INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS

MADISON, ILL.

JANUARY 27, 1939

INVESTIGATION NO. 2324

SUMMARY

Inv-2324

Railroad:	Terminal Railroad Association of St. Louis	
Date:	January 27, 1939	
Location:	Madison, Ill.	
Kind of accident:	Side collision	
Trains involved:	Burlington Freight	Nickel Plate passenger
Train numbers:	73-A	10
Engine numbers:	4943	154
Consist:	26 cars and caboose	4 cars
Speed:	4-7 m.p.h.	3-4 m.p.h.
Operation:	Stop boards at railroad grade crossing	
Track:	Single track used by each train; tangent at crossing; level on Granite City Cut-off and 0.171 percent descending on Eastern Connection	
Weather:	Clear and dark	
Time:	6:28 p.m.	
Casualties:	6 injured	
Cause:	Failure of Nickel Plate No. 10 to stop at railroad crossing which was occupied by a train on a conflicting route.	

March 7, 1939.

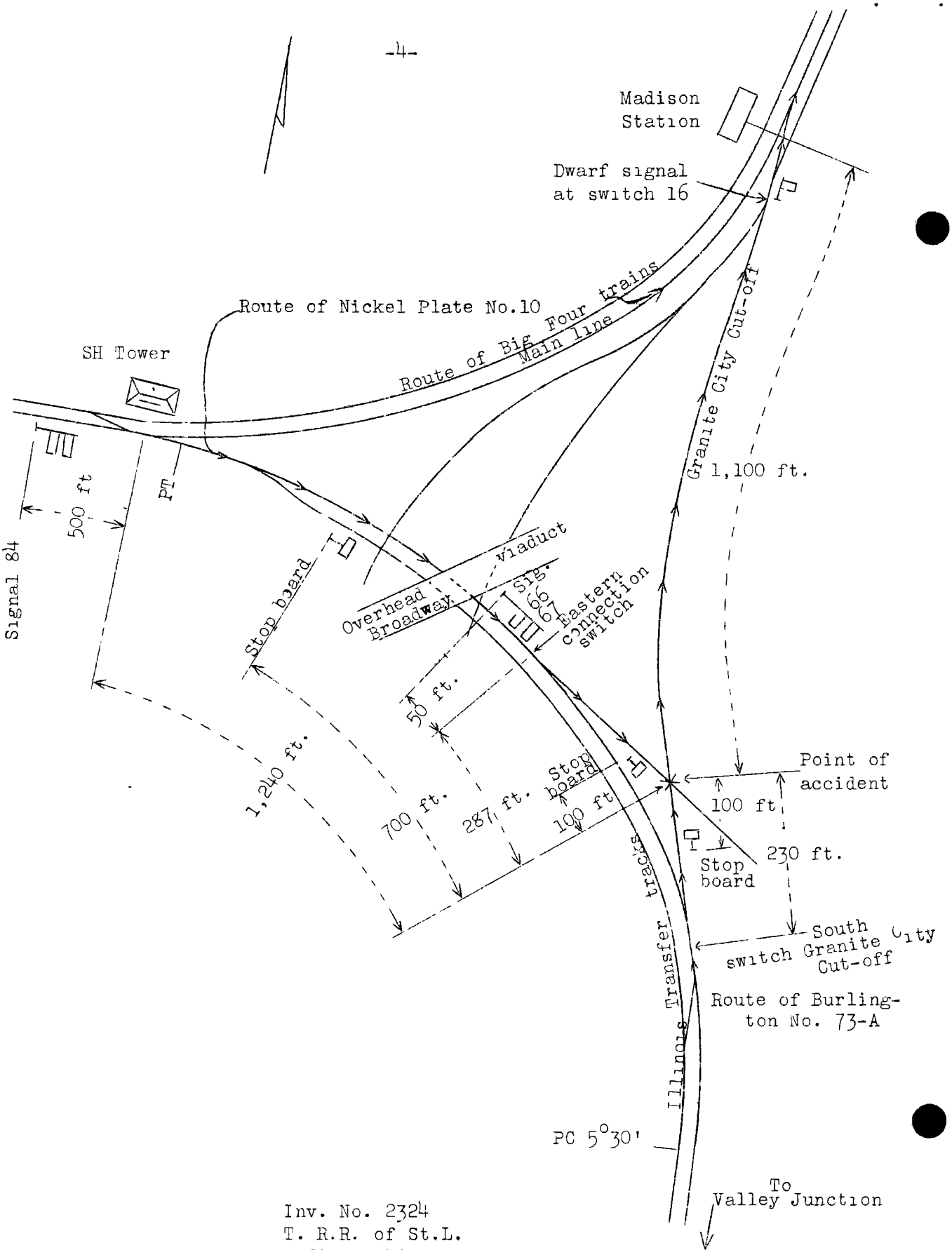
To the Commission:

On January 27, 1939, there was a side collision between a freight train of the Chicago, Burlington & Quincy Railroad and a passenger train of the New York, Chicago & St. Louis Railroad on the tracks of the Terminal Railroad Association of St. Louis, near Madison, Ill., which resulted in the injury of five passengers and one employee. The investigation of this accident was made in conjunction with a representative of the Illinois Commerce Commission.

Location and Method of Operation

Trains entering and leaving St. Louis and adjacent communities operate over the tracks of the Terminal Railroad Association of St. Louis, hereinafter referred to as the "Terminal." The Illinois Transfer Division of the Terminal, a two-track line, extends between Valley Jct. Tower and East Approach, or SH Tower, and in the vicinity of the point of accident the tracks extend in a northerly and then westerly direction to SH Tower. A track known as the Granite City Cut-off and used by the Chicago, Burlington & Quincy train, hereinafter referred to as the "Burlington," leads off to the right, or north, at a point 1,470 feet east of SH Tower, toward Madison where it connects with the main line known as the Merchants Bridge Route; at a point 517 feet beyond the Granite City Cut-off, and 953 feet east of the Tower, a track known as the Eastern Connection and used by the New York, Chicago & St. Louis train, hereinafter referred to as the "Nickel Plate," leads off to the east. These tracks intersect at a point 1,240 feet east of SH Tower, 230 feet north of the south switch of the Granite City Cut-off, and 1,100 feet south of the station at Madison; the accident occurred at this intersection. Movements over the above-mentioned routes are governed by signals controlled from SH Interlocking Tower or are made by direction of a dispatcher at SH Interlocking; the crossing is not included in the interlocking, but is protected by two stop signs.

Approaching the point of accident from the south there is a tangent approximately 2,035 feet in length, followed by a 5°30' curve to the left a distance of 347 feet to the switch leading to the Granite City Cut-off, and then a tangent a distance of 370 feet; the accident occurred on this latter tangent at a point about 120 feet from its northern end. The grade is practically level. Approaching from the west there is a tangent 2,515 feet in length, followed by a 5° curve to the right a distance of 843 feet to the switch leading to the Eastern Connection, and then a tangent a distance of 411 feet; the accident occurred on this latter tangent at a point 124 feet from its eastern end. The grade for eastbound trains is 0.171 percent descending at the point of accident.



Inv. No. 2324
T. R.R. of St.L.
Madison, Ill.
Jan. 27, 1939

The tracks involved cross at an angle of 32 degrees. The stop sign for northward movements on the Granite City Cut-off is located to the right of the track and 100 feet south of the crossing. The sign for eastward movements on the Eastern Connection is located to the right of the track and 100 feet west of the crossing. They bear the words "RAILROAD CROSSING STOP," and at the time of the accident these signs were badly weather-beaten although legible. All Burlington trains approaching from the south are required to stop at the switch leading to the Granite City Cut-off and call SH Tower from a telephone near the switch for instructions regarding which route to use and when to proceed. The train crews must line and reline the switches.

Switch 65 leading to the Eastern Connection, located 287 feet west of the crossing is operated by the towerman at SH Tower. A two-arm, upper-quadrant, semaphore signal is located to the north of the westward track and approximately 50 feet west of the switch; it is a route signal only and does not govern movements over the crossing. The top arm, signal 67, governs eastward movements to Illinois Transfer westward track, and the lower arm, signal 66, governs the entrance to the Eastern Connection. The normal aspects displayed by the signals are red; when the switch is lined for a movement to the Eastern Connection signal 66 displays a green aspect. The normal position of the switch is for an Illinois Transfer movement. Track indicators are provided in the tower to indicate when trains are moving over switch 65 which leads to the Eastern Connection and switch 16 which is located at the north end of the Granite City Cut-off; no means are provided, however, to indicate when trains are on the crossing.

In addition to the crossing involved, two tracks cross the Illinois Transfer tracks practically at right angles at points approximately 350 feet and 600 feet west of the point of accident, and a stop board is located to the right of the tracks and about 100 feet from the first crossing encountered from the west; under General Order No. 25, issued October 1, 1919, trains will not proceed over these tracks without first making the regulation stop, as required by law.

Rule 98 of the Terminal operating rules and rule 305 of the current timetable state that:

> Trains must approach the end of double track, junctions, railway crossings at grade and fixed signals, with caution. Where required by rule or law, trains must stop.

Rule 305 also states:

> Illinois law requires full stop within 800 feet of a railway crossing not protected by interlocking or other safety device.

Rule 301, of the timetable, states that:

> Trainmen (including enginemen and firemen) of other companies operating on the railways of these companies must have passed the required examinations, hold certificates of competency and have in their possession a copy each of the current Book of Railway Operating Rules and Joint Time-table, or request pilots as prescribed by General Rules, Section C, Book of rules dated March 1, 1921.

It was clear and dark at the time of the accident, which occurred at 6:28 p.m.

Description

No. 73-A, a north-bound Burlington freight train, consisted of 26 cars and a caboose, hauled by engine 4943, and was in charge of Conductor Eggers and Engineman Hyde. This train entered the tracks of the Terminal Railroad at Valley Jct. Tower at 5:52 p.m., according to the train sheet, and stopped at the switch leading to the Granite City Cut-off at 6:18 p.m. Instructions were then received by telephone from SH Tower to proceed on the Granite City Cut-off and wait until an east-bound passenger train had passed on the eastward main line at the north end of the cut-off and then to follow that train over the eastward main line. No. 73-A proceeded on the cut-off and stopped short of the dwarf signal, located near switch 16 and governing movements to the eastward main track, with its rear portion on the crossing involved. After standing there 8 or 9 minutes, No. 73-A received a proceed indication; it had started but had moved only a few car lengths and was traveling at a speed of between 4 and 7 miles per hour when the third car ahead of the caboose was struck by Nickel Plate No. 10.

No. 10, an east-bound Nickel Plate passenger train, consisted of one combination mail and baggage car, one baggage car, one coach, and one Pullman sleeping car, in the order named, all of all-steel construction, hauled by engine 154, and was in charge of Conductor Turner and Engineman Summers. This train departed from Union Station, St. Louis, at 6:12 p.m., according to the train sheet, 2 minutes late, passed SH Tower, located 5.54 miles east of Union Station, at 6:28 p.m., 6 minutes ahead of time and struck the Burlington train while traveling at a speed estimated to have been 3 or 4 miles per hour.

The left corner of the pilot of the Nickel Plate engine struck the middle of the third car from the caboose of the Burlington train, turning that car over; its trucks remained on the rails with the exception of one pair of wheels of the rear truck which was derailed. The Nickel Plate engine was slightly damaged. The fireman of the Nickel Plate train was injured.

Summary of Evidence

Engineman Hyde, of Burlington No. 73-A, stated that after arriving at the switch leading to the Granite City Cut-off the flagman called the tower on the telephone and received instructions to proceed to the dwarf signal at the north end of the cut-off and to follow the second section of a Big Four schedule. They proceeded to the dwarf signal and stood there about 8 or 9 minutes, and after the Big Four train had passed they received a proceed indication on the dwarf signal. Engineman Hyde then started the train and had moved about six car lengths and had attained a speed of 5 to 7 miles per hour when the accident occurred. Engineman Hyde stated that he makes this trip about every other day and there have been times when he was instructed to wait at the south Granite City Cut-off switch.

Fireman Wilson, of Burlington No. 73-A, stated that he thought their train had moved only about two or three car lengths when the accident occurred, and that the crossing had been blocked about 20 minutes prior thereto.

Conductor Eggers, of Burlington No. 73-A, stated that as the head brakeman was an extra man he instructed the flagman to assist the head brakeman and make the telephone call at the Granite City Cut-off switch. When the train began to move after having stopped on the cut-off, he went to the front platform of the caboose, saw the Nickel Plate train approaching and when he realized that it was not going to stop he gave stop signals with his white light, but they were not answered and the engine struck the third car ahead of the caboose.

Flagman Hubert, of Burlington No. 73-A, stated that after making the telephone call he remained at the south switch. He saw the proceed indication on the dwarf signal, then his train started to move, he closed the switch and had just boarded the caboose on the right side when the accident occurred; he did not see the Nickel Plate train at any time.

Head Brakeman Watts, of Burlington No. 73-A, stated that he lined the switch for his train to make the movement to enter the Granite City Cut-off, and also the switch at the north end of the cut-off after the Big Four train passed.

Engineman Summers, of Nickel Plate No. 10, stated that he received proceed indications on all signals after leaving Washington Avenue until reaching a 3-arm signal located just west of SH Tower; all three signals at that location displayed red aspects; he made a 9 or 10-pound brake-pipe reduction, and about that time the bottom arm, which governed his route, changed to yellow. The fireman called, "Yellow," and the engineman answered him and released the air brakes. He used a drifting throttle on the descending grade and as he approached the first crossing east

of SH Tower he reduced the speed to about 4 miles per hour, saw that the crossing was clear and called, "Clear crossing," to the fireman, who answered him. He then observed that the lower arm of the next signal, signal 66, displayed a proceed indication and he called its indication. He sounded two blasts on the whistle and started to work steam and when about 4 car lengths from the Granite City Cut-off crossing he saw a car moving slowly northward; he immediately applied the air brakes in emergency, and would have stopped before striking the train had there been about 3 feet more space. He made what he called a "practical" stop for the first crossing when he reduced to 4 miles per hour and saw that the first crossing was clear, and thought that he had observed the operating rules and the Illinois State Law with respect to the stop signs when he made a "practical" stop within 800 feet of the crossing involved and then received a proceed indication on signal 66. It was his understanding that when he received a proceed indication on signal 66 he had a clear route to East Madison, giving as his reason for this understanding that on the night of December 30 his train was stopped by the stop indication of this signal until a train which was passing had cleared the crossing, and after it had cleared the crossing, he received a proceed indication. He also stated that he considered one stop for the three crossings sufficient so far as the law is concerned, and that a "practical" stop, that is, traveling at a speed of 4 miles per hour, is just as safe as coming to a full stop when he sees that the crossing is clear. He had never seen any train make two stops for the crossings in that vicinity. Engineman Summers made conflicting statements relative to the signals located west of SH Tower; he referred to a 3-arm signal as well as a 2-arm signal and said that the lower arm of signal 84, a 2-arm signal, which, in fact, is the signal located a short distance west of SH Tower, is a route signal and indicates that they are to use the cross-over near the tower and proceed on the East Connection. Engineman Summers had last been examined on the operating rules of the Terminal Railroad in 1934, at which time he was examined relative to the routes to and from Union Station, but he did not remember what was brought out relative to the function of signal 66 except that the route was to the East Connection, and he did not remember that anything was said about a stop being made at that point. He had operated over this territory intermittently until 1936 and then took another assignment and had recently returned to the territory involved. However, before returning to this assignment he made a trial trip over this line with another engineman to familiarize himself with the route.

Fireman Kirkendoll, of Nickel Plate No. 10, stated that the first indication that they were going to be diverted from the Granite City main line to their regular route through the Eastern Connection was when approaching SH Tower they received a yellow aspect on the bottom arm of the 3-arm signal located west of the tower. The train was practically stopped at the stop sign at the

first crossing encountered; the speed was reduced to 3 or 4 miles per hour and then when receiving a proceed indication on signal 66 the speed was increased; the train was traveling at a speed of 12 or 14 miles per hour when they saw the train ahead on the crossing, about 4 car lengths distant. Fireman Kirkendoll was examined as an engineer on the operating rules of the Terminal Railroad in October, 1936, and was issued a certificate after being examined on the routes to be used and the signals governing. He stated that it had always been the practice when he was operating on that run to be governed by signal 66 in regard to the railroad crossing, that other enginemen with whom he had worked have accepted the proceed indication of signal 66 as indicating a clear route over the crossing, and that he had never seen any train make two crossing stops in that vicinity.

Conductor Turner, of Nickel Plate No. 10, stated that the air brakes were tested before leaving the Union Station at St. Louis and they functioned properly en route. He thought that the speed was reduced to 8 miles per hour after passing the tower and the first intimation he had of anything wrong was when he felt the air brakes being applied in emergency. He estimated the speed to have been 3 or 4 miles per hour at the time of accident. After the accident the engineman told him that he had a proceed signal, which the conductor interpreted to mean that he had a clear crossing. Conductor Turner had last been examined by the officials of the Terminal Railroad in July, 1917; this examination covered the operation of backing trains from the east to the Union Station. He had been operating regularly on the trip involved since January 3, 1939, but was not familiar with the signals or the stop boards, and could not remember having ever stopped for this crossing on an eastward movement.

The statements of Flagman Myers, of Nickel Plate No. 10, added nothing of importance relative to the operation of their train on the night of the accident. He had been working on this run approximately 37 years and had worked with many enginemen; he said it is the practice for trains in the vicinity of the crossing involved to proceed through this territory at a very low rate of speed. He was not familiar with the stop boards or signals and had never been examined on the operating rules of the Terminal Railroad.

Dispatcher Stanhope, at SH Tower, stated that when the Burlington train called from the Granite City Cut-off at 6:18 p.m., he instructed the operator to tell that train to follow the second section of Big Four 38. The Big Four train passed the tower at 6:26 p.m. and he thought the Nickel Plate train passed at 6:28 p.m. While it is not unusual for the Nickel Plate train to be ahead of time he did not expect it so soon; when he released the Burlington train at 6:18 the Nickel Plate train had not yet passed Biddle Street, 2.73 miles west of SH Tower. The Nickel Plate

Discussion

The investigation developed that in accordance with instructions received from SH Tower, Burlington No. 73-A proceeded on the Granite City cut-off and waited at the north end for the passage of the second section of the Big Four schedule before proceeding on the main line, and owing to the fact that the north end of the cut-off is only about 1,000 feet beyond the crossing with the East Connection track, the rear portion of the Burlington train blocked the crossing; this train had started forward and had moved only a short distance when it was struck by the Nickel Plate train.

Interlocking protection is not afforded at the crossing involved, but two stop boards are provided, one a short distance west of two other grade crossings and about 700 feet west of the grade crossing involved, and the other stop board being located about 100 feet west of the crossing involved. According to the evidence, the speed of the Nickel Plate train was reduced when passing through the SH interlocking and was further reduced to about 4 miles per hour at the first stop board but it did not stop; then when the proceed indication of signal 66 was observed, speed was increased, and the train did not stop or reduce speed for the second stop board. The train had attained a speed of 12 or 14 miles per hour when the engineman and fireman saw the Burlington train on the crossing, about 4 car lengths ahead, and it was then too late to stop before striking the train on the crossing.

The operating rules as well as time-table rules require that trains must approach railway crossings at grade with caution, and where required by law trains must stop. The engineman was familiar with the locations of the stop boards and the provisions of the Illinois State Law which require a stop to be made within 800 feet of a railway crossing not protected by interlocking or other safety device, but he thought one stop for the three crossings sufficient so far as the law is concerned and that a "practical" stop, that is, a reduction of speed to about 4 miles per hour, is just as safe as coming to a full stop. His statement as well as other evidence indicate that it was not the practice to stop at the second stop board. It is apparent from this investigation that at the location of the first stop board it could not be determined whether the way was clear to proceed over the crossing where this accident occurred. Had the Nickel Plate train approached this crossing under control prepared to stop at the second stop board, this train no doubt could have been stopped in time to prevent the accident.

The engineman and the fireman of the Nickel Plate train stated that there was a 3-arm signal west of SH Tower, when in fact there is no 3-arm signal in that vicinity. Interlocking signal 84 is the governing signal through the plant for eastward movements; it is a 2-arm signal located approximately 500 feet west of the tower and indicates the routes the trains are to follow. Another route signal, 66-67, is located at the Eastern Connection switch, 287 feet west of the crossing, and governs only the direction of trains and does not protect movements over the crossing. However, the investigation disclosed that the engineman, fireman and conductor of the Nickel Plate train thought signal 66 governed movements over the crossing and when displaying a green aspect indicated a clear route to East Madison. Had this crossing been protected by interlocking it is probable that this accident would have been prevented.

Rule 301 of the timetable requires that trainmen, including enginemen and firemen of other companies, must have passed the required examinations. The engineman, fireman and conductor of the Nickel Plate train had been given examinations on the operating rules and routes used; the flagman had not been examined at any time. However, the lack of knowledge on the part of the members of this crew relative to the signals, their functions and the requirements of the rules indicates that such examinations as were given were superficial in character, and the investigation disclosed decided laxity in the enforcement of rules. Operating officials should make certain that crews operating over these lines are thoroughly familiar with the requirements of the rules, the routes used, and the functions of the signals, and that operating rules are strictly adhered to.

Conclusion

This accident was caused by the failure of Nickel Plate No. 10 to stop at a railroad crossing at grade which was occupied by a train on a conflicting route.

Recommendation

It is recommended that responsible officials of the Terminal Railroad of St. Louis promptly adopt measures to insure a correct understanding on the part of train-service employees operating over their lines of the functions of signals and to obtain strict compliance with the rules.

Respectfully submitted,

W. J. PATTERSON,

Director.