

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2983  
THE WESTERN PACIFIC RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
AT PILOT, NEV., ON  
APRIL 5, 1946

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SUMMARY

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Railroad: Western Pacific  
Date: April 5, 1946  
Location: Pilot, Nev.  
Kind of accident: Derailment  
Train involved: Passenger  
Train number: 40  
Engine number: 482  
Consist: 16 cars  
Estimated speed: 45 m. p. h.  
Operation: Timetable and train orders  
Track: Single; tangent; 0.90 percent  
descending grade eastward  
Weather: Clear  
Time: 3:20 p. m.  
Casualties: 2 killed; 74 injured  
Cause: Failure properly to control speed  
of train entering siding

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2983

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

THE WESTERN PACIFIC RAILROAD COMPANY

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May 3, 1946.

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Accident at Pilot, Nev., on April 5, 1946, caused by  
failure properly to control the speed of a train  
entering a siding.

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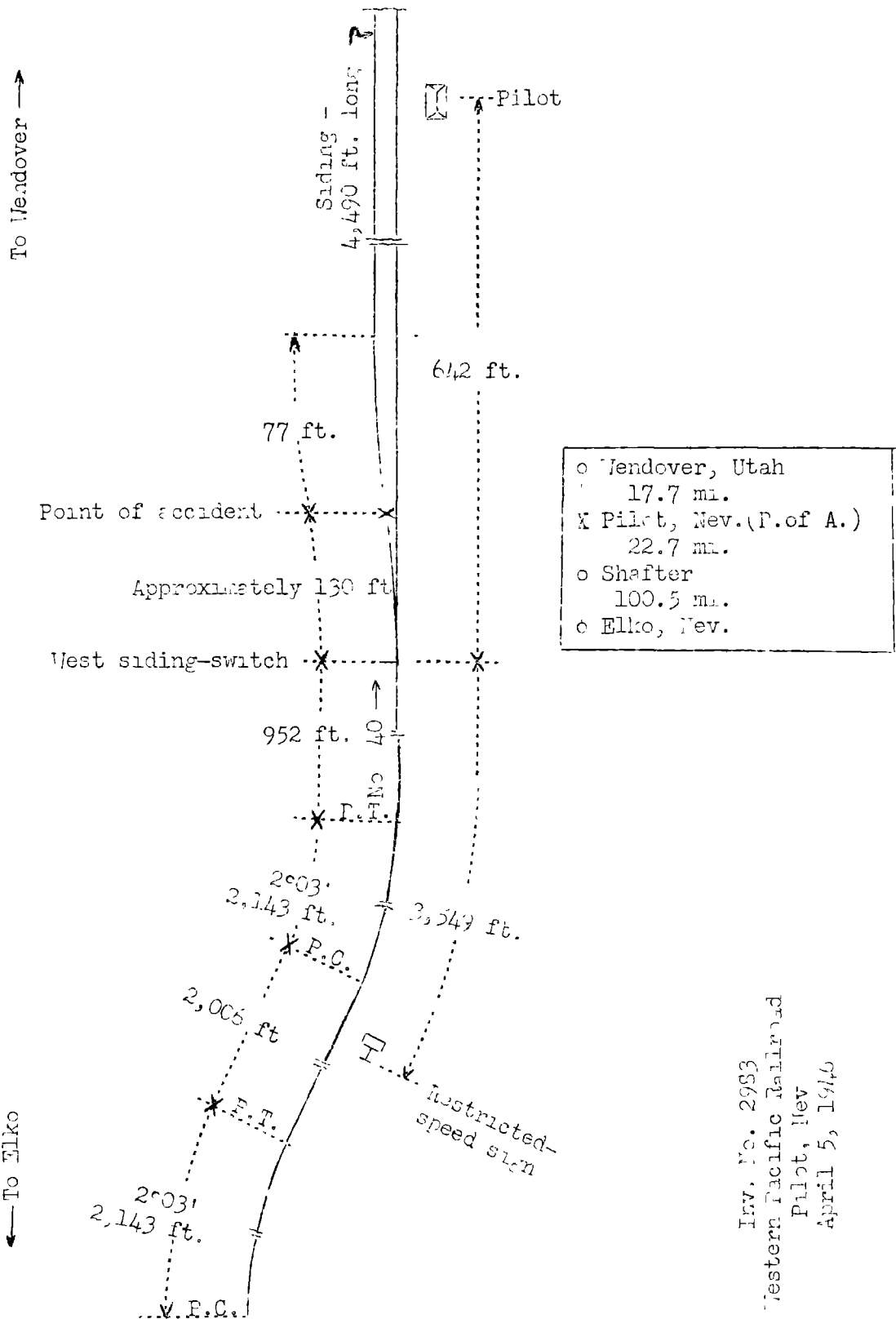
REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

On April 5, 1946, there was a derailment of a passenger train on the Western Pacific Railroad at Pilot, Nev., which resulted in the death of 2 passengers, and the injury of 71 passengers and 3 employees. This accident was investigated in conjunction with a representative of the Public Service Commission of Nevada.

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<sup>1</sup>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. 2953  
Western Pacific Railroad  
Pilot, Nev  
April 5, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Eastern Division extending between Elko, Nev., and Wendover, Utah, 140.9 miles, a single-track line in the vicinity of the point of accident, over which trains are operated by timetable and train orders. There is no block system in use. At Pilot, 123.2 miles east of Elko, a siding 4,490 feet in length parallels the main track on the north. Entry to the siding at the west switch is made through a No. 10 turnout having a curvature of  $7^{\circ}25'33''$ , without superelevation. The accident occurred on this turnout at a point about 130 feet east of the west switch. From the west on the main track there are, in succession, a  $2^{\circ}03'$  curve to the right 2,143 feet in length, a tangent 2,006 feet, a  $2^{\circ}03'$  curve to the left 2,143 feet and a tangent 952 feet to the west siding-switch and a considerable distance eastward. The grade for east-bound trains varies between 0.92 percent and 1.00 percent descending 1.31 miles, then it is 0.90 percent descending 128 feet to the west siding-switch and 4,372 feet eastward.

The turnout of the west siding-switch is provided with a spring-type tangent frog 16.5 feet in length, having an angle of  $5^{\circ}44'$ , and 112-pound rails and switch-points. The switch-stand of the west siding-switch 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 above the ties and 9 feet north of the north rail of the main track. When the switch is lined normally the target is parallel to the track and not visible from an approaching train. When the switch is lined for entry to the siding the target is at right angles to the track.

A temporary signal consisting of a metal sign, 12 inches by 18 inches and painted yellow, was displayed on a mast about 4 feet high, on the south side of the main track and 3,549 feet west of the west siding-switch.

Operating rules read in part as follows:

DEFINITIONS

\* \* \*

With Caution--Restricted Speed--To run at reduced speed, \* \* \* prepared to stop short of \* \* \* misplaced switch, \* \* \*

10. Color Signals

COLOR INDICATION

\* \* \*

(b) Yellow. Proceed with caution, \* \* \*

\* \* \*

10 (H). When a yellow signal is required it will be displayed to the right of track in the direction of approach, three-fourths mile from structure or track over which speed of trains must be restricted.

\* \* \*

Trains must not exceed the speed specified by train order \* \* \*

Time-table special instructions read in part as follows:

SPEED RESTRICTIONS

\* \* \*

Over all turnouts \* \* \* ten (10) miles an hour.

\* \* \*

The maximum authorized speed for the train involved was 60 miles per hour.

Description of Accident

At Elko, the crew of No. 40, an east-bound first-class passenger train, received copies of train order No. 715 reading as follows:

EFFECTIVE EIGHT ONE SIX AM APRIL 5TH PASSING TRACK AT PILOT WILL BE USED AS MAIN TRACK AT A SPEED NOT TO EXCEED 10 MPH. MAIN TRACK BETWEEN PASSING TRACK SWITCHES CANNOT BE USED.

No. 40 consisted of engine 482, a 4-8-4 type, two refrigerator-express cars, two baggage-express cars, three coaches, three sleeping cars, one dining car, and five sleeping cars, in the order named. The first two cars were of steel-underframe construction, and the remainder were of all-steel construction. This train departed from Elko at 12:27 p. m., 26 minutes late, departed from Shafter, the last open office, 22.7 miles west

of Pilot, at 2:38 p. m., 15 minutes late, passed the restricted-speed sign, located 3,549 feet west of the west siding-switch at Pilot, and while moving at an estimated speed of 45 miles per hour it entered the west siding-switch and the engine and the first ten cars were derailed.

The engine stopped on its left side about 30 feet north of the siding and practically parallel to it, with the front end about 376 feet east of the point of derailment. The tender was torn loose from the engine and stopped on its left side at the rear of the engine, and at an angle of 30 degrees to the siding. The first two cars stopped at the rear of the tender, across the siding and at right angles to it. The third to fifth cars, inclusive, stopped on top of the first two cars, and at right angles to the track. The sixth to eighth cars, inclusive, stopped in various positions across the siding. The ninth and tenth cars stopped practically upright and in line with the turnout. The engine and the first to ninth cars, inclusive, were badly damaged, and the tenth car was slightly damaged.

The weather was clear at the time of the accident, which occurred about 3:20 p. m.

The engineer, the fireman and the baggageman were injured.

Engine 482 is equipped with a booster engine mounted on the trailer truck. The total weight of the engine in working order is 466,100 pounds, distributed as follows: Engine truck, 73,650 pounds; driving wheels, 280,950 pounds; and trailer truck, 111,500 pounds. The specified diameters of the engine-truck wheels, the driving wheels, and the trailer-truck wheels are, respectively, 36 inches, 73-1/2 inches and 45-1/2 inches. The rigid wheelbase of the engine is 20 feet long and the total length of the engine wheelbase is 45 feet 10 inches. The total length of the engine and tender is 108 feet 11-1/4 inches. The tender is rectangular in shape and is equipped with two 6-wheel trucks. Its capacity is 23,300 gallons of water and 5,880 gallons of fuel oil. The weight of the tender loaded is 397,700 pounds. The engine is provided with No. 8-ET brake equipment, and the regulating devices were adjusted for brake-pipe pressure of 90 pounds and main-reservoir pressure of 110 pounds. The last heavy repairs were completed March 29, 1946.

#### Discussion

The investigation disclosed that at the time of the accident a culvert was being installed under the main track at a point 1,800 feet east of the west siding-switch at Pilot, and the main track between the siding switches was out of service. Train order instructions were issued to all trains that the main track was out of service and that trains would

proceed through the siding at a speed not in excess of 10 miles per hour. The siding switches were lined and locked for movement on the siding, and the switch-points were spiked in that position. Restricted-speed signs were placed to the east and west of the switches. The sign governing east-bound movements was placed on the south side of the main track and 3,549 feet west of the west siding-switch. This sign required the speed to be reduced to not exceeding 10 miles per hour and to be so controlled that the train could be stopped short of a switch not properly lined. The maximum authorized speed through the turnout involved was 10 miles per hour.

Train-order instructions covering the use of the siding at Pilot were delivered to the crew of No. 40 about 3 hours before the accident occurred. As this train was approaching the station-sign, located about 1 mile west of the west siding-switch at Pilot, the speed was about 60 miles per hour. The enginemen were maintaining a lookout ahead. All members of the crew understood the provisions of the train order, and that their train was required to be operated at a speed not exceeding 10 miles per hour through the turnouts of the siding. The conductor and the front brakeman were in the rear vestibule of the seventh car. They said a service application of the brakes was made soon after the train passed the station 1-mile sign, and the speed was reduced to about 30 miles per hour between that point and a point a few hundred feet west of the west siding-switch. Then the speed increased considerably, and the conductor was making an attempt to open the conductors' air valve when the derailment occurred. The engineer said that as the train was moving on the descending grade immediately west of the west siding-switch, the throttle was in position to maintain a valve-chamber pressure of about 40 pounds to ease a severe pound on the left side of the engine. When the engine was about 1 mile west of the switch a brake-pipe reduction of 6 pounds was made and the automatic brake valve was placed in lap position. When the engine passed the restricted-speed sign, a further reduction of 7 pounds was made. The total reduction of 13 pounds was not released. Soon afterward the fireman informed the engineer that the west siding-switch was lined for entry to the siding. Then the engineer made a third brake-pipe reduction, and the enginemen thought the speed was being controlled properly. They were not aware that the speed was excessive until the engine entered the turnout and the derailment occurred. The engineer said that trailing smoke and steam obscured his view, and as a result he improperly estimated the speed of the train and the distance to the west siding-switch. The engine was not equipped with a speedometer. The engineer was giving considerable attention to the pounding of the engine, and was endeavoring to reduce this condition by maintaining a greater than normal valve-chamber pressure on the descending grade. Consequently, the speed was greater than under normal



conditions. The brakes of this train had been tested and had functioned properly en route.

There was no defective condition of the engine prior to the accident. There was no indication of dragging equipment, defective track, or of any obstruction having been on the track. There was no condition found that would prevent the proper application of the train brakes. Examination after the accident disclosed that the west switch was lined and locked in position for entry to the siding. The inside spikes of the south rail had been forced upward at 16 tie locations immediately east of the heel of the switch point. There were no marks on the ties to indicate that the engine had marked the track structure either between the rails or on the rails. Several employees who were in the vicinity of the west siding-switch when the accident occurred said that immediately after the engine entered the turnout it rolled considerably to the right, then rolled to the left and overturned.

The maximum safe speed through the turnout involved was about 30 miles per hour, and the theoretical overturning speed was about 60 miles per hour. The evidence indicates that the engine was moving at less than the theoretical overturning speed but considerably in excess of the maximum safe speed when it entered the turnout.

Cause

It is found that this accident was caused by failure properly to control the speed of a train entering a siding.

Dated at Washington, D. C., this third day of May, 1946.

By the Commission, Commissioner Patterson.

W. P. BARTEL

Secretary.

(SEAL)