INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2874

NORTHERN PACIFIC RAILWAY COMPANY

REPORT IN RE ACCIDENT

NEAR LYONS, N. DAK., ON

FEBRUARY 17, 1945

SUMMARY

Railroad:	Northern Pacific
Date:	February 17, 1945
Location:	Lyons, N.Dak.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	Third 2
Engine number:	2659
Consist:	17 cars
Estimated speed:	45 m. p. h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Single; 3°30' curve; practically level
Weather:	Clear
Time:	1:50 p. m.
Casualties:	106 injured
Cause:	Insecure condition of track

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2874

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

NORTHERN PACIFIC RAILWAY COMPANY

April 10, 1945.

Accident near Lyons, N.Dak., on February 17, 1945, caused by insecure condition of the track.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On February 17, 1945, there was a derailment of a passenger train on the Northern Pacific Railway near Lyons, N.Dak., which resulted in the injury of 99 passengers, 5 Pullman employees and 2 train-service employees.

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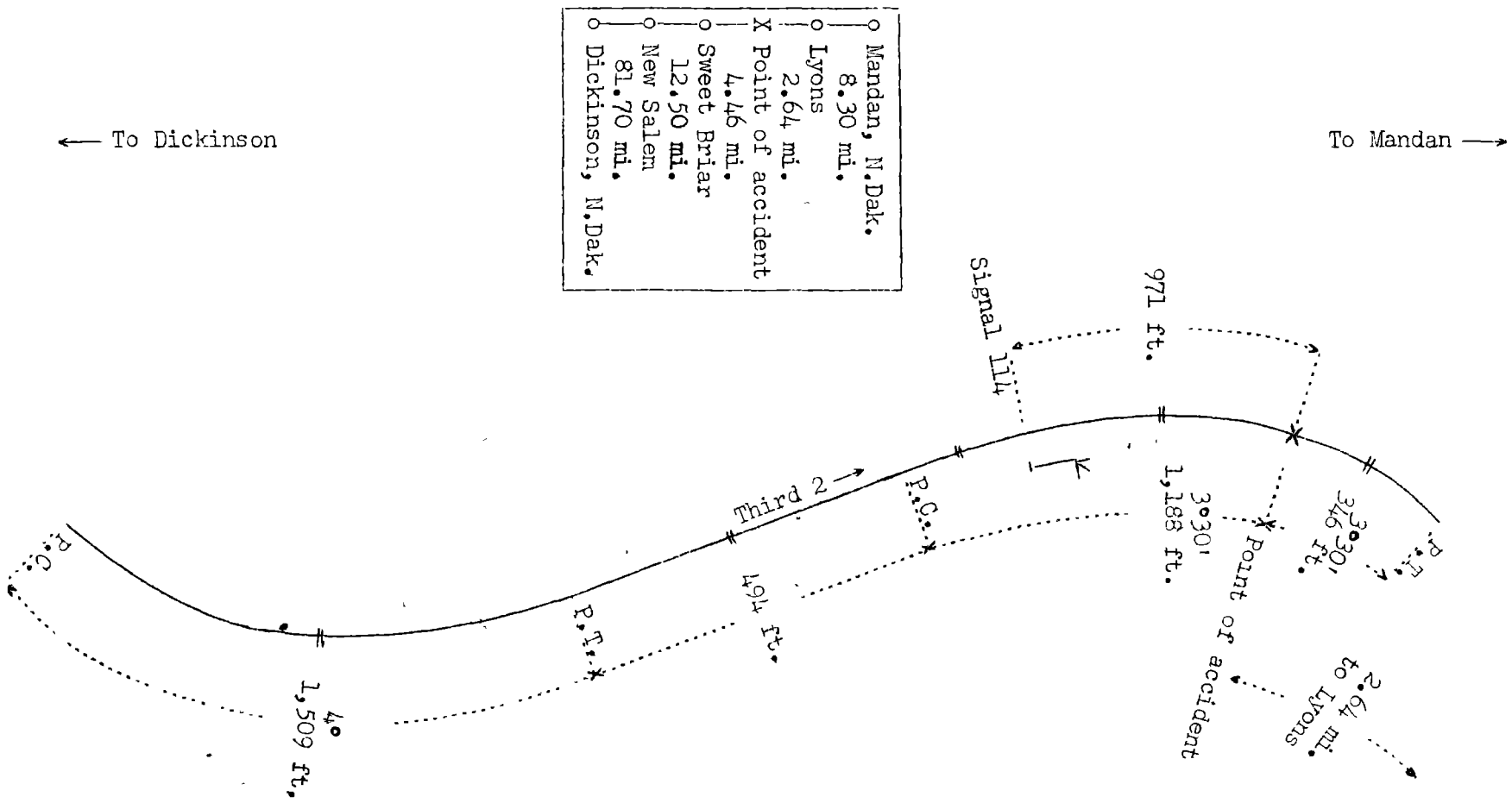
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 2874
Northern Pacific Railway
Lyons, N.Dak.
February 17, 1945

Location of Accident and Method of Operation

This accident occurred on that part of the Yellowstone Division designated as the First Sub-Division and extending eastward from Dickinson to Mandan, N.Dak., 109.6 miles. This was a single-track line over which trains were operated by timetable, train orders and an automatic block-signal system. The accident occurred on the main track 98.66 miles east of Dickinson, at a point 2.64 miles west of the station at Lyons. From the west there were, in succession, a 4° curve to the left 1,509 feet in length, a tangent 494 feet and a 3°30' curve to the right 1,188 feet to the point of accident and 346 feet eastward. At the point of accident the grade was practically level.

The track structure consisted of 131-pound rail, 39 feet in length and laid in 1938 on 22 treated ties to the rail length. It was fully tieplated, single-spiked, provided with 4-hole angle bars and an average of 20 rail anchors per rail length, and was ballasted with crushed rock to a depth of 6 inches. The superelevation on the curve on which the derailment occurred was 5 inches and the gage varied between 4 feet 8-1/2 inches and 4 feet 9-1/8 inches.

Automatic signal 114, governing east-bound movements, was 971 feet west of the point of accident.

General instructions read in part as follows:

> 728. If track is * * * to be made impassable, flagman must be sent out in both directions. At a distance fifty rail lengths from the obstruction, the flagman must place a red flag by day and, in addition, a red light at night on engineman's side. Two torpedoes must be placed ten rail lengths beyond the red signal. A yellow flag by day and, in addition, a yellow light by night must be placed one mile beyond the red signal where they can be plainly seen by an approaching train. Two torpedoes must be placed ten rail lengths beyond the yellow signal or farther on descending grades or where the view is obscured. Flagman will then return to a point near the "stop" signal remaining there until relieved or recalled by his foreman. On the approach of a train, flagman will give "stop" signal. Trains stopped by these signals must be governed by signal or instructions from the foreman in charge who, in giving such signal, must use a yellow flag by day or a yellow light by night.
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> * * *

Bulletin No. 3, issued January 1, 1944, read in part as follows:

* * *

"The red flag by day, and in addition the red light at night, will be placed twenty (20) rail lengths distant from the point of obstructions instead of fifty (50) rail lengths. The flagman will be located with the yellow signals, one and one-quarter (1¼) mile distant beyond the red signals. On the approach of a train the flagman will display the yellow signals, which must be acknowledged by the engineman * * *

* * *

A yellow flag or disc by day, and in addition a yellow light by night, placed on the engineman's side of the track, indicates that the track one and one-quarter (1¼) mile distant is in condition for a speed of not more than ten (10) miles per hour, unless a different speed is specified by train order, bulletin, or Special Rule. A green flag or disc by day and in addition, a green light by night, placed on the Engineman's side of the track, indicates that the slow track has been passed. The entire train must pass over the designated territory at the speed required, and the flagman will give proceed signal when the rear of train has passed the green signal."

* * *

The maximum authorized speed for passenger trains was 55 miles per hour.

Description of Accident

Third 2, an east-bound first-class passenger train, consisted of engine 2659, of the 4-8-4 type, one passenger-box car, two express-refrigerator cars, three tourist-sleeping cars, three troop-sleeping cars, two kitchen cars, and six tourist-sleeping cars, in the order named. The second and third cars were of steel-underframe construction, and the remainder were of all-steel construction. This train departed from Dickinson at 11:56 a.m., 2 hours 47 minutes late, passed New Salem, 19.6 miles west of Lyons

and the last open office, at 1:32 p.m., 2 hours 46 minutes late, passed signal 114, which displayed proceed, and while it was moving at an estimated speed of 45 miles per hour the rear wheels of the trailer-truck of the engine, the tender and the first 16 cars were derailed.

The engine and the first two cars, remaining coupled, stopped with the front of the engine about 1,630 feet east of the point of derailment. The third car became separated from the second car, and stopped practically upright, in line with the track and about 1,025 feet east of the point of derailment. The fourth to the sixteenth cars, inclusive, stopped in various positions north of the track. The derailed equipment was considerably damaged.

The weather was clear at the time of the accident, which occurred about 1:50 p.m.

The conductor and the front brakeman were injured.

Discussion

Third 2 was moving at a speed of about 45 miles per hour in territory where the maximum authorized speed was 55 miles per hour. The enginemen were maintaining a lookout ahead. The last automatic signal which this train passed displayed proceed. Prior to the time of the accident the engine and cars were riding smoothly, and there was no indication of defective equipment or track, nor of any obstruction having been on the track. When the engine was in the vicinity of the point where the derailment occurred, the engineer saw members of a crew of a track force, but no warning signals were seen or heard. When the engine passed over the point where the derailment occurred the enginemen felt an unusual movement of the engine, and a few seconds later they observed that the tender was derailed. Then the engineer moved the brake valve to emergency position.

After the accident a rail on the high side of the curve was found overturned outwardly, and the angle bars at each end of the rail were broken. Wheel marks indicated that wheels had dropped inside the rail. All the tie plates for this rail were displaced. Throughout the 19 ties at the west end of the rail, there were 30 spikes which had been pulled by a clawbar.

The investigation disclosed that on the morning of the day of the accident the track supervisor instructed the section foreman to correct the gage of the track on the curve where the accident occurred. Soon after 10 a.m. the

foreman started to correct the gage. Although his regular force consisted of six laborers, only two were on duty, as three were sick and one was on vacation. At noon the force departed for Sweet Briar, 4.46 miles west of the point of accident, and ate lunch at that station. Before they started to return to the scene of work, the foreman received a line-up which showed that Third 2 was 2 hours 30 minutes late. Since No. 2 was due to leave Sweet Briar at 11:02 a.m., he determined that Third 2 would not pass that station before 1:32 p.m. or the scene of work before 1:36 p.m. The motor-car departed at 1 p.m. and arrived at the curve in question about 1:10 p.m. Because of the double-shoulder tie plates in use, it was difficult to adjust the gage without removing most of the spikes and raising the rail, so he instructed the laborers to pull all the spikes holding the rail in question. The angle bars were not taken off. The rail was raised by the use of a jack and the tie plates had just been relocated when they heard Third 2 approaching at a distance of 3/4 mile. They were certain they could not signal the train in time for it to stop west of the rail, so they hurried to do all they could to make the track safe. The foreman was able to drive five spikes and partially drive another, one of the laborers drove four spikes, and the other laborer removed the jack before the engine reached the rail in question. However, there were not enough spikes to hold the rail in proper alinement. The rear pair of wheels of the trailer truck were the first wheels to become derailed.

The section foreman understood that the rules required flag protection be furnished to prevent trains from entering territory where work was being performed which would render the track unsafe for the passage of trains. However, in this instance, when they began to pull the spikes he thought the rail would be replaced and properly secured before Third 2 would arrive. During the progress of this work he overlooked the time. Third 2 was derailed 14 minutes after the time which he had estimated about an hour earlier as the earliest possible arriving time of that train.

Cause

It is found that this accident was caused by insecure condition of the track.

Dated at Washington, D. C., this tenth day of April, 1945.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL) Secretary.