

Inv-2320

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

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ACCIDENT ON THE  
ILLINOIS CENTRAL RAILROAD

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MARISSA, ILL.

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DECEMBER 29, 1938

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INVESTIGATION NO. 2320

SUMMARY

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Inv-2320

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Railroad:	Illinois Central
Date:	December 29, 1938
Location:	Marissa, Ill.
Kind of accident:	Rear-end collision
Trains involved:	Freight : Freight
Train numbers:	Extra 1539 : Extra 1843
Engine numbers:	1539 : 1843
Consist:	13 cars and : 30 cars and caboose caboose
Speed:	Standing : 25-35 m.p.h.
Operation:	Timetable, train orders and automatic block-signal system
Track:	Double; tangent; 0.49 percent descend- ing for northward movements
Weather:	Clear
Time:	8:37 p. m.
Casualties:	5 injured
Cause:	Failure to operate second train in accordance with signal indications and failure of first train to furnish adequate flag protection.

March 8, 1939.

To the Commission:

On December 29, 1938, there was a rear-end collision between two freight trains on the Illinois Central Railroad at Marissa, Ill., which resulted in the injury of five employees. This investigation was made in conjunction with a representative of the Illinois Commerce Commission.

#### Location and Method of Operation

This accident occurred on that part of the St. Louis Division designated as the St. Louis District which extends between East St. Louis, and Carbondale, Ill., a distance of 91.3 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-signal system, and the movement of extra trains without train orders is authorized by rule. At Marissa a house track 2,318 feet in length parallels the main tracks on the east; the north entrance switch to this track is located 1,733 feet north of the passenger station which is located between these tracks. The accident occurred on the northward main track at a point 854 feet north of the passenger station. Approaching from the south the track is tangent more than 9,000 feet to the point of accident and more than 6,000 feet beyond. The grade is 0.49 percent descending northward a distance of 4,100 feet to the point of accident and for some distance beyond.

Northward automatic signals G-38-2 and G-37-2 are located 4,095 and 250 feet, respectively, south of the point of accident, and signal G-36-4 is located 5,504 feet north of the point of accident; these are 2-arm, 2-position, lower-quadrant, semaphore signals approach lighted.

Night aspects and indications of these signals are as follows:

Green-over-green	Proceed
Green-over-yellow	Proceed at medium speed prepared to stop at the next signal.
Red-over-yellow	Stop; then proceed.

Timetable rule 282 reads, in part: On two or more tracks, \*\*\* Trains may pass a "Stop and Proceed" signal without stopping, proceeding at restricted speed not exceeding (15) miles an hour.

Medium speed is defined as "Proceed at a speed reduced to not exceeding one-half the maximum authorized at point involved (not exceeding thirty miles per hour) prepared to stop at the next signal."

o	East St. Louis, Ill.
	32.2 mi.
o	Lenzburg
	4.6 mi.
X	Point of accident
o	Marissa
	4.4 mi.
o	Tilden
	19.1 mi.
o	Pinckneyville
	9.7 mi.
o	DuQuoin, Ill.

North House track switch

Station

Direction  
of trains

Sig. G-36-2

5,504 ft.

879 ft.

Point of accident

250 ft.

Sig. G-37-2

854 ft.

3,845 ft.

Sig. G-38-2

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Illinois Central RR  
Marissa, Ill.  
Dec. 29, 1938

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."

The maximum authorized speed for the second train involved is 50 miles per hour.

Operating rules provide as follows:

Rule 505. Block signals govern the use of the blocks, but, unless otherwise provided, do not supersede the superiority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

Rule 35. The following signals will be used by flagmen:

Day Signals	- A red flag,	Night Signals	- A red light,
	Torpedoes		A white light,
	and Fusees.		Torpedoes and Fusees.

Rule 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 fusees. \*\*\* Conductors and enginemen are responsible for the protection of their trains.

Rule 917. Conductors must not allow other duties to interfere with the proper protection of their train, and must require their flagman to act promptly and in strict accordance with the rules. \*\*\*

The weather was clear at the time of the accident, which occurred about 8:37 p. m.

#### Description

Extra 1539 North, engaged in coal-mine switching service, consisted of 12 loaded cars, one empty car, and a caboose, hauled by engine 1539, and was in charge of Conductor Strait and Engineer man Turner. At Pinckneyville, the initial station for this train, 23.5 miles south of Marissa, the crew received a clearance card and a message detailing work at numerous coal mines and including

the following lineup on trains:

No. 205 and No. 226 and 15 on time  
No. 277 and 1st and 2nd 273 and 289 regular  
Exa 1394 B&E coal cars leave Belleville on arrival of No. 205  
Exa 1374 Clark may eat at Pinckneyville B&E coal  
Exa 1768 Brown leave Pville just ahead or just behind No. 226  
Listed at Cdale 4.15 PM picking up at Dowell

OTN 512 PM

Extra 1539 left Pinckneyville without train orders at 5:31 p.m., according to the train sheet, engaged in assigned duties en route, arrived at Marissa at 8:29 or 8:30 p.m., with 13 cars and a caboose, and while picking up a car from the house track the rear end was struck by Extra 1843 North.

Extra 1843 North, consisted of 30 loaded freight cars and a caboose, hauled by engine 1843, and was in charge of Conductor Evans and Engineman Roethe. This train, en route from the Centralia District, entered the St. Louis District at Du Quoin, 9.7 miles south of Pinckneyville, departed at 7:08 p.m., according to the train sheet, and left Pinckneyville, the last open office, at 7:57 p.m. No train orders or instructions regarding other trains on the district involved were received. Approaching Marissa this train received a green-over-yellow aspect displayed by signal G-38-2, a red-over-yellow aspect displayed by signal G-37-2, and while running at a speed variously estimated to have been from 25 to 35 miles per hour collided with the rear of Extra 1539 North.

Engine 1843 was derailed to the west and stopped on its left side parallel with and fouling the southward track 175 feet north of the point of collision, with its front end badly damaged and the cab practically demolished. The three rear cars and the caboose of the standing train and the first six cars of the moving train were derailed and badly damaged, and stopped at various angles to and fouling both main tracks and the house track.

The five employees injured comprised the entire crew of Extra 1843 North.

#### Summary of Evidence

Conductor Strait, of Extra 1539, who is regularly assigned to coal-mine service between Pinckneyville and Lenzburg, a distance of 28.1 miles, stated that he has been assigned to such service in that territory for various periods during the past 16 or 18 years. Prior to departure from Pinckneyville it is the custom to receive a message from the dispatcher containing working instructions, which also includes a line-up containing infor-

mation of the approximate movement of other trains in that district. Additional information in regard to the trains specified therein, when necessary, is obtained from the dispatcher by telephone at points en route. When departing from Pinckneyville he received the customary line-up and a clearance card but no train orders. The line-up indicated that Extra 1768 would be the first train following. Extra 1843 was not included in the lineup. Work was performed en route and he conversed with the dispatcher about 6:40 p.m. in regard to Extra 1394 South which was on the line-up. While setting out cars at Tilden, 4.4 miles south of Marissa, he placed two torpedoes on the rail; he thought the flagman had also placed torpedoes at a stop made prior to that time. On the basis of information in the line-up he estimated that Extra 1768 would not arrive at Marissa until after 9 p.m. He arrived at that point about 8:30 p.m., and therefore estimated that he had an interval of at least 30 minutes before the first following train would arrive; he expected the work at Marissa to consume from 6 to 10 minutes only. As his train passed the station he got off to obtain from the bill-box way-bills covering cars picked up en route, and, with a fussee and a white lantern in his possession, he assumed the responsibility for protecting the rear end while the flagman rode until the train stopped and assisted in getting the car from the house track. The weather was clear, the markers were properly lighted, and the caboose stopped north of signal G-37-2 and about 22 car lengths north of the station at 8:29 or 8:30 p.m. As he walked toward the caboose after obtaining the way-bills he noted that signal G-37-2 was functioning properly as the position of the semaphore arms indicated "stop;" the block behind him was unoccupied at that time and this signal was not lighted. As he arrived at the caboose he saw the reflection of the headlight of the approaching train about 1 3/4 miles distant; he immediately lighted the fusee and waved it as a stop signal and proceeded toward the approaching train; his signals were not acknowledged and the engine passed him at a speed of 30 or 35 miles per hour at a point about 16 car lengths south of his caboose; the collision occurred immediately thereafter. He had never received instructions of any kind authorizing him to disregard rule 99; it was his opinion that the flag protection he furnished and the distance he went back fully complied with the rule in this instance. He considered the message containing the line-up as special instructions; they were performing their duties on this occasion in accordance with the information therein and in the same manner in which this work has been done during the past 18 years. The supervising officers are aware of the custom and he has never been criticized for performing his duties in this manner nor for violation of rule 99.

Engineman Turner, of Extra 1539, stated that he is regularly assigned to coal-mine service in the district involved and he has been in this service for various periods during the past four

years. The rear headlight was illuminated while backing into the house track but immediately after coupling to the car, about 15 car lengths distant and before proceeding ahead, it was extinguished; the accident occurred about one or two minutes thereafter as he stopped north of the house-track switch to back to the train. It is the custom to receive a line-up, at the beginning of each trip, containing information of the movement of all following trains so that they can clear them. Prior to the date of the accident they had always cleared all following trains shown on the line-up without stopping them and this is the first instance, except a south-bound train a week prior to the accident, in which such a train was not included. The flag protection afforded at the time of the accident was the same as usually had been furnished while working coal mines when the information received from the chief dispatcher indicated that no following trains were near. When approaching preceding trains on the main track he usually finds the flagman from 4 to 15 car lengths back of the caboose; in his opinion the added protection of the automatic block signals makes it unnecessary to proceed a greater distance and in this particular instance the block signal at Marissa afforded adequate protection with the flagman back that distance. He recently attended a class for instructions and examination on train rules conducted by the trainmaster and the traveling engineer; he has never been authorized to disregard rule 99. The weather was clear at the time of the accident and he could see the lighted right marker on the caboose.

Fireman Beck, of Extra 1539, stated that the weather was clear and, while picking up the car from the house track, he noted that both caboose markers were properly lighted. The rear headlight was extinguished after coupling to the car on the house track. A short time prior to the date of accident a similar movement was made to pick up a car at Marissa and the flag protection furnished in that instance was the same as when the accident occurred. When engaged in switching the coal-mine tracks the members of the crew keep a lookout for following trains.

Flagman Stahlheber, of Extra 1539, stated that in accordance with the usual practice he assisted in picking up the car from the house track and as he returned after his engine had departed with the car he saw the conductor on the engineman's side of the northward track waving a lighted fusee as a stop signal at a point about 15 car lengths south of the caboose. The approaching train was drifting at a speed of 30 or 35 miles per hour when it struck the caboose. Flagman Stahlheber was not expecting Extra 1843 because it was not mentioned in the line-up. He has been assigned in the district involved at various times during his 24 years of employment. The line-up received at the beginning of the trip includes all train movements affecting them during their trip, therefore, the conductor does not thereafter contact the dispatcher by telephone or otherwise in regard to any train move-



ments unless it is apparent that a train specified in the line-up is late on the estimated arriving time; such inquiries are made for that reason only. The flag protection furnished is governed by their estimate of the time of train movements which is based on the information conveyed in the line-up. He usually goes out to flag but there are instances when, because of being engaged in switching on an auxiliary track and at a point to the rear of their train, he does not provide flag protection; there are other occasions when the work requires obstructing both main tracks and flag protection is not rendered; it is impossible to accomplish their switching and comply with rule 99 at all times as the crew consists of the conductor and two men only. Torpedoes are generally placed for protection at points where they stop to perform work and if the information in the line-up indicates a train is close a 10 minute fuse is dropped; however, fuses are of little value as the mine switching requires 1 to 1½ hours. He has never been instructed to disregard rule 99 nor reprimanded for violating it. In his opinion Extra 1539 was properly protected at the time of the accident because the visibility from the approaching train was clear about 1½ miles; he thought that the conductor had placed torpedoes at Tilden, 4.4 miles south of Marissa, and they were in automatic block-signal territory; however, he stated that the automatic block signals do not relieve them from observing rule 99.

Head Brakeman Ragland, of Extra 1539, stated that he has worked on the run involved for five or six years. He remained at the switch while the flagman coupled the car on the house track; the weather was clear and he saw no smoke from their engine which might have obscured signal G-37-2. The line-ups are issued by the dispatcher; they use them in the same manner as train orders and he understood the information contained therein conveys authority to disregard rule 99; he said they could not observe the rule and accomplish the work.

Engineman Roethe, of Extra 1843, stated that the air brakes were tested on 20 loaded cars picked up at Du Quoin and they functioned properly when applied at Pinckneyville. A clearance card was received at that point but no train orders or other instructions as to movements of other trains were issued to them; through trains are never given information as to movement of coal-mine crews. Approaching Marissa their speed was about 50 miles per hour when he observed that signal G-38-2 displayed a green-over-yellow aspect. He closed the throttle about 30 car lengths from the signal and applied the brakes with a brake-pipe reduction of between 20 and 25 pounds. As they passed the signal the fireman was firing the locomotive and the brakeman was on the fireman's seat box. Looking ahead Engineman Roethe saw a proceed signal and released the brakes when about 30 car lengths north of Signal G-38-2, at which time the speed had been reduced to about 30 miles

per hour. He then saw the red-over-yellow aspect displayed by signal G-37-2 and instantly realized that he had become confused as to the signal locations and had mistaken signal G-36-2, which was displaying a proceed indication, for signal G-37-2; the fireman observed and called out the stop indication at the same time. He did not see the cabooses or a flagman at any time and was not aware that the track was occupied until the headlight revealed the caboose; when he was within 8 or 10 car lengths of it he saw two men coming out the doorway, one of whom had a lighted fusee. No torpedoes were exploded enroute. The headlight of an approaching south-bound train did not restrict his vision and he saw no headlight in the vicinity of the house track; however, he thought that telegraph poles, cross-arms and wires might have interfered to some extent with his view of signal G-37-2. During his experience on the district involved he has observed that rule 99 is generally obeyed by the mine-run crews; however, these crews have usually been in the clear. More than one year had elapsed preceding the date of accident since he had overtaken a mine-run train on the main track; in that instance he encountered a fusee and a flagman. He underwent a physical and an operating-rules examination early in 1938; no exception was taken to his physical condition or his vision at that time; he was wearing his glasses at the time of accident.

Fireman Brokaw, of Extra 1843, stated that the weather was clear. No torpedoes were exploded en route. The head brakeman was on the engine; the speed was about 50 miles per hour when they all saw and called the green-over-yellow aspect of signal G-38-2; the engineman applied the air brakes and the speed was reduced to about 25 miles per hour. The fireman then began firing the engine, and the brakes were released while he was so engaged. The engineman made an emergency application at about the north end of the depot. Resuming his position on the seat box Fireman Brokaw saw the red aspect displayed by signal G-37-2 about 250 feet distant, at which time they were within a distance of about 500 feet of the caboose. He did not hear the engineman or head brakeman call out the aspect of signal G-37-2; they did not announce the presence of a flagman or a lighted fusee and he saw neither one. He could not recall having observed lighted markers on the caboose and he said that approaching northward after passing signal G-38-2 a pole or other object for a time interferes with the view of signal G-37-2.

Head Brakeman Miller, of Extra 1843, stated that no torpedoes were exploded en route. He was on the fireman's seat box, keeping a lookout ahead prior to and at the time the collision occurred, and the visibility was clear. The speed was reduced to about 30 miles per hour in accordance with the indication of signal G-38-2. The glare of a headlight of the engine on the house track interfered with his view so that he did not see the red aspect of signal G-37-2 until they were within 10 or 12 car

lengths of the caboose. The markers were brightly illuminated, but he did not see a flagman, a lighted fusee, a red or a white lantern before the collision occurred.

Conductor Evans, of Extra 1843, stated that he was in the caboose cupola approaching Marissa. The speed was about 50 miles per hour when a heavy brake-pipe reduction was made, at which time the locomotive was near signal G-38-2, and the speed was reduced to about 25 miles per hour. After this application the brakes were released and about 1 minute later he felt the brakes again being applied and the caboose air-gauge hand went to zero; immediately thereafter the collision occurred, which was about 8:37 p.m. He has worked on the St. Louis District 7 years. Line-ups are issued by the dispatcher to mine-run crews which inform them of the approximate time of movements of other trains at specified points. While no instructions have ever been issued relieving them from compliance with rule 99, north-bound mine-run crews have always considered the line-up as authority to occupy the main tracks without flag protection while engaged in switching if their estimate, based on information in the line-ups, indicates that no trains are near. This practice has existed so long that the custom has become the rule. It is necessary to violate rule 99 in order to accomplish their duties at the coal mines.

The testimony of Flagman Fitch, of Extra 1843, added nothing to the testimony of the other witnesses.

Dispatcher Perry stated that when he issued the line-up to Extra 1539 about 5:05 p.m., he had no figures on extra 1843 as it was not on the St. Louis District. He had no communication with the crew of Extra 1539 thereafter prior to the time of the accident as they did not call on the telephone; therefore, he had no opportunity to inform them of the movement of Extra 1843. Occasionally the mine-run crew involved calls on the telephone from outlying points en route but not regularly.

Superintendent Hamilton, in charge of the district involved, stated that while the investigation indicated that they were not requiring the observance of rule 99, the management of the division is not a party to such practice.

#### Observations of the Commission's Inspectors

Subsequent to the accident a night test was made by the Commission's inspectors to determine the range of visibility approaching the point involved. A caboose with illuminated red markers on its south end was placed at the point of collision. Engine 1539, headed north with its rear headlight burning, was placed at the point on the house track where it had been coupled to the car on the night of the accident and from the cab of an engine approaching northward it was established that under the conditions

which prevailed on the night the accident occurred, the red-over-yellow aspect of signal G-37-2 could be seen a distance of at least 3,945 feet and the caboose markers were visible at a distance of at least 4,200 feet. It was also established that had the rear headlight of engine 1539 been illuminated it could not have been seen from an approaching north-bound train until the engine was within 769 feet of signal G-37-2 because of the location of the depot.

#### Discussion

The crew of Extra 1539 received a line-up and a clearance card at Pinckneyville and proceeded northward, switching at coal mines en route. This train stopped at Marissa about 8:30 p.m. to pick up a car from the house track. According to the evidence, as the caboose passed the depot the conductor alighted to procure way-bills and at the same time, in accordance with the usual custom, he assumed the responsibility of protecting the train; the flagman rode to the stopping point to assist in coupling to the car. The conductor had only a white lantern and a fusee in his possession. The caboose stopped at a point 250 feet north of automatic signal G-37-2. This signal was functioning properly and the caboose markers were lighted. About seven minutes later, after engine 1539 had picked up the car and was preparing to back to the train, the rear end was struck by Extra 1843.

As he arrived at the caboose with the way-bills the conductor said he saw the headlight of the approaching train about 1-3/4 miles distant; immediately lighting the fusee he proceeded toward the train waving the fusee as a stop signal. His signals were not acknowledged and the train passed him at a point about 16 car lengths south of the caboose. He also said that he had placed torpedoes on the rail at Tilden, 4.4 miles south of Marissa. The flagman stated that as he was returning from the house track he saw the conductor waving the fusee at a point about 15 car lengths south of the caboose and shortly thereafter the approaching locomotive passed the north end of the depot. He also stated that the conductor had informed him at Tilden that he had placed torpedoes at that point. However, the three employees who were on engine 1843 stated positively that they heard no torpedoes exploded en route. The engineman of that train stated that he complied with the indication of signal G-38-2 and after reducing the speed to about 30 miles per hour he mistook signal G-36-2, located 5,754 feet north of signal G-37-2 and which was displaying a proceed indication, for signal G-37-2 and released his brakes; under the rules he was required to reduce speed to not more than 25 miles per hour after passing signal G-38-2; he then saw the yellow-over-red aspect displayed by signal G-37-2 and realized his error, but it was then too late to stop before colliding. Had automatic train stop, train control or cab signal devices been in use, it is

probable this error would have been detected in time to avert this accident. He also stated that he did not see a flagman or the caboose markers and was not aware that the track was occupied until he was within 8 or 10 car lengths of the caboose when it was revealed by the headlight of his own engine, at which time he saw two men coming from the doorway, one of whom had a lighted fusee. After passing the approach signal the fireman was firing but he looked out when the emergency application was made at the north end of the depot and saw the stop signal about 250 feet distant. The head brakeman, who was sitting on the fireman's seat box and looking ahead, stated that he did not see a flagman at any time; he also stated that the glare of the rear headlight of the engine on the house track blinded him to the extent that he did not see the red-over-yellow aspect of signal G-37-2 until immediately prior to the collision and that he first saw the lighted caboose markers when about 12 car lengths distant; however, his engineman stated that he saw no headlight in the vicinity of the house track. The engineman thought that telegraph poles and their cross-arms interfered with his view of signal G-37-2.

Tests made by the Commission's inspectors subsequent to the accident and under conditions similar to those prevailing at the time it occurred, established that the yellow-over-red aspect of signal G-37-2 was visible from the cab of a northbound locomotive a distance of at least 3,945 feet and the lighted red markers of the caboose could be seen a distance of at least 4,200 feet. This test also established that had the rear headlight of engine 1539 been lighted it could not have been seen from engine 1843 until they were within 769 feet of signal G-37-2. The engine crew of engine 1539 stated that the headlight was extinguished approximately two minutes prior to the time of the accident.

The evidence is conclusive that the engineman and the head brakeman of Extra 1843 for a time overlooked the indication of signal G-37-2, it seems incredible that they also failed to see a lighted fusee being waved across the track as stated by the conductor and the flagman; it also seems improbable that all three employees on locomotive 1843 failed to hear the explosion of torpedoes at Tilden had they been placed at that point, as stated by the conductor.

According to the evidence, at the beginning of a trip crews engaged in coal-mine service receive line-ups which convey advance information of the approximate time of movements of other trains at specified points during their tour of duty. Trains mentioned therein are not informed of mine-run movements. The crew of Extra 1539 received such a line-up which indicated that Extra 1768 would be the first train to follow them but no mention was made of Extra 1843. From the information in the line-up they estimated that when they stopped at Marissa about 8:30 p.m. Extra 1768 would

not arrive at that point until after 9 p.m. Extra 1843 did not arrive on the St. Louis District until almost 2 hours after the line-up was issued, therefore, the dispatcher did not include it. The crew of Extra 1539 was not later advised of this train because they did not call the dispatcher although telephones were available en route; they said that they do not contact the dispatcher after securing a line-up unless it is to obtain later information on trains already specified therein; such being the practice, they had no reason for calling the dispatcher in this instance, as they estimated that they were at least 30 minutes ahead of Extra 1768 when they stopped at Marissa.

Rule 505 requires that rule 99 must be observed in automatic block-signal territory. Flag protection as required by operating rule 99 was not furnished in this instance. The conductor, the engineman and the flagman of Extra 1539 were of the opinion that adequate flag protection was being furnished at the time of the accident. While the employees involved testified that they had never been instructed to disregard rule 99, their testimony disclosed that for a period of about 18 years prior to the occurrence of this accident crews engaged in mine-run service in the district involved have accepted these line-ups on a parity with train orders and as authority to occupy the main track while engaged in switching at mines and also to obstruct both main tracks when necessary without rendering flag protection, provided the information contained in the line-up indicates that no trains are near. The evidence was to the effect that this custom has been followed until it is considered a rule and that the officials have not criticized employees for failure of mine-run crews to observe rule 99. On the other hand, the superintendent stated that the management is not a party to the violation of rule 99.

The non-observance and non-enforcement of operating rules and the authorization of train movements by message or otherwise than by train orders, and without issuing the information to all trains concerned as disclosed in this investigation is a haphazard method of operation and creates conditions which are likely at any time to lead to accidents such as occurred in this case.

#### Conclusion

This accident was caused by failure to operate Extra 1843 in accordance with signal indications and by failure of Extra 1539 to furnish adequate flag protection.

#### Recommendation

It is recommended that officials take immediate action to secure strict observance of the rules.

Respectfully submitted,  
W. J. PATTERSON,  
Director.