

Dept. of Transportation

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REPORT OF THE DIRECTOR  
BUREAU OF SAFETY

ACCIDENT ON THE  
MICHIGAN CENTRAL RAILROAD

MONROE, MICH.

FEBRUARY 18, 1938

INVESTIGATION NO. 2251

SUMMARY

Inv-2251

Railroad:	Michigan Central	
Date:	February 13, 1938	
Location:	Monroe, Mich.	
Kind of accident:	Rear-end collision	
Trains involved:	Passenger	:Passenger
Train numbers:	No 309	:No 227
Engine numbers:	5335	:5294
Consist:	12 cars	:10 cars
Speed:	10-15 m.p.h.	:15-25 m.p.h.
Track:	Tangent; level	
Weather:	Foggy	
Time:	1:30 a.m.	
Casualties:	14 injured	
Cause:	Failure to obey signal indications, and failure to provide adequate rear-end protection.	

March 8, 1938

To the Commission:

On February 13, 1938, there was a rear-end collision between two passenger trains on the Michigan Central Railroad near Monroe, Mich., which resulted in the injury of 10 passengers, 1 Pullman porter, and 3 dining-car employees.

#### Location and method of operation

This accident occurred on that part of the Detroit Division which extends between Detroit, Mich., and Toledo, Ohio, a distance of 57.57 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 supplemented by automatic train-stop devices of the intermittent-inductive type. The accident occurred on the southward main track at a point approximately 4 miles north of the station at Monroe. Approaching this point from the north the track is tangent for a distance of more than 5 miles to the point of accident, and for several miles beyond. The grade is practically level.

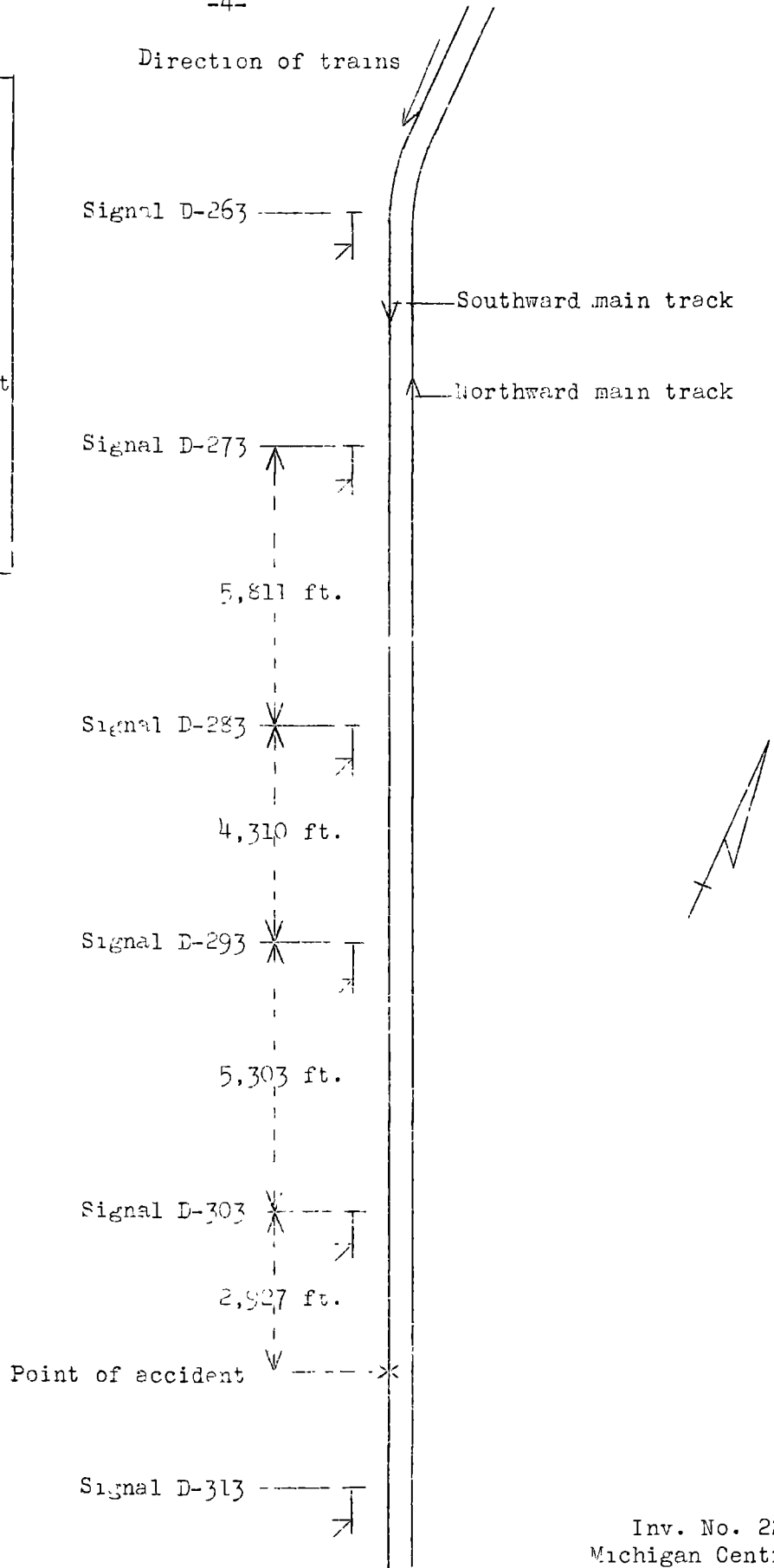
The signals directly involved in this accident are automatic block signals D-303, D-293, D-283, and D-273, governing southward movements, which are of the 3-indication, color light, continuously-lighted type; they are located 2,927, 8,230, 12,540, and 18,351 feet, respectively, north of the point of accident. Indications are red for "stop, then proceed at restricted speed"; yellow for "proceed preparing to stop at next signal; train exceeding medium speed must at once reduce to that speed"; and green for "proceed". When the southward track is occupied south of signal 303, this signal will normally display a red indication, signal 293 a yellow indication, and signals 283 and 273 will display green indications; however, there had been a severe electrical storm in this territory a short time prior to the time of the accident with the result that lights at some of the signals were not burning while at other signals restrictive indications were being displayed. Automatic train-stop inductors are located approximately 70 feet in approach of each signal.

Restricted speed is defined as a speed not exceeding that which will enable a train to stop short of train ahead, obstruction, or switch not properly lined, and look out for broken rail. Medium speed is defined as a speed not exceeding 30 miles per hour.

The maximum authorized speed for passenger trains is 70 miles per hour.

Direction of trains

o	Detroit, Mich.
	14.66 mi.
o	Trenton
	6.16 mi.
o	Rockwood
	5.62 mi.
o	Newport
	3.35 mi.
X	Point of accident
	4.03 mi.
o	Monroe
	23.75 mi.
o	Toledo, Ohio



Inv. No. 2251  
 Michigan Central RR  
 Monroe, Mich.  
 Feb. 13, 1938

Rule 27, in part, reads as follows: "A signal imperfectly displayed, or the absence of a signal at a place where a signal is usually shown, must be regarded as the most restrictive indication that can be given by that signal, except that when the day indication is plainly seen, it will govern".

Rule 34 reads as follows: "The engineman and fireman must, and when practicable the trainmen will, communicate to each other the indication of all signals affecting the movement of their train".

Rule 99, in part, reads as follows: "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. When recalled and safety to the train will permit, he may return. When the conditions require, he will leave the torpedoes and a lighted fusee. When a train is moving under circumstances in which it may be overtaken by another train, the flagman must take such action as may be necessary to insure full protection. By night, or by day when the view is obscured, lighted fuses must be thrown off at proper intervals".

It was dark and foggy at the time of the accident, which occurred at 1:30 a.m.

#### Description

No. 309, a south-bound passenger train, consisted of one baggage car, three coaches, six Pullman sleeping cars, one diner, and one Pullman sleeping car, in the order named, all of all-steel construction, hauled by engine 5335, and was in charge of Conductor Murphy and Engineman Coyne. This train left Detroit, approximately 30 miles north of the point of accident, at 11:55 p.m., according to the train sheet, on time; passed Trenton Tower, the last open office, located approximately 19 miles north of the point of accident, at 12:25 a.m., according to the train sheet, 4 minutes late; stopped at signal 303 on which there was no light burning; then proceeded and while traveling at a speed of 10 or 12 miles per hour its rear end was struck by No. 227.

No. 227, a south-bound passenger train, consisted of two express cars, one mail car, one combination car, one coach, four Pullman sleeping cars, and one coach, in the order named, the first two being of steel underframe construction and the

remainder of all-steel construction, hauled by engine 5294, and was in charge of Conductor George and Engineman Freidel. This train left Detroit at 12:30 a.m., according to the train sheet, on time; passed Trenton Tower at 1 a.m., according to the train sheet, 4 minutes late; passed signal 273 which was displaying a yellow indication; and without stopping passed signal 283 on which no light was burning, signal 293 which was displaying a red indication, and signal 303 on which no light was burning, and collided with the rear end of No. 309 while traveling at a speed of between 18 and 20 miles per hour.

No equipment of either train was derailed. The two rear cars of No. 309 and the fourth and fifth cars of No. 227 were slightly damaged.

#### Summary of evidence

Engineman Coyne, of No. 309, stated that all signals encountered between Trenton Tower and Rockwood, located approximately 6 miles south of Trenton Tower, displayed yellow indications and a speed of about 35 miles per hour was maintained through this territory. The signal at Rockwood displayed a red indication and on the next two signals no lights were displayed; a stop was made at each of these three signals. The fourth signal south of Rockwood displayed a yellow indication and he thought the fifth signal did not display any light; a green indication was displayed on signal 263, the sixth signal south of Rockwood; signal 273 displayed a yellow indication, signal 283 a red indication, and no lights were displayed on signals 293 and 303. Stops were made at the last three signals and due to not being able to see more than two car lengths ahead on account of a dense fog, which was first encountered just south of Rockwood, he operated the train at a speed of about 10 miles per hour. The train had proceeded one-half or three-fourths of the distance through the block governed by signal 303 when the rear of his train was struck.

Fireman Miller, of No. 309, corroborated the statement of the engineman in all essential details and said that from his side of the engine he could see the indications when close to the signals.

Conductor Murphy, of No. 309, stated that he observed the flagman protecting the rear of the train when the stop was made at Trenton Tower, but made no further observations prior to the time of the accident and did not caution the flagman because he did not think it was necessary as the flagman was good at flagging. Conductor Murphy said several other stops were made and the train was operated at a speed of 10 or 12 miles per hour

between these stops. He looked out the door of one of the Pullman cars as the train passed a signal but he was not able to distinguish a light on it, and shortly thereafter the train lunged forward, which was caused, he discovered upon investigation, by the rear end having been struck. He said it was his first duty during weather conditions existing on this trip to see that the speed of the train was not unsafe. He said it was his duty to know that the flagman performed his duties properly, but due to making so many stops he was unable to stay at the rear end continuously and do his other work. He knew his train was losing time and was encroaching upon the schedule of No. 227.

Flagman Buckland, of No. 309, stated that when the stop was made at Rockwood, he alighted from the train and was immediately called in by the engineman. He left one lighted fusee. Thereafter he alighted at each stop and in each instance was called in by the engineman. He left a burning fusee at each of the two stops between Rockwood and Newport, a point about 5.6 miles farther south, and one more near signal 283, which he supposed would burn 5 minutes. Having left Detroit with only 10 fusees he thought he had better conserve them, although aware of the fact that his train was encroaching upon the schedule of No. 227. As the train decreased speed he assumed that signal 303 was displaying a yellow indication, but when he looked out he saw the indication was red, but he thought this was due to the engine having passed it. He saw signal 313, the next signal beyond, displaying a green indication and he assumed the signal beyond it would be displaying a green indication also, and that the train would resume normal speed. He then spent about 2 minutes in the lavatory, located in the rear end of the rear car, after which he looked through the glass of the rear door and saw a headlight approaching about twenty car lengths distant. He stepped to the rear platform and gave stop signals with a red lantern; the following train was so close there was no time to light a fusee and throw it off. He then started to the forward end of the car, where he was when the accident occurred, at which time the speed was about 15 miles per hour. He said it was very foggy at the time of the accident and that the markers were in good order and were still burning after the accident. He said there was no limitation on the number of fusees permitted as a supply for each trip.

Engineman Freidel, of No. 227, stated that the air brakes were tested before leaving Detroit and found to be working satisfactorily, and they functioned properly en route. A fog was encountered about 2 miles south of Trenton Tower. The first signal north of Rockwood was displaying a yellow indication and

the one at Rockwood station was displaying a red indication. He stopped at the latter signal. He thought the next four lights were not burning but he proceeded at a speed of 15 to 20 miles per hour. At Newport he received a clear indication and he increased the speed to 50 miles per hour; from signal 273 to 303, inclusive, there were no lights burning except one which showed a red indication, and he said that he was positive the light at signal 303 was out, but he had reduced speed to 18 or 20 miles per hour at this point. Operating the forestalling device, he did not stop at any signal south of Rockwood regardless of whether a red indication or no indication at all was displayed. Shortly after passing signal 303, he observed a red spark which proved to be the rear of No. 309. He immediately applied the brakes in emergency, following which his train jerked and broke in two and the collision occurred; at this time the speed was about 18 or 20 miles per hour. Engineer Freidel stated that he was familiar with, and understood, the rules governing block signals but said that he did not observe them in this instance although he should have stopped at all signals displaying either red or no indication and then proceeded at restricted speed, not to exceed 10 miles per hour, and that had he done so the accident would have been averted. Between Rockwood and the point of accident, he did not see a burning fusee; had he found one he said he would have stopped as quickly as he could. He thought that if a lighted fusee had been thrown off by the preceding train the accident would have been averted.

Fireman Paulsen, of No. 227, corroborated the statement of the engineer relative to the events up to the time of the stop at Rockwood. Due to the dense fog he could not see all of the signal indications from his side of the engine, and did not know whether the signal indications were yellow or red when the engineer forestalled; however, he saw one red indication which the train passed at a very low rate of speed. He thought it was the duty of the engineer to communicate the signal indications to him when he could not see them himself. The first intimation he had of the impending accident was when the brakes were applied in emergency, and he then saw the markers on the train ahead. He said he understood the block-signal rules and knew that it was his duty to communicate the signal indications to the engineer. He made no comment to the engineer concerning the latter's failure to stop at the red signal referred to above or at the signals where the forestalling was done.

Conductor George, of No. 227, was in the fifth car of his train and said the speed was about 15 or 20 miles per hour just prior to the accident. He did not observe any signal indications south of Rockwood. He could not state definitely whether the



train was being operated at restricted speed because he did not know the engineman's range of vision in the fog prevailing at that time. After passing signal 303 he felt the brakes being applied in emergency, followed by a little jar. After the accident, which occurred at 1:30 a.m., he observed that his train had parted between the second and third cars.

The statements of Baggageman Packard and Flagman Kirchgessner, of No. 227, brought out nothing additional of importance.

Assistant Signal Engineer Green stated that during the night of February 12-13, a severe electrical storm occurred, resulting in the automatic block signals on the southward main track between Trenton and Monroe, a distance of 19 miles, giving either false-restrictive indications or no indications at all. This trouble was caused by fuses being burned out by lightning discharges. The signals were restored to normal functioning at 6 a.m., February 13.

#### Discussion

A severe electrical storm had occurred during the night of February 12, resulting in signals for a distance of 19 miles south of Trenton being out of order and a dense fog prevailed over this territory at the time of the accident.

No. 309 left Detroit on time and passed Trenton Tower 4 minutes late. Due to encountering signals displaying yellow indications between Trenton and Rockwood, a maximum speed of 35 miles per hour was maintained. Because of false-restrictive indications and signals displaying no lights, restricted speed of 10 to 12 miles per hour was maintained between Rockwood and the point of accident and stops were made at red signals as well as at signals displaying no lights. As a result, this train lost considerable time on its schedule and at 1:30 a.m. it was 4 miles north of Monroe where it was due at 12:47 a.m. No 227 was due at Monroe at 1:22 a.m. The flagman of No. 309 stated that he used four fuses between Detroit and the point of the accident, the last one being used near signal 283. Thereafter this train stopped at signals 293 and 305 and was operated at restricted speed over this territory. The flagman realized that his train was falling back on the time of No. 227 and his reason for not using fuses south of signal 283 was that he had started from Detroit with only 10 fuses and he wanted to conserve his supply. He thought, too, that his train would soon resume normal speed because signal 303 was passed without a stop being made and was displaying a red indication after the engine

had passed it; also he could see signal 313 ahead displaying a green indication. However, the engineman and fireman of No. 309 stated that no light was displayed on signal 303 and also stated that a stop was made at this signal.

No. 227 passed Trenton Tower 4 minutes late. It stopped at Rockwood due to a red signal indication, but thereafter no stop was made until at the point of accident. The engineman of this train admitted having passed several signals, between Rockwood and the point of accident, displaying either red indications or no indications; he did not stop between these points. He understood the requirements of the rules and said that he should have stopped at these signals and then should have operated at restricted speed of 10 miles per hour. Had he done so this accident would have been averted. He saw no burning fusees en route and was of the opinion that had No. 309 dropped burning fusees the accident would have been averted.

#### Conclusion

This accident was caused by the failure to obey signal indications and the failure to furnish proper rear-end protection.

Respectfully submitted,

W. J. PATTERSON,

Director.