

Inv-2291

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
SOUTHERN PACIFIC RAILROAD

JASPER, OREG.

SEPTEMBER 12, 1938

INVESTIGATION NO. 2291

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SUMMARY

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Railroad: Southern Pacific
Date: September 12, 1938
Location: Jasper, Oreg.
Kind of accident: Derailment
Train involved: Freight
Train number: Second 662
Engine number: 4137
Consist: 49 loads, 44 empties, and caboose
Speed: 35 m.p.h.
Operation: Timetable, train orders, and automatic block-signal system.
Track: Single; 4° left curve, descending grade 0.429 percent.
Weather: Clear
Time: About 2:50 p.m.
Casualties: 1 killed; 3 injured.
Cause: Broken car wheel.

Inv-2291

October 12, 1938.

To the Commission:

On September 12, 1938, there was a derailment of a freight train on the Southern Pacific Railroad at Jasper, Oreg., which resulted in the death of one trespasser, and the injury of three trespassers.

Location and method of operation

This accident occurred on the Portland Division, on that part of the Brooklyn Subdivision which extends between Crescent Lake and Eugene Yard, Oreg., a distance of 96.9 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable, train orders and an automatic block-signal system. This line extends nearly north and south but the timetable directions are east and west; the latter directions are used in this report. The accident occurred at a point 3,092 feet west of the station at Jasper. Approaching this point from the west there is a series of short curves and tangents followed by a 4° curve to the left 1,214 feet in length, the superelevation on which is 5 inches; the derailment occurred on this curve at a point 318 feet from its western end; at this point the track is on a 14-foot fill and the grade is 0.429 percent descending for east-bound trains.

The track is laid with 131-pound rail, 39 feet in length, with 24 ties to the rail length; it is fully tieplated, double-spiked on the outside of the high rail and single-spiked on the gage side; it is equipped with 8 anti-creepers per rail length and is ballasted to a depth of 10 inches. The track is well maintained.

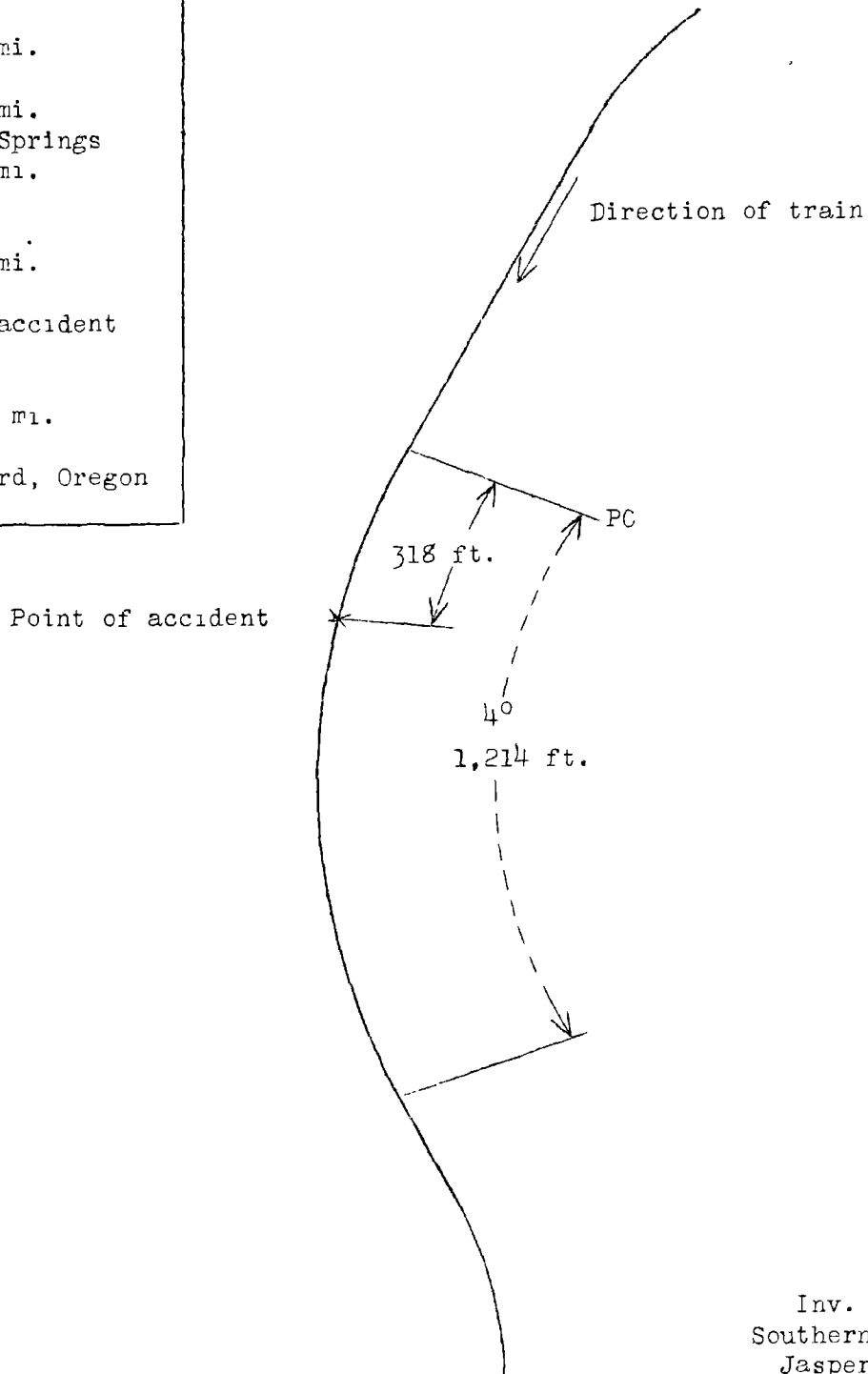
The maximum speed for freight trains in the vicinity of the point of accident is 35 miles per hour.

The weather was clear at the time of the accident, which occurred about 2:50 p.m.

Description

Second 662, an east-bound freight train, consisted of 93 cars and a caboose, hauled by engine 4137, and was in charge of Conductor Hamburg and Engineman Wimer. This train left Crescent Lake, 83 miles west of Jasper, at 10:25 a.m., according to the train sheet, 7 hours 25 minutes late, left Oakridge, the last open office and 31.4 miles west of Jasper, at 1:55 p.m., 7 hours 55 minutes late, and was derailed when approaching Jasper while

o	Crescent Lake, Oregon	
		8.1 mi.
o	Cascade Summit	
		9.3 mi.
o	Cruzatte	
		14.4 mi.
o	Wicopee	
		8.9 mi.
o	McCredie Springs	
		11.2 mi.
o	Oakridge	
		31.4 mi.
X	Point of accident	
o	Jasper	
		13.6 mi.
o	Eugene Yard, Oregon	



Inv. No. 2291
Southern Pacific R.R.
Jasper, Oregon
Sept. 12, 1938

traveling at a speed estimated to have been about 35 miles per hour.

The engine, tender and first 18 cars became detached from the remainder of the train and stopped with car S.P. 42774, the eighteenth car, 2,696 feet beyond the point of derailment, the rear truck of this car being derailed. The nineteenth to the fifty-third cars, inclusive, were derailed and strewn along the track and piled up within a distance of 617 feet. The forward truck of the fifty-fourth car was derailed but remained in line with the track.

Summary of evidence

Conductor Hamburg stated that before departing from Crescent Lake the brakes were tested, the train was inspected and no irregularities were observed. The retaining valves on the first 66 cars were then turned up. As the train was leaving that point he stood on the left side and observed the wheels of all cars and did not notice anything wrong with them; however, the swing brakeman made a list of cars having wheels with flat spots and car S.P. 42774 appeared thereon. The conductor said that he did not notice any pounding of the wheels of this car. Stops were made at Cruzatte, Wicopee, and McCredie Springs, located 66, 52 and 43 miles, respectively, west of Jasper, to permit the wheels to cool and to inspect the train. Before departing from Oakridge, 31.4 miles west of Jasper, the retaining valves were turned down, the train was again inspected and nothing was found to be wrong. From the back platform of the caboose he observed the progress of his train at various points between Oakridge and the point of accident and said that a speed of 35 miles per hour was not exceeded. His first intimation of the accident was when he felt a severe impact while seated at his desk. As soon as the caboose stopped he started forward on the right side of the train and saw marks on the rail at regular intervals which indicated to him that they had been caused by a broken wheel; some distance ahead he observed that the right rail had turned over and in the wreckage he saw a small fire apparently started by hot metal contacting a tie; however, there was no indication of the wheels having become overheated. It was his opinion that the fire was caused by the derailed trucks rubbing against the rails.

Flagman Moench, who was in the caboose when the accident occurred stated that as he went to the rear to flag he noticed marks on the rail which appeared to have been made by a broken wheel; these marks continued for a distance of $3\frac{1}{2}$ miles.

Swing Brakeman Williams, who was in the caboose at the time of the accident, corroborated the statement of the conductor in all essential details and added that at Crescent Lake he recorded car S.P. 42774 as one of those which sounded as though it had flat wheels. He inspected the left side of the train at Oakridge and found no defects. Shortly after the accident he found the lead wheel of the left side of the rear truck of car S.P. 42774 with the tread chipped off but the wheel was not hot.

Engineman Wimer stated that between Oakridge and the point of derailment he, the fireman and the head brakeman looked back along the train several times and nothing wrong was observed. The first intimation which he had of the accident was upon hearing an exhaust sound, and he then saw that the brake pipe pressure had been entirely depleted. Looking back and seeing that the train had parted he continued to work steam, keeping the independent brake valve in release position, in order to keep the front and the rear portions of the train separated. He did not make any particular examination of the derailed cars.

The statement of Fireman Thayer corroborated that of the engineman.

Head Brakeman Bates stated that at Oakridge he inspected about 40 cars on the head end of the train and found no defect.

Roadmaster Edwards stated that subsequent to the accident he had an examination made of the track for a distance of several miles west of the point of derailment; the first mark found was on the left rail near the station at Westfir, 29.2 miles west of Jasper; marks continued at regular intervals to the point of derailment, becoming more pronounced when approaching the point of derailment. A piece of a wheel tread was found $3\frac{1}{2}$ miles west of the point of derailment.

Assistant Division Engineer Putman stated that in company with other officials and the Commission's inspectors he made an inspection of the track west of the point of derailment and found a deep indentation on the left rail at a point 10,000 feet west of where the accident occurred; at that location a section foreman found a piece of wheel tread. Lesser marks were found westward to a point about 10 miles west of the point of derailment. The marks were more pronounced eastward toward the point of derailment and 1,700 feet west of the scene of the accident there were marks from 10 to $14\frac{1}{2}$ inches in length and several pieces of wheel-tread were found in this vicinity. The marks were more distinct on curves to the left and he concluded that the wedge shape of the defective wheel permitted it to drop inside the left rail when the right wheels were crowding the right rail.

Car Inspector Akers stated that car S.P. 42774 arrived at Klamath Falls, about 180 miles west of the point of accident, early on the day of the accident; it was given class "A" inspection and no exception was taken to its condition.

Assistant Superintendent Corbett stated that as a result of his investigation it was his opinion the derailment was caused by the progressive chipping of the tread of a left wheel on car S.P. 42774 to the extent of permitting the wheel to drop inside the left rail.

Engineer of Tests Wood conducted a test of the defective wheel and his report contained the following information:

"Nominal weight of wheel: 750 pounds;
Contour: ARA 1920 double plate;
Date cast: 2/27/24;
Number: S.P.X. 350566 Tape 3;
Iron: Grey and sound;
Depth of chill at tread: $\frac{1}{4}$ inch;
Condition of flange as to AAR gauge: Worn, but not to limit. Tread bright and shows no bluing or heat cracks;
Location of break: Approximately 24 inches rim broken out tapering from ends at break to within 1 inch of throat of flange at center of break.
Cause of break: Probably low chill. Portion of rim remaining on wheel did not show flat spots, but that portion that broke off may have been worn through chill and flattened. Piece was so badly battered that this is a surmise."

Observations of Commission's Inspectors

Car S.P. 42774 was a steel flat car equipped with Bettendorf type trucks with self-centering roller side bearings spaced 60 inches apart. The journals were $5\frac{1}{2}$ by 10 inches and the wheels were of cast iron with a capacity of 100,000 pounds. The light weight of the car was 33,600 pounds and the capacity was 100,000 pounds. It was loaded with rail, the gross weight being 167,080 pounds. Under AAR rules the maximum gross weight for this car is 169,000 pounds. The lading originated at El Paso, Tex., and its destination was Turner, Oreg. The defective wheel had been manufactured by the National Car Wheel Co., Cleveland, Ohio.

Examination of the wheel in question revealed that the tread was broken in the manner described by the engineer of tests. The flange was not worn thin or vertical at any point. The wheel was concentric and it was mounted to proper gage on the axle.

Inspection of the track west of the point of accident disclosed marks on the rail as described by the assistant division engineer.

Discussion

According to the evidence, car S.P. 42774, the eighteenth car in the train, was loaded with rail, the gross weight being approximately 2,000 pounds less than the maximum permitted under AAR rules. This car was given class "A" inspection at a point about 180 miles west of the point of derailment and no defect was found. Before departure it was inspected at Crescent Lake by members of the train crew and the swing brakeman made a record to the effect that its wheels had flat spots. Stops were made at points 66, 52, 43 and 31.4 miles west of Jasper and no other defect was observed. On approaching Jasper the car in question became derailed.

Subsequent to the accident the lead left wheel of the rear truck of this car was found broken. The fracture consisted of approximately 24 inches of the rim being broken off, the broken portion extending from the outer edge of the tread to within 1 inch of the throat of the flange at the center of the brock.

Marks evidently made by a broken wheel were found on the left rail for a distance of several miles west of the point of accident; these marks were more distinct on curves to the left when the right wheels were crowding the right rail and also became more distinct as the point of derailment was approached. One piece of wheel tread was found about $3\frac{1}{2}$ miles west of the point of accident while other pieces were found nearer the point of accident, indicating that the fracture was progressive.

Tests of the defective wheel after the accident developed/was that the iron grey in color and was sound; the tread was bright and there was no indication of heat cracks. The portion of the tread remaining on the wheel disclosed no flat spots. Since the depth of the chill at the tread was only one-fourth inch it is probable that the portion which broke off was worn through the chill due to flat spots, the chipping process following progressively until the wheel dropped inside the rail.

Conclusion

This accident was caused by a broken wheel.

Respectfully submitted,

W. J. PATTERSON

Director.