INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3032

UNION PACIFIC RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR WAHSATCH, UTAH, ON

OCTOBER 30, 1946

SUMMARY

Railroad:	Union Pacific	
Date:	October 30, 1946	
Location:	Wahsatch, Utah	
Kind of accident:	Rear-end collision	
Trains involved:	Freight	: Freight
Train numbers:	Extra 3965 East	: Extra 3937 East
Engine numbers:	3965	: 2898-3937
Consists:	79 cars, caboose	: 62 cars, caboose
Estimated speeds:	Standing	: 5 m. p. h.
Operation:	Signal indications	
Track:	Double; tangent; 0.40 percent descending grade eastward	
Weather:	Clear	
Time:	8:35 a. m.	
Casualties:	1 killed; 1 injured	
Cause:	Failure to operate following train in accordance with signal indications	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3032

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

UNION PACIFIC RAILROAD COMPANY

November 29, 1946

Accident near Wahsatch, Utah, on October 30, 1946, caused by failure to operate the following train in accordance with signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On October 30, 1946, there was a rear-end collision between two freight trains on the Union Pacific Railroad near Wahsatch, Utah, which resulted in the death of one employee, and the injury of one employee. This accident was investigated in conjunction with representatives of the Public Service Commission of Utah.

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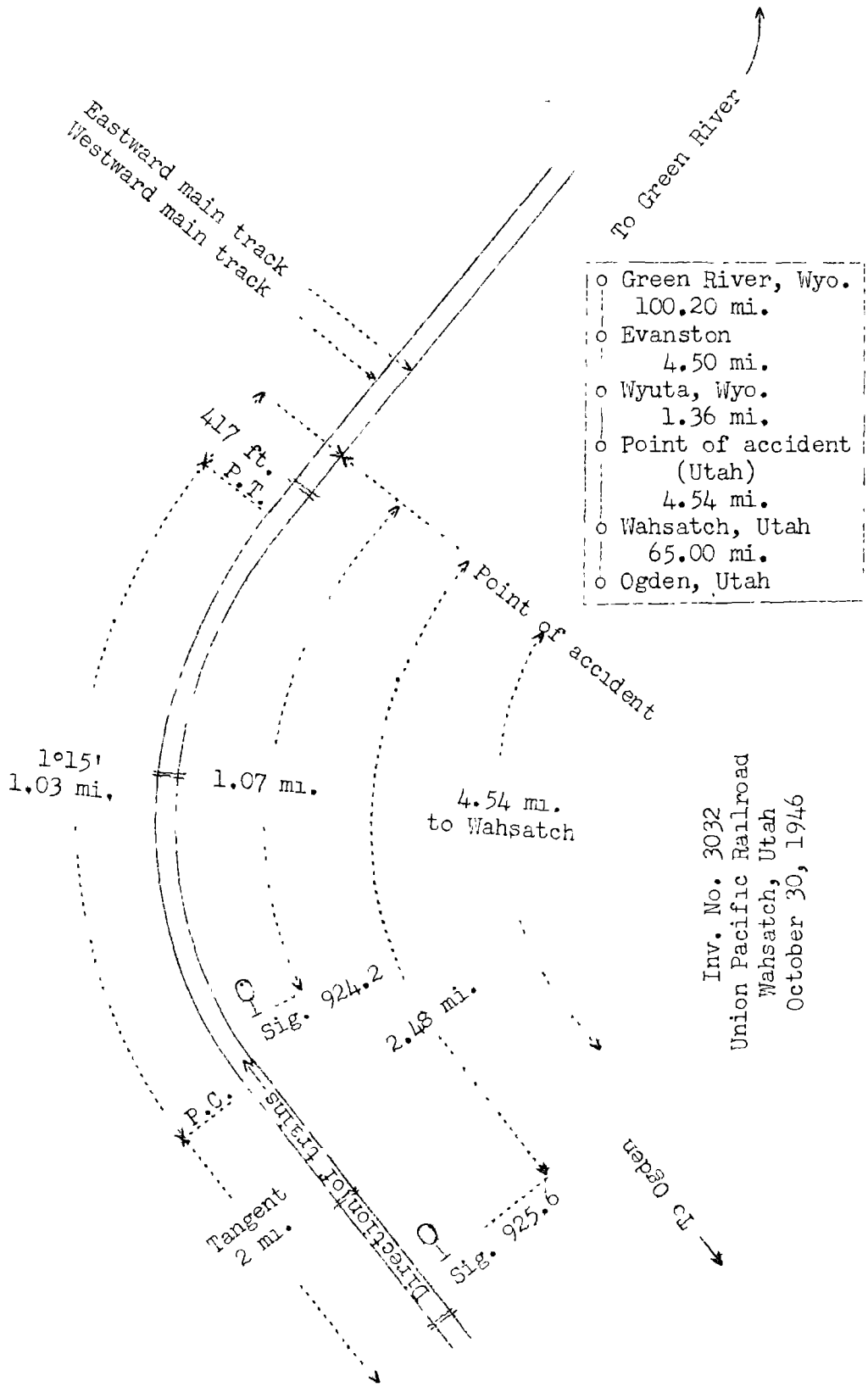
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.


To Green River
Eastward main track
Westward main track
o Green River, Wyo.
100.20 mi.
o Evanston
4.50 mi.
o Wyuta, Wyo.
1.36 mi.
o Point of accident
(Utah)
4.54 mi.
o Wahsatch, Utah
65.00 mi.
o Ogden, Utah
417 ft.
P.I.
Point of accident
1°15'
1.03 mi.
1.07 mi.
4.54 mi.
to Wahsatch
Sig. 924.2
2.48 mi.
P.C.
Tangent
2 mi.
Direction of trains
Sig. 925.9
To Ogden
Inv. No. 3032
Union Pacific Railroad
Wahsatch, Utah
October 30, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Wyoming Division extending between Ogden, Utah, and Green River, Wyo., 175.6 miles, a double-track line in the vicinity of the point of accident, over which trains moving with the current of traffic are operated by signal indications. The accident occurred on the eastward main track 69.54 miles east of Ogden and 4.54 miles east of Wahsatch. From the west there are, in succession, a tangent about 2 miles in length, a 1°15' curve to the right 1.03 miles and a tangent 417 feet to the point of accident and a considerable distance eastward. The grade for east-bound trains on the eastward main track varies between 0.09 and 0.40 percent descending throughout a distance of 3 miles to the point of accident, where it is 0.40 percent descending.

Automatic signals 925.6 and 924.2, governing east-bound movements on the eastward main track are, respectively, 2.48 and 1.07 miles west of the point of accident. These signals are of the three-indication color-light type, and are approach lighted. The red aspect of signal 924.2 is 16 feet above the level of the tops of the rails and 7 feet south of the south rail of the eastward main track. The involved aspects and corresponding indications and names of these signals are as follows:

Signal	Aspect	Indication	Name
925.6	Yellow	Immediately reduce speed to 20 miles per hour, and as much slower as necessary in order to be able to stop before passing the next signal.	Approach signal.
924.2	Red	Stop.	Stop signal.

The controlling circuits of these signals are so arranged that when a train is occupying the eastward main track in the block between signal 924.2 and the next signal eastward, signal 925.6 displays a yellow aspect and signal 924.2 a red aspect.

Operating rules read in part as follows:

DEFINITIONS

* * *

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or switch not properly lined, and be on lookout for broken rail, or anything that may affect movement of train.

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

99. When a train stops, except when clear of the main track, the flagman must go back immediately with flagman's signals, a sufficient distance to insure full protection. One-half mile from the rear of his train he will place two torpedoes on the rail, continuing back one and one-fourth miles from the rear of his train he will place two torpedoes on the rail. He may then return to the two torpedoes one-half mile from rear of his train where he must remain until relieved by another flagman or is recalled by the whistle of his engine.

* * *

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.

Flagman's signals:

Day signals--A red flag, not less than ten torpedoes and six fusees.

* * *

489. In foggy or stormy weather, engineers must approach all signals with great care, prepared to respect indication given, stopping if necessary to determine the indication.

509. When a train or engine is stopped by a Stop indication of an automatic block signal, it may proceed when signal changes to Approach or to Proceed indication; or if signal remains at Stop--

* * *

(d) On double track, train or engine may proceed * * * but must move at restricted speed to the next home signal.

On this line the maximum authorized speeds are 90 miles per hour for passenger trains and 50 miles per hour for freight trains.

Description of Accident

Extra 3965 East, an east-bound freight train, consisting of engine 3965, 79 cars and a caboose, departed from Wansatch, the last open office, at 8:17 a. m., and was moving on the eastward main track at an estimated speed of 35 miles per hour when the brakes became applied. The train stopped about 8:32 a. m., with the rear end standing 1.07 miles east of signal 924.2, and about 3 minutes later the rear end was struck by Extra 3937 East.

Extra 3937 East, consisting of engines 2898 and 3937, 62 cars and a caboose, passed Wansatch at 8:29 a. m., passed signal 925.6, which displayed approach-next-signal-preparing-to-stop, passed signal 924.2, which displayed stop-then-proceed-at-restricted-speed, passed the flagman of the preceding train, and while moving at an estimated speed of 5 miles per hour it collided with Extra 3965 East.

The caboose of Extra 3965 East was demolished, and the rear two cars were derailed and damaged. The first engine of Extra 3937 East was derailed and stopped practically upright immediately south of the eastward main track and in line with it. The tender, remaining coupled, stopped south of the track and at an angle of 45 degrees to the engine. The second engine was derailed to the north and stopped at an angle of 15 degrees to the track, with its front end about 20 feet east of the cab of the first engine. Both engines were badly damaged, and the cab of the first engine was demolished.

The weather was clear and the temperature was 6° above zero at the time of the accident, which occurred about 8:35 a. m.

The fireman of the first engine of Extra 3937 East was killed, and the engineer of the first engine was injured.

Engine 2898, the first engine of Extra 3937 East, is provided with one 8-1/2 inch cross-compound air compressor and No. 6-ET brake equipment. The regulating devices were adjusted for brake-pipe pressure of 80 pounds and main-reservoir pressure of 130 pounds. The second engine of Extra 3937 East is equipped with No. 8-ET brake equipment, and vent valves are provided on the engine and the tender to insure emergency application of the train-brakes. Approximately 65 percent of the cars of Extra 3937 East were equipped with AB-type brakes.

Discussion

Extra 3965 East was moving at a speed of about 35 miles per hour when an undesired application of the brakes occurred. Investigation disclosed that the dirt collector of the brake-pipe branch-pipe of the sixty-third car had become disconnected.

The train stopped about 8:32 a. m., and about 3 minutes later the rear end was struck by Extra 3937 East at a point 1.07 miles east of signal 924.2.

When Extra 3965 East stopped, the conductor proceeded eastward to inspect the train and the flagman proceeded westward to provide flag protection. The flagman had reached a point about 1,500 feet west of the rear of his train when he saw the first engine of the following train as it was emerging from the east end of a cut about 1,000 feet westward. He immediately gave stop signals with a red flag, and these signals were acknowledged by two short blasts of the whistle of the approaching train. The conductor and the flagman of Extra 3965 said that visibility in the vicinity of the point where the accident occurred was unimpaired by weather conditions. There was a considerable amount of snow on the ground and the flagman said that, because of difficulty in walking in the snow, he had reached the maximum possible distance to the rear of his train during the time available.

As Extra 3937 East was approaching the point where the accident occurred the speed was about 35 miles per hour, according to the statements of the members of the crew. The brakes of this train, which were in the charge of the engineer of the first engine, had been tested and had functioned properly en route. Brake-pipe pressure of 80 pounds was being maintained. The front brakeman, who was on the second engine, and the enginemen of both engines were maintaining a lookout ahead. The employees on the second engine said that throughout a considerable distance west of the point where the collision occurred their view ahead was obscured by trailing smoke and steam, and they were unable to see the aspects displayed by signals 925.6 and 924.2. The fireman of the first engine was killed in the accident. The engineer of the first engine said that when his engine was about one-half mile west of signal 925.6 he observed that this signal was displaying a yellow aspect and, in compliance with this aspect, he made a 12-pound brake-pipe reduction, which was not released. The speed of the train was reduced to about 20 miles per hour, and no further brake-pipe reduction was made in this vicinity. At a point some distance east of signal 925.6, dense fog was encountered and the engineer of the first engine did not see the indication displayed by signal 924.2. He said he did not know that his train had passed that signal until his engine rounded the curve immediately west of the point where the collision occurred, then he saw the rear end of the preceding train about 2,000 feet distant and the flagman of that train giving stop signals with a red flag from a point about 1,000 feet to the rear of the train. The engineer of the first engine of Extra 3937 East immediately moved the brake valve to emergency position, but the collision occurred before the train could be stopped. Immediately before the accident occurred, the engineer of the second engine placed the brake valve of his engine in emergency position to insure that the vent valves on his engine would open and relay the

emergency application through the train-brake system. The engineers of both engines could assign no reason why their train was not stopped a considerable distance short of the preceding train, in view of their statements that the brakes were applied throughout a distance of 3.5 miles, nor why the speed was not reduced lower than 20 miles per hour between signal 925.6 and the point where the emergency application was made. After the accident the cars of Extra 3937 East were moved to Green River, about 106 miles eastward, and the engineer who had charge of this movement said that he had no difficulty in controlling the speed and in stopping the train en route. The road foreman of engines said that, if the speed of Extra 3937 East was 20 miles per hour at signal 925.6 and if the brakes were not released after a 12-pound brake-pipe reduction was made one-half mile west of this signal, the train would have stopped soon after it passed the signal.

Several days after the accident occurred a series of braking tests was made in this territory with a train comparable in weight, types of cars, and brake systems to that of Extra 3937 East on the day of the accident. During one test the train was stopped from a speed of 35 miles per hour in a distance of 3,797 feet and at a point 1,760 feet east of signal 925.6, as a result of a 12-pound brake-pipe reduction made at a point 2,037 feet west of that signal. During another test the train was stopped from a speed of 35 miles per hour in a distance of 3,017 feet and at a point 2,263 feet west of the point where the collision occurred, as a result of a 12-pound brake-pipe reduction made at signal 924.2. The investigation disclosed that Extra 3937 East traversed a distance of 4.54 miles immediately west of the point of accident in 6 minutes, which was an average speed of 45.4 miles per hour. Apparently, the surviving members of the crew of Extra 3937 East misjudged the speed of their train and the point where the brake applications were made. The engines of this train were not equipped with speedometers.

Under the conditions present, signal 924.2 should have displayed a red aspect for Extra 3937 East, and in tests after the accident this signal functioned properly. The flagman of Extra 3937 East said that he observed this signal several minutes after the accident occurred, and at that time it was displaying a red aspect and was clearly discernible. The engineer of Extra 3965 East said that he saw the aspect displayed by signal 924.2 throughout a distance of 600 feet as his engine approached the signal about 8 minutes before the accident occurred.

Cause

It is found that this accident was caused by failure to operate the following train in accordance with signal indications.

Dated at Washington, D. C. this twenty-ninth day of November, 1946.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

(SEAL)

Secretary.