INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3622

NORTHERN PACIFIC RAILWAY COMPANY

IN RE ACCIDENT

NEAR CASTLE ROCK, WASH , ON

MARCH 16, 1955

SUMMARY

Date	March 16, 1955	
Railroad	Northern Pacific	
Location	Castle Rock, Wash.	
Kind of accident	Head-end collision	
Equipment involved	Track motor-car	Freight train
Train number		Extra 1911 West
Engine number		1911
Consist		22 cars, caboose
Estimated speeds	Undetermined	25-30 m. p. h
Operation	Train movements with current of traffic by timetable, train orders, and automatic block-signal system, movements against current of traffic by train orders	
Tracks	Double, 1° curve, level	
Weather	Clear	
Time	4 30 p. m.	
Casualties	1 killed	
Cause	Failure to provide adequate protection for movement of track motor-car	

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3622

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

NORTHERN PACIFIC RAILWAY COMPANY

May 13, 1950

Accident near Castle Rock, Wash., on March 16, 1950, caused by failure to provide adequate protection for the movement of a track motor-car.

REPORT OF THE COMMISSION[1]

CLARKE, Commissioner:

On March 16, 1950, there was a head-end collision between a track motor-car and a freight train on the Northern Pacific Railway near Castle Rock, Wash., which resulted in the death of one signal department employee. This accident was investigated in conjunction with a representative of the Department of Labor and Industry of the State of Washington.

[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. 3622
Northern Pacific Railway
Near Castle Rock, Wash.
March 16, 1955

Location of Accident and Method of Operation

This accident occurred on that part of the Tacoma Division extending between Tacoma and Vancouver, Wash., 136.2 miles, a double-track line, over which trains moving with the current of traffic are operated by timetable, train orders, and an automatic block-signal system. Trains moving against the current of traffic are operated by train orders. The accident occurred on the eastward main track at a point 90.7 miles east of Tacoma and 3.4 miles east of the station at Castle Rock. From the west there are a tangent 1,632 feet in length and a 1° curve to the right 5,708 feet to the point of accident and 1,108 feet eastward. From the east there are, in succession, a tangent 2,286 feet in length, a 3° curve to the right 840 feet, a tangent 11 feet, and the curve on which the accident occurred. The grade is level at the point of accident.

West of the point of accident the tracks are laid in a cut 504 feet in length, the south wall of which rises to a height of about 5 feet above the level of the track. The east end of this cut is 284 feet west of the point of accident.

This carrier's 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.

14. ENGINE WHISTLE SIGNALS.

* * *

The signals prescribed are illustrated by "o" for short sounds: "__" for longer sounds. * * *

* * *

Sound.	Indication.
* * *	
(q) __ o	When running against the current of traffic:
	(1) Approaching stations, curves, or other points where view may be obscured
* * *	* * *

This carrier's rules and instructions for foremen and employees engaged in maintenance of way and structures and for operators of track cars read in part as follows:

1101. * * *

* * *

(b) Track cars shall not be placed or moved on main tracks without a line-up Form 9024 if it can be obtained. If for any reason a line-up cannot be obtained, track cars shall be operated on obscure curves, long trestles or in tunnels under flag protection, when possible, unless the line is known to be clear of trains. The line-up must be read by the Car Operator to all persons who will ride the car.

(c) Dispatchers shall issue line-ups for all concerned at approximately the same time each morning and each afternoon as required and additional line-ups shall be issued when circumstances warrant. Line-ups shall be for a stated period and a specified territory. * * *

(d) The line-up shall list all trains on the road, ordered, or expected for the territory involved within the specified time, with information as to whether regular trains are late or on time including sections, and for extra trains an approximate time at a key station. * * *

(e) In double track territory it shall be understood that trains shown on line-ups will be operated with the current of traffic unless the line-up specifically designates otherwise.

(f) Foremen and track car operators should always keep in mind that trains other than those shown on line-ups may be run * * *.

* * *

(l) When it is necessary to run a train that is not shown on line-ups, dispatchers shall give such train a train order in the form, "Foremen and track car operators have no notice of your train on their line-ups. Run at restricted speed when visibility is limited and use whistle freely."

(m) In double track territory if it is necessary to operate a train against the current of traffic and it is not so designated on the line-up, such train shall be considered the same as a train not shown on the line-up and shall be given an order as covered in Paragraph (l).

The maximum authorized speed for freight trains is 50 miles per hour. There is no prescribed maximum speed for track motor-cars.

Description of Accident

A track motor-car occupied by a signal maintainer and an assistant signal maintainer departed east-bound from Castle Rock on the eastward main track about 3:45 p. m. and was stopped at a point about 2.3 miles east of the station while the occupants installed signal bonds on a rail. It then proceeded eastward, and while it was moving at an undetermined rate of speed it collided with Extra 1911 West at a point 3.4 miles east of the station at Castle Rock.

Extra 1911 West, a west-bound freight train, consisted of engine 1911, a 2-8-2 type, 22 cars, and a caboose. At Kelso, 6.5 miles east of the point of accident and the last open office, members of the crew received, among others, copies of train order No. 456 reading in part as follows:

> * * * Extra 1911 West has right over opposing trains on Eastward track from Rocky Point to crossover at Castle Rock.

and train order No. 457 reading as follows.

> Foreman and track car operators have no notice of your train on Eastward track between Rocky Point and Castle Rock on their line ups.
> Run at Restricted speed when visibility is limited and use whistle freely.

This train departed from Kelso at 4:10 p. m., entered the eastward main track at Rocky Point, 5.0 miles east of the point of accident, and proceeded westward on that track. While it was moving at a speed variously estimated as from 25 to 30 miles per hour it collided with the track motor-car.

The track motor-car was moved westward a distance of 883 feet to the point at which the front end of Extra 1911 West stopped. The track motor-car was demolished. The pilot of engine 1911 was damaged.

The signal maintainer who was on the track motor-car was killed.

The weather was clear at the time of the accident, which occurred about 4:30 p. m.

The track motor-car was of the belt-drive type and was powered by a one-cylinder, five to eight-horsepower engine. It weighed 710 pounds and had seating capacity for four persons. It was equipped with a top and a windshield and was insulated to prevent the shunting of track circuits.

During the 30-day period preceding the day of the accident the average daily movement in the vicinity of the point of accident was 33.3 trains.

Discussion

Because of a broken rail in the westward track 2.3 miles east of Castle Rock, Extra 1911 West was being operated over the eastward track when the accident occurred. The investigation disclosed that at the time of the accident the operator of the track motor-car was not in possession of a current line-up and that there was not a common understanding between the train dispatcher and the other employees concerned as to the movements which were to be made.

About 11:50 a. m. the train dispatcher transmitted train line-up No. 3, Form 9024, to the operator at Kelso. This line-up read as follows

TO ALL CONCD AT KELSO MARCH 16, 1955

BETWEEN VANCOUVER AND CENTRALIA

FROM 1201 PM UNTIL 401 PM BOTH TRACKS

FIRST CLASS TRAINS ABT ON TIME
EXA 1802 EAST CENTRALIA ABT 1155AM TO KALAMA
EXA 1693 EAST SOUTH BEND LOC CENTRALIA ABT 1215PM
TO CHEHALIS JCT
EXA UP 215 EAST LOC LV CHEHALIS ABT 1155AM
TO LONGVIEW JCT
EXA 1784 EAST PORT LOC LV CENTRALIA ABT 100PM
EXA MILW 2405 EAST LV CHEHALIS JCT ABT 115PM
EXA GN 307 A EAST 2/672 CENTRALIA ABT 315PM
EXA UP EAST LOC CENTRALIA ABT 400PM
EXA GN 606 EAST LOC LV CENTRALIA ABT 400PM
EXA 1670 EAST LOC LV KELSO ABT 230PM

EXA GN 606 WEST LOC LEFT KELSO 1045 AM
EXA 1705 WEST TACOMA LOC LV CASTLE ROCK ABT 12 NOON
EXA 1911 WEST L LEFT WOODLAND 1147AM
EXA UP 1559 WEST 681 VANCOUVER ABT 1220PM
EXA UP 215 WEST LOC LV LONGVIEW JCT ABT 300PM
EXA 1694 WEST SOUTH BEND TURN CHEHALIS ABT 330PM
EXA GN WEST 1/671 VANCOUVER ABT 215PM

Centralia, Chehalis, Chehalis Jct., Longview Jct., Kalama, and Woodland are located, respectively, 54.0 miles, 57.7 miles, 58.7 miles, 100.1 miles, 107.3 miles, and 116.5 miles east of Tacoma.

The track supervisor received a copy of this line-up at Kelso. Later in the day he discovered a broken rail in the westward track 2.3 miles east of Castle Rock. He left a flagman at this point, proceeded to Castle Rock on his track motor-car, and requested the operator to notify the train dispatcher of the broken rail and to tell him that the rail would be replaced in about 1 hour 15 minutes. This conversation took place about 3.25 p. m. He said that after talking on the telephone the operator informed him that west-bound trains would be held at Kelso. Several minutes later the track supervisor found that it would be necessary to use the eastward track at Castle Rock in order to load a rail on the track motor-car, and he returned to the station and asked the operator whether any east-bound trains were close. He said that the operator again talked on the telephone and then informed him that Extra GN 672 East, the next east-bound

train, should leave Centralia at any time. After requesting the operator to locate the signal maintainer and notify him of the broken rail, the track supervisor returned to the location of the broken rail via the westward track. He said that the signal maintainer and the assistant signal maintainer arrived from Castle Rock on their track motor-car as the broken rail was being replaced. After the signal maintainer stopped the track motor-car he shunted the track circuit in the eastward track and caused the eastward automatic signal behind the track motor-car to display a restrictive aspect. The track supervisor said he asked the maintainer whether Extra GN 672 East was close and the maintainer replied that the operator at Castle Rock had told him that the train should leave Centralia at any time. No mention was made of west-bound trains. The track supervisor said that he departed for Castle Rock about 4:20 p. m. and he thought the signal maintainer should have departed for Kelso about 4 25 p. m.

The operator at Castle Rock said that after the broken rail was reported he asked the train dispatcher whether any east-bound trains were close and the dispatcher told him that the first east-bound train had not yet departed from Centralia and that west-bound trains would be held at Kelso. The operator gave this information to the track supervisor, and the track supervisor then left the station. Soon afterward the signal maintainer entered the station, and the operator informed him that the track supervisor had requested that he install signal bonds at the point at which the broken rail was being replaced. He said he gave the maintainer the same information regarding east-bound trains he had given the track supervisor but west-bound trains were not mentioned. He said that each of these employees requested information concerning east-bound trains, but neither of them requested that he obtain a line-up. Since he had obtained the information for the track supervisor only a few minutes before the maintainer entered the station, he did not communicate with the train dispatcher when he received the request from the maintainer. He did not mention to the dispatcher that the maintainer was proceeding to the location of the broken rail. He thought the maintainer departed about 10 minutes behind the track supervisor.

The first-trick train dispatcher said that when the operator at Castle Rock reported the broken rail he volunteered the information that the first west-bound train was then at Kelso and had been there for some time, but he did not tell the operator that west-bound trains would be held at Kelso. He said that the train-order signal at the station had been in proceed position when Extra 1911 West arrived

and he was not certain that the crew would return to the station before the train departed, and for this reason it would have been impossible for him to make arrangements to hold the train. He said that the operator at Castle Rock made no request for information concerning train movements, and that east-bound trains were not mentioned at any time during the conversation. When the second-trick train dispatcher reported for duty, the first-trick dispatcher told him that the broken rail in the westward track was being replaced under flag protection. He also told him that Extra 1911 West had passed the train-order signal at Kelso and that if the crew returned to the station it might avoid delay if the train was operated over the eastward track.

The second-trick dispatcher said that several minutes after the first-trick dispatcher left the office the operator at Kelso reported that Extra 1911 West was ready to leave. The dispatcher then issued train orders Nos. 456 and 457 in order to avoid delay to the train in the event that the broken rail was not replaced within the time estimated by the track supervisor. He said he was aware that the track supervisor was east of Castle Rock but he had no information as to the location of the signal maintainer.

The signal maintainer received a copy of line-up No. 3 at Kelso. The assistant signal maintainer said he saw this line-up but he did not know what additional information concerning train movements the maintainer may have obtained at Castle Rock. He did not enter the station at that point and did not hear the conversation between the maintainer and the operator. He said that the maintainer did not mention train movements after he returned from the station. After the broken rail had been replaced and these employees had installed signal bonds they proceeded eastward on the eastward main track. The assistant maintainer estimated that the speed was about 30 miles per hour. He said that he was maintaining a lookout to the rear and that the maintainer applied the brakes of the track motor-car before he, the assistant maintainer, saw Extra 1911 West approaching. At first he thought the maintainer intended to stop the car and wait until the train passed. He then became aware that the train was operating over the eastward track, and he alighted from the car immediately before the collision occurred. He said the speed of the car was somewhat reduced before the collision occurred, but he was unable to estimate the speed at the time of the collision.

As Extra 1911 West was approaching the point where the accident occurred the speed was between 25 and 30 miles per hour, as estimated by the members of the crew. The enginemen and the front brakeman were maintaining a lookout ahead from their positions in the cab of the engine, the swing brakeman was standing on the deck of the engine, and the conductor and the flagman were in the caboose. All members of the crew had read train order No. 457 and understood that their train was required to be operated at restricted speed. The engineer sounded the whistle as the train entered the curve on which the accident occurred. Several seconds after he completed the signal, the fireman and the front brakeman saw the track motor-car approaching. They called a warning, and the engineer immediately made an emergency application of the brakes. The fireman thought that the track motor-car was about 750 feet distant when he first saw it. The front brakeman thought the distance was more than 800 feet. The engineer said that because of curvature of the track his view of the track ahead was restricted to a distance of about 300 feet. He thought the train moved about 300 feet between the time the brakes were applied and the time the collision occurred. Both the engineer and the fireman said they thought the train was being operated at a speed at which it could be stopped within the distance at which the fireman could see the track ahead, and the engineer said that at the time the accident occurred he thought this speed complied with the requirement for movement at restricted speed.

After the accident occurred tests were made to determine the range of vision between opposing movements in the vicinity of the point of accident. An engine of the same type as engine 1911 was stopped on the eastward track at a point 507 feet east of the point of accident, the point from which the front brakeman thought he first saw the track motor-car. It was found that an east-bound track motor-car on the eastward track first became visible from the left side of the cab at a distance of about 1,230 feet. The track motor-car was then moved eastward, and it reached a point 369 feet west of the point of accident before the occupant could determine which track the engine was occupying.

During the past 10 years the Commission has investigated 56 collisions, including the present case, in which track motor-cars were involved. These accidents resulted in the death of 91 persons and the injury of 168 persons. In the reports covering the investigations of these accidents, the Commission repeatedly has recommended that the carriers take

measures to provide adequate protection for the movement of track motor-cars on their lines. Pursuant to these recommendations the Board of Directors of the Association of American Railroads, on February 25, 1955, approved for submission to member roads as recommended practice a list of minimum standards for supplemental rules governing operation of track motor-cars under the line-up system. Included in this list are a suggested form for copying line-ups which also provides for a record of main track occupancy by track cars and a recommendation that line-ups for each work period should be forwarded to a designated supervisory officer for checking. With the exception of these two items, which would provide means for ascertaining whether track motor-cars were being operated without current line-ups, the rules of the Northern Pacific Company in general meet the recommended standards. However, these rules are not applied nor enforced in a manner which provides adequate protection for the movement of track motor-cars. The track supervisor, the operator, and the first-trick train dispatcher all said it had been the custom that when the operator of a track motor-car who was in possession of a written line-up asked for further information concerning train movements the information was given verbally as a supplement to the line-up which he already had. They said it had not been the practice to issue another line-up under these circumstances. In the instant case both the track supervisor and the signal maintainer left Castle Rock with a line-up which had been issued about 4 hours earlier and which became invalid within a few minutes after their departure. Both of these employees received information concerning east-bound trains which the train dispatcher said he did not provide, and the track supervisor received information concerning west-bound trains which was incorrect. A train order was issued to the crew of Extra 1911 West which required that the train be operated at restricted speed. The enginemen said that the train was operated at a speed at which it could be stopped within their range of vision, but since the track motor-car was being operated at approximately the same speed as the train neither movement could be stopped before the collision occurred.

Cause

This accident was caused by failure to provide adequate protection for the movement of a track motor-car.

Dated at Washington, D. C., this thirteenth day of May, 1955.

By the Commission, Commissioner Clarke.

(SEAL)

HAROLD D. McCOY,
Secretary.