

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3604
NORTHERN PACIFIC RAILWAY COMPANY
IN RE ACCIDENT
NEAR ULMER, MONT., ON
DECEMBER 16, 1954

*Broken
rail -
transverse
fracture*

SUMMARY

Date:	December 16, 1954
Railroad:	Northern Pacific
Location:	Ulmer, Mont.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	First 2
Engine number:	Diesel-electric units 6509A, 6509B, and 6509C
Consist:	12 cars
Speed:	75 m. p. h.
Operation:	Timetable, train orders, and automatic block-signal system
Track:	Single, tangent, level
Weather:	Clear
Time	5.15 a. m.
Casualties:	20 injured
Cause:	Broken rail

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3604

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

NORTHERN PACIFIC RAILWAY COMPANY

February 2, 1955

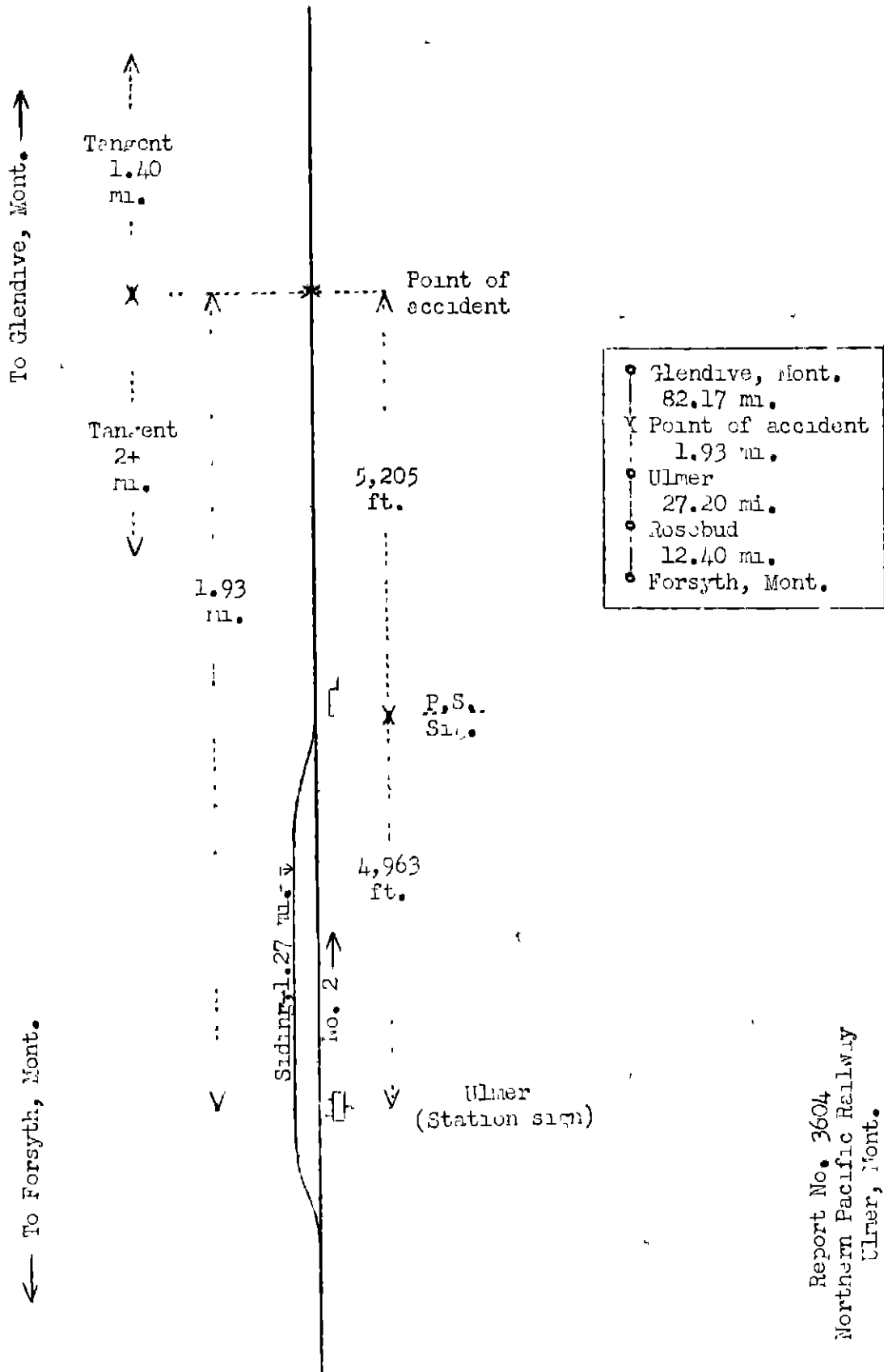
Accident near Ulmer, Mont., on December 16, 1954, caused
by a broken rail.

REPORT OF THE COMMISSION¹

CLARKE, Commissioner.

On December 16, 1954, there was a derailment of a passenger train on the Northern Pacific Railway near Ulmer, Mont., which resulted in the injury of 13 passengers, 6 dining-car employees, and 1 train attendant. This accident was investigated in conjunction with a representative of the Montana Board of Railroad Commissioners and Public Service Commission.

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. 3604
Northern Pacific Railway
Ulmer, Mont.
December 16, 1954

Location of Accident and Method of Operation

This accident occurred on that part of the Yellowstone Division extending between Forsyth and Glendive, Mont., 123.70 miles, a single-track line, over which trains are operated by timetable, train orders, and an automatic block-signal system. At Ulmer, 39.60 miles east of Forsyth, a siding 1.27 miles in length parallels the main track on the north. The east switch of this siding is 4,963 feet east of the station sign. The accident occurred on the main track at a point 5,205 feet east of the east siding-switch at Ulmer. From the west the main track is tangent throughout a distance of more than 2 miles to the point of accident and 1.40 miles eastward. The grade is level at the point of accident.

In the vicinity of the point of accident the track is laid on a low fill. The track structure consists of 100-pound rail, 39 feet in length, laid new in 1928 on an average of 23 treated ties to the rail length. It is fully tieplated with single-shoulder tieplates and is spiked with two spikes per tieplate. It is provided with 4-hole 24-inch joint bars and an average of 14 rail anchors per rail. It is ballasted with processed gravel to a depth of 8 inches below the bottoms of the ties.

An automatic signal governing east-bound movements on the main track is located at the east siding-switch at Ulmer.

The maximum authorized speed for passenger trains in the vicinity of the point of accident is 75 miles per hour.

Description of Accident

First 2, an east-bound first-class passenger train, consisted of Diesel-electric units 6509A, 6509B, and 6509C, coupled in multiple-unit control, three baggage cars, one mail car, one baggage car, one dormitory-baggage car, three coaches, one dining car, one sleeping car, and one sleeping-buffet-lounge car, in the order named. The second and fifth cars were of steel-underframe construction, the seventh to ninth cars, inclusive, were of lightweight steel construction, and the other cars were of conventional all-steel construction. The seventh to the eleventh cars, inclusive, were equipped with tightlock couplers. This train departed from Forsyth at 4 26 a. m., 3 minutes late, departed from Rosebud, 22.13

miles west of the point of accident, the last open office, at 4:46 a. m., 7 minutes late, and while moving at a speed of 75 miles per hour the rear nine cars were derailed at a point 5,205 feet east of the east siding-switch at Ulmer.

The forward portion of the train stopped with the front end of the locomotive 1,783 feet east of the point of derailment. The rear nine cars were derailed to the south. Separations occurred between the fourth and fifth cars, the fifth and sixth cars, and the sixth and seventh cars. The fourth car stopped with the front end on the track structure and the rear end 6 feet 6 inches south of the center-line of the track. The fifth car overturned and stopped on its right side immediately south of the track and parallel to it. The front end was approximately 170 feet west of the rear end of the preceding car. The sixth car overturned to the south and stopped with the front end on the track structure about 450 feet west of the fifth car. The rear end of this car was 21 feet south of the center-line of the track. The other cars stopped upright, on the south side of the track and approximately parallel to it. The rear end of the rear car stopped 12 feet east of the point of derailment. The fourth car was slightly damaged, and the other derailed cars, except the fifth car, were somewhat damaged. Inflammable material adjacent to a stove in the fifth car became ignited after the car overturned, and this car was destroyed by fire. The track was damaged throughout a distance of about 1,350 feet immediately east of the point of derailment.

The weather was clear and it was dark at the time of the accident, which occurred about 5:15 a. m.

Discussion

As First 2 was approaching the point where the accident occurred the speed was 75 miles per hour, as indicated by the tape of the speed-recording device. The engineer and the fireman were maintaining a lookout ahead from their respective positions in the control compartment at the front of the locomotive. The conductor and the front brakeman were in the seventh car, and the flagman was in the eleventh car. The headlight was lighted brightly. The brakes of this train had been tested and had functioned properly when used en route. The signal at the east siding-switch at Ulmer indicated Proceed. The enginemen said that the locomotive had been riding smoothly and they were unaware of anything being wrong until the brakes became applied in emergency.

The conductor said that soon after the train passed the east siding-switch at Ulmer he heard a grinding sound under the seventh car. The derailment occurred before he could take action to stop the train. The front brakeman said that immediately before the brakes became applied in emergency he heard gravel striking the bottom of the car.

Examination of the locomotive and cars after the accident disclosed no condition of the equipment which could have caused or contributed to the cause of the accident. Examination of the track disclosed no indication of dragging equipment nor of an obstruction having been on the track.

After the accident occurred a broken rail was found in the south side of the main track. This rail, which bore heat number 56554-19, was manufactured by the Illinois Steel Company, Gary Works, in September 1927. It was broken into several pieces. The first fracture occurred 3 feet 3-1/2 inches from the receiving end of the rail. This portion of the rail remained attached to the leaving end of the adjacent rail. At the point where this fracture occurred a transverse fissure extended over approximately 30 percent of the cross-sectional area of the head of the rail. It had not progressed to the surface. Other fragments of the rail were, respectively, 3 feet 4-1/2 inches, 2 feet 8 inches, and 2 feet 7 inches in length. The end of the portion of the rail immediately east of the initial fracture was flange-marked and battered. Evidently after the first break occurred the broken end was struck with sufficient force to cause the other breaks, and the derailment occurred when a portion of the rail was dislodged from the track.

A rail-defect detector car was last operated over this territory September 21, 1954. At that time no defective condition of the rail involved was found. The track in the vicinity of the point of accident was inspected by the section foreman and the district roadmaster on the day before the accident occurred. No defective condition was observed during these inspections. An east-bound freight train, which consisted of a steam locomotive, 92 cars, and a caboose, passed over the point of derailment between 30 and 40 minutes before the accident occurred. Members of the crew observed no unusual condition of the track.

Cause

This accident was 'caused' by a broken rail.

Dated at Washington, D. C., this second
day of February, 1955.

By the Commission, Commissioner Clarke.

(SEAL)

GEORGE W. LAIRD,
Secretary.