

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 3231
UNION PACIFIC RAILROAD COMPANY
REPORT IN RE ACCIDENT
NEAR COOLIDGE, IDAHO, ON
JANUARY 30, 1949

SUMMARY

Railroad: Union Pacific
Date: January 30, 1949
Location: Coolidge, Idaho
Kind of accident: Head-end collision
Trains involved: Freight : Freight
Train numbers: Extra 3824 West : Extra 1410 East
Engine numbers: 3824 : Diesel-electric
units 1435,
1422C and 1410
Consists: 71 cars, caboose : 80 cars, caboose
Estimated speeds: Standing : 40 m. p. h.
Operation: Signal indications
Tracks: Single; 2° curve; 0.28 percent
descending grade eastward
Weather: Clear
Time: 4:05 a. m.
Casualties: 3 killed
Cause: Failure to operate east-bound train
in accordance with signal indications

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3231

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

UNION PACIFIC RAILROAD COMPANY

March 23, 1949

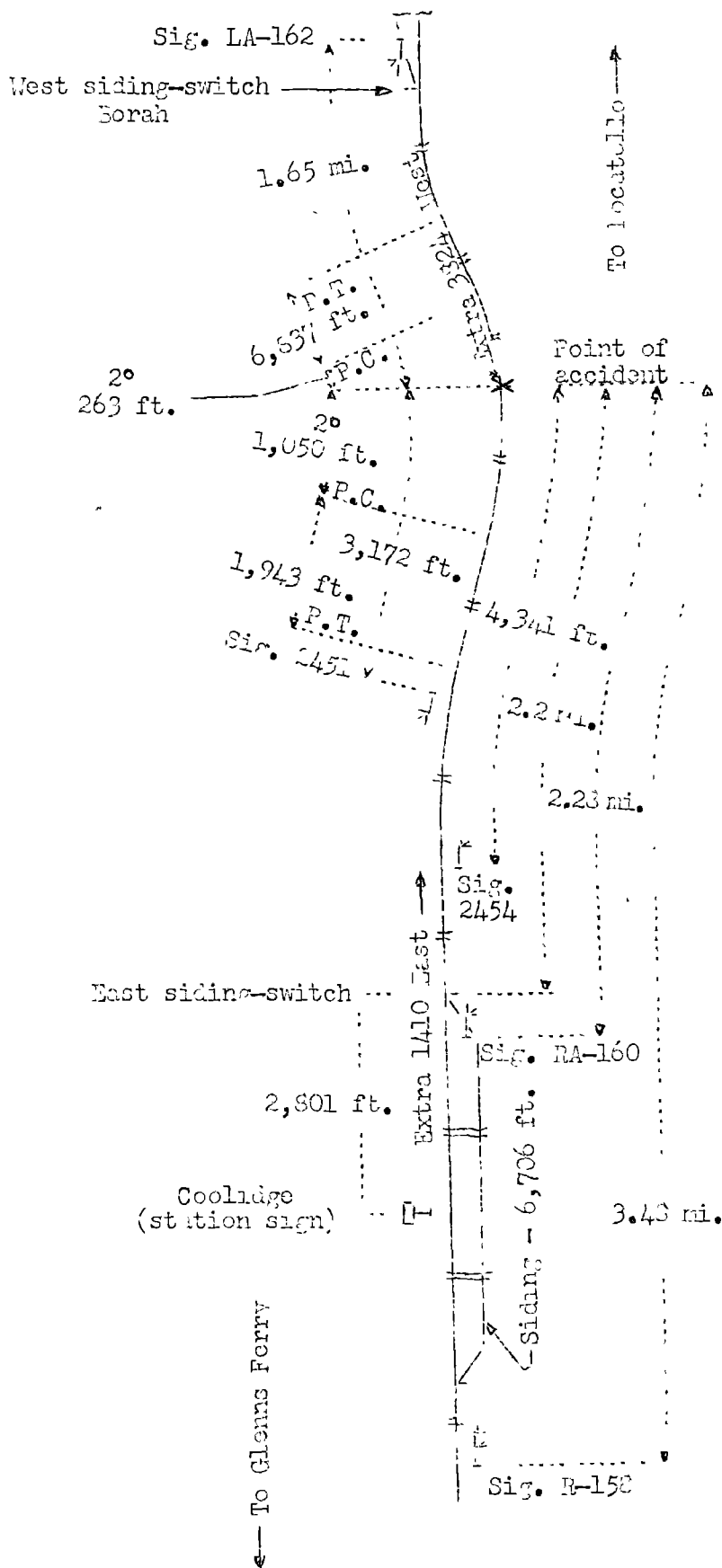
Accident near Coolidge, Idaho, on January 30, 1949, caused
by failure to operate the east-bound train in
accordance with signal indications.

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REPORT OF THE COMMISSION

PATTERSON, Commissioner:

On January 30, 1949, there was a head-end collision
between two freight trains on the Union Pacific Railroad
near Coolidge, Idaho, which resulted in the death of three
employees.

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



- | | |
|---|---------------------|
| o | Pocatello, Idaho |
| | 24.60 mi. |
| o | American Falls |
| | 3.80 mi. |
| o | Borah |
| | 2.07 mi. |
| X | Point of accident |
| | 2.73 mi. |
| o | Coolidge |
| | 3.00 mi. |
| o | Quigley |
| | 5.90 mi. |
| o | Wapi |
| | 16.40 mi. |
| o | Manidoka |
| | 49.10 mi. |
| o | Shoshone |
| | 45.30 mi. |
| o | King Hill |
| | 7.00 mi. |
| o | Glenns Ferry, Idaho |

Inv. No. 2231
 Union Pacific Railroad
 Coolidge, Idaho
 January 30, 1949

Location of Accident and Method of Operation

This accident occurred on that part of the Idaho Division extending between Glenns Ferry and Pocatello, Idaho, 159.9 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by signal indications. At Coolidge, 33.2 miles west of Pocatello, a siding 6,706 feet in length parallels the main track on the south. The east switch of this siding is located 2,801 feet east of the station sign. The accident occurred on the main track 2.2 miles east of the east siding-switch at Coolidge. From the west there is a tangent 1,943 feet in length and a 2° curve to the left 1,050 feet to the point of accident and 263 feet eastward. From the east there is a tangent 6,837 feet in length and then the curve on which the accident occurred. From the west the grade is level 3,300 feet and then 0.28 percent descending 1,175 feet to the point of accident. From the east the grade varies between 0.28 percent and 0.75 percent ascending 1.84 miles to the point of accident.

Semi-automatic signals R-158 and RA-160 and automatic signal 2454, governing east-bound movements, are located, respectively, 3.48 miles, 2.28 miles and 4,341 feet west of the point of accident. Semi-automatic signal LA-162 and automatic signal 2451, governing west-bound movements, are located, respectively, 1.65 miles east and 3,172 feet west of the point of accident. Signals RA-160, LA-162, 2454 and 2451 are of the one-arm color-light type, and they display three aspects. Signal R-158 is of the two-arm color-light type, and it displays four aspects. All signals are approach lighted. The involved aspects and corresponding indications and names are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
LA-162	Green	Proceed.	Clear
R-158	Yellow- over- red	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

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
2451	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
2454, 2451	Red	Stop and proceed at restricted speed.	Stop and proceed
RA-160	Red	Stop.	Stop

Signals at the ends of the sidings and power-operated siding-switches are controlled from a centralized-traffic-control machine located at Pocatello. The machine is equipped with visual indicators on the control panel to show the established direction of traffic between adjacent sidings, whether each power-operated switch is in normal or reverse position, whether each controlled signal is displaying an aspect to stop or an aspect to proceed, and to show track occupancy of each OS section and track occupancy between the OS sections of adjacent sidings. An OS section extends between the controlled leaving signals and the controlled entering signal at the end of a siding. The control machine also is equipped with an automatic train-graph to record the time that a controlled signal is displaying an aspect to proceed and to record the time that each OS section is occupied. Time and route locking are provided.

This carrier's 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.

ENGINE WHISTLE SIGNALS

14.

Note.--* * *

The signals prescribed are illustrated by "o" for short sounds; "___" for longer sounds. * * *

* * *

Sound	Indication
* * *	* * *
(1) ___ ___ o ___	Approaching public crossings at grade, * * *; approaching a train which is stopped on opposite track or on siding; * * *

* * *

* * *

17 (B). Headlights on road engines must be dimmed * * *

* * *

When passing engine or rear of train to afford identification of passing train;

* * *

409. When a train is stopped by a Stop and proceed signal, it may proceed at once at restricted speed * * *

874. * * *

On Diesel-electric train, fireman will remain in control room at all times when train is in motion.

The maximum authorized speed for freight trains in the vicinity of the point of accident was 45 miles per hour, but was restricted to 35 miles per hour by train order.

Description of Accident

Extra 3824 West, a west-bound freight train, consisted of engine 3824, 71 cars and a caboose. This train departed from Pocatello, 33.2 miles east of Coolidge, at 2:50 a. m., and stopped about 4 a. m. on the main track at a point 2.2 miles east of the east siding-switch at Coolidge. About 5 minutes later it was struck by Extra 1410 East.

Extra 1410 East, an east-bound freight train, consisted of Diesel-electric units 1435, 14220 and 1410, coupled in multiple-unit control, 80 cars and a caboose. This train departed from Wapi, 8.9 miles west of Coolidge, at 3:40 a. m.,

passed signal R-158, which indicated Approach, passed signal RA-160, which indicated Stop, trailed through the east siding-switch at Coolidge, which was lined for entry to the siding, passed signal 2454, which indicated Stop and proceed, and while moving at an estimated speed of 40 miles per hour it collided with Extra 3824 West.

Engine 3824 was driven backward approximately 200 feet by the force of the impact. The engine truck and the number one engine were derailed, and the engine was considerably damaged. The tender was derailed but remained coupled to the engine and leaned slightly to the north. The first four cars were derailed at various angles to the track. The first two cars were destroyed, the third car was badly damaged and the fourth car was slightly damaged. Separations occurred at each coupling between the Diesel-electric units of Extra 1410 East. The first unit stopped on its side, in reverse direction, north of the track and at an angle of about 15 degrees to it. The rear end was approximately 40 feet east of the front end of engine 3824. The second unit stopped on its side and 20 feet south of the track. Its front end was about 30 feet west of the front end of engine 3824. The third unit stopped parallel to the track, with its east end against the smoke-box of engine 3824. All of these units were badly damaged and all controlling appurtenances were destroyed. The first 20 cars of Extra 1410 East were derailed and stopped in various positions on or adjacent to the track. The first twelve cars and the seventeenth, eighteenth, and twentieth cars were destroyed, and the other derailed cars were considerably damaged.

The engineer, the fireman and the front brakeman of Extra 1410 East were killed.

The weather was clear and the temperature was about zero at the time of the accident, which occurred at 4:05 a. m.

The Diesel-electric units of Extra 1410 East were provided with 24-RL brake equipment. A safety-control feature had been provided but its use was discontinued about three months prior to the time of the accident. Unit 1435 was equipped with an oscillating signal light.

Discussion

In this territory the movements of trains are authorized by signal indications. Signals at the ends of sidings and power-operated siding-switches are controlled by the train dispatcher from a centralized-traffic-control machine at Pocatello. The controlling circuits are arranged so that a direction of traffic may be established between adjacent sidings when all opposing controlled and intermediate signals governing movements in the opposite direction are displaying

their most restrictive aspects and when there is no opposing train between the sidings. The dispatcher cannot cause a controlled signal to display an aspect to proceed until the direction of traffic has been established. After a train passes a controlled signal displaying an aspect to proceed, the established direction of traffic is maintained automatically while that train is occupying any track circuit between opposing controlled signals at adjacent sidings. Opposing signals governing movements into the same block cannot simultaneously display aspects to proceed.

Extra 3824 West entered the centralized-traffic-control territory at Pocatello at 2:54 a. m., and proceeded westward. At American Falls, 8.6 miles east of Coolidge, Extra 3824 West met an east-bound freight train, and it passed American Falls at 3:38 a. m. At Borah, where an east-bound passenger train was met, the speed of Extra 3824 West was materially reduced as it approached the west siding-switch, because the opposing train was not into clear on the siding. When the opposing train was into clear on the siding, the west siding-switch was restored to normal position by the dispatcher, and signal LA-162, governing west-bound main-track movements from Borah, indicated Clear. Extra 3824 West passed Borah at 3:44 a. m. When the engine was about 3,500 feet east of signal 2451 the enginemen observed that it indicated Approach. At that time visibility was not restricted by weather conditions. A short distance westward, this train stalled on the ascending grade. When the train stopped, the enginemen and the front brakeman were in the cab of the engine and the conductor and the flagman were in the caboose. The headlight was lighted brightly. Immediately after the train stopped preparations were made to take the front portion of the train to Coolidge, and then to return for the rear portion. About 3 minutes after the train stopped, the engineer observed the aspect of signal 2451 change from yellow to red. Then these employees observed the reflection of a headlight and heard the Diesel motors of an approaching east-bound train. About 1-1/2 minutes later they observed the brightly lighted headlight of the approaching train, but the oscillating signal light was not operating. They realized the train was moving at a speed too high to be stopped short of their train, and they alighted from their engine. They said that the speed of the approaching train was not reduced before the collision occurred and that they observed no sparks from the brake shoes. From this they thought the brakes were not applied before the collision occurred. After the collision they saw sparks from the brake shoes along the train. This indicated that the brakes had applied in emergency as a result of separations in the train. The engineer of Extra 3824 West estimated the speed of Extra 1410 East as 40 miles per hour at the time of the accident. The conductor and the flagman said that they saw the reflection of the headlight of Extra 1410 East, that they heard

the Diesel motors operating, and that the motors were not shut off before the collision occurred. Each member of the crew of Extra 3824 West said that he did not hear the pneumatic horn of engine 1410 sounded at any time.

Extra 1410 East departed from Glenns Ferry, its initial terminal, at 7:50 p. m., January 29. Stops were made at King Hill and at Shoshone, located, respectively, 6.9 miles and 52.3 miles east of Glenns Ferry. From Shoshone to Minidoka, 49.1 miles, the conductor was on the engine, and during the greater part of the time he was in the control compartment at the front of the first unit. The conductor said that the enginemen and the front brakemen had called the indications of signals and otherwise had performed their work in a normal and efficient manner. Between Glenns Ferry and Minidoka the flagman was in the caboose, and did not see the enginemen or the front brakemen. At Minidoka the air brakes were used in stopping the train. This train arrived at Minidoka at 1:45 a. m. At that station the first three cars were detached from the train and placed on an auxiliary track. After the three cars were placed on the auxiliary track, the engine was coupled to the train, and the engineer made a road-test of the train-brake system. The flagman inspected about 60 of the rear cars of the train both at Shoshone and at Minidoka.

When Extra 1410 East departed from Minidoka at 2:15 a. m., the conductor and the flagman were in the caboose. According to the train graph of the CTC machine this train arrived at Wapi, 8.9 miles west of Coolidge, at 2:50 a. m. At Wapi Extra 1410 East met Extra 3114 West and was passed by the passenger train which met Extra 3824 West at Borah. Extra 1410 East was inspected at Wapi, and the conductor observed that the brake-pipe pressure gauge in the caboose registered 70 pounds. This train departed from Wapi at 3:40 a. m. The conductor said that the speed was about 35 miles per hour as the train approached the west siding-switch at Coolidge. Because of swirling snow adjacent to the train, neither he nor the flagman could see the aspects of the wayside signals before the engine passed them. However, each signal displayed its most restrictive aspect when the caboose passed it. There was a gradual increase in the speed of the train after it reached the descending grade, which begins in the vicinity of the west siding-switch. They observed engine 567 on the siding at Coolidge but neither of them heard a whistle signal from either engine 1410 or engine 567. Neither of these employees observed anything unusual in the movement of his train while it was passing through Coolidge. They were not aware of anything being wrong until the brakes were applied in emergency as a result of the collision. Soon after the accident occurred, the conductor inspected the brakes of the undamaged cars of Extra 1410 East and found all of them applied.

Extra 567 West was routed to the siding at Coolidge at the east siding-switch. This train consisted of engine 567, headed westward, and the crew consisted of the engineer and the fireman. It proceeded immediately to the west siding-switch and arrived at that point about 3:05 a. m. Soon afterward, the dispatcher actuated a call light located in the vicinity of the west siding-switch for the engineer to communicate by telephone with the dispatcher. The dispatcher then informed the engineer that a west-bound train was to enter the siding behind Extra 567 West, and that Extra 567 West would proceed westward after the arrival of Extra 1410 East. The engineer then returned to his engine. The engineer and the fireman said that the engine of Extra 1410 East apparently was working full power as it approached on the ascending grade west of Coolidge. The engineer said that the speed of Extra 1410 East was about 25 miles per hour when the engine entered the descending grade in the vicinity of the west siding-switch. He was seated on the right side of the engine and the fireman was standing in the gangway directly behind him. The window on the engineer's side of the cab was open. The headlight of engine 567 was extinguished. The headlight of Extra 1410 East was lighted brightly, and it was not dimmed to aid the crew of Extra 567 West in identifying the passing train. The crew of Extra 567 West did not see any light or any employee in the cab of the first Diesel-electric unit of Extra 1410 East. They said that the Diesel motors of the engine of Extra 1410 East were working full power as long as they could hear them. Neither of these employees looked eastward to observe the aspect of the eastward signal at the east siding-switch at Coolidge. They were aware that the following west-bound train had not entered the siding behind them, and they assumed that it was being held at some station east of Coolidge. After Extra 1410 East was met, the route at the west siding-switch was changed for movement from the siding to the main track, and Extra 567 West departed from Coolidge.

The dispatcher who was operating the centralized-traffic-control machine at Pocatello when the accident occurred said that he had arranged to route Extra 3824 West to the siding at Coolidge behind Extra 567 West, where Extra 1410 East would meet both trains. When Extra 567 West arrived at Coolidge, he called the engineer and informed him of the anticipated movements. After the east-bound passenger train had cleared the main track at Borah, he changed the route for a westward main-track movement at Borah. The lights on the control panel indicated that the direction of traffic between Borah and Coolidge was established westward, and that westward signal LA-162 at Borah was displaying an aspect to proceed. Immediately afterward a light on the control panel indicated that Extra 3824 West was occupying the block between Borah and Coolidge. When Extra 1410 East was in the vicinity of Quigley,

3 miles west of Coolidge, the dispatcher changed the route at the east siding-switch at Coolidge for entry to the siding and actuated signal R-158 at the west siding-switch for movement of Extra 1410 East to eastward signal R-160 at the east siding-switch. The light on the control panel indicated that signal R-160 was displaying its most restrictive aspect. After Extra 1410 East cleared the OS section at the west siding-switch, he changed the route for Extra 567 West to proceed from the siding. Immediately afterward he observed that Extra 1410 East entered the OS section at the east siding-switch and immediately called the signal maintainer, who was in an adjoining room. The signal maintainer said the track between Borah and Coolidge was occupied, the direction of traffic was established westward, the east siding-switch at Coolidge was lined for entry to the siding, and eastward signals at the east siding-switch at Coolidge were displaying their most restrictive aspects. He said the signal apparatus between Borah and Coolidge had been functioning properly prior to the accident.

Tests of the signal apparatus between Borah and Coolidge were begun by signal forces of the carrier about 3 hours after the accident occurred and before any of the equipment involved in the accident was moved. These tests showed that the direction of traffic between Borah and Coolidge was being maintained westward by occupancy of the track circuit in which the accident occurred. These tests also indicated that the signal system was functioning properly at the time of the accident. The east siding-switch at Coolidge had been trailed through by an east-bound train while the switch was lined for entry to the siding, and Extra 1410 East was the last train to pass over the switch. The switch had functioned properly when reversed for entry of Extra 567 to the siding, when it was restored to normal position soon afterward, and when it again was reversed for Extra 3824 West to enter the siding. The graph on which the movements of Extra 1410 East were recorded showed that at 3:44 a. m. signal R-158 displayed an aspect to proceed and that it continued to display this aspect until the train occupied the OS section at the west siding-switch. During that time the graph showed that signal RA-160 was indicating Stop.

The controlling apparatus in the compartment of the first Diesel-electric unit of Extra 1410 East was destroyed in the accident, and the positions of the throttle and the brake valves prior to the accident could not be determined. However, it appears that power was being used up to the time of the collision, and that there was no application of the brakes or shutting off of power in compliance with the indications of the last three signals which this train passed. That part of the tape of the speed-recording device covering the movement of this train throughout the last few miles was

so badly damaged that it was not legible. It could not be determined why no action was taken to obey the signal aspects, as the three employees on the engine were killed in the accident. From the evidence it could not be determined where these employees were located at the time of the collision.

Cause

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

Dated at Washington, D. C., this twenty-third day of March, 1949.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

Secretary.

(SEAL)