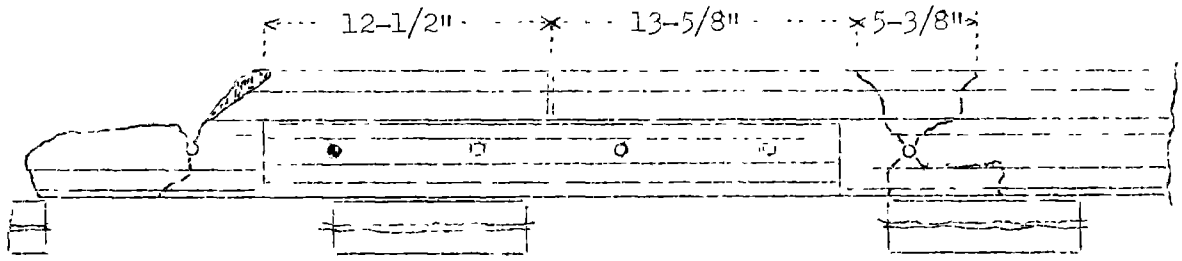
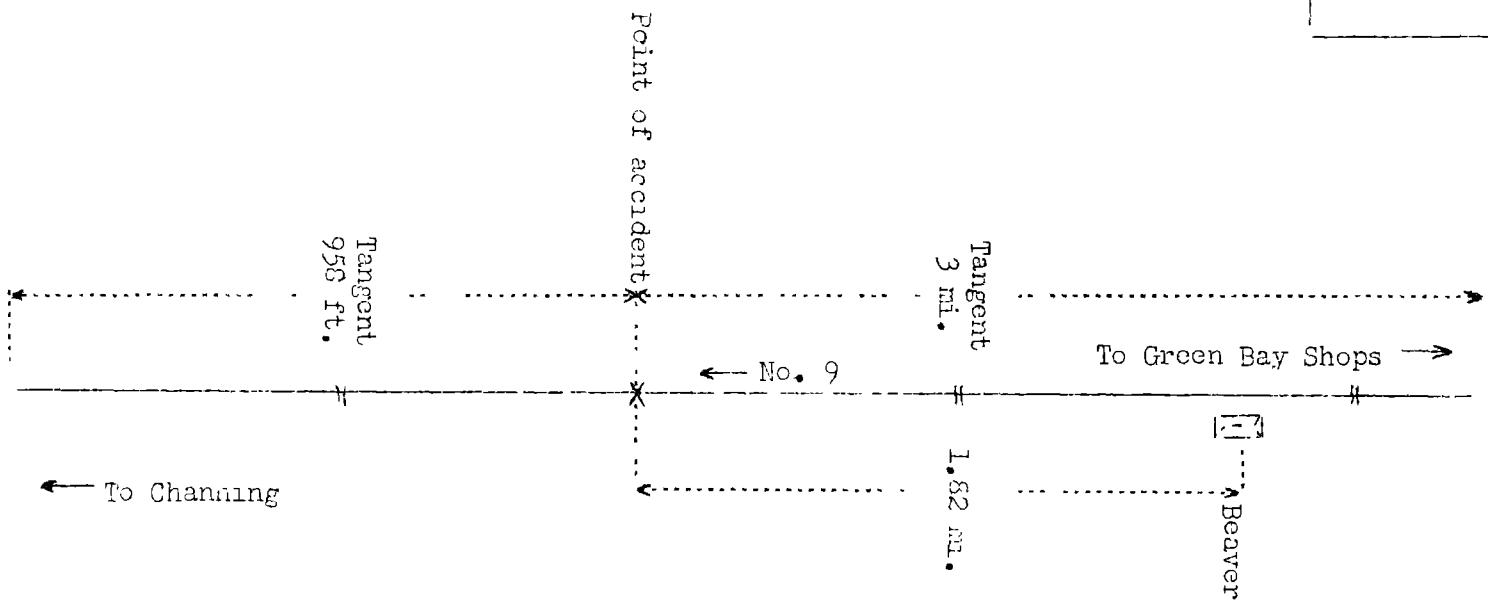
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Sketch showing broken rails at joint
on north side of main track

o Green Bay Shops, Wis.
39.20 mi.
o Coleman
5.10 mi.
o Beaver, Wis.
1.32 mi.
X Point of accident
71.98 mi.
o Channing, Mich.



Inv. No. 3058
Chicago, Milwaukee, St. Paul and Pacific Railroad
Beaver, Wis.
January 5, 1947

Location of Accident and Method of Operation

This accident occurred on that part of the Superior Division extending between Green Bay Shops, Wis., and Channing, Mich., 118.1 miles, a single-track line, over which trains are operated by timetable, train orders, and a manual-block system. The accident occurred on the main track 46.13 miles west of Green Bay Shops and 1.92 miles west of the station at Peaver. The main track is tangent throughout a distance of about 3 miles immediately east of the point of accident and 952 feet westward. The grade is 0.18 percent ascending westward.

The track structure consists of 75-pound rail, 30 feet in length, rolled new during 1901, and relaid at the point of derailment during 1935, on an average of 18 ties per rail length. It is fully tieplated with single-shoulder canted tieplates, single-spiked, and provided with 6 rail anchors per rail length. Each rail is provided with 3 bolt holes at each end for the use of 6-hole angle bars, but the angle bars in use are of the 4-hole type. The track is ballasted with a mixture of sand and gravel to a depth of 16 inches.

The maximum authorized speed for the train involved was 50 miles per hour.

Description of Accident

No. 9, a west-bound first-class passenger train, consisted of engines 151 and 159, of the 4-6-2 type, one express car, one mail-express car, three express cars, one sleeping car, three coaches, two sleeping cars and one coach, in the order named. All cars were of steel construction. This train departed from Coleman, the last open office, 5.1 miles east of Peaver, at 3:44 a. m., 1 hour 54 minutes late, passed Peaver, and while it was moving at a speed of 50 miles per hour the seventh to twelfth cars, inclusive, were derailed.

The first engine became separated from the second engine and stopped with the front end 2,565 feet west of the point of derailment. The second engine and the first six cars, remaining coupled, stopped with the front of the engine 500 feet east of the first engine. The seventh car stopped on its right side, about 20 feet north of the track and parallel to it, with the front end 1,312 feet west of the point of derailment. The eighth to twelfth cars, inclusive, stopped practically upright, about 5 feet north of the track and parallel to it, with the front of the eighth car and the rear of the twelfth car, respectively, 505 feet and 110 feet west of the point of derailment. The rear of the tender of the first

engine and the front end of the second engine were badly damaged as a result of a collision between the engines immediately after the separation occurred. The seventh car was badly damaged, and the eighth to twelfth cars, inclusive, were considerably damaged.

The weather was clear at the time of the accident, which occurred about 4 a. m.

Discussion

No. 9 was moving on tangent track at a speed of 50 miles per hour, as indicated by the speedometers with which the engines were equipped, in territory where the maximum authorized speed was 50 miles per hour, when the derailment occurred. The headlight of the first engine was lighted brightly, and the enginemen of both engines were maintaining a lookout ahead. The conductor and the front brakeman were in the seventh car and the flagman was in the rear car. The brakes of this train, which were in the charge of the engineer of the first engine, had been tested and had functioned properly en route. The first that any member of the crew was aware of anything being wrong was when the enginemen of the second engine heard an unusual noise under the engine, then the brakes became applied in emergency and the derailment followed. Prior to the time of accident the engines and the cars were riding smoothly, and there was no indication of defective equipment or track, nor of any obstruction having been on the track.

At the point of derailment two adjoining rails on the north side of the track were found broken. Each rail was broken through the head, the web, and the base at two locations. The first break in the east rail occurred 19 inches east of the leaving end and extended diagonally downward and westward in a slightly irregular line through an unused angle-bar bolt hole. The second break in this rail occurred 3-3/4 inches west of the first break and extended diagonally downward and westward in a slightly curved line through the unused bolt hole. This rail was supported by a tie at the location of the first break, and the second break occurred at the western edge of the same tie. The receiving end at the second break in the east rail was battered considerably. The first break in the west rail occurred 12-1/2 inches west of the receiving end and extended diagonally downward and westward through an unused angle-bar bolt hole. The second break in this rail occurred 3-1/2 inches west of the first break and extended downward vertically to the bolt hole thence ~~diagonally~~ downward and westward 6 inches. The first break in this rail occurred between two ties, and the second break occurred at the eastern edge of a tie. All breaks were new. The piece of rail extending westward from the second break in the east rail and the piece

extending eastward from the first break in the west rail remained attached to the angle bars. Evidently the failure of these rails occurred when the second engine was passing over them, and the pieces remaining attached to the angle bars became displaced under the wheels of the following equipment.

The track involved was last inspected by the section foreman about 16 hours before the accident occurred, and no defective condition was observed. An east-bound passenger train passed over this track about 3 hours before the derailment occurred, and the crew did not observe any abnormal condition of the track. According to the records of this carrier, during the past 5 years there were 268 broken rails in this territory, a distance of 12.4 miles. Of these breaks, 191 occurred at the location of unused bolt holes. Although these rails were arranged for 6-bolt-hole angle bars, 4-bolt-hole angle bars were in use, and thus one bolt hole at each end of the rails was not used. As a result, the rails at the unused bolt-hole locations did not have as much strength as elsewhere. There were 121 rail failures, including 75 breaks at unused bolt hole locations, in this territory during 1946. No rail-detector car has been in use in this territory. On January 11, the superintendent reduced the maximum authorized speed for passenger trains in the territory in question to 40 miles per hour.

Cause

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

Dated at Washington, D. C., this twelfth day of February, 1947.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.