

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3475
UNION PACIFIC RAILROAD COMPANY
IN RE ACCIDENT
AT WAMSUTTER, WYO., ON
JULY 6, 1952

SUMMARY

Date: July 6, 1958

Railroad: Union Pacific

Location: Wamsutter, Wyo.

Kind of accident: Derailment and collision

Trains involved: Freight : Freight

Train numbers: Extra 4011 West : Extra 3946
East

Engine numbers: 4011 : 3946

Consists: 116 cars, caboose : 61 cars,
caboose

Estimated speeds: 35 m. p. h. : 9 m. p. h.

Operation: Signal indications

Tracks: Double; tangent; level

Weather: Clear

Time: 8 p. m.

Casualties: 3 injured

Cause: Broken journal, and derailed cars
obstructing adjacent main track
in front of approaching train

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3475

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

UNION PACIFIC RAILROAD COMPANY

August 25, 1952

Accident at Wamsutter, Wyo., on July 6, 1952, caused by a broken journal, and by derailed cars obstructing an adjacent main track in front of an approaching train.

REPORT OF THE COMMISSION¹

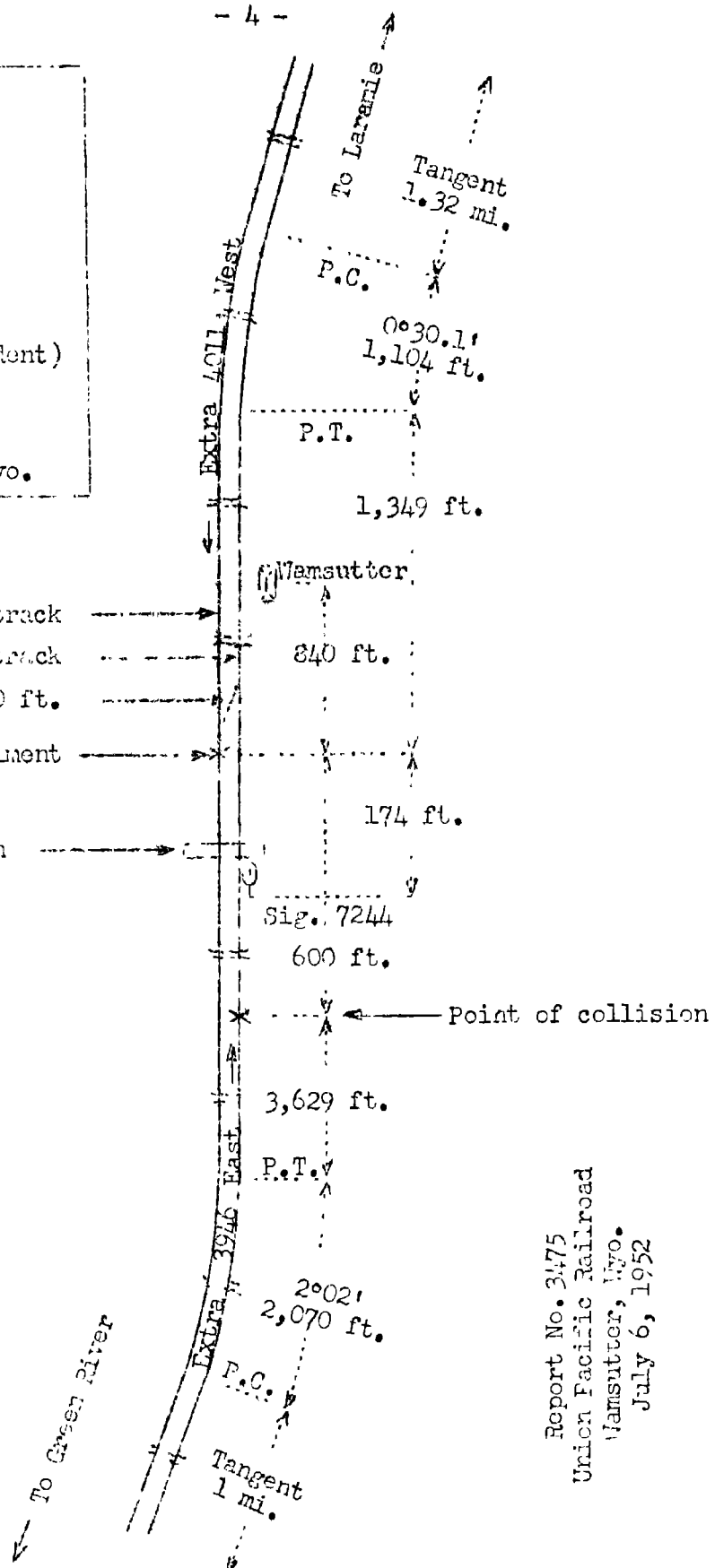
PATTERSON, Commissioner:

On July 6, 1952, there was a derailment of a freight train on the Union Pacific Railroad at Wamsutter, Wyo., and derailed cars were struck by another freight train on an adjacent track. This accident resulted in the injury of three employees.

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.
- | 110.3 mi.
- Sinclair
- | 6.5 mi.
- Rawlins
- | 33.2 mi.
- Latham
- | 8.2 mi.
- X Wamsutter
- | (Point of accident)
- | 32.5 mi.
- Bitter Creek
- | 60.3 mi.
- Green River, Wyo.

Westward main track
 Eastward main track
 Crossover - 240 ft.
 Point of derailment
 Coaling station



Report No. 3475
 Union Pacific Railroad
 Wamsutter, Wyo.
 July 6, 1952

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 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 Wamsutter, 158.2 miles west of Laramie, a crossover 240 feet in length connects the westward and eastward main tracks. The switches of this crossover are trailing-point for movements with the current of traffic. The west switch is 340 feet west of the station. The derailment occurred on the westward main track immediately west of the west crossover-switch, and the collision occurred 600 feet westward. From the east there are, in succession, a tangent 1.32 miles in length, a 0°30.1' curve to the left 1,104 feet, and a tangent 1,349 feet to the point of derailment and a considerable distance westward. From the west there are, in succession, a 2°02' curve to the left 2,070 feet in length and a tangent 3,629 feet to the point of collision. Throughout a distance of 2.38 miles immediately east of the point of derailment the grade for west-bound trains varies between level and 0.25 percent descending. At the point of accident the grade is level.

The track structure of the westward main track consists of 131-pound rail, 39 feet in length, laid on an average of 22 treated fir ties per rail length. It is fully tieplated, double-spiked on curves and single-spiked on tangents, and is provided with 4-hole 24-inch joint bars and an average of 8 rail anchors per rail length. It is ballasted with crushed stone to a depth of 8 inches below the bottoms of the ties. A coaling station of steel construction spanned the two main tracks at a point 103 feet west of the point of derailment.

Automatic signal 7244, governing east-bound movements on the eastward main track, is located 174 feet west of the point of derailment. It is of the color-light type and displays three aspects. The aspects applicable to this investigation and the corresponding indications and names are as follows:

<u>Aspect</u>	<u>Indication</u>	<u>Name of Indication</u>
Green	Proceed on main route.	Clear
Red	Stop.	Stop

This carrier's operating rules read in part as follows:

713. Employees must observe trains closely and if anything unusual or defective is noted such as hot journal, * * * or any other dangerous condition, they must make every effort to call attention of trainmen and enginemen to such conditions. If train is moving, hand or lantern signal to stop must be given. Train dispatcher must be notified if unable to stop train.

713(A). While train is moving, a trainman must be stationed on rear of train in position to give or receive signals, as follows:

When meeting trains on double track;
* * *

* * *

Trainmen and enginemen must observe other employees as they pass them, being alert for signals that may affect movement of train or engine.

713(B). Agent or operator must be on station platform when trains are passing, and must use a white light at night in exchanging signals with trainmen and enginemen.

810. Trainmen and enginemen must watch their train closely for hot boxes, brakes sticking, wheels sliding, defective brake equipment, load shifting or anything that may affect safe movement of train. If any unsafe condition is observed, train must be stopped and not moved until it is safe to do so.

Enginemen and head brakemen must frequently look back, especially while rounding curves and approaching sidings, to observe condition of train and signals from trainmen. While passing through cities, towns and yards, they must keep a careful lookout ahead.

* * *

The maximum authorized speed for freight trains is 50 miles per hour, but it is restricted to 25 miles per hour passing fueling stations.

Description of Accident

Extra 4011 West, a west-bound freight train, consisted of engine 4011, 113 cars and a caboose. This train departed from Rawlins, the last open office, 41.4 miles east of Wamsutter, at 6:55 p. m., and was moving on the westward main track at a speed of about 25 miles per hour when the first to the forty-eighth cars, inclusive, were derailed immediately west of the west crossover-switch at Wamsutter. A portion of the derailed equipment obstructed the eastward main track, and a few seconds later it was struck by Extra 3946 East.

Extra 3946 East, an east-bound freight train, consisted of engine 3946, 61 cars and a caboose. This train departed from Pitter Creek, the last open office, 32.5 miles west of Wamsutter, at 7:13 p. m., and while moving on the eastward main track at an estimated speed of 9 miles per hour it struck the portion of derailed equipment of Extra 4011 West which obstructed the eastward main track. The engine and tender and the first nine cars were derailed.

The engine of Extra 4011 West stopped about 2,000 feet west of the point of derailment. It was not derailed. The derailed cars stopped in various positions on or near the tracks and several of them struck the coaling station. The coaling station collapsed. Thirty-nine of the derailed cars were badly damaged or destroyed, and the other derailed cars were somewhat damaged.

The engine and tender of Extra 3946 East overturned and stopped on their right sides south of the eastward main track. The first and second cars stopped against the wreckage of the coaling station. The other derailed cars stopped approximately in line with the eastward main track. The engine and tender were considerably damaged. The first, second, and ninth cars were badly damaged. The other derailed cars were somewhat damaged.

The engineer, the fireman, and the front brakeman of Extra 3946 East were injured.

The weather was clear and it was dusk at the time of the accident, which occurred about 8 p. m.

Engine 4011 is of the 4-6-8-4 type. The tender is 10 feet 10 inches wide over the side ladders at the rear end and is 47 feet 6-1/2 inches long. The stoker engine is mounted on the tender.

U. P. 4535, the first car of Extra 4011 West, was a tank car, built in November, 1923. It was 36 feet 10-1/2 inches long, 10 feet wide over the running boards, and 14 feet 10-1/4 inches high. Its light weight and load limits were, respectively, 50,300 pounds and 118,700 pounds, or a maximum allowable weight of 169,000 pounds on the rails. The nominal capacity of the tank was 12,500 gallons. When the accident occurred the lading consisted of fuel oil. The trucks were of the 4-wheel type with 5-1/2-inch by 10-inch journals, wrought steel wheels, and cast-steel side frames.

Discussion

As Extra 4011 West was approaching the point where the accident occurred the engineer, the fireman, and the front brakeman were in their respective positions in the cab of the engine. The conductor and the flagman were in the caboose. The brakes of this train had been tested and had functioned properly when used en route. The headlight was lighted. The members of the crew estimated the speed as about 35 miles per hour. The front brakeman said that when the train was in the vicinity of the curve east of the station at Wamsutter he observed sparks flying from the wheels of the first car. Because a brake application had been made a short distance east of that point, he thought the sparks resulted from braking action. When the engine passed the station the front brakeman observed that the operator appeared concerned and had risen from his desk. He immediately looked back and again observed sparks flying in the vicinity of the first car. He called a warning to the engineer, and he and the fireman then saw one of the trucks become separated from the first car. The general derailment occurred immediately afterward. The engineer said that after the brakeman called a warning the brakes became applied in emergency before he could take any action. He at once released the brakes of the engine by use of the independent brake valve and instructed the fireman and the front brakeman to display stop signals on the eastward main track. Each of these employees immediately threw off a lighted red fuse. The front end of Extra 3946 East passed them several seconds later.

The operator at Wamsutter said that he remained in his office as Extra 4011 West approached the station in order to inform the dispatcher of the approach of Extra 3946 East. As the front end of Extra 4011 West passed he observed sparks flying from a truck of the first car and he attempted to signal the employees on the engine.

Extra 3946 East was approaching at a speed of about 35 miles per hour. The engineer, the fireman, and the front brakeman were maintaining a lookout ahead from their respective positions in the cab of the engine. The conductor and the flagman were in the caboose. The brakes of this train had been tested and had functioned properly when used en route. The headlight was lighted. Signal 7244 indicated Proceed, and the indication was called by the employees on the engine. The engineer said that when the front of the train reached a point about 2,400 feet west of signal 7244 the aspect of the signal changed from green to red. He immediately closed the throttle, placed the brake valve in emergency position, and opened the sander valve. Several seconds later he saw a fusee which was thrown off by the employees on the engine of Extra 4011 West. He thought that the speed of his train was reduced to 3 or 9 miles per hour when the collision occurred.

Examination of the track after the accident occurred disclosed that throughout a distance of about 1,600 feet east of the point of derailment the tops of the ties and other parts of the track structure of the westward main track were marked at irregular intervals. Examination of the equipment of Extra 4011 West disclosed that the right front journal of the rear truck of the first car, U. P. 4335, was broken, and that the truck side had dropped and had been in contact with the tops of the ties and other parts of the track structure on the north side of the north rail of the westward main track. The detached portion of the failed journal was found in the journal box. Immediately after the accident occurred the journal was found to be hot. No other defective condition which could have caused the derailment was found.

The failure of the journal involved consisted of an irregular break through a series of circumferential heat cracks 1 inch to 1-1/2 inches in depth which formed a continuous fracture around the journal from 6-1/4 inches to 6-1/2 inches inward from the collar. The diameter of the journal adjacent to the collar was 5-1/2 inches, and at the point of failure it was 5-5/8 inches. The end of the journal remaining attached to the wheel assembly was worn and tapered by contact with the journal box. This axle was manufactured in 1959. A chemical analysis of the failed portion of the journal disclosed that the carbon content of the steel was 0.42 percent and was in accordance with the specifications of the Association of American Railroads. There were indications that the journal previously had been overheated.

According to data furnished by the carrier, the journal boxes of U.P. 4335 were last repacked at Cheyenne, Wyo., on June 5, 1951. This car was loaded at Sinclair, Wyo., 47.9 miles east of the point of accident, on June 30, 1952, and on the same day it was moved westward to Rawlins, a distance of 3.5 miles. It was inspected by members of the mechanical force of the carrier before it was loaded at Sinclair and also after it arrived at Rawlins. No defective condition was found. On the day of the accident it was assembled in the train of Extra 4011 West for movement to Green River. This car was last inspected by a member of the mechanical force a few minutes before the departure of Extra 4011 West from Rawlins at 6:55 p. m., at which time no defective condition was found.

The members of the crew of Extra 4011 West said that they made frequent observations of the equipment of their train throughout the trip. The employees on the engine said that they were unaware of any defective condition in their train until a few seconds before the accident occurred. The conductor and the flagman said that two east-bound trains had been passed between Latham, 8.2 miles east of Wamsutter, and the point of accident and that members of the crews of these trains, who apparently had observed no defective condition of the equipment of Extra 4011 West, gave proceed signals as the rear ends of the trains passed.

Cause

It is found that this accident was caused by a broken journal, and by derailed cars obstructing an adjacent main track in front of an approaching train.

Dated at Washington, D. C., this twenty-first day of August, 1952.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.