

INTERSTATE COMMERCE COMMISSION

WASHINGTON

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INVESTIGATION NO. 3246

UNION PACIFIC RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT GRAHAM, OREG., ON

APRIL 11, 1949

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SUMMARY

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Date: April 11, 1949

Railroad: Union Pacific

Location: Graham, Oreg.

Kind of accident: Collision

Equipment involved: Yard engine : Cut of cars

Engine number: 1023 :

Consist: : 7 cars, caboose

Estimated speeds: 15 m. p. h. : 2 m. p. h.

Operation: Timetable, train orders, and automatic block-signal and train-control systems; yard limits

Track: Single; 3° curve; 0.895 percent descending grade westward

Weather: Clear

Time: About 1:35 p. m.

Casualties: 1 killed; 1 injured

Cause: Failure properly to control speed of yard engine moving within yard limits

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 3246

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

UNION PACIFIC RAILROAD COMPANY

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June 10, 1949

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Accident at Graham, Oreg., on April 11, 1949, caused by  
failure properly to control the speed of a yard  
engine moving within yard limits.

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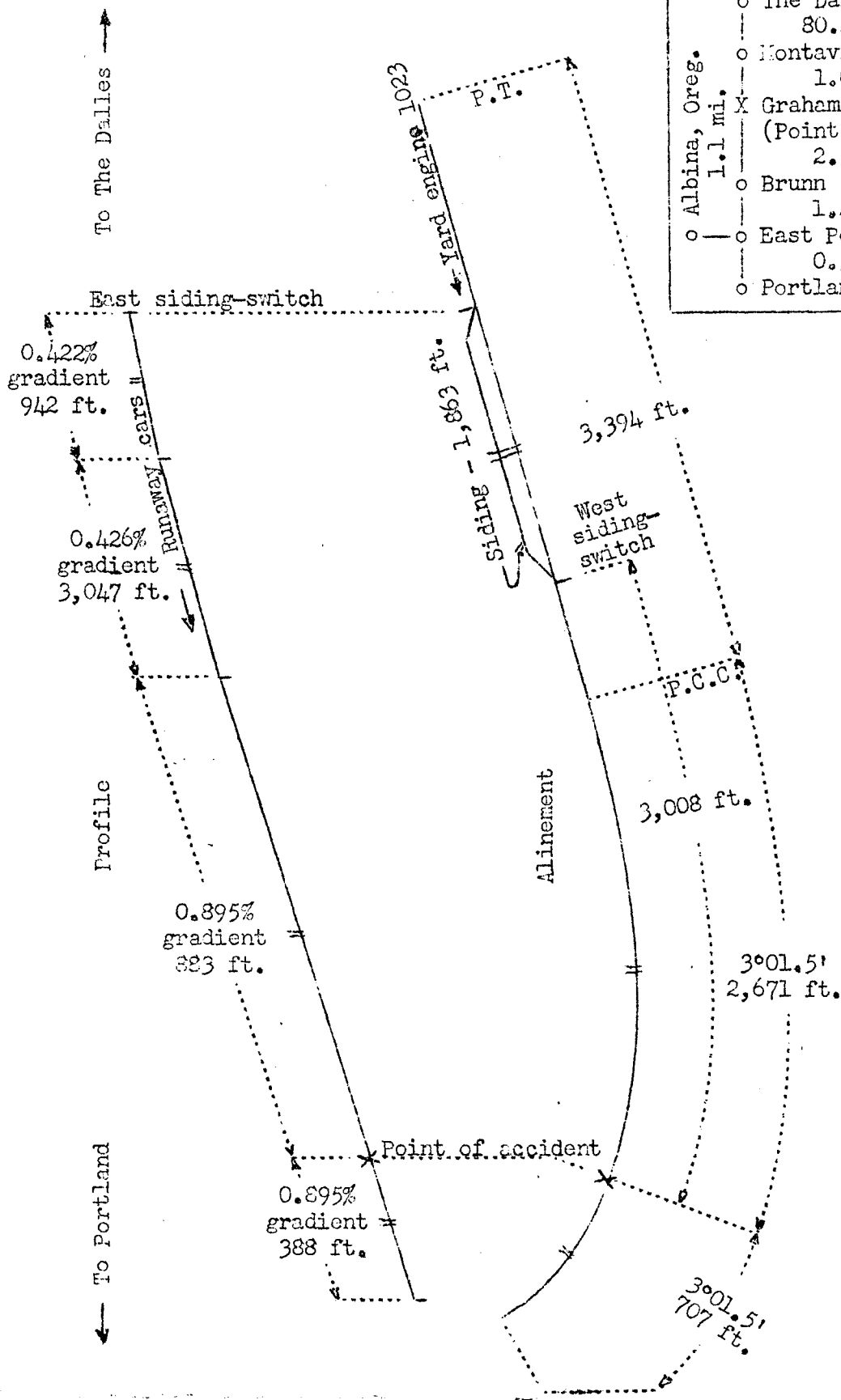
REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

On April 11, 1949, there was a collision between a yard engine and a cut of runaway cars on the Union Pacific Railroad at Graham, Oreg., which resulted in the death of one employee and the injury of one employee. This accident was investigated in conjunction with a representative of the Public Utilities Commissioner of Oregon.

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<sup>1</sup>  
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.



○	The Dalles, Oreg.	80.4 mi.
○	Montavilla	1.0 mi.
○	Graham	(Point of accident)
○	Albina, Oreg.	1.1 mi.
○	Brunn	1.4 mi.
○	East Portland	0.5 mi.
○	Portland, Oreg.	

Inv. No. 3246  
 Union Pacific Railroad  
 Graham, Oreg.  
 April 11, 1949

Location of Accident and Method of Operation

This accident occurred on that part of the Oregon Division extending between Portland and The Dalles, Oreg., 65.8 miles, a single-track line, over which trains are operated by timetable, train orders, and automatic block-signal and train-control systems. At Graham, 4.4 miles east of Portland, a siding 1,863 feet in length parallels the main track on the north. The Portland-Albina switching district extends from Albina, 5 miles west of Graham, to a point 2.52 miles east of Graham. The accident occurred within yard limits on the main track at a point 3,008 feet west of the west siding-switch at Graham. From the east there is a tangent 3,394 feet in length, then a compound curve to the right, having a maximum curvature of  $3^{\circ}01.5'$  2,671 feet to the point of accident and 707 feet westward. The curvature is  $3^{\circ}01.5'$  at the point of accident. Westward from the east switch of the siding at Graham the grade varies between 0.422 percent and 0.895 percent descending 4,872 feet to the point of accident, where it is 0.895 percent.

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

DEFINITIONS.

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

93. Within yard limits the main track may be used, protecting against first-class trains.

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All trains and engines must move within yard limits prepared to stop unless the track is seen or known to be clear. \* \* \*

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TRAIN AND YARD SERVICE.

806. When cars are left on any track, sufficient hand brakes must be set to prevent cars moving; if the track is on a grade and hand brakes are not sufficient, wheels must also be blocked or chained and, when practicable, cars must be coupled together.

When necessary to hold or stop cars by the use of hand brakes, it must be known that such brakes are in good order before cutting off cars.

807. When doing work at stations where the grade is such that cars will start if brakes are released, a trainman must be left in charge of the train while work is being done unless slack is bunched and train secured by hand brakes.

Before engines are detached from a train on a grade, either on main track or siding, a sufficient number of hand brakes must be applied on the low end of train to hold train; the air brakes must be released and the slack closed in against cars on which the hand brakes are applied.

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#### Description of Accident

Diesel-electric yard engine 1023, headed eastward but moving westward, pushing four cars and a caboose, arrived at Graham about 12:50 p. m. and entered the siding at the east siding-switch. The westerly car was coupled to a cut of three cars on the siding. About 30 minutes later and after the air-brake system of each unit had been charged, these cars were placed on the main track and the engine was uncoupled and it returned to the siding. About 10 minutes later a member of the crew observed that the cars which had been placed on the main track were moving westward out of control on the descending grade. The engine was immediately moved from the siding to the main track through the east switch of the siding, then it proceeded westward in pursuit of the runaway cars. Soon afterward engine 1023, moving at a speed of about 15 miles per hour, collided with the runaway cars, which were moving at a speed of about 2 miles per hour, at a point 4,872 feet west of the east siding-switch at Graham.

The engine stopped 120 feet west of the point of accident. The east end of the caboose superstructure was demolished. The west end of the caboose and the car ahead of it were separated a distance of 81 feet as a result of the impact. The rear end of the engine was considerably damaged. The caboose was badly damaged and the east end of the car ahead of the caboose was slightly damaged. None of the equipment was derailed.

The yard conductor was killed, and a yard brakeman was injured.

The weather was clear at the time of the accident, which occurred about 1:35 p. m.

Engine 1023 was a 1,000 horse-power Diesel-electric switching engine. It weighed 248,400 pounds in working

order, and it was provided with No. 14 EL brake equipment. The valves controlling the driver-brake cylinder, brake-pipe, and main-reservoir pressures were adjusted, respectively, to 35 pounds, 70 pounds and 130 pounds. When the automatic brake valve was placed in emergency position the driver-brake cylinder pressure increased to a maximum of 53 pounds. This engine was not equipped with a speed recorder or an automatic train-control device.

The caboose was of wooden superstructure and steel-underframe construction, built in 1907. It was given general repairs and converted into a standard box-car caboose in 1943. It was provided at each end with top-operated couplers with coupler-release mechanisms of the push-down type. The coupler at the B-end was a type-D having a 9-inch knuckle face. The coupler at the A-end was a type-E having a 9-inch face type-D knuckle.

#### Discussion

The rules of this carrier governing operation within yard limits provide that the main tracks may be used, but protection must be furnished against first-class trains. All trains and engines must move within yard limits prepared to stop unless the track is seen or known to be clear. When cars are left on any track, sufficient hand brakes must be set to prevent movement of cars. If the cars are on a grade and hand brakes are not sufficient to hold them, wheels must be blocked or chained. When work is being done at stations where the grade is such that cars will start if the brakes are released, a trainman must be left in charge of the train unless the slack is bunched and the train is secured by hand brakes.

Yard engine 1023, pulling 31 cars and a caboose, with engine 1014 coupled behind the caboose as a helper, departed from Albina about 9:10 a. m. The air brakes had been tested and they had functioned properly when used en route. The helper engine was detached at Bruun, 2.5 miles west of Graham. Engine 1023 then proceeded eastward and performed switching service between East Portland and Montavilla, located, respectively, 3.9 miles west and 1 mile east of Graham. Engine 1023, pushing 4 cars and a caboose, departed westward from Montavilla about 12:45 p. m. At Graham 3 cars on the siding were added to this movement, which then consisted, from the west to east, of 7 cars, a caboose and engine 1023, headed eastward. About 35 minutes later, during which time the air brake system was charged, these cars were moved to the main track through the east siding-switch, and then were moved westward on the main track west of the clearance point of the siding. This movement was stopped by use of the independent brake. The engine then was uncoupled and it

returned to the siding for the purpose of running around these cars. Hand-brakes were not applied on any of the cars. Immediately before this movement was stopped on the main track, a brush fire was observed north of the east siding-switch. The attention of the members of the crew was concentrated on this fire, and some of them attempted to extinguish it. A few minutes later the yard brakeman who attended the switch observed that the cars which had been left on the main track were moving westward out of control on the descending grade. At that time the cars were in the vicinity of the west siding-switch. He immediately called a warning to the other members of the crew and the engine was moved to the main track through the east siding-switch, then it proceeded westward in pursuit of the runaway cars. At this time the cars were moving out of sight on a curve to the right about 3,000 feet distant. The enginemen and a yard brakeman were in the cab of the engine and were maintaining a lookout westward. The yard conductor was on the west platform of the engine, and the other yard brakeman was on the west footboard of the engine. One brakeman was left at the scene of the fire. As engine 1023 approached the curve on which the accident occurred the speed was about 35 miles per hour. The engineer controlled the speed of the engine on the descending grade by applications made with the independent brake valve, and the speed had been reduced to about 25 miles per hour when the engine entered the curve. After the engine entered the curve the runaway cars again were observed by the crew about 400 feet distant. At that time the speed of the cars was estimated to be between 7 and 15 miles per hour. When the engine was about 100 feet from the cars the engineer observed that the speed of the cars was decreasing rapidly, and he immediately placed the automatic brake valve in emergency position, but the distance was insufficient in which to stop short of the runaway cars. The engineer said he thought the speed of the engine was about 8 miles per hour and that the cars were moving about 2 miles per hour when the collision occurred. The fireman said that the engine was moving about 25 miles per hour when he first observed the runaway cars about 400 feet distant. He thought the speed of the engine was being controlled properly, and when the engine was about 100 feet from the cars he observed that the speed of the runaway cars was being reduced at a much more rapid rate than that of the engine, then the engineer placed the brake valve in emergency position and the collision occurred immediately thereafter. The yard brakeman who was in the cab of the engine said the engineer applied the brake in emergency about 100 feet before the collision occurred, and thought the runaway cars were still moving at the time of the collision. The yard conductor was killed. The yard brakeman who was on the footboard of the engine was so seriously injured that he could not be questioned during the investigation.



After the accident tests were made of the brakes of all the cars, except the caboose, the air-brake system of which was damaged. It was found that the air brakes and the hand brakes on each car were in proper operating condition. Apparently the air-brakes on the runaway cars became applied because of brake-pipe leakage, and they practically were stopped when the collision occurred.

The investigation disclosed that a yard brakeman had been assigned to this particular movement for the purpose of securing the cars properly while they were standing on a descending grade and preventing unauthorized persons from releasing the hand brakes, or tampering with the train in such a manner that the cars might move out of control on a descending grade. However, the cars were not secured when they were placed on the main track. The collision occurred within yard limits, and if the speed of engine 1023 had been controlled properly in the pursuit of these cars, this accident would not have occurred.

Cause

It is found that this accident was caused by failure properly to control the speed of a yard engine moving within yard limits.

Dated at Washington, D. C., this tenth day of June, 1949.

By the Commission, Commissioner Patterson.

W. P. BARTEL,

Secretary.

(SEAL)