

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE
INVESTIGATION OF AN ACCIDENT WHICH OCCURRED
ON THE BOSTON AND MAINE RAILROAD AT LOWELL,
MASS., ON NOVEMBER 19, 1928.

February 16, 1929.

To the Commission.

On November 19, 1928, there was a side collision between two passenger trains on the Boston and Maine Railroad at Lowell, Mass., resulting in the death of 1 employee and the injury of 25 passengers, 4 employees off duty and 3 employees on duty. This investigation was made in conjunction with the Department of Public Utilities for the State of Massachusetts.

Location and method of operation

This accident occurred on that part of the Southern Division which extends between Boston, Mass., and Concord, N. H., a distance of 73.83 miles, and is a double-track line over which trains are operated by time-table, train orders and an automatic block-signal system. The accident occurred on the northbound track at a point 2,570 feet south of the station at Lowell and 30 feet north of interlocking home signal 81, at the fouling point of a crossover connecting the two main tracks. Approaching this point from the north there is tangent track for a distance of about 1,200 feet, followed by a $1^{\circ} 55'$ curve to the left, 750 feet in length, on which the accident occurred. Approaching from the south there is a $1^{\circ} 51'$ curve to the right about 900 feet in length and then tangent track for a distance of 800 feet, followed by the curve involved in the accident. The grade is alternately ascending and descending, but at the point of accident it is practically level.

Bulletin 3332, issued on June 30, 1928, reads in part as follows:

"Effective July 4, 1928, all main line movements between Bleachery tower, Lowell and North Chelmsford, Mass., tower will be under the direction of train director located in Bleachery tower.

"Between these points trains from both directions will accept the signal route as authority to use either track without train orders."

Bleachery tower is nearly 1 mile south of the station at Lowell and North Chelmsford is 3 miles north of Lowell.

A third tower, known as Hale Street tower, is 1,750 feet south of Lowell station, between the station and Bleachery tower.

On November 13, 1923, bulletin W-80 was issued, as follows:

"Slow flags reading 10 miles per hour are displayed at Bridge No. 54 near Hale Street."

Rule 30 of the time-table rules provides:

"In passing through Lowell, Nashua, Manchester (main line and Portsmouth Branch), Concord, N.H., Arlington, Lexington, and Woburn, engine bell must be rung continuously, and trains must be under full control, prepared to make a quick stop."

The weather was cloudy and hazy at the time of the accident, which occurred at 1.04 p. m.

Description

Southbound passenger train No. 10 consisted of one combination baggage and mail car, one baggage car, one smoker, one coach, one combination baggage and smoker, one baggage car and one coach, in the order named, hauled by engine 1483, and was in charge of Conductor Savory and Engineman Watson. All the cars were of steel-underframe construction except the first, which was an all-steel car, and the last, which was of wood with steel center sills. This train departed from Lowell at 1.01 p.m., on time, and because of some construction work it was necessary to divert train No. 10 to the northbound track and to operate it against the current of traffic for a distance of 1,379 feet to a second crossover leading back to the southbound track. It was while train No. 10 was proceeding through this second crossover that the second car was struck by northbound train No. 9.

Northbound passenger train No. 9 consisted of one mail car, one baggage car, three coaches and one sleeping car, hauled by engine 3639, and was in charge of Conductor Heath and Engineman Eames. All the cars were of steel construction except the second and third cars, which were of steel-underframe construction. This train departed from Boston, Mass., at 12.30 p.m., on time, passed Bleachery station, 0.89 mile from Lowell, at 1.03 p.m., one minute late, passed signal 81 in the stop position and collided with train No. 10 at a point 30 feet north of this signal while traveling at an undetermined rate of speed.

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The second, third and fourth cars in train No. 10 were turned over on their right sides, the third being so badly damaged as to be considered destroyed. Train No. 9 ran a further distance of 125 feet before coming to a stop, with the engine considerably damaged but upright on the rails. The employee killed was a brakeman on train No. 10.

Summary of evidence

Engineman Watson, of train No. 10, stated that while traveling southward on the northbound track he did not observe the position of northbound signal 81, nor did he see train No. 9 until his own engine was back on the southbound track and he had started to work steam, he then saw train No. 9 passing him and at once shut off and applied the air brakes, the collision occurring immediately afterwards. About one minute after the accident Engineman Watson observed signal 81, at which time it was in the stop position. Fireman Coates, also of train No. 10, stated that he was on his seat box while moving southward on the northbound track and that he observed signal 81 in the stop position. He also saw train No. 9 approaching but did not realize there was any danger until the trains passed each other.

Engineman Eames, of train No. 9, stated that while this was his first trip on train No. 9 he had operated other trains through Lowell territory, and it appeared that he was thoroughly familiar with the track and signal conditions in the vicinity of the point of accident. He had examined the bulletin boards that morning before leaving Boston but did not see bulletin W-80, restricting speed to 10 miles per hour at bridge No. 54 near Hale Street; he asked the fireman, however, before leaving Boston if they had any slow-downs and the fireman answered that there was a slow-down at Hale Street bridge. Engineman Eames said he was carrying a brake-pipe pressure of 110 pounds, that he made a running test of the air brakes coming into Mystic, about 1 3/4 miles from Boston, slowed down at a point less than 1 mile beyond, and had no other occasion to use the air brakes until he reached Bleachery, at which time he thought he was about one minute late and was traveling at a speed of about 55 miles per hour. Clear signal indications were received at this point, including the automatic signal just north of the station, and he said he made a 10-pound application of the air brakes and then when approaching the curve on which the accident occurred, or about 1,000 feet from signal 81, he read the signal as clear and released the brakes, he also called the indication of the signal to the fireman. It was his practice, after observing the indication of signal 81, to look ahead through the yard, as occasionally there would be cars obstructing his view, but he said that due to the fog he did not have a clear view and when he saw train No. 10

approaching he supposed it was on the southbound track; on looking again, however, he saw it was on the northbound track, at which time his engine was only 300 feet south of signal 81, and on looking at signal 81 he saw it was in the stop position. He immediately applied the air brakes in emergency and thought he had reduced the speed of his train from 30 or 25 miles per hour to about 12 or 15 miles per hour when the collision occurred. Engineman Eames subsequently estimated his speed at about 30 miles per hour when he made the emergency application, instead of 20 or 25 miles per hour as previously stated. On account of the injuries he sustained in the accident, no statement was obtained from the fireman of train No. 9.

Head Brakeman Patten, of train No. 9, stated that approaching Bleachery the speed of the train was about 35 or 40 miles per hour and that he did not notice any application of the air brakes. Baggageman Merrick noticed an air brake application just after passing Bleachery, although there seemed to be no perceptible reduction in speed, and he said he did not notice any emergency application of the brakes. The statements of Flagman Davis indicated that the speed was about 45 miles per hour until just before the collision occurred.

Signal Engineer Scott stated that the machine at Hale Street tower is entirely mechanical in its operation, with no circuits attached, but is arranged so that the levers must be thrown in a predetermined order, and the towerman could not clear up or change the signals for a northbound movement subsequent to the set-up having been made for the diverging southbound movement.

Towerman Sheridan, on duty at Hale Street tower on the day of the accident, stated that he had received instructions from the director at Bleachery tower to run trains between the two crossovers on the northbound main track, due to some construction work being done on the southbound track. He set the route for train No. 10 through these crossovers and this route was still set up until after the accident had occurred. Towerman Sheridan stated that as train No. 10 was passing the tower he received a ring on the bell from the director at Bleachery tower indicating that train No. 9 then was at South Lovell, 2.23 miles from Lowell.

Towerman Hubbard, on duty at Bleachery tower, stated that on the morning of the day of the accident arrangements were made to divert southbound traffic over the northbound track between the two crossovers. Train No. 9 rang the bell in his tower at 1.01 p.m. and passed Bleachery tower at 1.03 p.m. As soon as train No. 9 struck his bell he in turn rang train No. 9 into Hale Street tower for the information of Towerman Sheridan. He further stated that when train No. 9 passed the tower it was traveling at a speed of about 40 or 45 miles per hour and that he thought it was moving faster

than usual. He gave train No. 9 a clear signal, expecting that if train No. 10 was not into clear train No. 9 would stop at home signal 81.

Interlocking Inspector Drohan stated that at the time of the accident he was standing about 100 feet north of Bleachery tower, and as he proceeded toward the scene of the accident he was able to see signal 81 in the stop position from Gorham Street bridge, a distance of about 1,875 feet. Signal Maintainer Grumley stated that he was in Bleachery tower at the time of the accident and immediately proceeded toward the scene, his statement as to a clear view of signal 81 from Gorham Street bridge substantiated that of Interlocking Inspector Drohan. The statements of Signal Helpers Atherton and Wood, employed in Lowell yard, brought out nothing additional of importance. Clerk Carron, employed in the yardmaster's office, located about 1,150 feet south of signal 81, stated that he thought the speed of train No. 9 was about 50 miles per hour when it passed his office.

Engineman Eames' statements that the fog interfered with his view were not substantiated by the great majority of witnesses who testified, their opinions differed, but apparently the most that can be said is that the weather was cloudy and perhaps a little hazy or misty, but not sufficient to have prevented Engineman Eames from seeing signal 81 in time to stop.

Conclusions

This accident was caused by the failure of Engineman Eames of train No. 9 properly to observe and obey signal indications.

The testimony indicates that Engineman Eames examined the bulletin board on the morning of the accident before leaving Boston but that for some reason he failed to see bulletin W-80, restricting speed to 10 miles per hour at bridge No. 54 near Hale Street, he was informed by the fireman, however, about the slow order covered by this bulletin. Engineman Eames also was thoroughly familiar with the physical characteristics through Lowell yard, with the time-table rule requiring trains to move under full control, and with the location of the home interlocking signals at Bleachery and Hale Street towers, as well as the location of the automatic signals. Engineman Eames stated, however, that he passed Bleachery at a speed of about 55 miles per hour and that he then applied the brakes, releasing them at a point about 1,000 feet south of signal 81 when he read it as being in the clear position. The statements made by Engineman Eames as to the position of signal 81, and also as to the manner in which he handled the brakes, are not supported by the evidence. There is no doubt that Engineman Eames misread the signal indication in view of the fact that the route had been

lined for the movement of train No 10, and was being used by that train, prior to the time train No. 9 came within sight of the signal, which is so interlocked that the tower-man could not then have changed its indication. As to his operation of the air brakes, attention is called to the fact that had a 10-pound brake-pipe reduction been made at Bleachery tower, at a speed of 55 miles per hour, and not released until the train had traveled 1,800 feet, it is probable that the train would have been brought nearly to a stop, certainly the speed would have been reduced to such an extent that an emergency application made from a brake-pipe pressure of 100 pounds, at a point 300 feet south of signal 81, would have stopped train No 9 in time to avert the accident. As it was, however, Engineman Eames subsequently stated that the speed of his train was about 30 miles per hour when he made the emergency application, while other witnesses did not think the speed had been reduced materially until just before the accident occurred. Had Engineman Eames observed signal 81 in the danger position before he was close to it, and had he been operating his train in compliance with the rule requiring trains to be under full control, as well as the slow flags protecting the construction work at the bridge, he would have been able to stop in time to prevent the accident.

All of the employees involved were experienced men and 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 law.

Respectfully submitted,

W P. BORLAND

Director.