INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2547

THE UNION PACIFIC RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT EDSON, WYO., ON

NOVEMBER 24, 1941

SUMMARY

Railroad:	Union Pacific	
Date:	November 24, 1941	
Location:	Edson, Wyo.	
Kind of accident:	Side collision	
Trains involved:	Freight	:Freight
Train numbers:	Extra 9004 West	:Extra 3914 West
Engine numbers:	9004	:2891-3914
Consist:	44 cars, caboose	:39 cars, caboose
Estimated speed:	6-10 m.p.h.	:35-50 m.p.h.
Operation:	Timetable, train orders and automatic block-signal system	
Track:	Double; 4° left curve; 0.50 percent descending grade westward	
Weather:	Clear	
Time:	About 11:35 p.m.	
Casualties:	2 killed; 2 injured	
Cause:	Accident caused by failure properly to provide flag protection for Extra 9004 and by failure properly to control the speed of Extra 3914 in accordance with signal indications.	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2547

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

THE UNION PACIFIC RAILROAD COMPANY

January 24, 1942.

Accident at Edson, Wyo., on November 24, 1941, caused by failure properly to provide flag protection for Extra 9004 and by failure properly to control the speed of Extra 3914 in accordance with signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On November 24, 1941, there was a side collision between two freight trains on the Union Pacific Railroad at Edson, Wyo., which resulted in the death of two employees and the injury of two employees.

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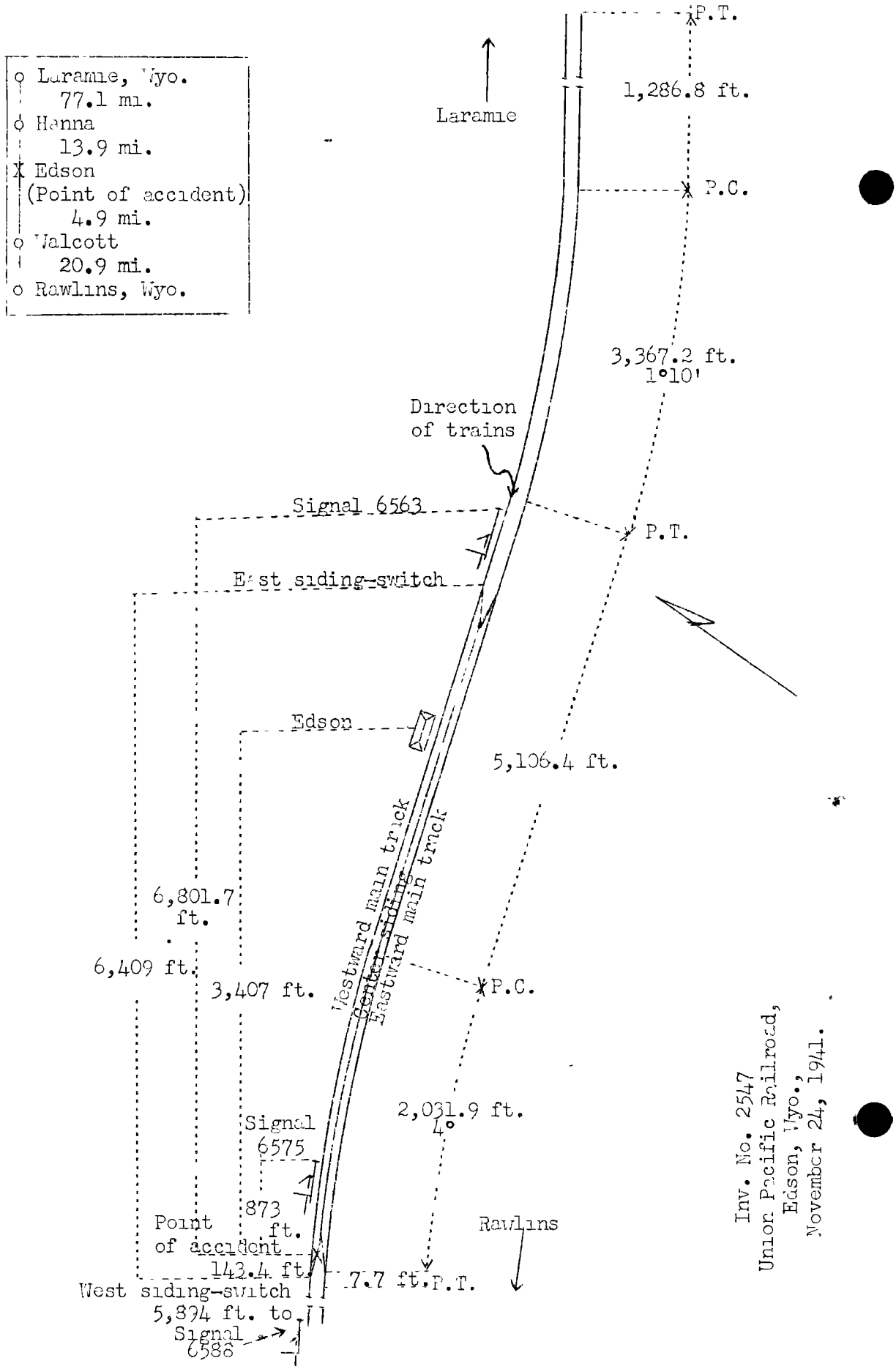
[1] Under authority of section 17(2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 2547
Union Pacific Railroad,
Edson, Wyo.,
November 24, 1941.

Location of Accident and Method of Operation

This accident occurred on that part of the Wyoming Division designated as the Sixth Subdivision, which extends between Laramie and Rawlins, Wyo., a distance of 116.8 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal system. At Edson a siding 6,409 feet in length lies between the main tracks and is parallel to them. The west siding-switch which connects the siding and the westward main track is located 3,407 feet west of the station. The turnout of this switch is 225 feet in length. The accident occurred on the main track at a point 143.4 feet east of the west siding-switch, at the fouling point of the turnout. As the point of accident is approached from the east on the westward main track there are, in succession, a tangent 1,286.8 feet in length, a 1°10' curve to the right 3,367.2 feet, a tangent 5,106.4 feet, and a 4° curve to the left 2,031.9 feet to the point of accident and 7.7 feet beyond. In the vicinity of the point of accident the grade for westbound trains is 0.50 percent descending.

Automatic signals 6563 and 6575, which govern movements on the westward main track, are located, respectively, 6,801.7 feet and 873 feet east of the point of accident. These signals are of the two-arm, two-position, lower-quadrant, semaphore type, and are approach lighted. The aspects and corresponding indications and names of these signals are as follows:

Aspect	Indication	Name
Green-over-green	Proceed	Clear Signal
Green-over-yellow	Proceed preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach Signal
Red-over-yellow	Stop	Stop Signal

The top arms of signals 6563 and 6575 are controlled by track circuits and display green aspects when the track is unoccupied to the next signal in advance. The bottom arms are controlled by line circuits to the next signal and display green aspects when the top arm of the signal in advance displays a green aspect and the track is unoccupied to the second signal in advance.

Operating rules read in part as follows:

MEDIUM SPEED.--A speed not exceeding thirty (30) miles per hour.

11. A train finding a fusee burning red on or near its track must stop before passing the fusee, extinguish it, and may then proceed at reduced speed for at least one-half mile.

S-19. The following signals must be displayed, one on each side of the rear of train, as markers to indicate the rear of the train: * * *; by night, green lights to the front and side and red lights to the rear, except when the train is clear of main track, green lights must be displayed to the front, side and rear.

34. All members of engine and train crews must, when practicable, communicate to each other by its name the indication of each signal affecting the movement of their train or engine.

91(A). Trains must approach all stations where the view is obscured at a rate of speed that will enable them to stop should an emergency arise.

Responsibility for collision rests with the following train, but this does not relieve the leading train from protecting itself.

99. * * *

When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fusees must be thrown off at proper intervals.

* * *

D-511. Before a train moves to a main track from a siding * * *, all switches to be used must be opened and then wait two minutes before occupying the main track; except if it is immediately after a train has passed, all switches to be used must be opened as soon as such train has cleared these switches, after which, if other conditions permit, the movement to the main track may be made immediately.

This does not relieve enginemen and trainmen from protecting their train as required by the rules, * * *.

In the vicinity of the point of accident the maximum authorized speed for freight trains is 50 miles per hour, and on the curve involved, 40 miles per hour.

Description of Accident

Extra 9004 West, a west-bound freight train, consisted of engine 9004, 44 loaded cars and a caboose. After a terminal air-brake test was made this train departed from Laramie, 91 miles east of Edson, at 8:45 p.m., according to the dispatcher's record of movement of trains, departed from Hanna, 13.9 miles east of Edson and the last open office, at 10:45 p.m., and about 11:08 p.m. entered the siding at Edson to clear for First and Second 37, two sections of a first-class schedule. Second 37 passed Edson about 11:31 p.m. and soon afterward Extra 9004 started to enter the westward main track, and while it was moving at an estimated speed of 6 to 10 miles per hour the fourteenth car was struck by Extra 3914 West.

Extra 3914 West, a west-bound freight train, consisted of engines 2891 and 3914, coupled, 34 loaded and 5 empty cars and a caboose. After a terminal air-brake test was made this train departed from Laramie at 9:15 p.m., according to the dispatcher's record of movement of trains, departed from Hanna at 11:19 p.m., passed signal 6563, which was displaying approach, passed signal 6575, which was displaying stop, and while moving at an estimated speed of 35 to 50 miles per hour it collided with Extra 9004 West at the fouling point of the west siding-switch.

The front truck of the fourteenth car of Extra 9004 was derailed to the south. The eighth to thirteenth cars, inclusive, were derailed and stopped across both main tracks and at various angles to them. The engine and first seven cars were driven ahead by the impact. The rear end of the seventh car was badly damaged. Engine 2891, the first engine of Extra 3914, was derailed to the south, continued forward 278 feet, and stopped, badly damaged, with the front end 8 feet south of the center-line of the westward main track, and leaned to the south at an angle of 20 degrees. The tender was torn loose from the engine, derailed to the north and stopped upright, but in reverse position, 268 feet beyond the point of collision and 12 feet north of the westward main track. Engine 3914 and its tender, remaining coupled, were derailed to the north and stopped on their right sides, badly damaged, with the front end of the engine 243 feet beyond the point of collision and 28 feet north of the westward main track. The first to fourteenth cars, inclusive, of Extra 3914 were derailed and stopped at various angles across both main tracks. Most of these cars were demolished. The thirty-ninth car was slightly damaged.

The weather was clear at the time of the accident, which occurred about 11:35 p.m.

The employees killed were the engineer and the fireman of the second engine of Extra 3914, and the employees injured were the fireman of the first engine of Extra 3914 and the conductor.

Signal Data

Tests made after the accident disclosed that signals 6563 and 6575 functioned as intended.

Mechanical Data

After the accident, the S-6 independent brake valve and the H-6 automatic brake valve were removed from engine 2891 and tested on the test rack. Both brake valves functioned properly and were in conformity with the requirements of the testing code.

According to the dispatcher's record of movement of trains, Second 37 departed from Hanna at 11:15 p.m., 24 minutes late, and departed from Walcott, 4.9 miles west of Edson and the next open office, at 11:36 p.m., 23 minutes late. The average speed maintained was 53.7 miles per hour. Second 37 passed the west siding-switch at Edson about 11:31 p.m.

Discussion

The rules governing operation on the line involved provide that before a train moves from a siding to the main track a 2-minute interval must elapse after all switches used are lined for such movement, except when the switches for entry to the main track are lined immediately after the passage of a train on the main track. Trains moving from a siding to the main track must provide flag protection. The rules governing operation in automatic block-signal territory provide that an approach indication requires the speed to be reduced to one-half the maximum authorized speed and the train to be prepared to stop at the next signal. A fusee burning red on the track or near it requires a train to stop and then to proceed at reduced speed throughout a distance of one-half mile.

Extra 9004 West entered the siding at Edson about 11:08 p.m. to clear for two sections of No. 37, a first-class schedule. Before Extra 9004 proceeded to the west end of the siding, the conductor talked on the telephone with the dispatcher and then walked to the engine and told the engineer that Extra 9004 would follow Second 37. First 37 passed Edson at 11:18 p.m., and Extra 9004 proceeded through the siding and

stopped with the engine about 100 feet east of the inside switch of the turnout just before Second 37 passed the west siding-switch. According to the statement of the conductor, immediately after Second 37 passed, about 11:31 p.m., he proceeded to the inside switch and lined it for entrance to the turnout and the front brakeman proceeded to the main-track switch and lined the route for movement to the main track. Tests after the accident indicated that these switches were operated before Second 37 cleared the block, and that therefore signal 6575 displayed stop and signal 6563 displayed approach continuously from the time Second 37 passed until the accident occurred. According to the statement of the engineer, after the west siding-switch was lined he had some difficulty in starting the train and his train did not move until about 2-1/2 minutes after Second 37 passed, then it proceeded at a moderate rate of speed and entered the main track. The engine and 13 cars were west of the fouling point and the speed was about 6 miles per hour when the front end of the fourteenth car was struck by Extra 3914 West about 11:35 p.m.

The flagman of Extra 9004 West said that when his train started to enter the main track at the west siding-switch he turned the marker lights to display red to the rear and he displayed a lighted red fusee from the right side of the caboose. His train had proceeded about 350 feet when he observed the headlight of Extra 3914 rounding the curve about 4,000 feet to the rear of his train. He thought that Extra 3914 was stopping at signal 6563, but when he became aware that it was not stopping there was insufficient time to obtain another fusee from inside the caboose and to proceed to the westward main track to flag the approaching train. Extra 3914 passed his caboose at a speed of about 50 miles per hour, and he observed fire flying from the brake shoes. In his opinion, the crew of Extra 3914 should have seen the lighted red fusee displayed at the right side of the caboose and the red markers. Had the flagman properly placed a lighted red fusee on the westward main track it is probable this accident would have been averted.

As Extra 3914 was approaching Edson, the throttle of the first engine was open, the speed was about 50 miles per hour, and the engineer of the first engine and the front brakeman were maintaining a lookout ahead. The fireman of the first engine was engaged in tending the fire. The engineer and the front brakeman said that between Hanna and Percy, 9.4 miles east of Edson, the signals displayed approach until shortly before the engine reached them, then changed to display proceed. Between Percy and Edson all signals displayed proceed for their train. The engineer of the first engine said that signal 6563 was displaying proceed; however, he did not call its indica-

tion nor did other members of the crew on the engine call it to him. The fireman of the first engine said that because of being occupied by other duties he did not observe the indication displayed by signal 6563. The front brakeman said that because of track curvature to the right he did not see the indication displayed by signal 6563. The engineer of the first engine said that at a point about 5,000 feet east of the west siding-switch, because of the speed restriction on the curve west of Edson, he made a 5-pound brake-pipe reduction to control the speed of his train, then returned the brake valve to lap position. At a point about 2,700 feet east of the west siding-switch the front brakeman observed simultaneously the red fusee displayed on the caboose of Extra 9004 and signal 6575 displaying stop. The brakeman warned the engineer, who immediately moved the brake valve to emergency position, but the distance was insufficient to stop short of the signal. Extra 3914 passed the signal and collided with Extra 9004 at a point 873 feet beyond. The speed of Extra 3914 was about 35 miles per hour at the time of the collision. The brakes of Extra 3914 had been tested and had functioned properly en route. After the accident, tests disclosed that signals 6563 and 6575 functioned as intended.

The rules require all members of an engine and train crew to communicate to each other, when practicable, the indication of each signal that affects the movement of their train. The investigation disclosed that, in this instance, the three members of the crew on the first engine failed to comply with this provision of the rules. Since the engineer and the fireman of the second engine of Extra 3914 were killed in the accident, it could not be determined if they observed the indication displayed by signal 6563.

Second 37 departed from Hanna at 11:15 p.m., and, based on the average speed of 53.7 miles per hour, this train passed the west siding-switch at Edson not later than 11:31 p.m. Extra 3914 departed from Hanna at 11:19 p.m., or 4 minutes later than Second 37. According to the statements of the crew of Extra 3914, Second 37 gradually out-distanced their train; therefore, Extra 3914 could not have arrived at Edson until after 11:35 p.m., and there is other evidence also to this effect. Since at least 2 minutes elapsed between the time the main-track switch was opened and the time Extra 9004 started to move and since the thirteenth car was beyond the fouling point of the west siding-switch when the accident occurred, it appears conclusive that the main-track switch was open a sufficient time for signal 6563 to display approach and signal 6575 to display stop for Extra 3914, as not more than 1 minute 42 seconds elapsed from the time the engine of Extra 3914, moving at an average speed of 45 miles per hour, passed signal 6563 until the accident occurred. If signal 6563 was dis-

playing proceed when Extra 3914 passed it, only 1 minute 42 seconds would have been available for the crew of Extra 9004 to line the switches and for their train to proceed until the engine and 13 cars were beyond the fouling point. Tests made after the accident disclosed that a period of 2 minutes 30 seconds was necessary to start a train on the siding and to proceed until the fourteenth car was at the fouling point of the west siding-switch. Since no defective condition of the signals involved was disclosed during tests, apparently signal 6563 displayed approach for Extra 3914. Had the engineer controlled the speed in accordance with signal indications, this accident would have been averted.

Cause

It is found that this accident was caused by failure properly to provide flag protection for Extra 9004 and by failure properly to control the speed of Extra 3914 in accordance with signal indications.

Dated at Washington, D.C., this twenty-fourth day of January, 1942.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.