

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN THE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON
THE NORTHWESTERN PACIFIC RAILROAD AT SAUSALITO,
CALIF., AUGUST 8, 1924.

September 19, 1924.

To the Commission:

On August 8, 1924, there was a head-end collision between a passenger train and an express train on the Northwestern Pacific Railroad at Sausalito, Calif., resulting in the injury of four passengers, one express messenger, and four employees. This accident was investigated in conjunction with the Railroad Commission of California.

Location and method of operation

This accident occurred on that part of the Southern Division extending between San Francisco and San Rafael, Calif., a distance of 19 miles; in the vicinity of the point of accident this is a double-track electric line over which trains are operated by time-table, train orders, and an automatic block-signal system. The accident occurred on the westbound main track, just outside of the interlocking limits at Sausalito, at a point about 1,270 feet east of electric interlocking tower 1. Approaching the point of accident from the west, beginning at the tower, there is a short curve to the left, then a short tangent extending to about Johnson street, which crosses the tracks almost at right angles at a point 940 feet east of the tower and marks the eastern end of the interlocking limits, followed by a short curve to the right, the accident occurring about at the end of this curve, 330 feet east of the interlocking limits. Approaching from the east the track is tangent for a considerable distance, extending practically to the point of accident.

Within the interlocking limits there are numerous tracks, extending to the Sausalito Terminal, situated on San Francisco Bay, where trains await the arrival of ferry boats from San Francisco. These tracks merge into three tracks at the point of accident, the third of these tracks at this point is known as the drill track and parallels the main tracks on the north,

Dwarf signals govern train movements through the interlocking limits; they are controlled from the tower. Dwarf signal 38, located between the main tracks 163 feet east of the tower, is of the two-arm, two-position, lower-quadrant, semaphore type; the bottom arm governs movements against the current of traffic on the westbound main track, and the top arm governs movements through the crossover switch leading to the eastbound main track, located a short distance east of dwarf signal 38. The indications displayed are red and green, for stop and proceed, respectively. Eastbound signal 68 is a permissive signal, giving two color light indications, green and yellow, for proceed and caution, respectively; this signal is situated at the east end of the interlocking limits, 777 feet east of dwarf signal 38, just south of the eastbound main track, and governs the approach to eastbound automatic signal 70, located approximately 2,000 feet beyond. Westbound signal 71, a similar permissive signal, located north of the westbound main track and opposite eastbound signal 70, governs the approach to dwarf signal 47, the first signal within interlocking limits controlling westbound movements with the current of traffic. These signals permit of the closing up of eastbound trains between signals 68 and 70, and of westbound trains between signal 71 and dwarf signal 47, in order to maintain prompt connections with the schedules of the ferry boats. The weather was clear at the time of the accident, which occurred at 9.21 a. m.

Description

Eastbound passenger train No. 514 consisted of motor 360, trailer 235, and motors 304, 305 and 329, in the order named, and was in charge of Conductor McNulty and Motorman Whaley. After making connections with the ferry the train departed from Sausalito Terminal at about 9.20 a. m., two minutes late, passed dwarf signal 38, which was displaying a stop indication, continued by the crossover switch leading to the eastbound main track and proceeded against the current of traffic on the westbound main track. Motorman Whaley saw train No. 919 approaching and had brought his own train to a stop when it was struck by train No. 919.

Westbound express train No. 919 consisted of express motor 370 and was in charge of Conductor Tovani and Motorman Steinbrun. This train passed Almonte, 3.4 miles east of Sausalito, at 9.16 a. m., passed westbound permissive signal 71, located approximately 1,715 feet east of the point of accident, and while traveling at a speed estimated to have been between 15 and 20 miles an hour collided with train No. 514.

The forward vestibules of motor 360 and express motor 370 were completely demolished, express motor 370 being telescoped a short distance. Trailer 235, of train No. 514, had its forward platform demolished and was otherwise badly damaged, motor 304 was slightly damaged, while the remaining cars in this train sustained no damage of any consequence.

Summary of evidence

Motorman Whaley, of train No. 514, stated that a clear indication was displayed at dwarf signal 38, and he was quite sure it was the bottom arm, governing movements against the current of traffic on the westbound main track. He did not, however, realize his train was running on the wrong track until it nearly reached Johnson street, at which time the speed was about 40 miles an hour, and about the same time he saw train No. 919 approaching. He immediately made an emergency application of the air brakes, placed the motor in reverse, and turned on the power, and on realizing the collision was inevitable he started back through the car, the accident occurring just after his train was brought to a stop. The air brakes had been tested and worked properly. Motorman Whaley further stated that the speed of his train was between 20 and 25 miles an hour passing tower 1. In the event it becomes necessary to establish a single-track zone in double-track territory, train orders on Form 31 are required. No such orders had been issued and Motorman Whaley admitted he therefore had no right to pass dwarf signal 38, and was unable to explain why he did so. Motorman Whaley did not remember having observed eastbound permissive signal 68, which would have governed the further movement of his train had it been on the proper track, although he said there was nothing about the operation of the motor to distract his attention.

Conductor McNulty, of train No. 514, stated that just before his train reached the tower he went inside and began to collect tickets, and the first knowledge he had of anything wrong was when the air brakes were applied in emergency, just after his train came to a stop the accident occurred. The speed was about 25 or 30 miles an hour after passing the tower. As his train was eastbound and there was no order to the effect that the westbound main track could be used against the current of traffic, his train had no right beyond dwarf signal 38.

Towerman Ahern, on duty at tower 1, stated that both blades of dwarf signal 38 were displaying stop indications and when he realized that train No. 514 was not going to stop he waved violent stop signals by hand in an endeavor to avert the accident, but to no avail.

Assistant General Foreman Hatch, Signal Maintainer Driscoll, and Towerman Linebaugh were standing just a short distance from dwarf signal 38 when train No. 514 passed; immediately after the accident Foreman Hatch looked at dwarf signal 38 and at that time both blades were in the stop position, while Maintainer Driscoll and Towerman Linebaugh saw both blades in the stop position before the train reached the signal or as it passed the signal.

A thorough examination of the interlocking plant failed to disclose any condition whereby dwarf signal 38 would display a false clear indication, and no defects were found to exist with the signal or switch mechanisms, in fact, had the bottom arm been clear, as claimed by Motorman Whaley, it could have been displaying the proper indication so far as the actual position of the switches was concerned. As a matter of fact, however, Towerman Ahern had not been able to complete the locking of switch 27, used in connection with a previous movement, and until that had been done he could not possibly have cleared signal 38. A check of the interlocking plant verified the fact that lever 27 had to be fully normal before lever 38 could be reversed. This examination also showed the presence of a negative ground, but tests showed the signal could not be cleared by the application of power from an outside source, there were no positive grounds.

Owing to the nature of the injuries sustained by the motorman and conductor of train No. 919 no statement was obtained from them.

Conclusions

This accident was caused by the failure of Motorman Whaley, of train No. 514, properly to observe and obey interlocking signal indications.

While Motorman Whaley said he was quite positive that the bottom arm of dwarf signal 38 was displaying a clear indication, the testimony of several other witnesses was to the effect that both arms of the signal were displaying stop indications at the time of and immediately after the passage of train No. 514, and it also appears that at that particular time, on account of the fact that the locking of switch 27 had not been completed, it was impossible for the towerman to have cleared either arm of signal 38. Attention is also called

to the fact that one of the special rules contained in the time-table, covering signals at interlocking plants, reads as follows: "Movements governed by short-arm or dwarf signals must be made under control, (speed not to exceed 6 miles per hour) and position of switches observed, as such signals govern movements of various interlocking sections." The rules also provide that "trains running on double track must use right hand track and move with the current of traffic unless otherwise authorized by train order and under protection." Under these rules therefore, Motorman Whaley had no right to pass signal 38 even had a clear indication been displayed by the bottom arm, and to this extent he acknowledged responsibility, having no train-order authority for a movement against the current of traffic. It is also possible that the accident would not have occurred had Motorman Whaley properly observed the speed restriction of 6 miles per hour.

During the course of the investigation it was disclosed that the towermen were picking the electric locks, due to a new frog being installed causing a track circuit to be out of service. In the interest of safety the proper officials should take immediate steps to have all cabinets properly sealed and locked so as to prevent this practice in future.

The employees involved were experienced men. At the time of the accident none of them had been on duty in violation of any of the provisions of the hours of service laws.

Respectfully submitted,

W. P. BORLAND,

Director.