

INTERSTATE COMMERCE COMMISSION

REPORT OF THE DIRECTOR OF THE BUREAU OF SAFETY IN RE INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD AT READVILLE, MASS., ON JANUARY 19, 1931.

February 20, 1931.

To the Commission.

On January 19, 1931, there was a side collision between two passenger trains on the New York, New Haven & Hartford Railroad at Readville, Mass., which resulted in the injury of 107 passengers, 7 employees, 2 mail clerks, and 4 dining-car employees. This accident was investigated in conjunction with representatives of the Massachusetts Department of Public Utilities.

Location and method of operation

This accident occurred on that part of the Midland Division extending between Boston and Readville Transfer, Mass., a distance of 10.43 miles, this is a four-track line over which trains are operated by time-table, train orders, and a controlled-manual block-signal system. The tracks are numbered from north to south as follows: 3, 1, 2, and 4, the two first-numbered tracks being for westbound movements and the others for eastbound movements. Readville is the junction of the double-tracked line of the Willimantic Branch with the four-track main line. Willimantic Branch track 2, eastbound, connects with each of the four main-line tracks. The accident occurred within interlocking limits, 310 feet west of the westbound home signal 96, directly opposite tower 181, at the intersection of westbound main line track 1 with Willimantic Branch eastbound track 2. Approaching the point of accident from the east, track 1 is tangent for a distance of approximately 4,650 feet, this tangent continuing for more than 1 mile beyond the crossover. The grade for westbound trains is slightly ascending, being 0.13 per cent at the point of accident.

Chickering is located 1.98 miles west of Boston and the territory between Chickering and Readville Transfer, a distance of 8.45 miles, is equipped with the controlled-manual block-signal system. Work of replacing the existing distant signals at the block stations with electric distant signals, and relocating them so as to provide additional braking distance between distant and home signals, has been in progress during the past year. The home signal at Readville is located 1,706 feet west of old westbound distant signal 97, while the new distant signal location is 3,751

New Distant Signal
(No blade on mast
for movement involved)

3751 ft.

Old Distant Signal 97 -
(Blades had been removed)

1706 ft.

Home Signal 9b -

210 ft.

Point of accident -

Tower 181

Dwarf Signal 22
225 ft.

400 ft.

Home Signal 9

Willimantic

Boston

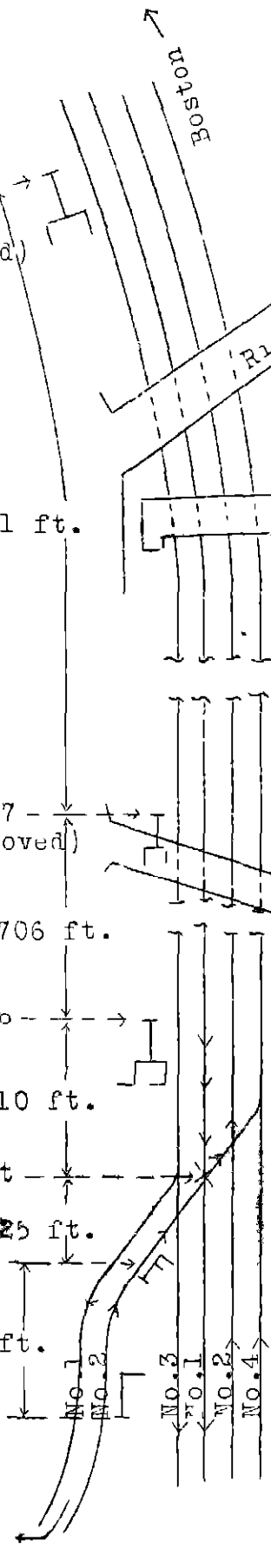
River Street

Hyae Park Station

New Allen Street

Providence

INR. No. 1684,
New York, New Haven & Hartford R.R.
Readville, Mass.
January 19, 1931



feet east of the old distant signal. Old distant signal 97 and home signal 96 were of the one-arm, two-position, lower-quadrant type, mechanically operated. About two hours prior to the accident the lever of the interlocking plant in tower 181 controlling old distant signal 97 was locked so as to hold the arm in the horizontal or caution position, in which position it is required that trains reduce speed at once and proceed at restricted speed, not exceeding 25 miles per hour, prepared to stop at next signal; the intent was to safeguard the relocating of the new distant signal, but a few minutes prior to the accident the blade and lamp of old distant signal 97 were removed, before the installation of the new distant signal was completed.

Notice of changes in signals in the vicinity of Readville to be made on January 19, 1931, was covered by superintendent's bulletin notice No. 1, issued under date of January 14, 1931, including information that "WESTWARD - The distant signals for tracks 1 and 3 now located 2000 feet east of S. S. 181, Readville Jct, will be moved 4000 feet east " Under the rules, a signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as the most restrictive indication that can be given by that signal.

Under normal conditions, a view of old distant signal 97 could be had for a distance of about 3,250 feet, while a view of home signal 96 could be had for a distance of about 2,950 feet, but visibility was interfered with very materially by the fact that it was snowing hard at the time of the accident, which occurred about 9.48 a.m.

Description

Eastbound local passenger train No. 910 consisted of two coaches, one smoking car, and one baggage car, in the order named, hauled by engine 1209, and was in charge of Conductor Colgan and Engineman Wylie. The first three cars were of wooden construction, while the last car was of steel-underframe construction. This train left Norwood Central, the last open office, 5.33 miles from Readville, at 9.40 a.m., according to the train sheet, five minutes late, and while moving through the crossover at Readville at a speed estimated to have been about 10 miles per hour the tender was struck on the forward end of the left side by train No. 175.

Westbound passenger train No. 175, the Colonial Express, consisted of one mail car, one deadhead lounge car, one club car, three parlor cars, one sleeping car, one dining car, one coach, and one smoking car, in the order named, all of steel construction, hauled by engine 1363,

and was in charge of Conductor Huntington and Engineman Gladding. This train left Boston at 9.30 a.m., according to the train sheet, on time, passed Forest Hills, the last open office, 4.48 miles east of Readville, at 9.44 a.m., according to the train sheet, two minutes late, passed the new distant signal location, at which time the installation had not been completed, passed old distant signal 97, no indication being displayed thereon as the blade and lamp had been removed, passed home signal 96, which was displaying a stop indication, and collided with the side of train No. 910 while traveling at a speed estimated to have been between 10 and 15 miles per hour.

Engine 1209 was separated from its tender as a result of the impact and came to a stop on eastbound main line track 2 about 75 feet east of the crossover, without being derailed. The tender was torn from its trucks and came to rest west of the crossover and across eastbound main line track 4, with its rear end telescoping the forward end of the first coach in its train a distance of about 15 feet. Both coaches were derailed and came to rest in line with and west of the crossover, leaning toward the right. The third and fourth cars were not derailed. Engine 1363 came to rest on its right side on westbound main line track 3, with its forward end fouling the crossover, the tender was behind the engine on the east side of the crossover. The forward truck of the mail car was the only other equipment derailed in train No. 175.

Summary of evidence

Engineman Gladding of train No. 175, who was interviewed at his home five days after the occurrence of the accident, stated that this was his regular run and that he read superintendent's bulletin notice No. 1 prior to starting on the trip in question and understood that the signals were going to be changed some time that day. On departing from South Station, Boston, it had just started to snow and on leaving Back Bay station the storm got worse. Approaching Chickering tower the signal indications could be seen fairly well, but when approaching Boylston Street and also Forest Hills it was snowing harder, increasing all the time, and in his opinion it was snowing the hardest as his train approached Readville. Engineman Gladding worked the engine hard as far as Forest Hills, as usual, estimating the speed of the train to have been about 45 miles per hour on passing that point. Before reaching Hyde Park, located 1.26 miles east of Readville, he shut off steam, at which time he estimated the speed to have been between 45 and 50 miles per hour. Engineman Gladding could not say whether he saw any one in the vicinity of the new distant signal location, about 950 feet east of Hyde Park station; the signal mast was bare, however, with no blade on it. The engine was

drifting and about the time it went under the bridge, located about 100 feet east of Hyde Park station, he set the brake just a little, "pinched" them down, estimating that he made about a 15-pound brake-pipe reduction, from a brake-pipe pressure of 110 pounds, and then lapped the valve. As the train approached old distant signal 97, the throttle was entirely closed and the speed of the train had not been retarded perceptibly from the speed of about 45 miles per hour; he could not see the mast of the old distant signal through the storm until the engine was about three or four car-lengths from it and he then saw that there was a man on the pole and that the signal blade was missing. Engineman Gladding realized that something was wrong and that the absence of an indication meant he should regard the signal as having displayed its most restrictive indication, the result was that he immediately applied the air brakes in emergency and opened the sanders, moving the brake-valve handle from lap position around to emergency in one motion, and he thought the brakes were applied in emergency by the time the engine passed the mast of old distant signal 97. Engineman Gladding looked ahead through the storm, but did not see home signal 96 until he was about two car-lengths from it, and it was then displaying a stop indication; he reversed the engine and opened the throttle, and estimated the speed of the train to have been about 20 miles per hour on passing the home signal, and about 15 miles per hour at the time of the collision. On account of the storm, it was not until he had passed the home signal that he was able to see the local train crossing over ahead of him. Engineman Gladding said that the air brakes had been tested and worked properly, that when he made the emergency application at old distant signal 97 he expected that the train would be brought to a stop before the engine reached home signal 96 and that he could not say why the stop was not made. The speed seemed to be retarded as he would expect it to be, however, in view of the conditions, wet rail, etc., there was a question in his mind as to whether the wheels locked. Engineman Gladding thoroughly understood the rule in regard to a signal improperly displayed, or the absence of a signal at the place where one is usually shown, also the rule in regard to taking extraordinary precaution in approaching signals during stormy weather, but at the same time he said that while he did not know at what time of the day the signals would be changed, yet he expected to find some kind of a distant signal in operation, either at the new distant signal location or at old distant signal 97, and it was his opinion that had a signal been displayed he would have been able to pick it up much quicker than was the case with no signal displayed.

Fireman McHugh, of train No. 175, who was a promoted man with a total of 20 years' experience, stated that this was his regular run and that he had read superintendent's

Bulletin notice No. 1. He was very busy working on the fire and paid no particular attention as to the speed of the train when it passed Forest Hills, but he said the speed increased perceptibly after passing that point and estimated it to have been 50 miles per hour, probably more, on passing Hyde Park station. Fireman McHugh experienced trouble with coal that had worked down in the hopper and was unaware of his exact location until the engineman started to apply the air brakes, which was his first intimation of anything wrong, saying that it was customary when the engineman was going to shut off steam to call his attention to the fact so that there would be no danger of back fire in the cab. On this particular occasion the engineman did not say anything when he shut off steam, at which time the speed was about 50 miles per hour, and immediately following made a heavy service air-brake application, which retarded the speed of the train considerably. The fireman took it for granted that the engineman had encountered the distant signal and was getting the train under control at once, and he could tell by the serious expression on the engineman's face that there was something wrong. Fireman McHugh got on his seat box as soon as he possibly could and leaned out of the window to find out what was transpiring, and it seemed to him that at that time the engine was about 500 or 600 feet from home signal 96, which was displaying a stop indication, and the crossover was not then occupied by the local train. Closely following the heavy service air-brake application, the engineman applied the air brakes in emergency, and while the fireman could not say for sure, everything having happened so quickly, he did not think the emergency application was made until the engine was in the vicinity of the home signal. Following the emergency application the brakes did not seem to control the speed of the train at all, the fireman saying that after that application was made that he felt as though he was "just having a sleigh ride." The last thing the fireman remembered seeing the engineman do was to reverse the engine, when passing the home signal, in the fireman's opinion, however, the wheels were already locked and sliding on the wet rails, so that reversing the engine accomplished nothing. He thought that the engineman worked steam up to the location of the distant signal, and estimated the speed to have been about 20 or 25 miles per hour as the engine passed the home signal.

Statements of Conductor Huntington, Baggage-master Van Germert and Trainmen Smith and Minnix, of train No. 175, were to the effect that nothing unusual transpired with regard to the operation of the train until just prior to the accident. Conductor Huntington was riding in the seventh car, he said that he felt the air brakes apply in emergency, at which time he estimated the speed of the train to have been between 50 and 60 miles per hour, and said that he immediately sat down, through necessity, due to the sudden

decrease in speed, remaining seated until the impact occurred, at which time he estimated the speed to have been about 10 miles per hour, or less. He felt no air-brake application made immediately prior to the emergency application. Conductor Huntington placed the location of the car in which he was riding at the time the emergency application was made as going under the first bridge east of tower 181, this bridge being located approximately 2,000 feet east of that tower, at old distant signal 97, saying that he did not feel anything to indicate that the air brakes were released from that time until the collision occurred. Baggage-master Van Germert, who was in the third car, felt as though two air-brake applications were made, the first one being a light application, immediately followed by an emergency application, he placed the location of the club car when the emergency application was made as opposite an industrial plant which is located not a great distance from home signal 96. Trainman Smith was riding in the last car in the train, he said that when that car was passing under the overhead bridge at old distant signal 97 the air brakes applied in emergency and that he was thrown against the door of the wash room. After the accident he immediately went back to flag. Trainman Minnix was riding in the sixth car, he felt as though the engineman shut off steam and permitted the engine to drift, without making an air-brake application, as the train passed Hyde Park station, saying that the speed decreased slightly. He placed the location of the car in which he was riding at the time the air brakes were applied in emergency, which nearly caused him to fall, as being in the vicinity of old distant signal 97. Trainman Minnix estimated the speed of the train just prior to the emergency application as being between 35 and 40 miles per hour.

Engineman Wylie, of train No. 910, stated that it was snowing hard as his train approached Reedville on the Wilimantic Branch, restricting vision considerably, therefore, he had the speed reduced to around 5 or 6 miles per hour approaching home signal 9, located about 625 feet west of tower 181. The home signal was displaying a proceed indication, but on account of the snow, and the smoke from a work train engine that was on westbound main line track 3, he could not see dwarf signal 22, which governed the movement of his train through the crossover and is located about 400 feet east of home signal 9, until he was about 15 or 20 feet from it. He brought his train almost to a stop at the dwarf signal, prepared to stop in the event it was against him, however, it was also displaying a proceed indication. Engineman Wylie had the air brakes applied at this time and the speed of his train was about 3 or 4 miles per hour, he released the brakes and when his train started over the crossover he permitted the engine to drift, until the forward end reached eastbound main line track 2, where he began to work steam. On account of his position

on the opposite side of ~~the~~ engine from the direction in which train No. 175 approached the crossover, the first knowledge he had of anything wrong was when the collision occurred, just as his engine was heading in on eastbound main line track 2. Engineman Wylie did not see, hear or have any indication that train No. 175 was approaching. The statements of Fireman Painten conflicted with those of Engineman Wylie to the extent of indicating that the home signal, No. 9, was at stop when they first came in sight of it, clearing up before they reached it. Dwarf signal 22 also was at stop, but was cleared about the time the engine reached it. Fireman Painten further stated that as his engine entered upon the crossover the speed of the train was about 5 or 6 miles per hour, he was sitting on the seat box, reaching up to close the injector, and glanced toward the east. While he was not certain, he thought he saw smoke in that direction, but did not pay much attention to it, thinking it was a yard engine stopped for the signal. After closing the injector he got down in order to start firing and just as he put his foot on the deck the collision occurred, at which time he estimated the speed of his train to have been about 10 miles per hour. Fireman Painten had no intimation that train No. 175 was approaching the crossover. Statements of Conductor Colgan, Baggage-master Clark and Trainman McCrillis developed nothing additional of importance.

Operator Willard, on duty at tower 181, stated that as soon as train No. 910 rang in on the Willimantic Branch, and before he removed the receiver from the telephone to get in touch with Clarendon Hills in order to obtain information on train No. 175, he lined the crossover route for train No. 910 and displayed proceed indications on both home signal 9 and dwarf signal 22. The information concerning train No. 175 was obtained from Clarendon Hills at least one minute or more after train No. 910 rang in, he did not obtain this information direct from the operator, however, saying that some one was talking on the telephone and that he asked the man to ask Clarendon Hills where train No. 175 was at the time, and the man said "just coming by." Operator Willard considered that this was the equivalent of his having obtained the information himself, also that the information was received in what he considered time enough to make the contemplated movement with train No. 910. Operator Willard stated that he pondered whether to take the route away from train No. 910 and give it to train No. 175, or leave it as it was, but finally decided that train No. 175 would slow down when they did not receive the distant signal and there would be time enough to get train No. 910 across. Operator Willard had seen superintendent's bulletin notice No. 1, knew the character of the work that was to be done at and in the vicinity of Readville that day, and was familiar with what was contemplated, he said that he exercised his best judgment and con-

sidered it the proper movement to let local train No. 910 cross over from the Willimantic Branch ahead of express train No. 175

Assistant Signal Engineer Chappelle stated that according to instructions and practice, it was intended that the installation of the new distant signal be completed and properly tested before the blade was removed from old distant signal 97, however, the blade of old distant signal 97 was inadvertently removed before the new distant signal installation was completed and prior to the arrival of train No. 175.

Signal Supervisor Dobson stated that on January 16 he went to Readville and in the course of the conversation he specifically instructed Signal Foreman Mills, who was the only man who had a copy of the plans, not to remove the blade from old distant signal 97 until the blade was installed at the new distant signal location, and that during this conversation Signal Foreman Forbes, a mechanical foreman, came in. Signal Supervisor Dobson was at home on the day of the accident, on account of illness, and he said that he had left Signal Foreman Mills in direct charge of the work of changing signals at and in the vicinity of Readville. Signal Foreman Mills, however, denied that he knew he was in direct charge, saying that he thought either Assistant Signal Engineer Chappelle or Signal Supervisor Dobson would arrive at any time during the day, and it was merely incumbent on him, an electrical foreman, and Mr. Forbes, a mechanical foreman, to cooperate and follow instructions until their superior arrived.

Signal Foreman Mills stated that he thoroughly understood that the new distant signal installation should have been completed before the blade was removed from old distant signal 97, and that he had previously performed work of a similar nature on a number of occasions. Signal Foreman Mills stated that he instructed Signaller Banks to go to the new distant signal location and install the blades, and to notify him when the work was done. Signaller Banks left tower 181 at Readville about 9.05 or 9.10 a.m. to go to the new distant signal location, going by automobile truck, and being accompanied by signal helpers. Signal Foreman Mills remained in tower 181, he maintained that he did not send anyone to old distant signal 97 to remove the blade, but said he told Signal Foreman Forbes that the truck was going, that the material had been placed for Forbes to make his changes, and asked him if he wanted to send anyone with the truck to the old distant signal. The result was that Forbes and his men also left tower 181 for old distant signal 97 the same time as and in the same automobile truck with Signaller Banks and the signal helpers. Signal Foreman Mills stated that he did not say anything to Signal Foreman Forbes about removing the blade from old

distant signal 97, but that he did tell Signal Foreman Forbes that Signalman Banks was going to install the blades at the new distant signal location. Signal Foreman Mills expected and felt certain that Signal Foreman Forbes would get in touch with Signalman Banks and arrange to have the work of installing the blades at the new distant signal location properly taken care of before the blade was removed from old distant signal 97. Signal Foreman Mills also stated that it was his intention to notify Signal Foreman Forbes when he received word that the blades were installed at the new distant signal location, so that Forbes might remove the blade from old distant signal 97. There was no definite understanding between them, however, as to the conduct of the work.

Signal Foreman Forbes, a mechanical foreman, stated that he was instructed by Signal Foreman Mills to cut out of service old distant signal 97 and remove the blade, that the other men "would go right through with the truck and they would have the blades on by the time I had the blades removed." Signal Foreman Forbes left Readville on the automobile truck along with the other men and accompanied by signal helpers, and according to his statements no mention was made about keeping the blades in position on old distant signal 97 until the blades were applied on the new distant signal, he did not know that the blades had not been applied to the new distant signal, and merely waited at the old distant signal about 15 or 20 minutes and then took off the blades on the signals at that point.

Conclusions

This accident was caused by the failure of Engineman Gladding, of train No. 175, properly to control the speed of his train, particularly in view of the existing weather conditions, with the result that he was unable to bring it to a stop before passing home signal 96, and the lack of a distant signal indication, for which Signal Foreman Mills and Forbes were responsible.

Engineman Gladding maintained that between the new distant signal location and Hyde Park station he shut off steam and made about a 15-pound brake-pipe reduction, the speed of his train then was 45 or 50 miles per hour, and his engine was at least 2,900 feet east of old distant signal 97, all of this distance being on a slightly ascending grade. According to his statements, however, although he then lapped the brake valve, yet the speed of the train was still around 45 miles per hour on approaching the old distant signal. Engineman Gladding further stated that he then moved the brake-valve handle from lap to emergency position and opened the sanders, the air brakes being applied in emergency by the time the engine passed distant signal 97. This signal is located 1,706 feet east of home

signal 96, which was displaying a stop indication, yet the train passed home signal 96 at a speed of about 30 miles per hour and collided with train No. 910 about 310 feet beyond that point while traveling at a speed of about 15 miles per hour. According to his own statements, Engineman Gladding, from the time he made the emergency air-brake application, had a total distance of over 2,000 feet within which to have brought his train to a stop, all on a slightly ascending grade and with the sanders opened. The mail car had PC brake equipment, and all the other cars had UC equipment, the piston travel of the mail car, tested after the accident, was 7 inches, while all the others were tested, in emergency, before the accident and had a piston travel of approximately 8 inches. The brakes had been examined again in the station at Boston, a running test had been made leaving Boston, the brakes had worked properly when making a station stop at Back Bay, 1.28 miles from the terminal, the engineman said they seemed to be all right when he applied them approaching the point of accident, and when examined and tested after the accident they had a piston travel varying from 7 to 8 inches. Under these circumstances, and considering the previous 15-pound reduction from a brake-pipe pressure of 110 pounds, it would appear that the emergency application Engineman Gladding said he made at distant signal 97 should have brought his train to a stop before it passed home signal 96.

There were five other employees in the crew of train No. 175, the fireman, who was on the engine, the baggage-master in the third car, a brakeman in the sixth car, the conductor in the seventh car, and another brakeman in the last car. The first two employees mentioned thought there was a service application of the air brakes, followed almost immediately by an emergency application, while the other three employees thought the emergency application was the only application which was made. The estimates of all of these employees as to their respective locations at the time they felt the emergency application indicated that the head end of the train must have been well beyond distant signal 97 at that time. Under these circumstances, and after considering the various other features connected with the occurrence of this accident, it seems more than probable that any application made by Engineman Gladding before reaching Hyde Park station, practically 1 mile from the point of accident, was more in the nature of a slight application while the train was rounding the curve in that locality; that when approaching distant signal 97 Engineman Gladding was endeavoring to make out the indication which he supposed would be displayed at the signal location, and that owing to the absence of the semaphore blades and also the lamps, coupled with the stormy weather conditions prevailing, he was unable to determine that no indication was displayed until his engine had practically reached the signal, and that it was not until after the head end of his

train had passed the distant signal, still moving at a comparatively high rate of speed, that he realized the condition of the signals, and then made the emergency application of the brakes and opened the sanders, too late, however, to enable him to bring his train to a stop. Engineman Gladding seemed to think that the wheels might have locked after the emergency application was made, and his fireman apparently had a similar idea. It is to be noted, however, that no slid-flat wheels were found on inspection after the accident, and this would make it appear that both brakes and sand were effective in the engineman's endeavor to bring the train to a stop.

So far as the signal department is concerned, there was an inexcusable lack of cooperation. The procedure was very simple so far as it affected the two distant signals, all the signal department employees had to do was to place in operation the new distant signal and then cut out the old distant signal. Signal Supervisor Dobson was absent on account of illness, and this left it up to Signal Foreman Mills, an electrical foreman, and Signal Foreman Forbes, a mechanical foreman. The former was the only one in possession of a copy of the plans, and had been given to understand that he was in charge of the work in the absence of Signal Supervisor Dobson. He said he did not understand it that way, however, his idea being that he and Signal Foreman Forbes were jointly responsible, each for his own part of the work. While there is no question but that some one should have been in charge of the work, even this misunderstanding on the part of Signal Foreman Mills is not a sufficient excuse for what occurred. These two foremen were experienced men, were fully aware of the nature of the work to be done, and each realized that the old distant signal should not be cut out until the new distant signal had been placed in service. There was no cooperation between them, however, and no definite arrangement made to guard against the possibility of cutting out the old signal before the new one had been placed in service. The result was that Signal Foreman Forbes proceeded to the old distant signal location, waited 15 or 20 minutes, within which period he supposed the new signal would be placed in service, and then proceeded to cut out the old signal. The new signal had not been placed in service, however, and train No 175 therefore was enabled to approach at a high rate of speed without receiving any warning on either of the distant signals to indicate that the home signal was in the stop position. The actions of these two foremen made very probable the occurrence of just such an accident as did occur, and they can not be too strongly condemned for their total lack of cooperation and for their failure to realize the responsibilities of their respective positions.

Engineman Gladding, who had had more than 44 years' experience in engine service, had been on duty less than two hours at the time of the accident, prior to which he had been off duty more than 36 hours, all of the other 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