

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 3230
CHICAGO, ROCK ISLAND AND PACIFIC
RAILROAD COMPANY

REPORT IN RE ACCIDENT
AT MARBLE ROCK, IOWA, ON
JANUARY 23, 1949

SUMMARY

Railroad: Chicago, Rock Island and Pacific
Date: January 23, 1949
Location: Marble Rock, Iowa
Kind of accident: Head-end collision
Trains involved: Freight : Passenger
Train numbers: Second 99 : 62
Engine numbers: 3019 : Diesel-electric
unit 627
Consists: 55 cars, caboose : 7 cars
Estimated speeds: Standing : 50 m. p. h.
Operation: Timetable and train orders
Track: Single; tangent; 0.51 percent
ascending grade eastward
Weather: Foggy
Time: 8:52 p. m.
Casualties: 10 injured
Cause: Inferior train occupying main track
on time of opposing superior train
without providing full protection

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3230

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

CHICAGO, ROCK ISLAND AND PACIFIC
RAILROAD COMPANY

March 16, 1949

Accident at Marble Rock, Iowa, on January 23, 1949,
caused by an inferior train occupying the main
track on the time of an opposing superior train
without providing full protection.

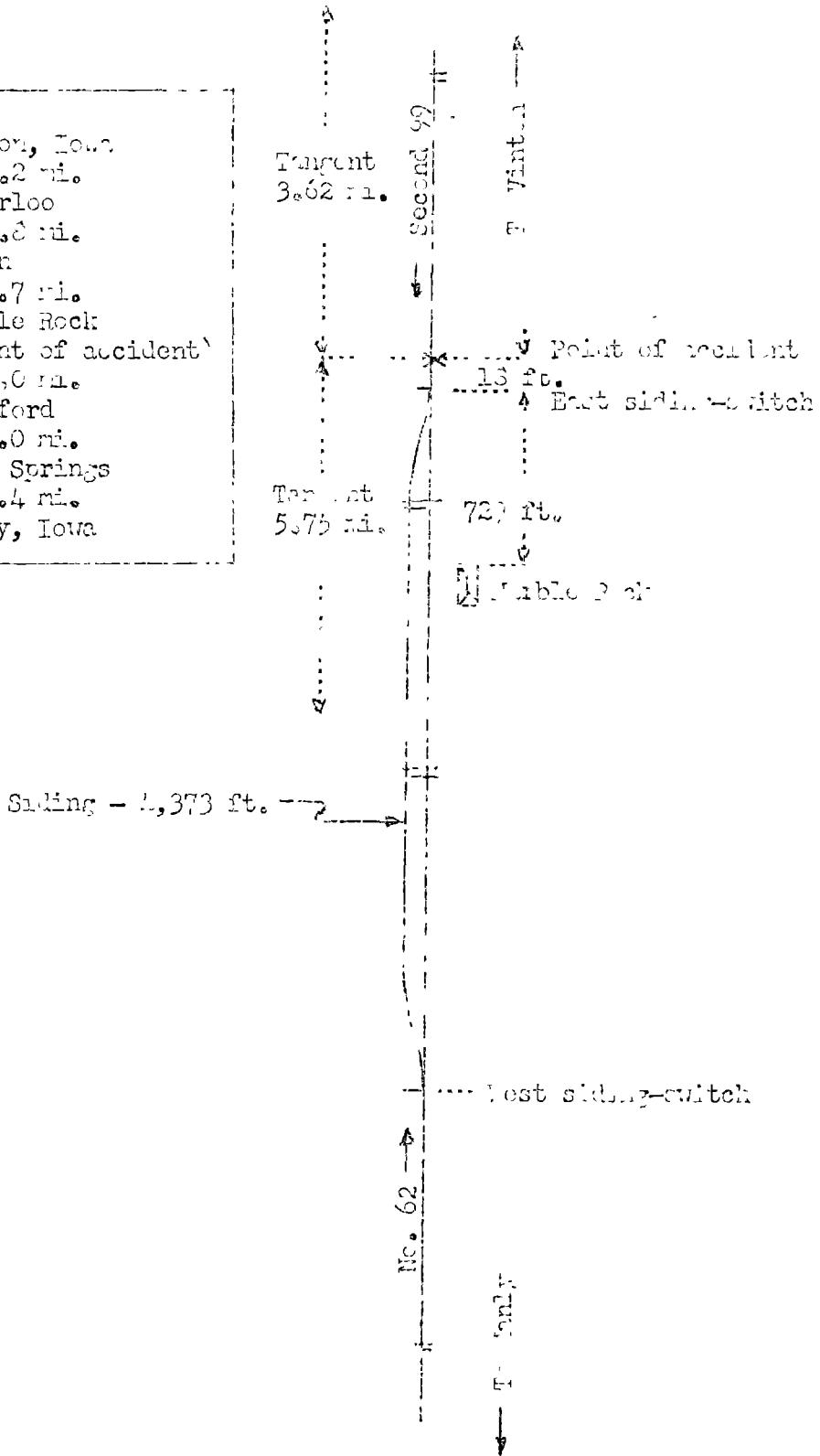
REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On January 23, 1949, there was a head-end collision between a passenger train and a freight train on the Chicago, Rock Island and Pacific Railroad at Marble Rock, Iowa, which resulted in the injury of four passengers, four dining-car employees and two train-service employees. This accident was investigated in conjunction with representatives of the Iowa State Commerce Commission

¹
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.

- Winton, Iowa
- | 29.2 mi.
- Waterloo
- | 39.8 mi.
- Green
- | 5.7 mi.
- X Marble Rock
- | (Point of accident)
- | 8.0 mi.
- Rockford
- | 7.0 mi.
- Nora Springs
- | 14.4 mi.
- Manly, Iowa



Plan No. 2230
 Chicago, Rock Island and Pacific Railroad
 Marble Rock, Iowa
 January 23, 1947

Location of Accident and Method of Operation

This accident occurred on that part of the Cedar Rapids Division extending between Vinton and Manly, Iowa, 104.1 miles, a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. At Marble Rock, 74.7 miles west of Vinton, a siding 4,373 feet in length parallels the main track on the north. The east switch of this siding is 729 feet east of the station. The accident occurred on the main track at a point 18 feet east of the east siding-switch. The main track is tangent a distance of 5.75 miles immediately west of the point of accident and 3.62 miles eastward. The grade is 0.51 percent ascending eastward at the point of accident.

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

5. * * *

The time applies at the switch where an opposing train enters the siding; * * *

* * *

14. Engine Whistle Signals.

NOTE.--The signals prescribed are illustrated by "o" for short sounds; "___" for longer sounds. * * *

Sound.

Indication.

* * *

(c) — o o o

Flagman protect rear of train.

* * *

(g) o o

Answer to * * * or any signal not otherwise provided for.

* * *

17. The headlight will be displayed to the front of every train by night. * * *

* * *

29. When a signal * * * is given to stop a train, it must be acknowledged as prescribed by Rule 14 (g) * * *

35. The following signals will be used by flagmen:

* * *

Night signals (A red light,
(Torpedoes and
(Fusees.

S-72. Trains of the first class are superior to those of the second; * * *

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.

* * *

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.

* * *

The front of the train must be protected in the same way when necessary by the forward trainman or fireman.

* * *

FORMS OF
TRAIN ORDERS.

E.

Time Orders.

- (1) No 1 Eng 39 and No 3 Eng 47 wait at
N until 9 59 a m
P 10 30 a m
R 10 55 a m, etc.

The train, or trains, named, must not pass the designated points, before the times given. Other trains receiving the order are 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, or trains, named.

Timetable special instructions read in part as follows:

Second class * * * trains * * * must clear the time of Nos. * * * 62 in non-automatic block territory not less than 15 minutes * * *

The maximum authorized speed for the passenger train was 70 miles per hour.

Description of Accident

At Waterloo, the last open office, 45.5 miles east of Marble Rock, the crew of Second 99, a west-bound, second-class freight train, received copies of train order No. 390 reading in part as follows:

No 62	Diesel 627
Wait	At
Rockford until	8 40 p m
Marble Rock	8 48 p m
* * *	

This train, consisting of engine 3019, 55 cars and a caboose, departed from Waterloo at 6:59 p. m., 4 hours 19 minutes late, stopped at Greene, 5.7 miles east of Marble Rock, and departed from that station at 8:18 p. m., 4 hours 4 minutes late. At 8:33 p. m. it stopped on the main track just east of the east siding-switch at Marble Rock, and about 19 minutes later it was struck by No. 62.

No. 62, an east-bound first-class train of the Rocket type, consisted of Diesel-electric unit 627, one mail car, one baggage car, two coaches, two sleeping cars and one diner-observation car, in the order named. The first, second, fifth and sixth cars were of conventional all-steel construction, and the other cars were of lightweight all-steel construction. At Manly, 29.4 miles west of Marble Rock, the crew received .

copies of train order No. 390. This train departed from Manly at 8:17 p. m., 12 minutes late, departed from Nora Springs, the last open office, 15 miles west of Marble Rock, at 8:37 p. m., 16 minutes late, passed the flagman of Second 99, and while moving at an estimated speed of 50 miles per hour it struck Second 99 at a point 18 feet east of the east siding-switch at Marble Rock.

The engine of Second 99 was driven backward 42 feet by the force of the impact and stopped upright with all of its wheels derailed. The front end was badly damaged and the engine truck was driven back under the cylinders. The tender remained upright and coupled to the engine, but the cistern was torn loose from the frame and the frame was bent. The first car was derailed to the south and demolished. The second and third cars were derailed and somewhat damaged.

The Diesel-electric unit of No. 62 stopped with its front end against the smoke-box and cylinder-saddle of engine 3019. The frame was broken at the rear of the cab, and it was jack-knifed upward about 12 feet above the tops of the rails. The Diesel engines and the traction motors were badly damaged. The first two cars were derailed and somewhat damaged.

The engineer and the fireman of No. 62 were injured.

It was foggy at the time of the accident, which occurred at 8:52 p. m.

During the 30-day period preceding the day of the accident, the average daily movement in the vicinity of the point of accident was 9.77 trains.

Discussion

The crews of both trains held copies of train order No. 390, which required No. 62 to wait at the east siding-switch at Marble Rock until 8:48 p. m. Under the rules, Second 99 was required to be into clear at the east siding-switch at Marble Rock not later than 8:33 p. m., if it proceeded to that station to meet No. 62, or to provide full protection. All members of the crew of Second 99 so understood.

Second 99 was stopped with the engine about 18 feet east of the east siding-switch at Marble Rock at 8:33 p. m., and the front brakeman lined the switch for entry into the siding. The headlight was lighted brightly. When the engineer attempted to start the train the brakes were applied in emergency and

an investigation by the front brakeman disclosed that a separation had occurred between the second and the third cars as a result of a broken knuckle at the west end of the third car. The front brakeman then obtained flagging equipment and immediately started westward to provide protection against No. 62. The engineer and the fireman proceeded to replace the broken knuckle. The footing was slippery because of snow and ice. This condition materially retarded the progress of the front brakeman. When he saw the headlight of No. 62 at an estimated distance of 3,500 feet, he immediately lighted a red fusee and gave stop signals. There were no torpedoes placed on the rail. The engineer of No. 62 acknowledged these signals by sounding two short blasts on the pneumatic horn when that train was about 2,700 feet distant, but the front brakeman said that No. 62 was moving at a high rate of speed when it passed him, and that the speed was not materially reduced when the collision occurred. He said that the brakes of No. 62 were applied when it passed him, but the small amount of sparks coming from the brake shoes indicated that the brakes were only lightly applied at that time. The front brakeman reached a point 1,861 feet west of the east siding-switch when No. 62 passed him. The engineer of Second 99 said that he heard the flagging signals acknowledged, then he proceeded to the edge of the right-of-way and observed No. 62 as it approached. He estimated that the speed of No. 62 was 60 miles per hour when the collision occurred. He said that he saw no sparks coming from the brake shoes and also that he thought the throttle of the engine of No. 62 had not been shut off. A few minutes after the collision occurred he examined the brake shoes of three of the cars of No. 62 and said that the low temperature of the shoes indicated that the braking of No. 62 prior to the collision was not severe.

The conductor of Second 99 said that when his train departed from Greene, 5.7 miles east of Marble Rock, at 8:18 p. m., there was sufficient time to be into clear at Marble Rock at 8:33 p. m., because the usual running time for a freight train similar to Second 99 was somewhat less than 15 minutes. When the brakes were applied in emergency he immediately started toward the front of the train. He stopped for about 5 minutes to inspect a defective brake beam and had reached the third car from the engine when the collision occurred. He said that he saw the lighted red fusee on the main track about 1/2 mile west of the east siding-switch. When the broken knuckle was discovered, sufficient time remained for the engine crew to detach the engine, proceed through the siding to the west siding-switch and provide flag protection at that point, a distance of about 4,400 feet. However, each of the employees said that it did not occur to him that the footing was such that the front brakeman would be unable to reach a point far enough west to provide full protection.

As No. 62 approached Marble Rock the speed was about 70 miles per hour. The engineer and the fireman were in their respective positions in the control compartment at the front of the Diesel-electric unit and an engineer learning this portion of the railroad was seated between them. The headlight was lighted brightly and all three employees were maintaining a lookout ahead. The conventional automatic air-brake equipment was being used. The brakes had been tested at Manly and had functioned properly where used en route. The engineer said that before No. 62 reached the west siding-switch at Marble Rock, he observed that the time for the wait at Marble Rock had expired. In the vicinity of the west siding-switch he made a brake-pipe reduction of about 10 pounds, which was released when the speed of the train had been reduced to 68 miles per hour. The Diesel-electric unit was equipped with a speedometer but there was no tape in the recording device. He said that he expected to find the opposing train on the siding at Marble Rock. When the engine reached the station at Marble Rock, 729 feet west of the east siding-switch, the engineer said that he saw a lighted red fusee, which he acknowledged by sounding two short blasts on the pneumatic horn and immediately made a service application of the brakes. A few seconds later he closed the throttle and placed the brake valve in the emergency position. He estimated that the speed of the train had been reduced to 50 miles per hour at the time of the collision. He said that he did not see the headlight of Second 99. The fireman said that about 4 seconds after No. 62 passed the west siding-switch at Marble Rock he saw the fusee and called a warning to the engineer, who made a service application of the brakes. After passing the fusee, the engine entered a fog bank. After it emerged from the fog bank he saw the headlight of Second 99 about 1,200 feet distant, and the engineer made an emergency application of the brakes. The engineer who was off duty said that No. 62 was moving at a speed of about 70 miles per hour when it passed the west siding-switch at Marble Rock. Soon thereafter, he saw the lighted red fusee and called a warning to the engineer, who made a service application of the brakes. After the engine passed the front brakeman of Second 99, the engineer placed the brake valve in the emergency position. The engineer who was off duty could not estimate the speed of No. 62 at the time of the collision, because he was preparing to alight from the train. The flagman of No. 62 said that he was in the vestibule of the last car, and that the brakes were first applied after that car had passed the west siding-switch at Marble Rock. Soon afterward, he opened the vestibule door on the south side and observed that the engine had passed a lighted red fusee. When he saw the fusee to the rear of the train, the brakes were applied in emergency and the collision occurred a few seconds later.

An air-brake instructor of this carrier said that a train similar to No. 62, moving at a speed of 70 miles per hour, could be stopped in a distance of 3,300 feet by a service application of the brakes, and in 2,600 feet by an emergency application. However, the front brakeman of Second 99 reached a point only 1,879 feet west of the front end of his engine, and intermittent fog prevented the enginemen of No. 62 in having sufficient preview to take action soon enough to prevent the collision.

Cause

It is found that this accident was caused by an inferior train occupying the main track on the time of an opposing superior train without providing full protection.

Dated at Washington, D. C., this sixteenth day of March, 1949.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.