

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT NO. 3527  
THE MINNEAPOLIS & ST. LOUIS RAILWAY COMPANY  
IN RE-ACCIDENT  
NEAR WATERVILLE, MINN., ON  
JULY 17, 1953

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SUMMARY

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Date: July 17, 1953

Railroad: Minneapolis & St. Louis

Location: Waterville, Minn.

Kind of accident: Head-end collision

Trains involved: Freight : Passenger

Train numbers: Extra 546 East : 1

Engine number: Diesel-electric : GE-25  
unit 546

Consists: 14 cars, caboose : 2 cars

Estimated speeds: 5 m. p. h. : 5 m. p. h.

Operation: Timetable and train orders

Track: Single; 3° curve; 0.64 percent  
ascending grade eastward

Weather: Clear

Time: 4:12 p. m.

Casualties: 26 injured

Cause: Failure to comply with rules  
pertaining to the issuance of and  
failure to make proper delivery of  
train order

INTERSTATE COMMERCE COMMISSION

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REPORT NO. 3527

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

THE MINNEAPOLIS & ST. LOUIS RAILWAY COMPANY

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August 19, 1953

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Accident near Waterville, Minn., on July 17, 1953, caused  
by failure to comply with rules pertaining to the  
issuance of and failure to make proper delivery of a  
train order.

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

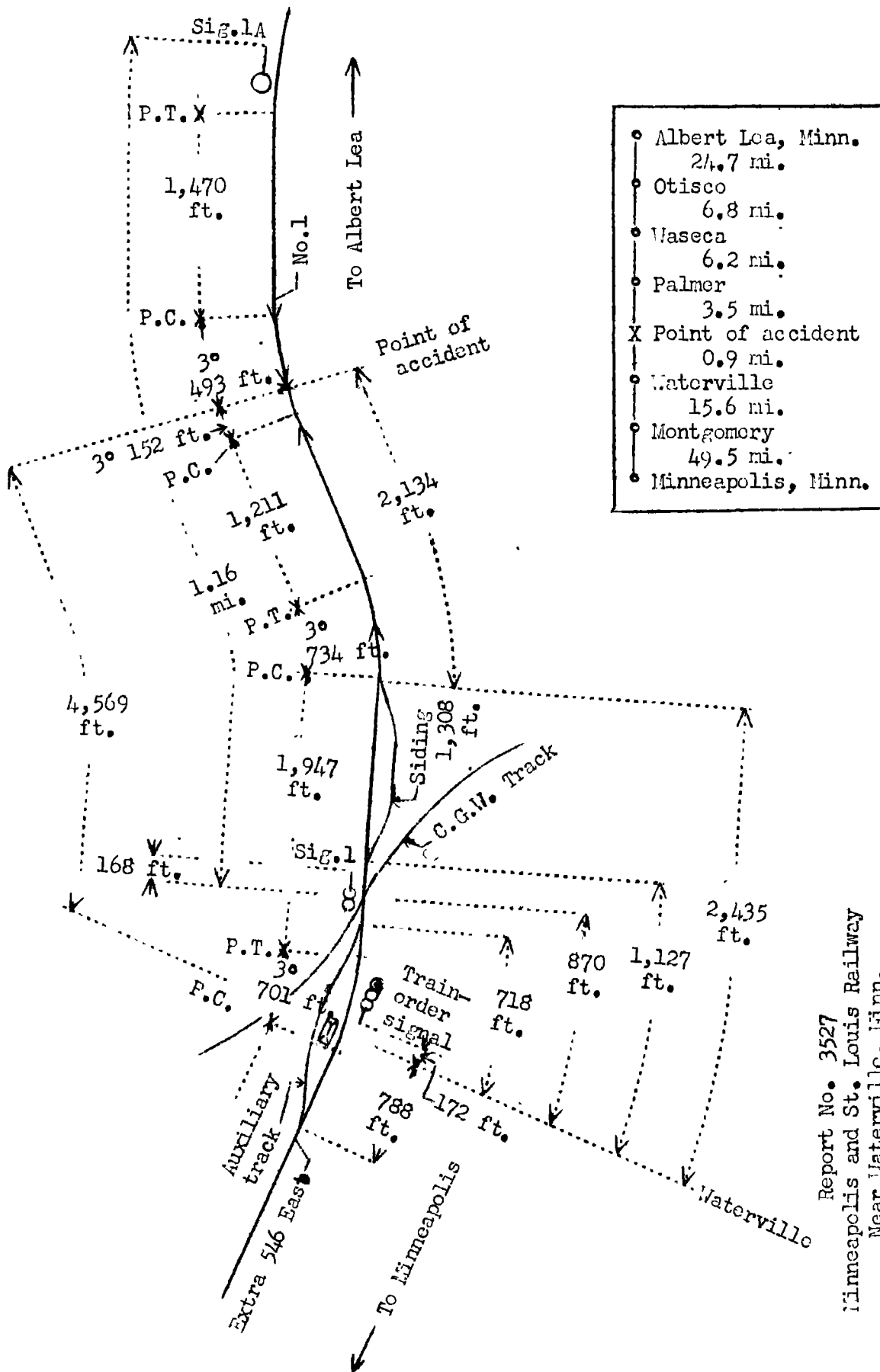
CLARKE, Commissioner:

On July 17, 1953, there was a head-end collision between a freight train and a passenger train on the Minneapolis & St. Louis Railway near Waterville, Minn., which resulted in the injury of 20 passengers, 2 railway mail service employees, 1 railway express messenger, and 3 train-service employees. This accident was investigated in conjunction with a representative of the Minnesota Railroad and Warehouse Commission.

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Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.



Report No. 3527  
 Minneapolis and St. Louis Railway  
 Near Waterville, Minn.  
 July 17, 1953

Location of Accident and Method of Operation

This accident occurred on that part of the railroad extending between Minneapolis and Albert Lea, Minn., 107.2 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. At Waterville, 65.1 miles east of Minneapolis, a siding 1,308 feet in length parallels the main track on the south. The siding switches are located, respectively, 1,127 feet and 2,435 feet east of the station. An auxiliary track north of the main track extends between switches located 788 feet west and 718 feet east of the station. The accident occurred on the main track at a point 4,569 feet east of the station and 2,134 feet east of the east siding-switch. From the west there are, in succession, a 3° curve to the left 701 feet in length, a tangent 1,947 feet, a 3° curve to the left 734 feet, a tangent 1,211 feet, and a 3° curve to the right 152 feet to the point of accident and 493 feet eastward. From the east there are, in succession, a tangent 1,470 feet in length, and the curve on which the accident occurred. The grade is 0.64 percent ascending eastward at the point of accident.

A line of the Chicago Great Western Railway intersects the main track of the Minneapolis & St. Louis Railway at a point 370 feet east of the station at Waterville. Movements over the crossing are governed by an automatic interlocking. Automatic signals 1A and 1, governing west-bound movements on the main track of the Minneapolis & St. Louis, are located, respectively, 1.16 miles and 168 feet east of the crossing. Signal 1A is of the three-indication color-light type. The aspect applicable to this investigation and the corresponding indication and name are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
1A	Red over number plate	Stop, then proceed at restricted speed to next signal.	STOP AND PROCEED

The controlling circuits are so arranged that when the main track between signal 1A and signal 1 is occupied, signal 1A indicates Stop and Proceed.

The train-order signal at Waterville is of the three-indication color-light type. It is located 172 feet east of the station.

This carrier's operating rules read in part as follows:

#### DEFINITIONS

Restricted Speed--Proceed prepared to stop short of train, engine, obstruction or switch not properly lined.

75. Extra trains are inferior to regular trains.

S-87. An inferior train must keep out of the way of opposing superior trains and failing to clear the main track by the time required by rule must be protected as prescribed by Rule 99.

Extra trains must clear the time of opposing regular trains not less than five minutes \* \* \*

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.

\* \* \*

99-c. The front of a train must be protected in the same way, when necessary, by the front brakeman \* \* \*

208-a. Meeting orders, or orders conferring rights to the point where placed, must not be addressed to the trains of superior right at the point of execution if it can be avoided.

When it cannot be avoided, special precaution must be taken by the train dispatchers and operators to insure safety, and the following notice will be incorporated in the order: "-----gets this order at -----."

213. "Complete" must not be given to a train order for delivery to an inferior train until the order has been repeated or the "X" response sent by the operator who received the order for the superior train.

219. An operator must not repeat or give the "X" response to a train order restricting the movement of a train which has been cleared or of which the engine has passed his train-order signal until he has obtained the signatures of the conductor and engineman to the order \* \* \*

## FORMS OF TRAIN ORDERS

### S-A

#### Fixing Meeting Points for Opposing Trains

(1) \* \* \*

No 5 meet Extra 150 East at B.

\* \* \*

\* \* \*

Trains receiving these orders will run with respect to each other to the designated points and there meet in the manner prescribed by the rules.

These examples may be modified by adding:

(3) Extra 150 East hold main track at B.

\* \* \*

\* \* \*

#### Time Orders

### S-E

(1) No 1 wait at H until 9 59 nine fifty nine a m  
J 10 20 ten twenty a m  
for No 2.

The train first-named must not pass the designated points before the times given, unless the other train has arrived. The train last named is required to run with respect to the time specified, at the designated points or any intermediate station where schedule time is earlier than the time specified in the order, as before required to run with respect to the schedule time of the train first-named.

In the vicinity of the point of accident the maximum authorized speeds are 50 miles per hour for passenger trains and 45 miles per hour for freight trains on tangent track and 35 miles per hour for passenger trains and 30 miles per hour for freight trains on curves.

#### Description of Accident

At Montgomery, 15.6 miles west of Waterville, the crew of Extra 546 East, an east-bound freight train, received copies of train order No. 96 reading as follows:

No 1 Eng GE 25 wait at  
Palmer until 415 four  
fifteen PM for Extra 546 East

Palmer is located 4.4 miles east of Waterville. Extra 546 East departed from Montgomery at 2:30 p. m. and arrived at Waterville at 3:35 p. m. It stopped at Waterville with the front end east of the train-order signal, which indicated Proceed. After switching was performed and the train was assembled it consisted of Diesel-electric unit 546, 14 cars, and a caboose. About 3:55 p. m. the operator displayed the train-order signal in stop position for east-bound trains and then copied train order No. 101, which read as follows:

Order No 96 is annulled. No 1 Eng  
GE 25 meet Extra 546 East at  
Waterville. Extra 546 East hold  
main track at Waterville.

This train order was addressed to the conductor and the engineer of Extra 546 East and the operator, but it was not delivered to the engineer. About 4:09 p. m. the locomotive was detached from the train. It departed east-bound, and while it was moving at a speed of about 5 miles per hour it collided with No. 1 at a point 4,569 feet east of the station and 2,134 feet east of the east siding-switch.

No. 1, a west-bound first-class passenger train, consisted of Diesel-electric rail motor-car GE-25, one baggage car, and one coach, in the order named. All units were of all-steel construction. Motor-car GE-25 is a three-compartment-type unit, arranged with a control compartment at the front, a mail compartment in the center, and a baggage compartment at the rear. At Otisco, 17.4 miles east of Waterville, the crew received copies of train order No. 96. The train departed from Otisco at 3:39 p. m., 2 minutes late, and



arrived at Waseca, 10.6 miles east of Waterville, at 3:50 p. m. At Waseca the crew received copies of train order No. 101. The train departed from Waseca, the last open office east of Waterville, at 3:59 p. m., 9 minutes late, and stopped at signal 1A, which indicated Stop and Proceed. It immediately proceeded, and while moving at a speed of about 5 miles per hour it collided with the locomotive of Extra 546 East.

No. equipment of either train was derailed. The front end of the rail motor-car of No. 1 was considerably damaged, and the cars of No. 1 and the locomotive of Extra 546 East were slightly damaged.

The engineer of Extra 546 East and the conductor and the engineer of No. 1 were injured.

The weather was clear at the time of the accident, which occurred about 4:12 p. m.

#### Discussion

When Extra 546 East arrived at Waterville the crew held copies of train order No. 96. This train order required No. 1 to wait at Palmer until 4:15 p. m. unless Extra 546 East had arrived at that station. Extra 546 East was required to be clear of the main track at either Palmer or Waterville not later than 4:10 p. m. or be protected as prescribed by rule No. 99. After order No. 101 was issued, No. 1 was permitted to leave Palmer at 3:59 p. m., the schedule time at that station. Under the provisions of this order Extra 546 East was authorized to hold the main track at Waterville to meet No. 1 and was required to remain west of the east siding-switch at Waterville until No. 1 had been met. However, the locomotive of Extra 546 East was east of the train-order signal at the time order No. 101 was issued, and until a copy was delivered to the engineer the movement of the locomotive was not restricted by the issuance of the order.

At the time train order No. 101 was issued, the locomotive of Extra 546 East had been detached from the train to perform switching service. The rear end of the train was on the main track west of the train-order signal. The conductor was in or near the train-order office, and the other members of the crew were with the locomotive on the east end of the auxiliary track or the west end of the siding. The switching was completed and the locomotive was coupled to the train about 3:57 p. m. The flagman then proceeded from the locomotive to the rear of the train. The locomotive had not moved west of the train-order signal after the operator displayed the signal in stop position, and the employees on the locomotive

were not aware that a train order for their train had been issued. After waiting several minutes for a signal from the employees at the rear of the train, the engineer decided to detach the locomotive and proceed eastward a sufficient distance to enable the front brakeman to provide flag protection against No. 1. He then planned to proceed westward to the train. Since he had not received the order annulling order No. 96 he was proceeding under the impression that No. 1 would wait at Palmer until 4:15 p. m. The locomotive departed eastward about 4:09 p. m., or 10 minutes after No. 1 left Waseca. In the vicinity of the point of accident the range of vision between opposing movements is materially restricted by curvature of the track and vegetation along the track. When the employees on the locomotive observed the approach of No. 1 the speed was about 10 miles per hour and the engineer had already applied the brakes preparatory to stopping to permit the brakeman to alight. The collision occurred before the locomotive could be stopped. The conductor said that he had no knowledge of the contents of train order No. 101 until two train orders, including order No. 101, were delivered to him by the operator at 4:10 p. m. When he left the office after receiving the orders, the locomotive had departed.

As No. 1 was approaching the point where the accident occurred the engineer was in the control compartment at the front of the rail motor-car. The conductor and the flagman were in the cars of the train. Signal 1A of the interlocking indicated Stop and Proceed, and the train was stopped in accordance with the indication. This signal was caused to indicate Stop and Proceed after locomotive 546 passed signal 1. No. 1 immediately proceeded, and was moving at a speed of 18 to 20 miles per hour when the engineer observed the approach of the locomotive of Extra 546 East. The engineer immediately made an emergency application of the brakes, and the speed had been considerably reduced when the collision occurred. The engineer said he thought that after passing signal 1A, the indication of which required movement at restricted speed, the train was operated in such manner that it could be stopped short of a train or obstruction. He thought the train could have been stopped short of the locomotive of Extra 546 East if that locomotive had not been moving toward him.

The operator at Waterville was first employed as an operator in November, 1952. He said that before train order No. 101 was issued he informed the train dispatcher, in response to questions by the dispatcher, that the locomotive of Extra 546 East had passed the train-order signal and was switching on the auxiliary track, that a member of the crew was in the office, and that the train should be ready to leave about 4 p. m. The dispatcher then instructed him to copy a train order for the train. The operator understood that the rules required him to obtain the signatures of the engineer and the conductor before acknowledging or repeating an order which restricted the movement of the train. However, since the dispatcher had been informed of the location of the locomotive and had then issued the order without instructing him to obtain the signatures, he did not obtain them. After order No. 101 had been transmitted and repeated, the dispatcher issued a second order for delivery to Extra 546 East. The operator did not call the conductor's attention to order No. 101 until he delivered the two orders to him at 4:10 p. m.

The train dispatcher said that when he learned that Extra 546 East had arrived at Waterville and would not have sufficient time to proceed to Palmer to meet No. 1, he annulled order No. 96 in order to avoid delay to No. 1. He was aware that under the rules order No. 96 could not be annulled to the crew of No. 1 until it had first been annulled to the crew of Extra 546 East. However, he thought that since without further orders Extra 546 East could not proceed beyond Waterville to meet No. 1 there would be no hazard in delivering order No. 101 to the crew of No. 1 without obtaining the signatures of the crew of Extra 546 East. The train dispatcher realized that he had addressed order No. 101 to the crew of Extra 546 East at the point of restriction. Under these circumstances the rules required that this fact be stated in the order and special precautions be taken.

#### Cause

It is found that this accident was caused by failure to comply with rules pertaining to the issuance of and failure to ~~make proper~~ delivery ~~of~~ a train order.

Dated at Washington, D. C., this nineteenth day of August, 1953.

By the Commission, Commissioner Clarke.

(SEAL)

GEORGE W. LAIRD,  
Acting Secretary.