

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3516
UNION PACIFIC RAILROAD COMPANY
IN RE ACCIDENT
AT RED DESERT, WYO., ON
APRIL 27, 1953

SUMMARY

Date: April 27, 1953
Railroad: Union Pacific
Location: Red Desert, Wyo.
Kind of accident: Derailment
Train involved: Freight
Train number: Extra 4005 West
Engine number: 4005
Consist: 62 cars, caboose
Estimated speed: 50 m. p. h.
Operation: Signal indications
Tracks: Double; tangent; 0.43 percent
descending grade westward
Weather: Cloudy; light mist
Time: 9:20 a. m.
Casualties: 3 killed
Cause: Switch being opened immediately in
front of approaching train

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3516

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

UNION PACIFIC RAILROAD COMPANY

June 11, 1953

Accident at Red Desert, Wyo., on April 27, 1953, caused
by a switch being opened immediately in front of an
approaching train.

REPORT OF THE COMMISSION¹

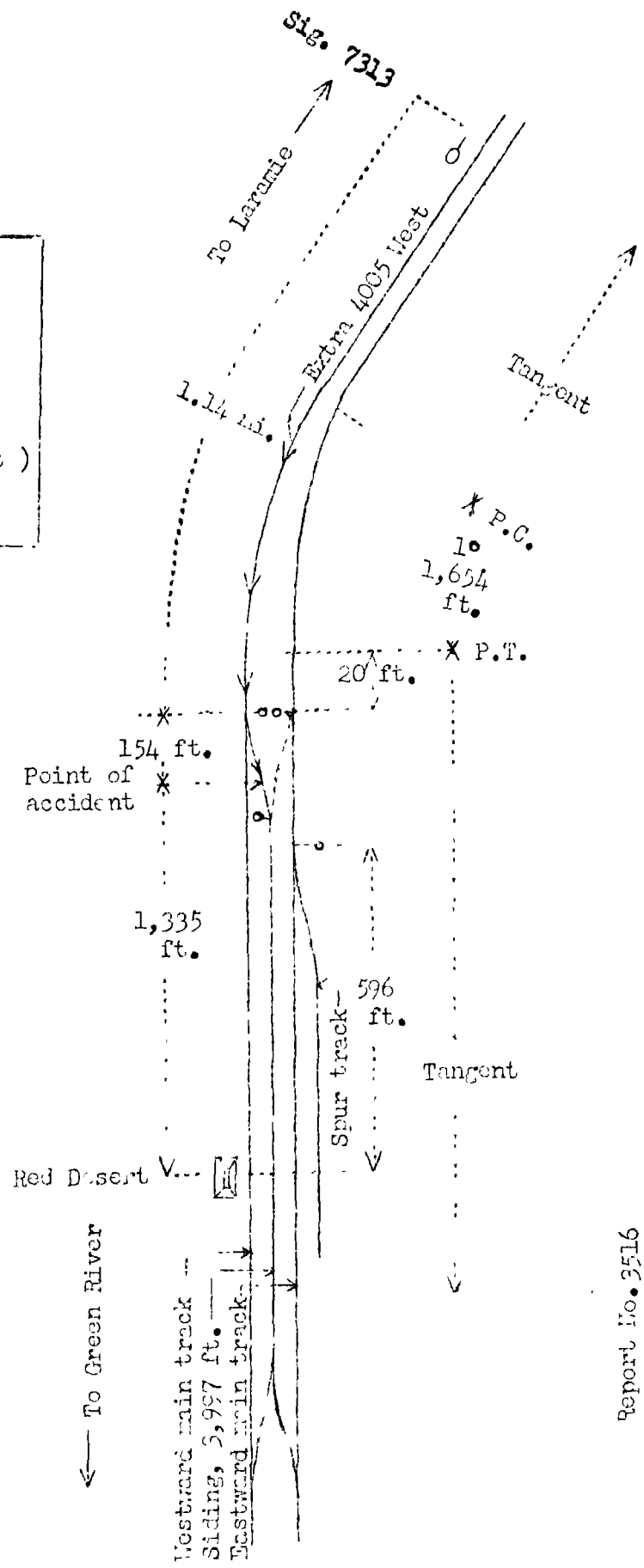
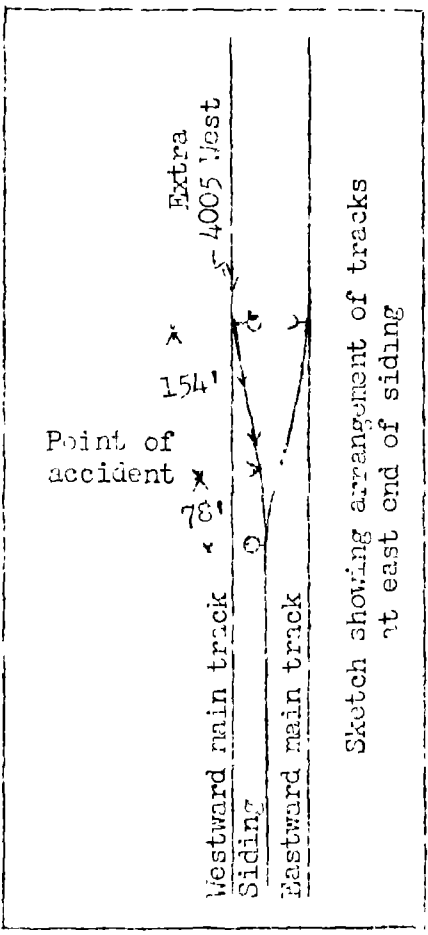
PATTERSON, Commissioner:

On April 27, 1953, there was a derailment of a freight train on the Union Pacific Railroad at Red Desert, Wyo., which resulted in the death of three train-service employees. This accident was investigated in conjunction with representatives of the Board of Equalization and Public Service Commission of Wyoming.

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.

- Laramie, Wyo. 158.2 mi.
- Mansueter 4.9 mi.
- Frewen 3.6 mi.
- X Red Desert (Point of accident) 84.3 mi.
- Green River, Wyo.



Report No. 2516
 Union Pacific Railroad
 Red Desert, Wyo.
 April 27, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the Wyoming Division extending between Laramie and Green River, Wyo., 251.0 miles, a double-track line, over which trains moving with the current of traffic are operated by automatic block-signal and cab-signal indications. At Red Desert, 166.7 miles west of Laramie, a siding 3,997 feet in length is located between the main tracks, and a spur track parallels the eastward main track on the south. The east siding-switch in the westward main track is located 1,335 feet east of the station. The spur-track switch is 596 feet east of the station. The accident occurred on the siding at a point 154 feet west of the east main-track switch. From the east on the westward main track there are, in succession, a tangent over 4 miles in length, a 1° curve to the left 1,654 feet, and a tangent 20 feet to the east siding-switch and a considerable distance westward. The grade for west-bound trains is, successively, 0.35 percent ascending 1.17 miles, and 0.43 percent descending 1,352 feet to the point of accident.

In the vicinity of the point of accident the structure of the westward main track consists of 131-pound rail, 39 feet in length, laid new in 1947 on an average of 22 ties to the rail length. It is fully tieplated with heavy duty tie-plates, single-spiked, and is provided with 6-hole joint bars and an average of 12 rail anchors per rail. It is ballasted with rock to a depth of 8 inches below the bottoms of the ties. The main-track turnout at the east end of the siding is constructed with 16.5-foot switch rails, 131-pound rail, and a No. 10 spring-rail frog. The inside turnout is constructed with 16.5-foot switch rails, 90-pound rail, and a No. 6-1/2 crotch frog. The siding was laid with secondhand 90-pound rail in 1924. It is fully tieplated.

The switch stand of the main-track switch is of the horizontal-throw intermediate-stand type. It is located 8 feet 6 inches south of the center-line of the track and is equipped with a circular red banner 18 inches in diameter. The banner is parallel to the track when the switch is lined for movement on the main track, and it is at right angles to the track when the switch is lined for entry to the siding. The switch stand of the inside switch is of the ground-throw type.

Automatic signal 7313, governing west-bound movements on the westward main track, is located 1.14 miles east of the east siding-switch. This signal is of the color-light type

and displays three aspects. The controlling circuits are so arranged that when the east main-track siding-switch is lined for entry to the siding the signal displays its most restrictive aspect. Under this condition the cab signal of an engine moving between signal 7513 and the switch displays its most restrictive aspect. The inside switch at the east end of the siding is normally lined for movement from the westward main track to the siding. The operation of this switch does not affect the signals on the westward main track.

This carrier's rules for the maintenance-of-way department read in part as follows:

90 (E). When track is impassible, or before obstructing track, * * * flagman must be immediately sent in both directions with flagman's signals a sufficient distance to insure full protection.
* * *

762. Switches must not be handled by unauthorized persons and must be left in proper position after having been used. Those authorized to handle switches must see that they are properly lined for the route to be used, observing the position of target or lamp and know that switch point is closed against the stock rail.

The normal position of main track switches is for main track movement and they must be lined and locked in that position except when changed for immediate movement through them. When a main track switch is set in other than normal position, an authorized employe must remain near enough to the switch to be able to line it for main track movement upon the approach of a train or engine.

All switches equipped with switch locks must be locked while movements are being made over them and must be left locked after they have been used.

* * *

When train movements are to be made over switches, employes must, when possible, take position on opposite side of track from switch stand while the movement is being made. * * *

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The maximum authorized speed for freight trains is 50 miles per hour.

Description of Accident

Extra 4005 West, a west-bound freight train, consisted of engine 4005, 62 cars, and a caboose. This train passed Wainwright, 9.5 miles east of Red Desert and the last open of ice, at 9:10 a. m. While moving at an estimated speed of 50 miles per hour the front of the train entered the siding at Red Desert and the engine and tender and the first 13 cars were derailed at a point 154 feet west of the east siding-switch.

The engine stopped on its left side, on the track structure of the siding and parallel to it. The front end was 201 feet west of the point of derailment. The tender remained coupled to the engine. It stopped on its left side with the rear end toward the southeast at an angle of approximately 45 degrees to the engine. The derailed cars stopped in various positions on or near the tracks. The cab of the engine was demolished, and the engine was considerably damaged. The first 12 cars were badly damaged. The thirteenth to the seventeenth cars, inclusive, were somewhat damaged.

The engineer and the fireman were killed, and the front brakeman died later as a result of injuries received in the accident.

The weather was cloudy and there was a light mist at the time of the accident, which occurred about 9:20 a. .

Engine 4005 is of the 4-8-8-4 single-expansion articulated type. The total weight in working order is 762,000 pounds, distributed as follows: engine truck, 97,000 pounds, driving wheels, 340,000 pounds; and trailing truck, 125,000 pounds. The specified diameters of the engine-truck wheels, the driving wheels, and the trailing-truck wheels are, respectively, 36 inches, 38 inches, and 42 inches. The driving wheelbase of each engine is 12 feet 3 inches long, the total driving wheelbase is 47 feet 3 inches long, and the total wheelbase is 72 feet 5 inches long. The total length of the engine and tender, coupled, is 132 feet 9-7/8 inches. The tender is rectangular in shape and is constructed with a four-wheel truck at the front and five pairs of wheels mounted in pedestals cast integrally with the tender bed. Its capacity is 24,000 gallons of water and 56,000 pounds of coal. Its weight when fully loaded is 427,500 pounds.

Discussion

On the day of the accident a section force stationed at Frevon, 5.6 miles east of Red Desert, proceeded from Frevon to Red Desert on a track motor-car to obtain a supply of switch ties. This force consisted of a foreman and four sectionmen. Soon after these employees arrived at Red Desert, a sheep herder approached the foreman and requested assistance in getting his sheep across the tracks. The foreman obtained a line-up of train movements from the train dispatcher. This line-up, which was issued at 9:02 a. m., read as follows:

Westbound, Extra 4005 West, Red Desert 9:15 a. m.
Westbound, Extra 1480 West, Red Desert 9:50 a. m.
Eastbound, Extra 3969 East, Red Desert 9:15 a. m.
Eastbound, Extra 1470 East, Red Desert 9:55 a. m.

After receiving the line-up, the foreman assigned one sectionman to proceed eastward and another to proceed westward to provide flag protection. He instructed them that after one eastbound and one westbound train passed they were to provide protection until the sheep had crossed the tracks. In order to provide additional protection by causing the block signals to display restrictive aspects, the foreman planned to have the other two sectionmen open a switch in each main track. He unlocked the lock on the spur-track switch and stationed a man at that point with instructions to open the switch after the first east-bound train passed. The foreman accompanied the other sectionman to the east siding-switch in the westward main track, unlocked the lock, and instructed the sectionman to throw the switch when he, the foreman, gave a signal. The foreman then proceeded to a road crossing, 884 feet east of the switch, to confer with the sheep herder. He remained in the vicinity of the crossing until the accident occurred.

As Extra 4005 West was approaching the point where the accident occurred the speed was about 50 miles per hour. The engineer and the front brakeman were on the engine. The conductor and the flagman were in the caboose. The front brakeman made a statement before he died; he said that as the engine was closely approaching the east end of the siding a man opened the siding switch and then made an unsuccessful attempt to close it before the engine passed. The front brakeman and the fireman immediately warned the engineer. The engineer made an emergency application of the brakes as the engine entered the siding.

After the accident occurred the siding switch was found to be open. The operating lever was not latched, but it had been moved from normal position a sufficient distance to line the switch points for entry to the siding. A rail was overturned at a point 154 feet west of the switch. The track was destroyed between this point and the point at which the engine stopped.

The sectionman who was stationed at the switch was inexperienced in railroad work and had not operated a switch before the day of the accident. According to his statements, when he and the foreman reached the east end of the siding the foreman unlocked and opened the switch. The foreman then instructed him to move the operating lever to the opposite position when he received a signal from the foreman to do so. He did not receive a signal from the foreman and did not operate the switch at any time.

According to the statements of the foreman, when he and the sectionman arrived at the switch he unlocked the lock but did not unlatch the operating lever. He explained, both verbally and by the use of gestures, that the sectionman was to operate the switch when he gave a signal. At that time he was satisfied that the sectionman understood him. After he reached the road crossing he did not look toward the switch until the engine of Extra 4005 West was about to enter the siding. It then appeared to him that the sectionman was attempting to operate the switch.

The contradiction between the statements of the sectionman and those of the foreman may have been due, in part, to the sectionman's difficulty in speaking and understanding the English language. This employee is a native of Puerto Rico and his knowledge of the English language is extremely limited. During the investigation he was questioned through an interpreter. The foreman speaks no language other than English.

After the switch was opened, both signal 7313 and the cab signal of engine 4005 should have displayed their most restrictive aspects. From the fact that the engineer did not make a brake application until the other employes on the engine saw a man operate the switch, it appears that the

switch was in normal position and that the cab signal indicated Proceed until the train was closely approaching the switch. The signal system was tested after the accident occurred and was found to function properly.

Cause

It is found that this accident was caused by a switch being opened immediately in front of an approaching train.

Dated at Washington, D. C., this eleventh day of June, 1953.

By the Commission, Commissioner Patterson.

(SEAL)

GEORGE W. LAIRD,
Acting Secretary.