

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 2528
THE CHICAGO, MILWAUKEE, ST. PAUL AND
PACIFIC RAILROAD COMPANY
REPORT IN RE ACCIDENT
NEAR ZANE, IDAHO, ON
SEPTEMBER 20, 1941

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SUMMARY

Railroad: Chicago, Milwaukee, St. Paul and Pacific
Date: September 20, 1941
Location: Zane, Idaho
Kind of accident: Derailment
Train involved: Freight
Train number: Extra 55 East
Engine number: 55
Consist: 82 cars and caboose
Estimated speed: 20 m. p. h.
Operation: Timetable, train orders and
automatic block-signal system
Track: Single; 10° curve to left; grade level
Weather: Partly cloudy
Time: About 3:18 a. m.
Casualties: 3 killed
Cause: Accident caused by rock slide

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2528

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

THE CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

November 15, 1941.

Accident near Zane, Idaho, on September 20, 1941, caused
by rock slide.

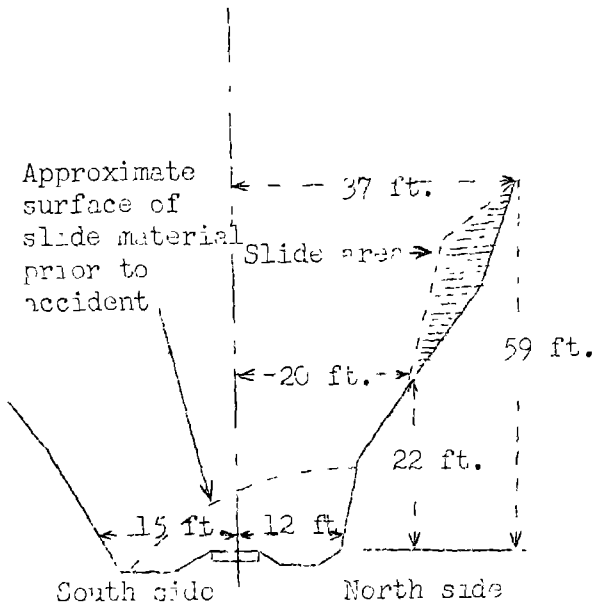
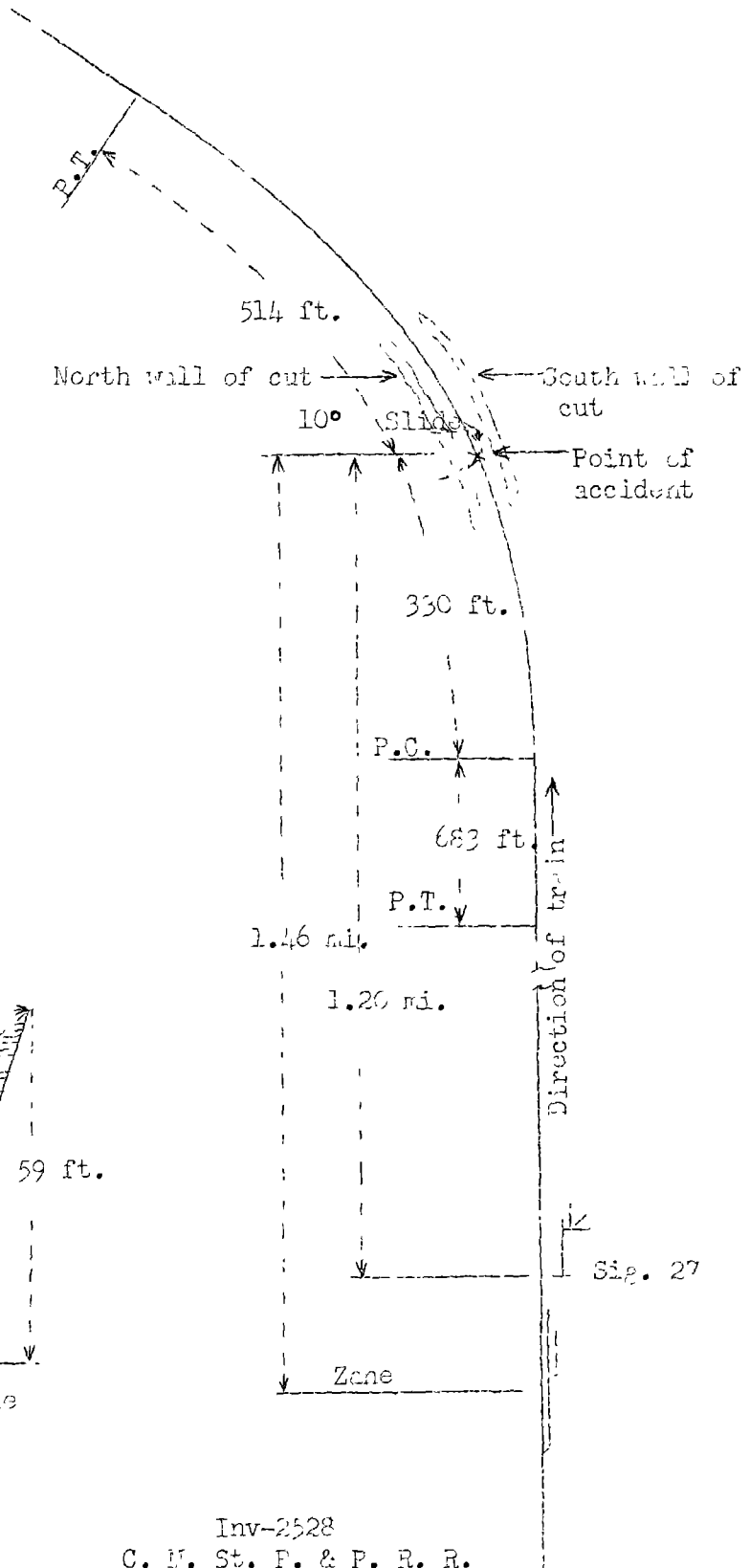
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On September 20, 1941, there was a derailment of a freight train on the Chicago, Milwaukee, St. Paul and Pacific Railroad near Zane, Idaho, which resulted in the death of three employees.

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.

- o Avery, Idaho
26.04 mi.
- X Point of accident
1.46 mi.
- o Zone
17.9 mi.
- o St. Maries, Idaho
63.4 mi.
- o Malden, Wash.



PROFILE AT POINT OF DERAILMENT

Inv-2528
 C. M. St. P. & P. R. R.
 Zane, Idaho
 September 20, 1941

Location of Accident and Method of Operation

This accident occurred on that part of the Coast Division designated as the First Subdivision, which extends between Malden, Wash., and Avery, Idaho, a distance of 108.8 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and an automatic block-signal system. The accident occurred at a point 1.46 miles east of Zane. As the point of accident is approached from the west there are, in succession, a tangent 1,397 feet in length, a 3° curve to the right 1,856 feet, a tangent 683 feet, and a 10° curve to the left 330 feet to the point of accident and 514 feet beyond. The grade for east-bound trains is, successively, 0.127 percent ascending a distance of 3,877 feet and level 330 feet to the point of accident and 514 feet beyond.

In the immediate vicinity of the point of accident the track is laid in a hillside cut 340 feet in length. At the point of derailment the toe of the north wall of the cut is approximately 12 feet from the center-line of the track. This wall rises almost perpendicularly to a height of about 12 feet above the level of the rails. Above the wall the hill slopes northward at a ratio of about 3 to 1 to a height of about 75 feet. The toe of the south wall is about 15 feet from the center-line of the track and the wall slopes to a height of about 26 feet above the level of the rails. The formation consists of a stratum of limestone covered by 5 to 10 feet of semi-cemented rock and clay. Drainage ditches are provided on each side of the track.

The track structure consists of 100-pound rail, 39 feet in length, laid on an average of 22 treated oak ties to the rail length; it is fully tieplated, provided with 6 rail anchors per rail length, ballasted with 2-1/2 feet of gravel, and is well maintained.

The last eastward automatic signal passed by an east-bound train is located 1.20 miles west of the point of accident.

On the curve involved the maximum authorized speed for all trains is 30 miles per hour.

Description of Accident

Extra 55 East, an east-bound freight train, consisted at the time of the accident of engine 55, of the 2-6-6-2 type, 82 cars and a caboose. After a terminal air-brake test was completed this train departed from Malden, Wash., 81.3 miles west of Zane, at 9 p. m., September 19, according to the dispatcher's

record of movement of trains, and departed from St. Maries, Idaho, 17.9 miles west of Zane and the last open office, at 2:20 a. m., September 20. This train passed Zane and, at a point about 75 feet east of the west end of the cut involved, struck a rock slide and was derailed while moving at an estimated speed of about 20 miles per hour.

Because of track curvature and the cut, the point where the accident occurred can be seen from the left side of an east-bound engine a distance of only 100 feet and cannot be seen from the right side.

A slide consisting of about 230 cubic yards of limestone fell from the north slope and covered the track a distance of approximately 50 feet. The greatest depth on the north rail was approximately 8 feet, and on the south rail, about 6 feet. The maximum height, width and depth of the area from which the slide fell were, respectively, 37, 32 and 8 feet. The base of this area was about 22 feet above the track. There was no indication that the track had been damaged as a result of the slide. After the accident occurred, the rail bonds were intact at the point of derailment and the automatic signals functioned properly.

The engine was derailed to the right, continued forward about 100 feet, and stopped upright, parallel to the track and against the south wall of the cut. The pilot beam, the engine truck and the engine cab were demolished. The tender remained coupled to the engine, was derailed to the left and stopped upright at an angle of about 30 degrees to the engine. The first three cars were jack-knifed across the track. The first car was demolished and the second and third were badly damaged. The fourth car was not derailed but was slightly damaged. The fifth and sixth cars were derailed and badly damaged. The thirteenth, twenty-ninth and thirtieth cars were demolished. The thirty-first and thirty-third cars were derailed and slightly damaged. Fourteen other cars in various locations to the rear of the thirty-second car were slightly damaged.

The weather was partly cloudy at the time of the accident, which occurred about 3:18 a. m.

The employees killed were the engineer, the fireman and the front brakeman.

Discussion

Extra 55 East was moving on a 10-degree curve to the left at an estimated speed of about 20 miles per hour when the engine struck a rock slide and was derailed. The surviving members of the crew were in the caboose at the time of the accident

and the first they knew of anything being wrong was when the air brakes were applied in emergency. The visibility was good and nothing unusual was observed in the handling of the train. The last stop prior to the time of the accident was made at St. Maries, about 19 miles west of the point of accident, where a car was set out.

After the accident, examination disclosed that a slide consisting of about 230 cubic yards of limestone had fallen from the north slope of the hill and had covered the track a distance of about 50 feet. Because of track curvature and the cut, the engineer could not see the obstruction and the fireman's view was restricted to a distance of about 100 feet. The exact time that the slide occurred is not known, but the last train which passed the point involved was a west-bound train, which passed about 12:30 a. m., or about 2 hours 45 minutes prior to the time the accident occurred. The members of the crew of that train did not observe any unusual condition.

The section foreman in charge of the track where the accident occurred had observed conditions in the cut the day prior to the occurrence of the slide and he did not see any indication that a slide might occur. During the past 6 years there had been a few instances of rocks falling on the track in the cut but no slide had occurred at this point. The track in this territory is not regularly patrolled, but the section force patrol it when they deem it necessary. There had been no recent condition that required a special patrol in the area involved. The last inspection of the area from which the slide fell was made during the month of April, 1941. At that time there was no evidence of disintegration and there was no crack appearing on the surface. After the accident occurred an inspection of the slide area disclosed no indication of moisture or seepage. The exposed face of the slide area indicated that a weak bond had existed, and it was thought the slide was the result of gradual disintegration of the limestone stratum. Approximately 90 days prior to the occurrence of the accident there had been some blasting during the process of highway construction about 1/2 to 3/4 mile distant from the area. The vibrations of this blasting were felt at points 3 miles from the point of discharge.

The installation of slide-detector fences in the territory involved was in progress at the time the accident occurred. If this device had been in operation in the cut involved on the day of the accident and if the slide occurred before the engine of the train involved passed the last automatic signal, it is probable this accident would have been averted.

Cause

It is found that this accident was caused by a rock slide.

Dated at Washington, D. C., this fifteenth day of November, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.