

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2934
NORTHERN PACIFIC RAILWAY COMPANY
REPORT IN RE ACCIDENT
AT PROSSER, WASH., ON
SEPTEMBER 23, 1945

SUMMARY

Railroad: Northern Pacific
Date: September 23, 1945
Location: Prosser, Wash.
Kind of accident: Head-end collision
Trains involved: Passenger : Passenger
Train numbers: Second 1 : First 2
Engine numbers: 2251 : 2259
Consist: 12 cars : 12 cars
Estimated speed: Standing : 30 m. p. h.
Operation: - Timetable, train orders and
automatic block-signal system
Track: Single; 1°30' curve; 0.25 percent
ascending grade eastward
Weather: Clear
Time: 4:14 a. m.
Casualties: 1 killed; 112 injured
Cause: Switch being opened immediately
in front of approaching train
Recommendation: That the Northern Pacific Railway
Company install electric switch-
locking at main-track hand-operated
switches in high-speed automatic
block-signal territory

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2934

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

NORTHERN PACIFIC RAILWAY COMPANY

October 25, 1945.

Accident at Prosser, Wash., on September 23, 1945, caused
by a switch being opened immediately in front of an
approaching train.

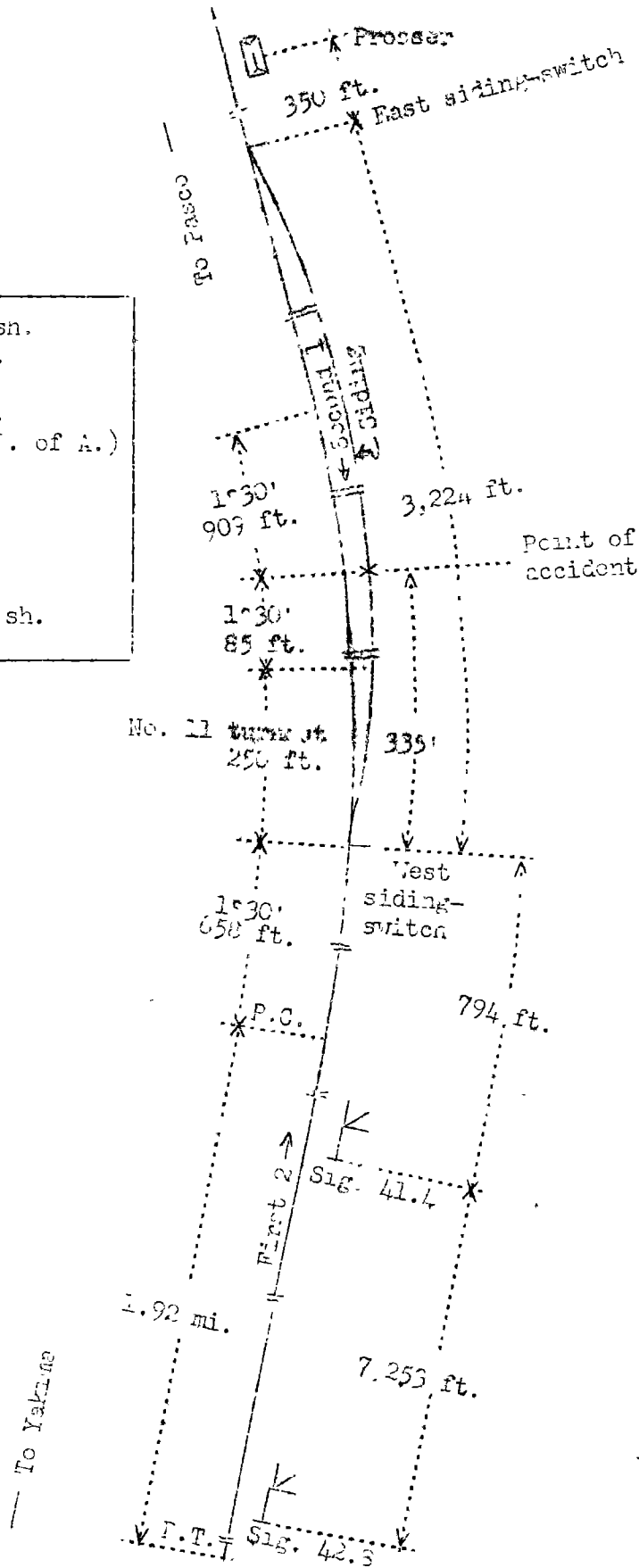
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On September 23, 1945, there was a head-end collision between two passenger trains on the Northern Pacific Railway at Prosser, Wash., which resulted in the death of 1 train-service employee, and the injury of 104 passengers, 3 railway mail clerks, 2 railway express employees and 3 train-service employes.

¹Under 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.

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|---|--------------------|----------|
| o | Pasco, Wash. | 33.8 mi. |
| o | Gibben | 0.1 mi. |
| X | Prosser (I. of A.) | 5.5 mi. |
| o | Byron | 0.1 mi. |
| o | Mabton | 18.0 mi. |
| o | Yakima, Wash. | |



Inv. No. 2934
 Northern Pacific Railroad
 Prosser, Wash.
 September 23, 1945

Location of Accident and Method of Operation

This accident occurred on that part of the Idaho Division which extends between Pasco and Yakima, Wash., 89.5 miles, a single-track line in the vicinity of the point of accident, over which trains are operated by timetable, train orders and an automatic block-signal system. At Prosser, 39.9 miles west of Pasco, a siding 3,224 feet in length parallels the main track on the south. The east switch and the west switch of this siding are, respectively, 350 feet and 3,574 feet west of the station. The accident occurred on the siding at a point 335 feet east of the west switch. From the west there are, in succession, a tangent 1.92 miles in length, a 1°30' curve to the left 658 feet to the west siding-switch, a No. 11 turnout to the right 250 feet and a 1°30' curve to the left 85 feet to the point of accident and 909 feet eastward. At this point the grade is 0.25 percent ascending eastward.

The automatic block-signal system is arranged on the absolute-permissive principle and consists of double-location signals near sidings and intermediate signals between stations. Signals 42.8 and 41.4, governing east-bound movements, are, respectively, 8,047 feet and 794 feet west of the west siding-switch. These signals are of the one-arm, three-position, upper-quadrant, semaphore type, and are approach lighted. The involved night aspects and the corresponding indications and names of these signals are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
42.8	Green	Proceed.	Clear signal.
41.4)	Green	Proceed.	Clear signal.
)	Red, with	Stop, then proceed	Stop and pro-
)	number plate	at restricted	ceed signal.
)		speed.	

The switch-stand of the west siding-switch at Prosser is of the hand-throw, intermediate-stand type, and is provided with a red circular target 18 inches in diameter. The center of the target is 5 feet 1-7/8 inches above the ties, and about 7 feet south of the gage side of the south rail of the main track. A reflector lens 5 inches in diameter is attached to the switch-stand 10-1/8 inches above the center of the target. When the switch is lined normally the target is parallel to the track and at night a green reflection from the headlight of an approaching locomotive is displayed. When the switch is lined for entry to the siding the target is at right angles to the track and at night a red reflection from a locomotive headlight is displayed.

Operating rules read in part as follows:

DEFINITIONS.

* * *

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

* * *

10. COLOR SIGNALS.

Color.	Indication.
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(a) Red.	Stop.
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* * *

(c) Green.	Proceed, * * *
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* * *

104. Conductors are responsible for the position of switches used by them and their trainmen, * * *

* * *

When practicable, the engineman must see that the switches near the engine are properly lined.

* * *

104 (A). Employes must stand not less than 20 feet from the switch stand and, when practicable, on the opposite side of the track while a train is closely approaching or passing and know that main track switches are locked in proper position.

* * *

204. * * *

* * *

Enginemen must show train orders to firemen and when practicable to forward trainmen. Conductors must show train orders, when practicable, to trainmen.

The maximum authorized speed for passenger trains is 70 miles per hour.

Description of Accident

At Gibbon, 6.1 miles east of Prosser, the crew of Second 1, a west-bound first-class passenger train, received copies of train order No. 210 reading in part as follows:

Second 1 * * * meet First 2 * * *
at Mabton * * *

Mabton is 11.6 miles west of Prosser. Second 1 departed from Gibbon 2 hours 12 minutes late. At Prosser the crew received copies of train order No. 211 reading in part as follows:

Second 1 take siding meet First 2
* * * at Prosser instead of Mabton
hold main track meet No 6 at Byron
* * * Second 1 gets this order at
Prosser

Byron is 5.5 miles west of Prosser. Second 1 consisted of engine 2251, two baggage cars, two express-refrigerator cars, one dormitory car, two Pullman sleeping cars, one dining car, two passenger-baggage cars and two coaches, in the order named. The sixth, seventh, eleventh and twelfth cars were of all-steel construction, and the remainder were of steel-underframe construction. This train departed from the station at Prosser about 4:05 a. m., entered the siding at the east switch and stopped about 4:10 a. m., with the engine 335 feet east of the west siding-switch. About 4 minutes later the engine was struck by First 2.

At Mabton the crew of First 2, an east-bound first-class passenger train, received copies of train orders Nos. 210 and 211. First 2 consisted of engine 2259, one express-refrigerator car, one mail-express car, two baggage cars, one dormitory car, two tourist sleeping cars, one dining car and four Pullman sleeping cars, in the order named. The first, third, fourth and fifth cars were of steel-underframe construction, and the remainder were of all-steel construction. This train departed from Mabton at 4 a. m., 1 hour 19 minutes late, passed signal 42.8, which displayed proceed, passed signal 41.4, which displayed stop-then-proceed-at-restricted-speed, and while moving at an estimated speed of 40 miles per hour it entered the siding at Prosser at the west switch and struck Second 1.

The force of the impact moved Second 1 eastward about 15 feet. The engine and the front truck of the first car of Second 1, and the engine, the first car and the front wheels of the rear truck of the second car of First 2 were derailed. The superstructure of the first car of First 2 was practically demolished. The remainder of the derailed equipment was considerably damaged.

The weather was clear at the time of the accident, which occurred about 4:14 a. m.

The fireman of First 2 was killed. The conductor and a student engineer of First 2, and the conductor of Second 1 were injured.

Discussion

Second 1, a west-bound first-class passenger train, was on the siding at Prosser to meet First 2, an east-bound first-class passenger train, in compliance with the provisions of train order No. 211. The crew of each train held copies of the train order. About 4 minutes after Second 1 stopped into clear on the siding, First 2 entered the siding at the west switch and struck Second 1.

As First 2 was approaching Prosser the speed was about 60 miles per hour. The headlight was lighted brightly, and the enginemen were maintaining a lookout ahead. Signals 42.8 and 41.4 displayed proceed and the enginemen called the indications. However, when the engine was about 150 feet west of signal 41.4, located 794 feet west of the west siding-switch, the aspect of this signal changed from green to red, and the engineer immediately moved the brake valve to emergency position. The speed of First 2 was about 40 miles per hour when the engine entered the west siding-switch and about 30 miles per hour when the collision occurred.

The investigation disclosed that the front brakeman of Second 1 had read train order No. 211, but he said he thought the order contained the provision for his train to hold the main track at Prosser to meet First 2. During the time station work was being done, the conductor opened the east siding-switch for his train to enter the siding, and the flagman closed the switch after the train was into clear. From the time the train left the station until it stopped near the west end of the siding, the front brakeman was walking through the train. Soon after his train stopped into clear on the siding he proceeded toward the west switch, and, when he saw the reflection of the headlight of the engine of First 2 as it was approaching signal 41.4, he lined the switch for First 2 to enter the siding. He was positive in his statement that he believed his train was occupying the main track and that he was to line the west siding-switch for First 2 to enter the siding. The conductor of Second 1 was in the fifth car, the flagman was in the vicinity of the rear end of the train and the enginemen were on the engine, and they were not aware of the action taken by the front brakeman until immediately prior to the collision.

In addition to the present accident, during the past 14 years the Commission has investigated eighteen accidents which

resulted from switches being opened immediately in front of approaching trains, similar to the accident here under discussion. These accidents resulted in the death of 28 and the injury of 313 persons.

During the 30-day period preceding the day of the present accident, the average daily movement on this district was 16.8 trains. The maximum authorized speeds in this territory are 70 miles per hour for passenger trains and 50 miles per hour for freight trains. If the west siding-switch at Prosser had been provided with electric switch locking, it would not have been possible to operate the switch immediately in front of First 2.

Cause

It is found that this accident was caused by a switch being opened immediately in front of an approaching train.

Recommendation

It is recommended that the Northern Pacific Railway Company install electric switch-locking at main-track hand-operated switches in high-speed automatic block-signal territory.

Dated at Washington, D. C., this twenty-fifth day of October, 1945.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.