

INTERSTATE COMMERCE COMMISSION

REPORT OF THE CHIEF OF THE BUREAU OF SAFETY, COVERING INVESTIGATION OF AN ACCIDENT WHICH OCCURRED ON THE RUTLAND RAILROAD NEAR RIVERSIDE, VT, ON MARCH 14, 1920

APRIL 16, 1920

To the Commission

On March 14, 1920, there was a head-end collision between a passenger train and a freight train on the Rutland Railroad near Riverside, Vt, which resulted in the death of 5 passengers and 5 employees and injury to 1 employee, 6 Pullman employees, and about 25 passengers. After investigation of this accident I respectfully submit the following report:

The Bellows Falls subdivision of the Vermont division of the Rutland Railroad, on which this accident occurred, is a single-track line extending from Rutland to Bellows Falls, Vt, a distance of 52.2 miles. Trains are operated by time-table and train orders transmitted by telegraph, no block signal system being in use. Special bulletin order No. 334, issued March 6, 1920, restricts the speed of all passenger and milk trains to 40 miles an hour over the entire Vermont division, while bulletin order No. 363, issued March 10, 1920, restricts the speed of freight trains to 25 miles an hour.

The accident occurred about half a mile north of Riverside, a station located 2 miles north of Bellows Falls. The accompanying diagram shows the location of stations in the vicinity of the point of accident. Approaching the point of accident from the south there is a 3° curve to the left 380 feet in length and then 138 feet of tangent track to the point of accident. Approaching from the north, there is a 1° 30' curve to the right 231 feet in length and then 315 feet of tangent track to the point of accident. Approaching from each direction the grade is undulating, but it is level at the point of accident. On the east side of the track at the point of accident the land slopes down to the Connecticut River about 15 feet below the level of the track, while on the west side of the track there is an embankment which slopes upward at an angle of about 35° to a height of 60 or 70 feet above the subgrade. The slope is covered with trees and shrubbery. Approaching from the north an engineman can see the point of accident for a distance of approximately 2,500 feet, but he would have no view of a train approaching that point.

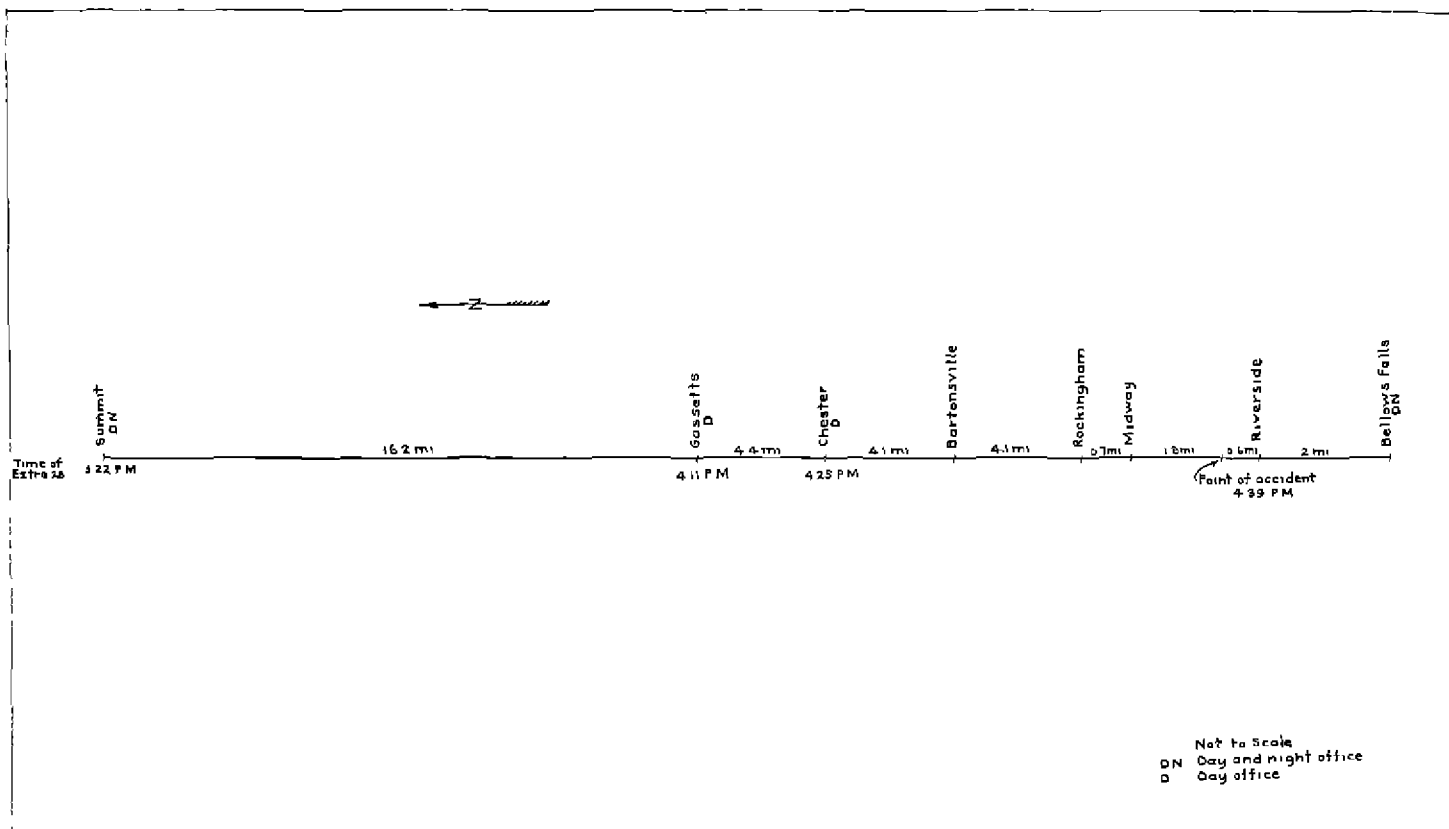


Diagram showing relative location of the stations involved

from the south on account of the 3° curve just south of the point of accident, the range of vision of an engineman on a northbound train is limited to a very short distance. The weather at the time of the accident was clear.

Southbound freight train extra 28, in charge of Conductor Phillips and Engineman Cady, consisting of two engines, Nos. 28 and 37, 46

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|--|--------------------------|--------------|------|
| 19 | RUTLAND RAILROAD COMPANY | | 19 |
| TRAIN ORDER NO. 314 7/14 1920 | | | |
| To: E. C. 285 M | | At: Gassetts | |
| X _____ Opr. _____ M. _____ | | | |
| <p>No. 285 M Meet at Gassetts until 7:45 PM for E. C. 285 M STRK</p> | | | |
| <p>Conductor and Engineman and Pilot. If any must have a copy of this order and must read the same to their Trainmen and Fireman respectively.</p> | | | |
| Made | Time | At | Opr. |
| Kepler | 4:15 | Gassetts | |

FIG. 1.—Train order No. 314 as transcribed by operator at Gassetts

cars, and a caboose, departed from Rutland at 12:55 p. m. At 3 p. m. it arrived at Summit, 18.3 miles south of Rutland, and at this point helper engine 37 was cut out of the train. Two train orders were received here, one of which, No. 410, stated that train No. 165 would run 1 hour and 15 minutes late, Bellows Falls to Rutland. The train left Summit at 3:22 p. m. and arrived at Gassetts, 16.2 miles south at 4:07 p. m. While water was being taken, with the engine at a point about 100 feet north of the station, the operator received train order

No 414, addressed to the crew of the extra, this order read as follows

No one sixty five 165 wait at Bartonville until four fifty 450 p m for Ex 28 south

Bartonville is 8.5 miles south of Gassetts and 9.2 miles north of Bellows Falls. Illustration No 1 shows the order as it was transcribed by the operator at Gassetts. A copy of this order, but no clearance card, was delivered to the fireman as the engine passed the station and a second copy and a clearance card were delivered to the conductor on the caboose by means of a train order hoop. The extra departed from Gassetts at 4:11 or 4:12 p m, and at 4:39 p m collided with northbound passenger train No 165 at a point about 3,000 feet north of the north switch at Riverside, the speed at the time of the collision is believed to have been approximately 45 miles an hour although the employees estimate that the speed was not in excess of 25 or 30 miles an hour.

Northbound passenger train No 165 was in charge of Conductor Buslin and Engineman Sullivan and consisted of engine No 52, 1 milk car, 1 combination car, 1 coach, 1 dining car, and 1 Pullman parlor car. At Bellows Falls the crew of this train received two train orders on form 31, one of which was train order No 414, above quoted, while the other was train order No 410 directing them to run 1 hour and 15 minutes late from Bellows Falls to Rutland. The train departed from Bellows Falls at 4:33 p m, 23 minutes late on the time of train order No 410 or 1 hour and 38 minutes late on its time-table schedule, and about 6 minutes later, while traveling at a speed of approximately 35 miles an hour, it collided with extra 28.

The impact of the collision resulted in the engine of train No 165 being thrown to the west side of the track and it came to rest in a reversed position, with its front end in the forward end of the combination car, as shown by illustration No 2. This engine was completely stripped, its boiler was torn from the frame, and the machinery practically destroyed. The milk car was destroyed, while the forward end of the combination car was badly damaged. The engine of extra 28 was thrown over the embankment on the east side of the track. Twelve cars of the freight train were derailed, eight of which were practically destroyed. Illustrations Nos 3 and 4 are general views of the wreckage of the freight train. On the left in illustration No 3 may be seen the engine of the freight train. The employees killed were the engineman, fireman, and one brakeman of train No 165, and the engineman and head brakeman of extra 28.

Conductor Buslin, of train No 165, stated that his train left Bellows Falls at 4:33 p m. He was in the dining car when he felt an emergency application of the brakes, which was followed imme-

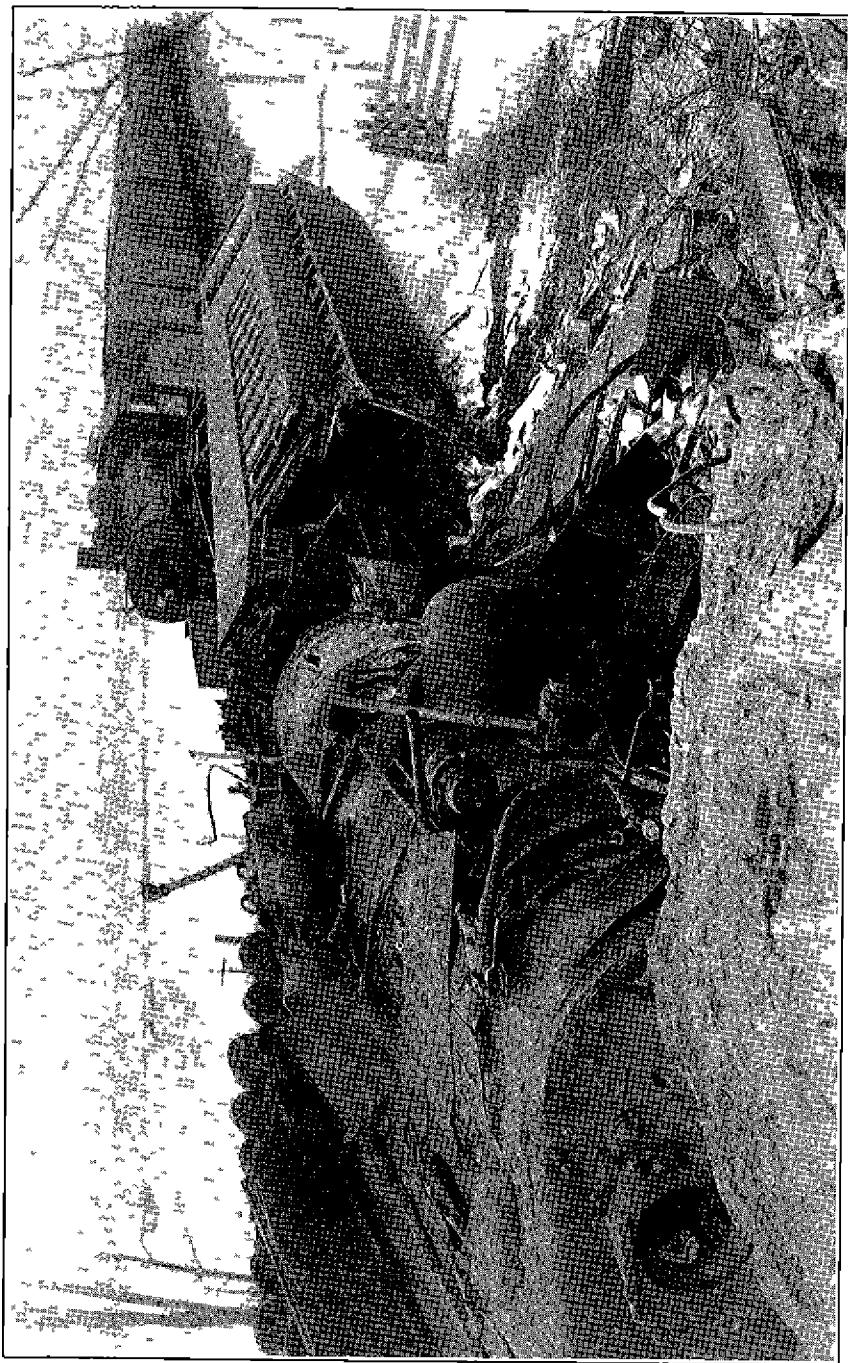


FIG 2—Engine and second car of passenger train, engine in reversed position with its front end in head end of coach

diately by the collision. After the collision he talked with Conductor Phillips, who said to him, "I couldn't quite figure out where you were to wait for us."

Fireman Bean, of extra 28, stated that when the train was ready to proceed from Gassetts the train-order board at the station was in the stop position, the train passing it at a speed of 3 or 4 miles an hour. He was standing on the steps of the tender at the time for the purpose of receiving a train order from Operator Spafford, no clearance card accompanied the order. He was positive that he distinctly heard the operator say to him as he handed him the order, "Wait at Bellows Falls until 4 50, I haven't got time to make out a clearance, that is all there is, go ahead." He immediately handed the order to the engineman, telling him that the train-order board was clear, and the engineman then read it aloud to him and to the head brakeman, as follows: "No 165 will wait at Bellows Falls until 4 50 for extra 28 south." After leaving Gassetts, train order No 414 was discussed on the engine and it was decided that they would go either to Midway, 4.8 miles south of Batonsville, or to Riverside, 7.2 miles south, for train No 165, the engineman saying that they had time enough to go to Riverside. The fireman said that the train drifted all the way from a point just south of Batonsville to the point of accident, while the brakes were used to control the speed on three different occasions, and he did not believe the speed at any time was more than 30 miles an hour. He stated that about five or six seconds before the accident occurred Engineman Cady said, "Look out," and sounded the whistle for brakes. Fireman Bean further stated that it was Engineman Cady's practice, after reading orders, to hand them to him and the head brakeman to read, but he did not do so on this occasion, and neither he nor the head brakeman read the order. He realized that under rule 211-a he was required to read train orders, and at the time of the investigation, on reading a photographic copy of train order No 414, as written by Operator Spafford, he said he thought that had he read the order on the day of the accident he probably would have read it correctly, although the word "Batonsville" was not legibly or correctly written.

Conductor Phillips of extra 28, stated that the air brakes were tested before the train left Rutland and were reported as being all right, and no trouble was experienced in controlling the speed at any point on the trip. No test of the brakes was made after the helper engine had been cut out at Summit. On arrival at Gassetts the train was brought to a stop north of the station for the purpose of taking water. When the train passed the station he received a copy of train order No 414 and a clearance card. The order was very poorly written, but he thought it directed train No 165 to wait for his train at Bellows Falls until 4 50 p. m. He then

handed the order to the flagman and after discussing it the flagman agreed with him as to its contents, he therefore felt positive that he had read the order correctly. Conductor Phillips further stated that he had read special bulletin order No 363 restricting the speed of all freight trains on the Vermont division to 25 miles an hour, but he did not think about the restriction at that time. He figured that they had time enough to reach Riverside, 15.7 miles south, and get into clear at 4:45 p. m., 5 minutes before train No 165 was due to leave Bellows Falls, according to his understanding of train order No 414, although he thought it might be necessary to protect the head end of the train when heading into the passing track. On reaching Bartonville, 8.5 miles south of Gassetts, at about 4:28 p. m., he took train order No 414 out of his pocket and read it again to make sure of its contents, and while he said he felt positive that the station named was Bellows Falls, he again handed the order to the flagman to read. The flagman said there was no doubt about its being Bellows Falls because Engineman Cady probably had the order read to him when he received it and there were three experienced men on the engine who would know what they were doing. The conductor said he had never worked with Engineman Cady before, and while he knew he was an experienced engineman he was not relying upon him for the safety of the train more than he would upon any other engineman. He thought the speed of his train was not in excess of 25 or 30 miles an hour at any point and that he would have noticed it had the speed been much greater, he did not think it was over 20 miles an hour at the time of the collision, as the engineman had reduced the speed at a point about a mile north, apparently preparing to take siding at Riverside. When he looked at his watch, just before getting out of the caboose after the collision, it was 4:40 p. m. He had made 32 trips as a conductor since having been promoted to that position, this was his first trip over this subdivision as a conductor, but he had been over it frequently as a brakeman and baggage master.

Flagman Brooks, of extra 28, stated that he took train order No 414 from the hoop as the caboose passed the station at Gassetts and immediately handed the order to Conductor Phillips, who was on the rear platform of the caboose. After reading the order the conductor handed it to him and he read it that train No 165 would wait at Bellows Falls until 4:50 p. m. At that time there was no discussion between the conductor and himself concerning the order. As the train passed Bartonville the conductor handed him the order again and said, "Look at that order again." The flagman said that he did so but gave more attention to the train number than to the station mentioned and he told Conductor Phillips that the engineman probably had had the order read to him and knew all about it,



FIG 3 — General view of wreckage, engine of flight train on the left



FIG 4—General view of wreckage

also that there were three experienced men on the engine. It was at this time that the conductor looked at his watch, said it was 4 28 p. m. and that they would probably go to Riverside. He said that at no time was there anything said concerning the station named in the order. He further stated that probably both he and Conductor Phillips read the order too hurriedly, and that if more careful attention had been given to it they might have discovered that the waiting point was Bartonville instead of Bellows Falls. Flagman Brooks also stated that he did not think the train was running unusually fast and said that inasmuch as he was riding in the caboose which was a small four-wheeled caboose, he thought he would have noticed any unusual speed.

Assistant Superintendent Kramer stated that a few hours after the accident occurred he asked Conductor Phillips his reason for running past Bartonville, and the conductor said that he thought of applying the brakes by opening the conductor's emergency valve, but decided not to do so because it might pull out a drawbar. The conductor also told him that both he and the flagman agreed that the station mentioned in the train order must be Bellows Falls, as the engineman and head brakeman were experienced men and would know exactly what the order contained.

Operator Spafford, on duty at Gassetts, stated that he completed train order No. 414 at 4 11 p. m., at about the time extra 28 was leaving the water station north of his office, and to avoid delay he did not take the time to make out a clearance card for the engine crew. He delivered one copy of the order to the fireman, who was on the tender steps, and said to him, "You have got no clearance card, that is the only order you have got, it is all right to go ahead." He denied having said anything about the contents of the order to the fireman. Extra 28 departed at 4 12 p. m. He admitted that he violated rule 221 in allowing the train to pass the train-order board in stop position without first delivering a clearance card to the engine crew. Operator Spafford further stated that when he received train order No. 414 from the dispatcher he understood the number of the order to be "314," but in repeating it to the dispatcher he was corrected. He did not, however, change the number on the order as he was in a hurry to get the order ready for the train when it passed the station. He did not know that the first figure, "4," meant the Bellows Falls subdivision, the other figures indicating the number of the order. Operator Spafford further stated that Engineman Cady was familiar with his handwriting and he had frequently issued orders to him during the past 25 or 30 years, and the engineman had apparently never before had trouble in reading them.

This accident was caused primarily by the failure of the crew of extra 28 correctly to read and be governed by train order No. 414,

"Bartonsville," the point at which train No 165 was to wait, being mistaken for "Bellows Falls." Engineman Cady and Conductor Phillips, being in charge of the train, are chiefly responsible for this error, Flagman Brooks made the same error in reading the order and is therefore also responsible, while Fireman Bean and Head Brakeman Granger are at fault for their failure to read the order as required by the rules.

According to the statement of Fireman Bean, the engineman read the point named in the order as "Bellows Falls." While the word "Bartonsville" was not legibly written, it is believed that if the engineman had read the order with care, he would not have made the error which resulted in this accident, or if in doubt he should not have proceeded on the order. It is possible, however, that he overheard the remark claimed by the fireman to have been made by the agent when delivering the order, and if he did this might have misled him when he read the order. No such condition existed in the case of the conductor and flagman. Conductor Phillips' statement to Conductor Buslin of the passenger train shortly after the accident, that he did not know exactly where the passenger train was to wait, together with his statement to the assistant superintendent a few hours afterwards that he thought of applying the air brakes, but decided that the men on the engine knew what they were doing, and his statement made at the hearing a few days afterwards that there was some discussion on the subject between himself and the flagman, indicated that there was a doubt in his mind as to the point named in the order. If these statements are correct, then he was grossly negligent in failing to stop his train at Chester, the last open telegraph office, for the purpose of finding out exactly what rights had been given to his train. Regardless of how they made the error, both the conductor and flagman read the order twice and they are at fault for their failure to read it with proper care, had they done so it is probable that they would not have misread the order in spite of the manner in which it was written. Fireman Bean and Head Brakeman Granger, in failing to read the order, violated rule 211-a, which reads as follows:

Each "31" or "19" train order after delivery to those who are to execute it must be read by the other employees of the train.

Had this rule been obeyed either by the fireman or head brakeman, or both, it is possible that they would have read the order correctly, and in that event this accident undoubtedly would not have occurred.

Attention is called to the fact that Engineman Cady violated rule 221 by leaving Gassetts without a clearance card when the train order board was displayed, and also bulletin order No 363, dated March 10, 1920, which restricted the speed of freight trains to 25

miles an hour at all points on the Vermont Division. Engineman Cady had registered his watch at 11 15 a m in the watch register book at Rutland, his watch then being 10 seconds fast, while the watch of Conductor Phillips, according to the register, was 20 seconds fast. After the accident Engineman Cady's watch was found to have stopped at 4 39 p m, while Conductor Phillips stated that it was 4 40 p m when he looked at his watch just before getting out of the caboose after the collision. These facts are considered as definitely establishing the time of the accident at 4 39 p m, as the train sheet shows that extra 28 passed Chester at 4 25 p m, the distance of approximately 11 miles between Chester and the point of collision was covered in 14 minutes, or at an average rate of speed of 47 miles an hour. That the rate of speed was high was fully demonstrated by the condition of the equipment after the collision. The crew of extra 28 also violated rule 507 by not testing the air brakes at Summit and again at Gassetts, at both of which points the train line had been broken.

While train order No 414 as written was sufficiently legible to have given the crew of extra 28 the desired information had they read it with due care, nevertheless Agent Spafford is open to censure for the manner in which he handled this order. His failure to correct the number of the order after his attention had been called to his mistake by the dispatcher was negligent in the extreme, while the manner in which he wrote the order, and his action in verbally authorizing the extra to pass the train-order board without a clearance card indicated a lack of realization of the importance of the duties he was supposed to perform. Carelessness of this nature is one of the causes frequently leading to accidents of this character and should not be tolerated.

Engineman Cady entered the service of the Rutland Railroad Co as fireman in August, 1892, and was promoted to engineman in October 1899. He had been held responsible for four collisions, dating back to 1909, but his record since April, 1916, was clear. Conductor Phillips entered the service in August, 1909, and was promoted to conductor in December, 1918, Flagman Brooks entered the service in February, 1918, Head Brakeman Granger entered the service in September, 1910. The records of these three employees were good. Fireman Bean entered the service in September, 1912, and from June, 1917, to October, 1919, was in military service, his record was clear. Agent Spafford entered the service in 1880 and was appointed agent at Gassetts in May, 1887, and had an excellent record.

At the time of the accident the crew of extra 28 had been on duty about 5 hours, after off-duty periods ranging from 16 to 32 hours.

The crew of train No 165 had been on duty about 2 hours and 20 minutes, after off-duty periods ranging from 8 to 18 hours

This accident again calls attention to the weakness of the train-order method of operation and to the necessity of adopting some form of block-signal system if a reduction is to be made in the number of accidents of this character. The time-table of this railroad shows that on the Bellows Falls subdivision there are five first-class and two second-class trains each week day in each direction, a total of 14 scheduled trains. With the exception of one first-class train in each direction, all of these train movements take place between the hours of 6 a m and 10 30 p m. There are 18 stations on this subdivision, including the terminals, and with the exception of the four stations between Chester and Bellows Falls, within which territory this accident occurred, there are day telegraph offices at all stations, while the offices at Summit and at the terminals are day-and-night offices. The installation of an adequate block-signal system would not be a difficult matter, considering the large number of open telegraph offices, and in view of the traffic handled during the day it is recommended that such a system be installed. Had a block-signal system been in use this accident undoubtedly would have been prevented.

Respectfully submitted

W P BORLAND,
Chief, Bureau of Safety

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