

Inv-2426

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
ERIE RAILROAD

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PORT JERVIS, N. Y.

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May 12, 1940

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INVESTIGATION NO. 2426

SUMMARY

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Inv-2426

Railroad: Erie

Date: May 12, 1940

Location: Port Jervis, N. Y.

Kind of accident: Rear-end collision

Trains involved: Passenger : Passenger

Train numbers: Fourth 6 : Fifth 6

Engine numbers: 2916 : 2960

Consist: 11 cars : 11 cars

Speed: Standing : 8-20 m.p.h.

Operation: Timetable, train orders and  
automatic block system

Track: Double; 2°40' curve to right;  
0.15 percent descending grade  
eastward

Weather: Clear

Time: 7:44 a.m.

Casualties: 159 injured

Cause: Failure to provide adequate flag  
protection for preceding train  
and failure to operate following  
train in accordance with signal  
indications

June 19, 1940.

To the Commission:

On May 12, 1940, there was a rear-end collision between two passenger trains on the Erie Railroad at Port Jervis, N.Y., which resulted in the injury of 158 passengers and 1 employee. This accident was investigated in conjunction with a representative of the New York State Public Service Commission.

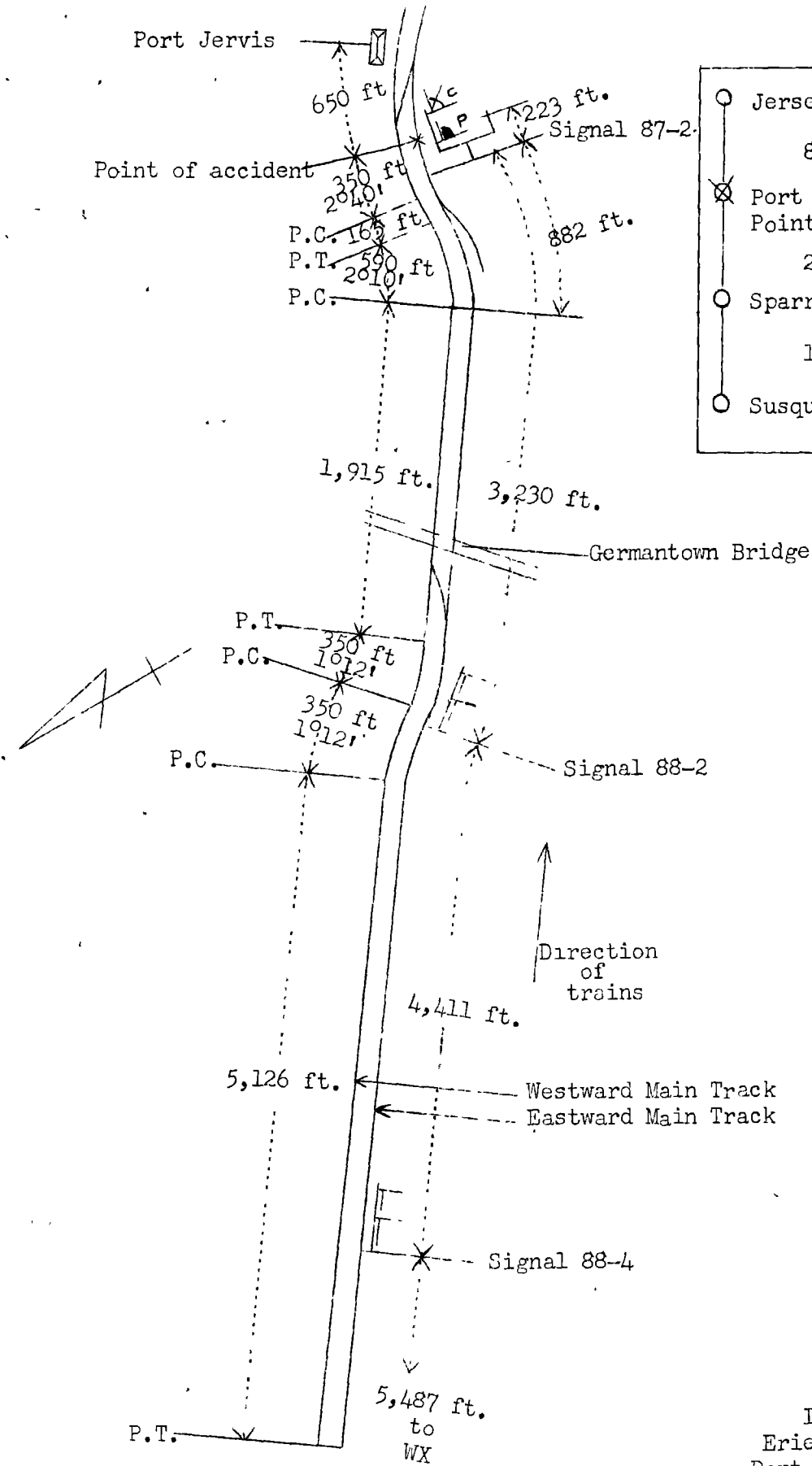
Location and Method of Operation

This accident occurred on that part of the New York Division which extends between Sparrowbush, N.Y., and Jersey City, N.J., a distance of 89.8 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated by timetable, train orders and an automatic block system. The accident occurred within yard limits on the eastward main track at a point 650 feet west of the station at Port Jervis. Approaching this point from the west there are, in succession, a tangent a distance of 5,126 feet; a 1°12' curve to the right, 350 feet; a 1°12' curve to the left, 350 feet; a tangent, 1,915 feet; a 2°10' curve to the left, 590 feet; a tangent, 165 feet; and a 2°40' curve to the right, 545 feet; the accident occurred on the last-mentioned curve at a point 350 feet east of its western end. The grade for east-bound trains from Sparrowbush to Port Jervis, a distance of 2.5 miles, is descending and varies from 0.15 percent to 0.32 percent; at the point of accident it is 0.15 percent.

Automatic signal 88-2 and semi-automatic signal 87-2 governing movements on the eastward track are located, respectively, 3,453 feet and 223 feet west of the point of accident. Signal 88-2 is a 2-arm, semaphore-type signal. When the block immediately east of signal 87-2 is occupied, the aspect displayed by signal 88-2 is as follows:

Aspect	Indication	Name
Green-over-yellow	Prepare to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach

Signal 87-2 is a 3-indication, searchlight-type signal mounted at the top of a bracket mast; immediately below the upper unit there is a 2-indication, position-light signal, which is known as a telephone train-order signal. The telephone train-order signal is controlled by the operator at Port Jervis station; the circuits are so arranged that when this signal is in horizontal position the upper unit displays a red aspect. The involved aspects of signal 87-2 are as follows:



○	Jersey City, N.J.	87.3 mi.
⊗	Port Jervis, N.Y. Point of accident	2.5 mi.
○	Sparrowbush, N.Y.	101.8 mi.
○	Susquehanna, Pa.	

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 Erie Railroad  
 Port Jervis, N.Y.  
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Unit	Aspect	Indication	Name
Upper	Yellow	Prepare to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach
Lower	Vertical	Proceed regardless of following superior trains. * * *	Telephone Train Order Signal
Upper	Red	Stop then proceed in accordance with Rule 509-B.	Stop and Proceed
Lower	Horizontal	Stop on main track and report for instructions. * * *	Telephone Train Order Signal

Medium speed is defined as: One-half maximum authorized speed at point involved, but not to exceed thirty miles per hour unless otherwise provided.

Restricted speed is defined as: Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

Rules of the operating department read in whole or in part as follows:

34. All members of train and engine crews must, when practicable, communicate to each other by its name the indication of all signals affecting the movement of their train.

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

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99. When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fuses. \* \* \*

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509b. When train is stopped by a Stop and Proceed signal it may proceed:

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(b) On two or more tracks at once at restricted speed

Yard-limit boards are located approximately 1-1/2 miles east and 3-1/2 miles west of the point of accident.

The maximum authorized speed in the vicinity of the point of accident for the trains involved is 40 miles per hour.

The weather was clear at the time of the accident, which occurred about 7:44 a.m.

#### Description

Fourth 6, an east-bound first-class passenger train, with Conductor Adams and Engineman Sartori in charge, consisted of engine 2916, 1 baggage car and 10 coaches, in the order named; all cars were of steel construction. This train departed from Susquehanna, on the Delaware Division, 104.3 miles west of Port Jervis, at 5:16 a.m., according to the train sheet, 1 hour 53 minutes late, passed Sparrowbush at 7:33 a.m., 1 hour 53 minutes late, stopped at Port Jervis at 7:38 a.m., 1 hour 53 minutes late, at which point Conductor Orrok and Engineman Hinkley of the New York Division took charge, and about 6 minutes later its rear end was struck by Fifth 6.

Fifth 6, an east-bound first-class passenger train, with Conductor J. Smith and Engineman E. N. Smith in charge, consisted of engine 2960, 1 baggage car and 10 coaches, in the order named; all cars were of steel construction. This train departed from Susquehanna at 5:33 a.m., according to the train sheet, 2 hours 10 minutes late, passed Sparrowbush at 7:40 a.m., 2 hours late, passed signal 88-2 displaying a green-over-yellow aspect, passed signal 87-2 displaying a red aspect and the telephone train-order signal in stop position and, while moving at a speed estimated to have been from 8 to 20 miles per hour, collided with the rear end of Fourth 6.

The impact shoved Fourth 6 ahead a distance of 46 feet. The rear coupler of the tender and the front coupler of the first car of Fourth 6 were broken and the engine stopped at a point 42 feet east of the first car. The rear car was telescoped a distance of 41 inches by the engine of Fifth 6; the west truck of this car was derailed. The engine of Fifth 6 was not derailed but the front end was badly damaged; the rear coupler of the tender and the front coupler of the first car were broken, and the engine stopped at a point 43 feet east of the first car. The west end of the tender and the east end of the first car were considerably damaged; the east truck of the first car was derailed. The remaining cars of this train were slightly damaged but were not derailed.

The employee injured was the front brakeman of Fourth 6.

Summary of Evidence

Engineman Sartori, of Fourth 6, stated that immediately after his train stopped at Port Jervis he sounded a signal for the flagman to protect the rear of his train. The engine was then moved a few feet to take water and he was relieved by another engineman. He was standing on the station platform when the accident occurred, prior to which water had been taken and Fourth 6 was about ready to leave. He said that when his train approached signal 87-2 the sun was shining but it did not interfere with his view of that signal. He stated that he usually made a 10-pound brake-pipe reduction after passing signal 88-2 to stop a passenger train at Port Jervis station.

Fireman Rappold, of Fourth 6, stated that he observed the indication of signal 37-2 when his train passed under German-town bridge, located approximately 2,200 feet west of signal 87-2. His train stopped at Port Jervis at 7:38 a.m.

Conductor Adams, of Fourth 6, stated that he got off near the front end of his train at Port Jervis where he was relieved by the outgoing conductor. He could not see the rear end of his train but was advised later by his flagman that the outgoing flagman had gone back to flag. He said that the accident occurred at 7:44 a.m.

Front Brakeman Bauer, of Fourth 6, stated that when his train stopped at Port Jervis the engineman sounded a signal for the flagman to protect the rear of the train and he had not been recalled when the accident occurred.

Flagman Burke, of Fourth 6, stated that his train reduced speed at a point approximately 900 feet east of signal 88-2, and he threw off a lighted 5-minute fusee at that point. After his train stopped at Port Jervis he started back to flag but was relieved by the outgoing flagman, who started back immediately to protect the rear of the train. Flagman Burke remained at the rear of his train and after an air-brake test was completed he observed Fifth 6 approaching at a point 1,500 to 1,800 feet distant; at that time the outgoing flagman was waving stop signals with his flag at a point approximately 1,000 feet to the rear of Fourth 6. Flagman Burke estimated the speed of Fifth 6 at 10 or 12 miles per hour at the time of the collision.

The statements of Engineman Hinkley, Fireman Decker, Conductor Orrok and Brakeman Amato, members of the outgoing crew of Fourth 6, developed nothing additional of importance.

Flagman Bishop, of Fourth 6, stated that he was on the station platform when his train arrived at Port Jervis at 7:38 a.m. He relieved the incoming flagman and started back to flag

about 1 minute after the train stopped. He had walked a distance of about 2 rail lengths from the rear of the train when he heard Fifth 6 whistling. He then ran toward the approaching train, waving stop signals with his flag, and had reached a point between 900 and 1,000 feet west of his train when the engine of Fifth 6 passed him. The engineman did not acknowledge his flag signals. The engine was moving at a speed of 30 miles per hour and the engineman appeared to be looking straight ahead; the engine was not working steam and the brakes appeared to be applied lightly. The flagman said that after the accident occurred he was opposite the rear car of Fifth 6. He said that signal 87-2 was displaying a red aspect and the train-order signal was displayed at stop for Fifth 6. He did not place torpedoes as he had not been recalled and he thought it more important to wave stop signals than to take the time to place torpedoes.

Engineman Smith, of Fifth 6, stated that at Susquehanna an air-brake test was made on his train. Between Susquehanna and Sparrowbush he applied the air brakes approximately 22 times and they functioned properly each time. Signal 88-4, located 4,411 feet west of signal 88-2, was displaying a proceed indication and his train passed this signal at a speed of 40 miles per hour. About midway between signal 88-4 and signal 88-2 he closed the throttle in preparation for the station stop at Port Jervis. Signal 88-2 was displaying an approach indication, which he called and which the fireman acknowledged. He made about a 10-pound brake-pipe reduction at signal 88-2 and after the speed of his train was reduced to about 20 miles per hour he released the brakes. He stated that from the right side of the cab signal 87-2 came into view for a short time when his engine was passing under Germantown bridge and he misread its indication as approach. When his engine entered the curve about 900 feet west of signal 87-2 he made another service brake-pipe reduction and as his engine rounded the curve signal 87-2 again came into his view; it was then displaying a red aspect and at the same time he observed the flagman at a point 40 or 50 feet west of signal 87-2 and about 300 feet east of his engine, waving stop signals. At a point approximately 360 feet west of the rear end of Fourth 6 he applied the brakes in emergency. The speed of his train was reduced to 8 or 10 miles per hour at the point of accident. He said that he had a clear view of all signals involved and that the cause of the accident was that he misread the indication of signal 87-2. He stated that the last test of his vision was in January 1940; he passed that test without glasses.

Fireman Hendrickson, of Fifth 6, stated that the speed of his train was about 35 miles per hour when it passed signal 88-4, which was displaying a proceed indication; the engineman



closed the throttle immediately after passing this signal. The fireman, who was on the left seatbox, observed and called the approach indication displayed by signal 88-2. The engine-man made a service brake-pipe reduction as the engine passed signal 88-2, this reduction resulting in the speed being reduced to about 18 miles per hour. The brakes were released at Germantown bridge; the fireman then got off the seatbox and was opening the coal gates to be prepared to take water at Port Jervis when the engineman called an approach indication for signal 87-2. The first he knew of anything being wrong was when the engineman placed the brake valve in emergency position at a point approximately 6 car lengths west of the rear end of Fourth 6. He stated that the engineman appeared to be normal at all times during the trip. He understood the rules required him, as well as the engineman, to observe all signals but in this case he relied on the engineman and failed to observe signal 87-2.

Conductor Smith, of Fifth 6, stated that the air brakes were tested at Susquehanna and they functioned properly en route. The speed of his train when passing signal 88-2 was about 40 miles per hour; immediately after passing that signal the brakes were applied and the speed was reduced to about 30 miles per hour; thereafter the speed was reduced at the usual rate for a train preparing to stop at Port Jervis station; the speed at the time of the accident was 8 or 10 miles per hour.

Brakeman Kenyon, of Fifth 6, corroborated the statement of his conductor.

Flagman McCormack, of Fifth 6, corroborated the statement of his conductor, except that he thought the speed of his train at the time of the accident was about 15 miles per hour. After the accident occurred he got off the rear car of his train to flag, and observed the flagman of Fourth 6 at a point about midway of Fifth 6.

Operator Wycoff, on duty at Port Jervis, stated that under the direction of the yard master he displayed the telephone train-order signal in stop position after the arrival of Fourth 6 at 7:38 a.m. He did not change the indication of this signal prior to the time of the accident.

Operator Newkirk, on duty at WX, located 2.59 miles west of Port Jervis, stated that Fourth 6 and Fifth 6 passed his office at 7:33 and 7:40 a.m., respectively.

Trainmaster White stated that he was at Port Jervis station at the time the accident occurred. It was his opinion the speed of Fifth 6 was reduced from 30 miles per hour to about 12

miles per hour within the last 700 feet.

Superintendent Donnellan stated that he was on Fourth 6 from Susquehanna to Port Jervis. Fourth 6 stopped at Port Jervis at 7:37 a.m. The flagman started back to flag at 7:38 a.m. Fifth 6 was moving at a speed of 18 or 20 miles per hour at the time of the accident, which occurred at 7:44 a.m.

Trainmaster Kinback stated that he was on Fifth 6 from Endicott to Port Jervis. Engineman Smith appeared to be normal when he took charge of the engine at Susquehanna. He said that prior to the time of the accident the train was handled smoothly and the air brakes functioned properly when applied en route. The speed of the train entering Port Jervis yard was 35 or 40 miles per hour until it reached Germantown bridge, where a light application of the air brakes was made. The next application was an emergency application at a point approximately 200 feet west of the point of accident; this application reduced the speed to about 15 miles per hour before the collision occurred.

Shop Superintendent Mitchell stated that he was at Port Jervis station at the time of the accident. He first observed Fifth 6 approaching from a point which appeared to be near Germantown bridge and the speed at that time was 30 or 35 miles per hour. The flagman of Fourth 6, who was waving stop signals with a flag, appeared to be at a point about 400 feet west of signal 87-2. He said the speed of Fifth 6 was 12 or 14 miles per hour at the time of the accident.

Leading Car Inspector Barnard stated that he conducted an air-brake test on Fifth 6 before its departure from Susquehanna; the brakes applied and released properly.

General Signal Inspector Smith stated that subsequent to the accident he tested signal 87-2 and found it to be functioning as intended.

According to data furnished by the carrier, subsequent to the accident the piston travel on the engine, tender and cars of Fifth 6 was found to be within the prescribed limits, except the travel on the left driving-wheel brake-piston, which was 9 inches; however, this excessive travel was caused by damage sustained in the accident.

### Observations of the Commission's Inspectors

The Commission's inspectors observed a test conducted in the vicinity of the point of accident with a locomotive and a baggage car of the same types as those involved and with the 10 coaches involved in the accident. A speed of 40 miles per hour was attained when the engine passed signal 88-2, at which point a 10-pound brake-pipe reduction was made; the speed was reduced to 25 miles per hour and then the brakes were released. The train was then permitted to drift and it attained a speed of 25 to 28 miles per hour at the point where the engineman said he made the second service brake-pipe reduction; a full service brake-pipe reduction was made at this point and the train stopped with the front engine-truck wheels at a point 91 feet east of signal 87-2 or 152 feet west of the point of accident.

Visual tests from the cab of a locomotive of the same type as the one involved disclosed that signal 87-2 could be observed from both sides of the cab from a point 122 feet east of signal 88-2; from this point signal 87-2 was continuously within the range of vision from the left side of the cab, but from the right side it was out of the range of vision a distance of 202 feet and again came into view at a point 643 feet west of the signal.

### Discussion

According to the evidence, Fourth 6 had been stopped at Port Jervis station 6 minutes when the rear end was struck by Fifth 6. The weather was clear and it was daylight when the accident occurred. The air brakes on Fifth 6 and the automatic signals functioned properly.

There was considerable discrepancy in the testimony as to the distance the flagman of Fourth 6 had gone to the rear of his train. The estimates varied from 275 feet to 1,000 feet; the preponderance of evidence was to the effect that he was about 600 feet to the rear of his train when Fifth 6 passed him. The rules required the flagman to furnish flag protection, which included the placing of torpedoes on the rail. The flagman said that he did not place torpedoes on the rail because he thought it better to use all of the time available in proceeding to the rear and waving stop signals. The flagman had not less than 5 minutes in which to furnish flag protection. If he had gone a distance of 1,105 feet to the rear of his train he would have been on the eastern end of a section of tangent track 1,915 feet in length, and an engine crew of an east-bound train could have seen his flagging signals when the engine was at a point 3,000 feet to the rear of Fourth 6. The engineman of Fifth 6 did not

see the flagman's signals until his engine reached a point about 865 feet to the rear of Fourth 6. The fireman was not on his seatbox to observe conditions ahead at this time.

Signal 88-4, located 4,411 feet west of signal 88-2, was displaying a proceed indication for Fifth 6. Signal 88-2 was displaying an approach indication, which required that the speed of this train be reduced to not exceeding 20 miles per hour and that the train be prepared to stop at the next signal. Midway between signals 88-2 and 87-2 the speed was reduced to about 20 miles per hour, but the engine passed signal 87-2, which was displaying a stop indication. The engineman of Fifth 6 said that when his engine reached a point a short distance east of signal 88-2, he momentarily saw signal 87-2 and thought it was displaying an approach indication. The signal was then obscured from his view for about 200 feet and when he observed it again, at a point about 600 feet west of the signal, he saw that it was displaying a stop indication. He placed the brake valve in emergency position when his engine was about 360 feet to the rear of Fourth 6, but this application was made too late to avert the accident. The rules required the engineman and the fireman to communicate to each other the indication of each signal affecting the movement of their train. If the fireman had remained in position to observe signal indications he would have been able to see the indication of signal 87-2 a distance of more than 3,000 feet and the flagman a distance of about 2,600 feet; had he communicated the stop indication of signal 87-2 to the engineman, as required by the rules, it is probable that the accident would have been averted.

#### Conclusion

This accident was caused by failure to provide adequate flag protection for the preceding train and by failure to operate the following train in accordance with signal indications.

Respectfully submitted,

S. N. MILLS,

Director.