

INTERSTATE COMMERCE COMMISSION  
WASHINGTON

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REPORT NO. 3307  
CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC  
RAILROAD COMPANY  
IN RE ACCIDENT  
AT MONONA, IOWA, ON  
DECEMBER 28, 1949

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SUMMARY

Date: December 28, 1949

Railroad: Chicago, Milwaukee, St. Paul  
and Pacific

Location: Monona, Iowa

Kind of accident: Side collision

Trains involved: Freight : Freight

Train numbers: 63 : Extra 441 East

Engine numbers: Diesel-electric : 441  
unit 83D

Consists: 81 cars, caboose : 51 cars, caboose

Estimated speeds: Standing : 15 m. p. h.

Operation: Timetable, train orders and manual  
block system

Track: Single; 4°30' curve; 0:33 percent  
ascending grade eastward

Weather: Clear

Time: 1:30 a. m.

Casualties: 1 killed; 1 injured

Cause: Failure to obey meet order

INTERSTATE COMMERCE COMMISSION

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REPORT NO. 3307

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS  
UNDER THE ACCIDENT REPORTS ACT OF MAY 8, 1910.

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD COMPANY

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March 15, 1950

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Accident at Monona, Iowa, on December 28, 1949, caused  
by failure to obey a meet order.

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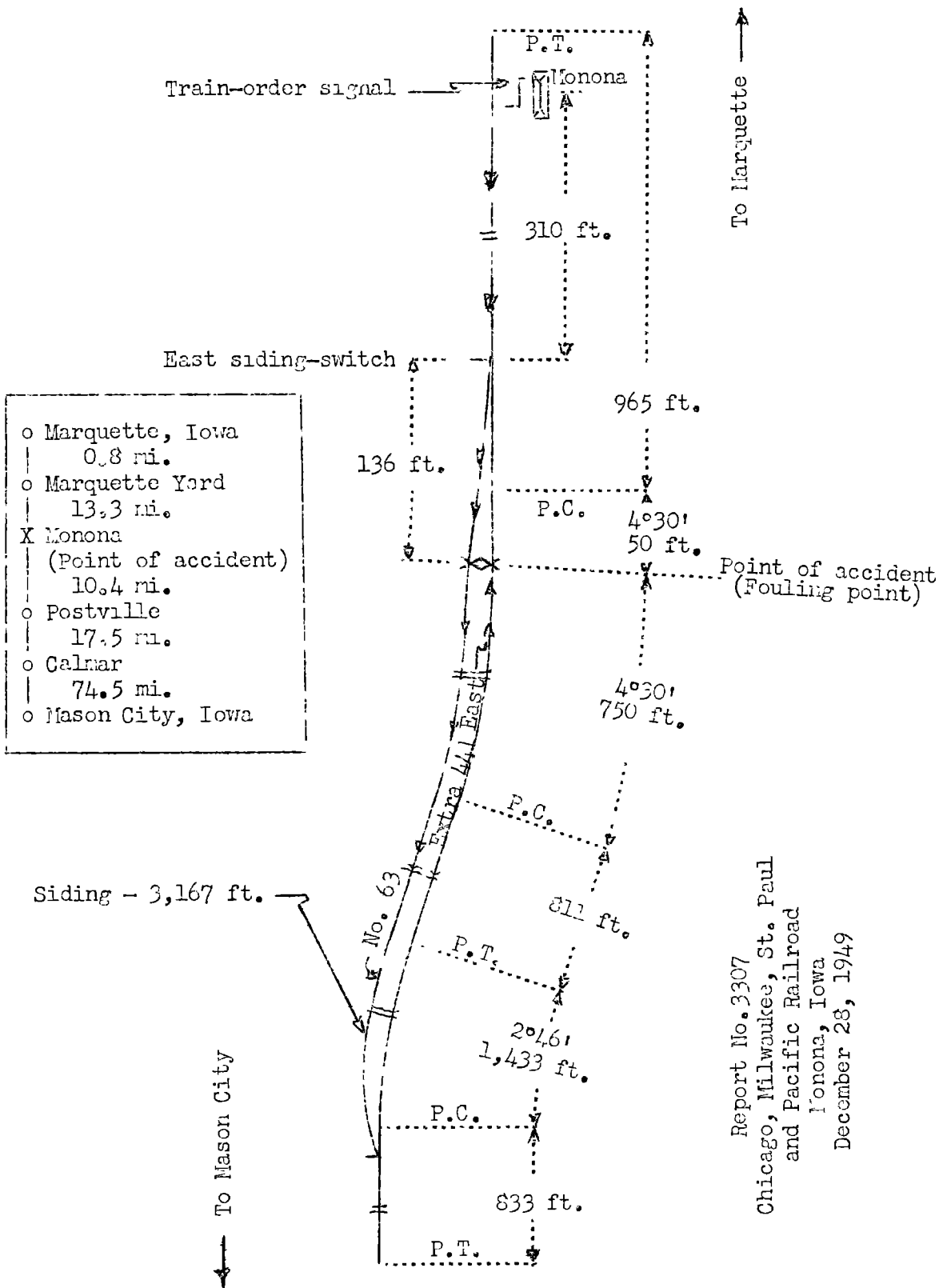
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REPORT OF THE COMMISSION

PATTERSON, Commissioner:

On December 28, 1949, there was a side collision between two freight trains on the Chicago, Milwaukee, St. Paul and Pacific Railroad at Monona, Iowa, which resulted in the death of one employee and the injury of one employee. This accident was investigated in conjunction with a representative of the Iowa State Commerce 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 Patterson for consideration and disposition.



Report No. 3307  
 Chicago, Milwaukee, St. Paul  
 and Pacific Railroad  
 Monona, Iowa  
 December 28, 1949

Location of Accident and Method of Operation

This accident occurred on that part of the Iowa and Dakota Division extending between Marquette and Mason City, Iowa, 116.5 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable, train orders and a manual-block system. At Monona, 14.1 miles west of Marquette, a siding 3,176 feet in length parallels the main track on the north. The east switch of this siding is 310 feet west of the station. The accident occurred at the fouling point of the main track and the turnout of the east siding-switch, at a point 136 feet west of the point-of-switch. From the east there is a tangent 965 feet in length and then a 4°30' curve to the right 50 feet to the point of accident and 750 feet westward. From the west there are, in succession, a tangent 833 feet in length, a 2°46' curve to the right 1,433 feet, a tangent 811 feet and the curve on which the accident occurred. At the point of accident the grade is 0.33 percent ascending eastward.

The switch stand at the east siding-switch is located 8.6 feet north of the center-line of the main track. It is equipped with a metal target 15 inches wide and 3 feet long, and an oil-burning switch lamp. The switch lamp is mounted above the target and is 6.8 feet above the level of the tops of the rails. When the switch is in normal position the target is parallel to the track and the switch lamp displays green in the direction of approaching trains. When the switch is lined for entry to the siding the target is at right angles to the main track and displays alternate bands of red and white, and the switch lamp displays red in the direction of approaching trains.

At the time of the accident the manual block in which the accident occurred extended from the station at Monona, 310 feet east of the east siding-switch, to Postville, 10.4 miles westward. The manual-block signals are of the three-position, upper quadrant, semaphore type, and they also serve as train order signals. The involved aspects and the corresponding indications and names are as follows:

| <u>Signal</u> | <u>Aspect</u>                     | <u>Indication</u> | <u>Name</u> |
|---------------|-----------------------------------|-------------------|-------------|
| Monona        | Red light,<br>arm hori-<br>zontal | Stop for orders   | Stop signal |

|           |                              |   |                    |
|-----------|------------------------------|---|--------------------|
| Postville | Yellow light<br>arm diagonal | Proceed under<br>clearance or<br>train order and<br>clearance | 19 order<br>signal |
|-----------|------------------------------|---|--------------------|

The manual-block system extends westward from the station at Monona. An automatic block-signal system extends eastward from Monona to Marquette. A sign bearing the words "END OF WESTWARD AUTOMATIC BLOCK" is located 11 feet east of the manual-block and train-order signal at Monona.

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

#### DEFINITIONS

\* \* \*

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train to be reduced.

Block.--A length of track of defined limits, the use of which by trains or engines is governed by block signals, cab signals or both.

S-17. \* \* \*

Until the headlight of a train turned out to meet another train is extinguished, it is an indication that the main track is obstructed. The opposing train must approach prepared to stop before passing the headlight and if the head end of train is clear of main track, may proceed only at restricted speed to the point where the main track may be obstructed.

19. Unless otherwise provided, the following signals will be displayed to the rear of every train, as markers, to indicate the rear of the train.

\* \* \*

Lights \* \* \* showing green to the front and side and red to the rear.

S-89 (A). \* \* \*

At train order meeting points, the train holding the main track must stop clear of the switch used by the train to be met in going on siding unless the train to be met is clear of the main track and switch is properly lined.

## FORMS OF TRAIN ORDERS

### S-A

#### Fixing Meeting Points for Opposing Trains

(1.) \* \* \*

No 5 meet Extra 95 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.

## MANUAL BLOCK SYSTEM

308. When Clearance Form A is used information will be shown as to the condition of the block "clear" or "occupied". If block is occupied, train will proceed prepared to stop short of train ahead.

317 (A). To admit a train to a block to meet opposing trains at a closed block station or a siding between two open block stations, by train order, the signalman must examine the block record, and if the block is clear of all but the train or trains to be met, give "1 for ..... except .....", to the next station in advance.

The signalman receiving this signal, if there is no train in the block except the train or trains to be met, must display Stop-indication or 19 order indication and then reply "13 for.....except.....". The signalman at the entrance of the block must then display Stop-indication or 19 order indication.

The approaching train will then be admitted to the block with a Clearance Form A reading, "Block clear except.....Stop-indication or 19 order indication is displayed for.....to meet.....as per order number.....".

The authority of a signalman for the issuance of such clearance will be the receipt of a copy of the order to be repeated and signed by him and completed by the train dispatcher.

317 (B). To admit a train awaiting the arrival of an opposing train or trains to a block, the signalman must examine the block record and if the block is clear of all but the expected train or trains, give "1 for..... except....." to the next block station in advance.

The signalman receiving this signal, if the block is clear of all but the train or trains to be met, must display Stop-indication and then reply "13 for..... except.....". The signalman at the entrance of the block must then display the proper signal indication.

The train must be brought to a stop and may then be given Clearance Form A reading, "Block clear except .....Stop-indication is displayed for.....to meet .....". A train receiving such clearance must not leave until the opposing train has arrived.

The maximum authorized speed of the trains involved was 50 miles per hour but was restricted to 35 miles per hour on the curve on which the accident occurred.

#### Description of Accident

No. 63, a west-bound second-class freight train, consisted of helper engine 575, Diesel-electric unit 83D, 81 cars and a caboose. At Marquette the crew received copies of train order No. 73 reading in part as follows:

No 63 Eng 83D meet Extra 441 East at Monona  
\* \* \* No 63 take siding at Monona

This train departed from Marquette Yard, 0.8 mile west of Marquette, at 12:25 a. m., 2 hours 10 minutes late, and stopped at the train-order signal at Monona at 1:10 a. m., 2 hours late. The signal indicated Stop-for-orders. The



engine crew of No. 63 received copies of train order No. 73 and Clearance Form A. The clearance stated, "Block clear except Extra 441 East Stop indication displayed for No 63 to meet Extra 441 East." The train entered the block and then entered the siding at the east siding-switch. This train stopped with the front end near the clearance point at the west end of the siding and with the fifty-ninth, sixtieth and sixty-first cars occupying the east turnout of the siding. About 1:30 a. m. the cars on the turnout were struck by Extra 441 East.

Extra 441 East, an east-bound freight train, consisted of engine 441, 51 cars and a caboose. At Calmar, 27.9 miles west of Monona, the crew of this train received copies of train order No. 73. Extra 441 East departed from Calmar at 12:25 a. m. At Postville the crew received copies of another train order, and also a Clearance Form A stating that the block between Postville and Monona was clear. Extra 441 East entered the block and while moving at an estimated speed of 15 miles per hour it struck the fifty-ninth car of No. 63.

The fifty-ninth car of No. 63 was slightly damaged. The sixtieth and sixty-first cars were derailed to the north. The sixtieth car was destroyed and the sixty-first car was somewhat damaged. The engine of Extra 441 East stopped on its right side and across the main track, with the engine cab 161 feet east of the point of collision. The tender was detached and stopped parallel to the rear portion of the engine. The first three cars were derailed. The engine was considerably damaged and the first three cars were somewhat damaged.

The front brakeman of Extra 441 East was killed. The fireman of Extra 441 East was injured.

The weather was clear at the time of the accident, which occurred about 1:30 a. m.

During the 30-day period preceding the day of the accident the average daily movement in this territory was 12.77 trains.

#### Discussion

Under the rules of this carrier, the train holding the main track at a train-order meeting point must stop clear of the switch to be used by the train to be met in going on the siding unless the train to be met is clear of the main

track and the switch is properly lined. Unless the headlight of a train occupying a siding to meet another train is extinguished, it is an indication that the main track is obstructed. The opposing train must approach in such manner that it can be stopped before it passes the headlight, and if the front end of the train to be met is clear of the main track, it may proceed only at restricted speed to the point where the main track may be obstructed. This carrier's manual-block rules provide that under authority of Clearance Form A opposing trains may be admitted to a block to meet, in accordance with requirements of a train order, at a siding between two open block stations. An operator is authorized to issue a Clearance Form A when he receives a copy of the meet order. The clearance must contain the information that the block is clear of all trains except the train to be met, the reason why the Stop aspect or 19-order aspect is displayed, and the number of the train order authorizing the movement.

The crew of No. 63 received copies of train order No. 73 at Marquette. This train was stopped at the station at Monona, where the enginemen of the road engine, the second engine, received a copy of train order No. 73, and also a Clearance Form A, which contained the instruction that the block was clear of all trains except Extra 441 East. No. 63 then entered the siding and stopped with the engines a short distance east of the west switch of the siding. Then the front brakeman detached the helper engine from the train, and it moved westward about 10 feet. The headlight of the helper engine was lighted brightly. Immediately after the helper engine was uncoupled the headlight and oscillating signal light of engine 83D were lighted brightly. The front brakeman, after retracting the coupler at the front of Diesel-electric unit 83D, proceeded to the vicinity of the west siding-switch to await the passage of Extra 441 East. The conductor of No. 63 was in the caboose and the flagman was near the rear of the train. As the engine of Extra 441 East passed the engines on the siding, proper identification of each train was made. During the approach and passage of Extra 441 East, the headlight and the oscillating signal light of Diesel-electric unit 83D remained lighted brightly.

The crew of Extra 441 East received copies of train order No. 73 at Calmar. At Postville, the western limit of the block in which the accident occurred, the crew received Clearance Form A containing the information that the block

was clear. When Extra 441 East was approaching Monona the headlight was lighted brightly. The enginemen and the front brakeman were in the cab of the engine. The conductor and the flagman were in the caboose. The speed on the ascending grade was about 20 miles per hour. The meeting-point whistle signal was sounded about 1 mile west of the west siding-switch. The engineer of Extra 441 East said he saw a light near the west siding-switch when he was still some distance from it, but he thought it was the headlight of an automobile on a highway adjacent and parallel to the track at that point. He then diverted his attention to a lubricator and did not look forward again until his engine was passing the front end of No. 63. The boiler of engine 441 obstructed his view of the two engines on the siding, and he did not see the headlight of either engine or the oscillating signal light of Diesel-electric unit 83D. He did not receive any flagging signals and therefore assumed that No. 63 was into clear on the siding. He said he thought the rules required that such protection be provided. The train then proceeded with the brakes released and the throttle open until the fireman called a warning. As the east siding-switch is approached from the west there is a 4°30' curve to the left and cars on the turnout at the fouling point cannot be seen from the right side of the cab of an east-bound engine. The engineer then placed the independent brake valve in application position. The collision occurred immediately afterward. The switch lamp and target at the east siding-switch were obscured from the view of the employees on engine 441 by the cars of No. 63. The brakes of Extra 441 East had been tested and had functioned properly en route.

The engineer, the fireman and the front brakeman of Extra 441 East had read train order No. 73. The fireman said he saw the headlight of helper engine 575 lighted brightly and he identified No. 63 on the siding. He assumed the engineer also saw the indication that the train to be met was not into clear. He thought that the engineer was operating the train so that it could be stopped short of the fouling point of the east turnout of the siding. Prior to the warning by the fireman, no information concerning the opposing train was exchanged by the employees on engine 441. The flagman heard the meeting-point whistle signal sounded and informed the conductor accordingly. As the caboose was in the vicinity of the west siding-switch the conductor saw the brightly lighted headlight of helper engine 575 and identified No. 63. He thought the speed of Extra 441 East was properly controlled and that the engineer was prepared to stop the train short of the fouling point of

the east siding-turnout. The conductor saw a flash from the oscillating signal light of Diesel-electric unit 83D as the rear of the train passed the west switch of the siding. He said, however, that the tender of engine 575, separated only by a distance of about 10 feet from the road engine of No. 63, prevented to a considerable extent the crew of Extra 441 East from seeing the headlight and signal light of the second engine on the siding.

Prior to the time of this accident, operators had not been given instructions as to which manual-block rule was applicable for the blocking of two trains meeting at Monona. The operator at Postville said he thought that Rule 317B was applicable and that for this reason he gave Extra 441 East a clearance indicating that the block was clear. He said this had been the practice at Postville for a considerable time. This rule provides for the issuance of block authority to one train while an opposing train is occupying the block but effective only after the block has been cleared. The operator at Monona issued a clearance to No. 63 in compliance with provision of Rule 317B. If Rule 317A had been complied with, the clearance delivered to Extra 441 East at Postville would have carried the information that the block was not clear. On January 2, 1950, the carrier issued instructions that Rule 317A would be applicable in blocking trains meeting at Monona. However, each member of the crew of Extra 441 East had read and understood the train order which established Monona as the meeting point with No. 63 and each was aware that the opposing train was occupying the siding at the meeting point.

Cause

It is found that this accident was caused by failure to obey a meet order.

Dated at Washington, D. C., this fifteenth day of March, 1950.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.