

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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INVESTIGATION NO. 2505  
THE NEW YORK CENTRAL RAILROAD COMPANY  
REPORT IN RE ACCIDENT  
AT TOLEDO, OHIO, ON  
MAY 22, 1941

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## SUMMARY

Railroad: New York Central

Date: May 22, 1941

Location: Toledo, Ohio

Kind of accident: Head-end collision

Trains involved: Yard engine and cars : Passenger

Train numbers: : 303

Engine numbers: 7297 : 5392

Consist: 10 cars : 7 cars

Speed: Standing : 22 m. p. h.

Operation: Movement with current of traffic by automatic block-signal and automatic train-stop system; movement against current of traffic by yard order and manual block system

Track: Double; 2°0' curve; practically level

Weather: Clear

Time: 12:52 p. m.

Casualties: 30 injured

Cause: Accident caused by train having been operated against current of traffic under a clearance card indicating that block was clear when block was occupied by an opposing movement.

Recommendation: That the New York Central Railroad Company establish an adequate block-signal system for operation of trains against the current of traffic in the Toledo Terminal District, and submit to this Commission for approval rules and instructions for operation and maintenance of said block-signal system

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2505

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS  
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

THE NEW YORK CENTRAL RAILROAD COMPANY

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September 2, 1941.

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Accident at Toledo, Ohio, on May 22, 1941, caused by a train having been operated against current of traffic under a clearance card indicating that block was clear when block was occupied by an opposing movement.

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REPORT OF THE COMMISSION<sup>1</sup>

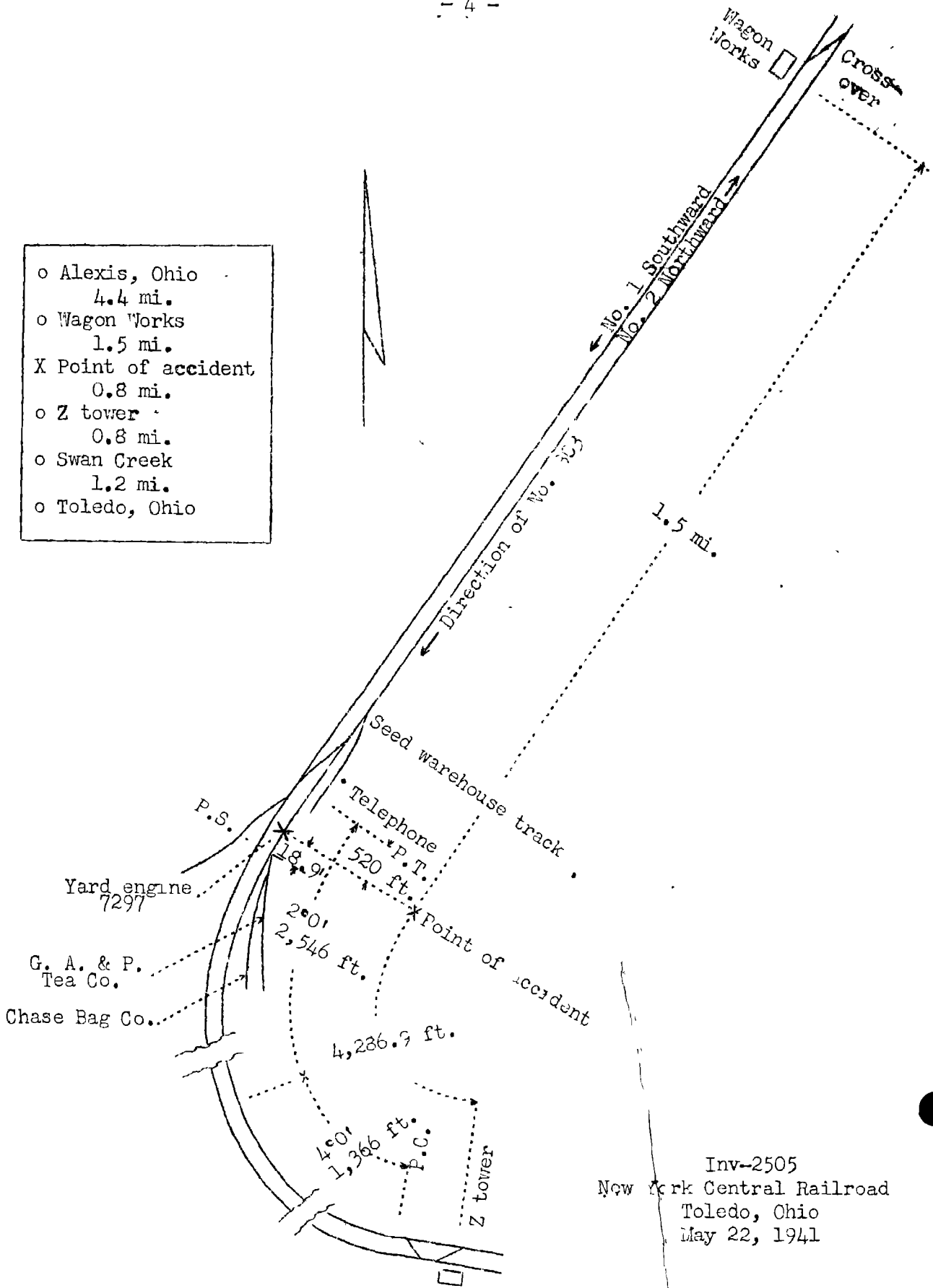
PATTERSON, Commissioner:

On May 22, 1941, there was a head-end collision between a Michigan Central Railroad passenger train and a New York Central Railroad yard engine on the line of the New York Central Railroad near Z tower, Toledo, Ohio, which resulted in the injury of 21 passengers, 3 Pullman employees, 1 Union News Company employee, 4 train-service employees, and 1 employee of a near-by factory. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Ohio.

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<sup>1</sup> Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.

- o Alexis, Ohio 4.4 mi.
- o Wagon Works 1.5 mi.
- X Point of accident 0.8 mi.
- o Z tower 0.8 mi.
- o Swan Creek 1.2 mi.
- o Toledo, Ohio



Inv-2505  
 New York Central Railroad  
 Toledo, Ohio  
 May 22, 1941

### Location of Accident and Method of Operation

This accident occurred on that part of the Toledo Terminal District extending between Alexis, Ohio, and Z tower, a distance of 6.7 miles. In the vicinity of the point of accident this is a double-track line over which trains are operated with the current of traffic by an automatic block-signal and automatic train-stop system, the indications of which supersede time-table superiority and take the place of train orders. Trains moving against the current of traffic are operated by yard orders and a manual-block system. The main tracks from west to east are No. 1, southward, and No. 2, northward. The accident occurred on track No. 2 at a point 1.5 miles south of Wagon Works and 4,286.9 feet north of Z tower. At Wagon Works a trailing-point crossover connects tracks Nos. 1 and 2. The north switch of this crossover is located 750 feet north of the train-order signal.

As the point of accident is approached from the south there is a compound curve to the right 3,912 feet in length, which has a maximum curvature of 4°0'. The accident occurred at a point 520 feet south of the northern end of this curve where the curvature is 2°0'. As the point of accident is approached from the north there is a tangent several miles in length, which is followed by the curve on which the accident occurred. At the point of accident the grade is practically level.

Between Z tower and Wagon Works numerous industrial spur tracks parallel the main tracks. On track No. 2 a trailing-point switch, located 4,268 feet north of Z tower, leads to tracks which serve the Chase Bag Company and the Great Atlantic & Pacific Tea Company. The accident occurred 18.9 feet north of this switch. A telephone connected with the dispatcher's circuit is located approximately 700 feet north of this switch.

Operating rules read in part as follows:

#### MANUAL BLOCK SYSTEM RULES

The Manual Block System will be used only where so specified on the time-table or by special instructions, which will prescribe whether Rules 317-A, \* \* \* for absolute block \* \* \*, shall govern.

317-A. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give "1 for \_\_\_\_\_," to the next block station in

advance. The signalman receiving this signal, if the block is clear, must display the Stop-indication to opposing trains, and reply "2 for \_\_\_\_\_." If the block is not clear, he must reply "5 of \_\_\_\_\_," or "56 of \_\_\_\_\_." The signalman at the entrance of the block must then display the proper signal indication.

\* \* \*

Note to Rule 317-A. Rule 317-A is for absolute block for following and opposing movements on the same track.

There is no instruction in the timetable nor any special bulletin instruction specifying that the manual-block system will be in effect under any condition in the territory involved. Movements against the current of traffic are authorized by the yard dispatcher, who issues a special form of order designated as a yard order.

In the territory involved the maximum authorized speed for yard engines is 20 miles per hour and for passenger trains with inoperative automatic train-stop device it is 35 miles per hour.

#### Description of Accident

Yard engine 7237, with nine cars behind the engine, departed from Z tower at 12:26 p. m., according to the train sheet, moving with the current of traffic on track No. 2, and stopped south of the switch leading to the A. & P. track, where one car was set out and two cars were added. About 12:40 p. m. an employee of the A. & P. Co. informed the conductor that the yard dispatcher desired to talk with him. Before the engine could be detached from the standing cars to take the conductor to the telephone north of the A. & P. switch, engine 7297 was struck by No. 303.

No. 303, a south-bound first-class Michigan Central passenger train, consisted of engine 5382, one express-refrigerator car, one baggage car, two coaches, one Pullman cafe-club car and two Pullman sleeping cars, in the order named. These cars were of steel construction except the first, which was of steel underframe construction. This train departed from Alexis, 5.9 miles north of the point of accident, at 12:34 p. m., according to the train sheet, 4 minutes late, and stopped at Wagon Works at 12:40 p. m., where the crew received copies of yard order No. 3, which

read as follows:

To C & E 303                      At Wagon Works

No 303 - Eng 5382 has right over opposing trains on  
No. 2 track Wagon Works to Z-Tower

<u>Repeated</u>	<u>Signalman</u>	<u>Made Complete</u>	<u>Signalman</u>
<u>At</u> 12:40 p <u>M</u>	Gangwer	<u>At</u> <u>M</u>	L J P

The crew received also a clearance, Form A, which contained information as follows:

12:40 A M                      5/22                      1941

To Conductor and Engineman 303 at Wagon Works  
I have one yard orders for your train.  
Order No. \_\_\_\_\_ \* \* \* have been delivered  
and there are no further orders for your train.  
Stop signal is displayed yard order No. 3  
This form is authority to pass stop-signal for Track

Elock                      clear                      Gangwer                      Operator

In both the yard order and the clearance, Form A, the under-scored words were printed and the other words were written.

Yard order No. 3, as written by the dispatcher, was addressed to "Trains North and Operator" at Z tower and the copy on file at Z tower was addressed to "Trains West and Operator." The dispatcher's record reads, "No. 303 Eng Unknown," but the copy made by the operator at Wagon Works reads, "No. 303 Eng 5382." The copy made by the operator at Z tower agrees with the dispatcher's record. The copy at Z tower indicates that it was made complete at 12:40 p. m., and it was signed by the operator. The copy at Wagon Works does not indicate that the order had been made complete and it was not signed by the operator. On the latter copy the superintendent's initials were in the place provided for the operator's signature after the word "complete." The time shown on the clearance, Form A, delivered to No. 303, is 12:40 a. m., May 22, 1941, or 12 hours before yard order No. 3 was issued.

No. 303 backed through the crossover north of the station at Wagon Works, proceeded southward on track No. 2, and passed the station at 12:48 p. m., according to the train sheet, 10 minutes late. While the train was moving at a speed of about 22 miles per hour, according to the tape of the speed-recorder with which the engine was equipped, it

collided with yard engine 7297.

Because of a box car standing on an industrial track east of track No. 2 at the time of the accident, the view of the point where the accident occurred, from the left side of the cab of a south-bound engine, was restricted to a distance of 550 feet.

As a result of the impact, the brakes of engine 7297 became inoperative, the throttle was opened, and the engine with 10 cars coupled to the rear moved a distance of 2.7 miles and passed through two interlockings before it stopped. The pilot beam of engine 7297 was badly damaged. The cab was crushed inward at the rear and was moved forward on the boiler. The main frame and the foundation brake gear were bent and broken, and the main-reservoir supply pipe and the distributing valve were broken off. No. 303 stopped with the front of its engine 51 feet south of the point of collision. Both air compressors were knocked off, the pilot was bent downward and the front end-frame was broken. The rear pair of wheels of the rear truck of the first car was derailed and the rear coupler was broken. The second car stopped about 30 feet to the rear of the first and the front pair of wheels of the rear truck was derailed. The couplers between the second and third cars passed over each other, and the third car, badly damaged, stopped with the closed knuckle of the front coupler against the closed knuckle of the rear coupler of the second car. The fourth and fifth cars were slightly damaged.

The weather was clear at the time of the accident, which occurred about 12:52 p. m.

The employees injured were the fireman of engine 7297, and the engineman, the fireman and the flagman of No. 303.

#### Discussion

The investigation discloses that yard engine 7297, moving northward on the northward main track, passed Z tower about 12:26 p. m. and stopped at the A. & P. switch, 4,265 feet north of Z tower, about 12:35 p. m. This movement was governed by signal indications. The crew had completed switching work and the yard engine was standing on the main track and was ready to depart southward against the current of traffic to Z tower when the conductor was notified by an employee of the A. & P. Co., at the request of the yardmaster, to call the yard dispatcher on the telephone. Before the conductor could start to the telephone the yard engine was struck by No. 303, which was moving against the current of traffic at a speed of



about 22 miles per hour in territory where the maximum authorized speed was 35 miles per hour. In the vicinity of Z tower the southward main track was occupied by a south-bound freight train. In order to minimize delay to No. 303, the yard dispatcher issued a yard order authorizing its movement against the current of traffic on the northward main track between Wagon Works and Z tower. After the operators at Z tower and Wagon Works repeated the yard order, the dispatcher made it complete at 12:40 p. m. Soon afterward the operator at Z tower informed the dispatcher that engine 7297 was not clear of the northward main track; however, the dispatcher's record indicated that this engine was north of Z tower and he said he did not overlook the fact that the engine was between Z tower and Wagon Works. The dispatcher immediately called the yardmaster and instructed him to tell the crew of engine 7297 to clear the northward main track, and about the same time the operator at Wagon Works reported that No. 303 was backing through the crossover at that point and was occupying the northward main track. The dispatcher did not instruct the operator to hold No. 303 because, under the manual-block system, it was necessary that the operator at Wagon Works obtain from the operator at Z tower authority to release No. 303 on the northward main track. The dispatcher thought the operator at Wagon Works was listening on the telephone while the dispatcher and the operator at Z tower were discussing the location of engine 7297. Before the yardmaster was able to instruct the crew of engine 7297 to clear the northward main track, the operator at Wagon Works reported that No. 303 had departed from that station at 12:48 p. m. The operator at Wagon Works delivered copies of the yard order to the crew of No. 303 and, in addition, copies of clearance, Form A, bearing information that the block between Wagon Works and Z tower was clear.

Instead of a train order, an order designated as a yard order is used in the Toledo Terminal District to direct trains to move against the current of traffic. The superintendent, chief dispatcher and dispatchers said there are no rules pertaining to the use of the yard order, as the book of operating rules does not provide for its use and there are no rules in the timetable or in any bulletin with reference thereto. However, the yard order has been in use in this terminal for many years, and the superintendent and the chief dispatcher thought all employees had a common understanding of what the officials considered was customary practice. Nevertheless, it was developed that all employees did not have a common understanding of the operation, as one employee considered a yard order the same as a message, three employees thought it was not necessary to make a yard order complete, the yard dispatcher on duty at the time of the accident and two train dispatchers said it was customary practice to issue a yard order for movement of a train against the current of traffic

without first clearing the track of all opposing trains, and three yard dispatchers thought the track should be cleared of all opposing trains before a yard order is issued. The yard dispatcher on duty understood that his duties were to direct the movement of trains and engines but not to furnish protection, and that it was the duty of operators to furnish block protection for trains moving against the current of traffic and the duty of crews to furnish protection for crossover movements. The yard dispatcher said that he had never been instructed in regard to the use of the yard order.

The book of operating rules states that manual-block rules will not be in effect except as specified in the timetable or special instructions. The superintendent and the chief dispatcher said that the manual-block system is in use for trains operated against the current of traffic in the terminal but that manual block is not mentioned in the timetable or special instructions. These officials thought all operators in the terminal understood that the manual-block system was in use when trains were being operated against the current of traffic, but according to the statement of the operator at Wagon Works, who has worked at that station 20 years, he had never blocked trains moving against the current of traffic and did not know that he was required to do so. In the case in question, this operator issued a clearance indicating that the block from Wagon Works to Z tower was clear, but did not request block authority from the operator at Z tower. The station record of train movements in use at stations in the terminal is not designed for the blocking of trains manually, since there is no provision for entering on the record of a particular station the time of trains at the station to the rear and at the station in advance. The operator at a station does not report trains to the operator at the station in advance or to the operator at the station to the rear. This results in the operator at the station where a train is about to begin a movement against the current of traffic not knowing whether there is a train in the block moving with the current of traffic on that track. In this case, if the operator at Wagon Works had known it was necessary to block No. 303, he would not have known that the yard engine had departed from Z tower for the A. & P. switch until he had requested block authority for No. 303, then undoubtedly the operator at Z tower would have informed him. The lack of complete records of all movements in manual-block territory may at any time result in an error in the blocking of trains.

The movement of trains against the current of traffic in territory outside this terminal is not handled the same as within the terminal. Outside the terminal, if an opposing train is at an intermediate blind siding and it is desired to operate a train against the current of traffic, before the train is permitted to start the movement against the

current of traffic the crew of the train at the intermediate siding is given a copy of the train order to restrict the superiority of that train. On the other hand, the superintendent and the chief dispatcher said that in the terminal the only requirement concerning a train or engine at an intermediate point, such as the case of the yard engine involved, was to have information from the conductor that his train was clear of the main track about to be used in the opposing-track movement. Movements against the current of traffic within the terminal are at times made without the use of any orders; in fact, if this accident had not occurred, the yard engine involved would have returned to Z tower against the current of traffic after the operator at Z tower had informed the crew that he would protect the movement by displaying the northward home signal at stop.

The lack of definite rules pertaining to the use of yard orders and the manual-block system resulted in the employees involved having various opinions concerning the operation of trains in the Toledo Terminal District. Most of the employees had attended operating-rules classes within the past year but it appears that instruction and supervision have not been sufficient to establish a common understanding of operating rules, which is necessary for safe operation.

#### Cause

It is found that this accident was caused by a train having been operated against the current of traffic under a clearance card indicating that the block was clear when the block was occupied by an opposing movement.

#### Recommendation

It is recommended that the New York Central Railroad Company establish an adequate block-signal system for the operation of trains against the current of traffic in the Toledo Terminal District, and submit to this Commission for approval rules and instructions for the operation and maintenance of said block-signal system.

Dated at Washington, D. C., this second  
day of September, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.