

INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3114

ILLINOIS CENTRAL RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT NEW HARTFORD, IOWA, ON

JULY 1, 1947

SUMMARY

Railroad: Illinois Central
Date: July 1, 1947
Location: New Hartford, Iowa
Kind of accident: Head-end collision
Trains involved: Freight : Freight
Train numbers: First 73 : 66
Engine numbers: I.C. 1254 and : 1324
C.B.& Q. three-
unit Diesel-
electric engine
158
Consists: 69 cars, caboose : 50 cars, caboose
Estimated speeds: Standing : 10 m. p. h.
Operation: Timetable, train orders, and automatic
cab signal and train-stop system
Track: Single; 0°46' curve; 0.215 percent
descending grade eastward
Weather: Clear
Time: 11:30 p. m.
Casualties: 1 killed
Cause: Failure of inferior train to obey
meet order, and failure to operate
superior train in accordance with
cab-signal indication

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3114

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

ILLINOIS CENTRAL RAILROAD COMPANY

August 13, 1947

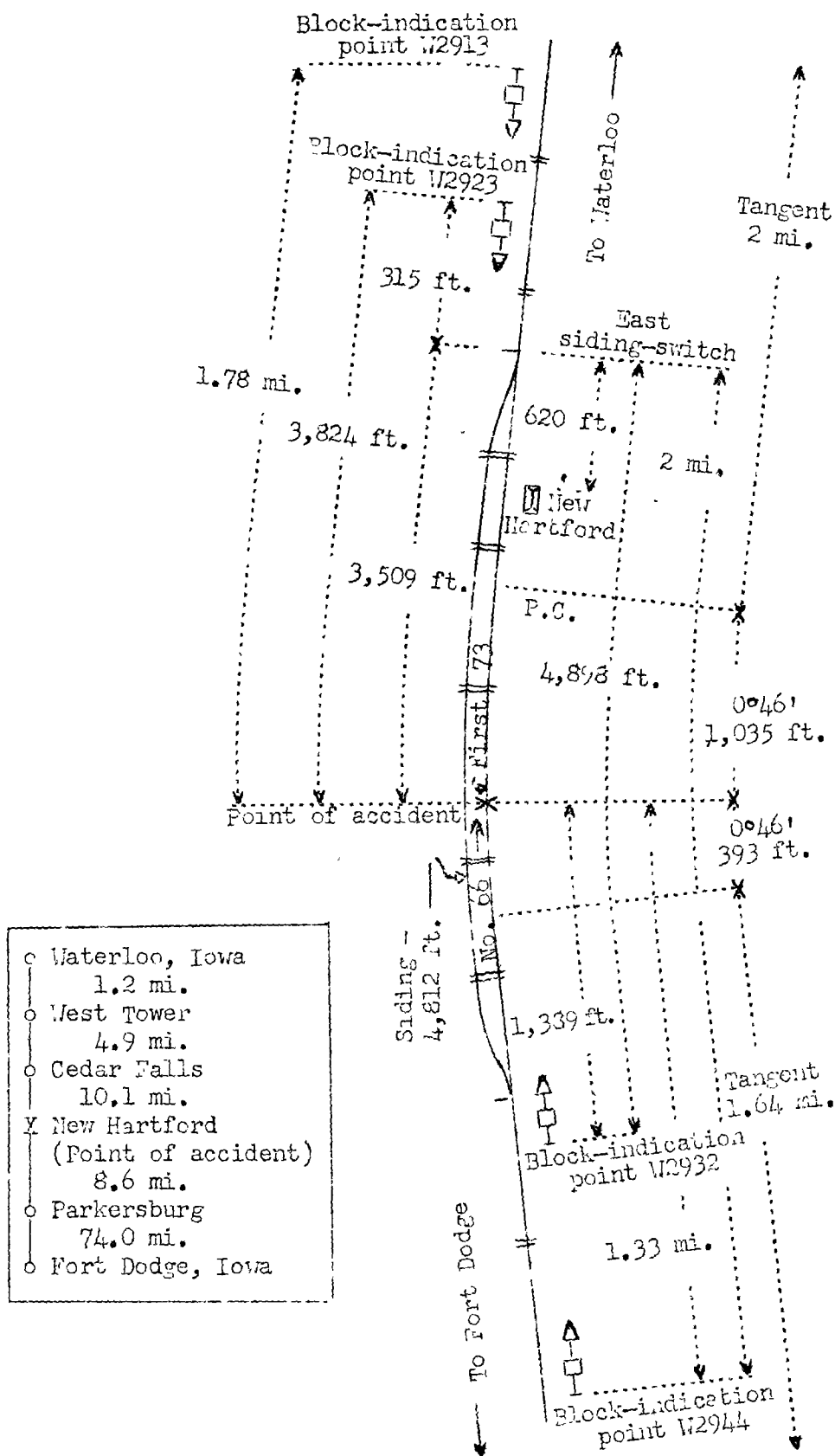
Accident at New Hartford, Iowa, on July 1, 1947, caused
by failure of the inferior train to obey a meet order,
and by failure to operate the superior train in
accordance with cab-signal indication.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On July 1, 1947, there was a head-end collision between two freight trains on the Illinois Central Railroad at New Hartford, Iowa, which resulted in the death of one employee. This accident was investigated in conjunction with a representative 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.



Location of Accident and Method of Operation

This accident occurred on that part of the Iowa Division extending between Waterloo and Fort Dodge, Iowa, 98.8 miles, a single-track line. In the vicinity of the point of accident trains are operated by timetable, train orders and an automatic cab-signal and train-stop system. At New Hartford, 16.2 miles west of Waterloo, a siding 4,812 feet in length parallels the main track on the north. The east switch of the siding is 620 feet east of the station. The accident occurred on the main track 3,509 feet west of the east siding-switch. From the east there is a tangent about 2 miles in length, and then a 0°46' curve to the left 1,035 feet to the point of accident and 393 feet westward. From the west there is a tangent 1.64 miles in length, and then the curve on which the accident occurred. The grade is 0.215 percent descending eastward.

The automatic cab-signal and train-stop system is of the continuous inductive type. Engines are equipped with two-indication color-light cab signals which display either a green or a red aspect. There are no wayside signals except interlocking home signals and two-indication signals near the ends of sidings. The controlling track circuits are arranged on the absolute-permissive principle. Cab signals are actuated at block-indication points, which correspond to the points where automatic wayside signals, if used, would be located. When the cab signal changes from a green to a red aspect a warning whistle in the cab of the engine sounds and, if the acknowledging lever is not actuated within a period of 6 seconds, an automatic brake application sufficient to stop the train will occur. If the brake application is forestalled, the train may proceed under the control of the engineer in accordance with the operating rules. When a train is operating under a red aspect through two or more consecutive blocks and passes a block-indication point between two blocks the cab signal changes to green while the engine is moving over an energized section of track immediately in advance of the block-indication point and then changes back to a red aspect, which again causes the warning whistle to sound and the automatic train-stop device to operate if it is not forestalled. The cab signals of the involved equipped engines were mounted on the right side of the firebox and facing the engineer. The aspects and corresponding indications of the cab signals are as follows:

<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
Green	PROCEED.	CLEAR.
Red	PROCEED AT RESTRICTED SPEED.	RESTRICTING.

Block-indication points W2913 and W2923, governing west-bound movements, are, respectively, 1.78 miles and 3,824 feet east of the point of accident. Block-indication points W2944 and W2932, governing east-bound movements, are, respectively, 1.35 miles and 1,389 feet west of the point of accident. The controlling circuits are so arranged that when a west-bound train occupies the main track at any point within a distance of 10.2 miles immediately east of the point of accident, the cab signal of an east-bound engine will display a red aspect when the engine passes block-indication point W2944. The cab signal will continue to display a red aspect until the engine reaches block-indication point W2932, at which point it momentarily changes to display a green aspect, then reverts to a red aspect. When an east-bound train occupies the main track at any point within a distance of 5 miles immediately west of the point of accident, the cab signal of a west-bound engine will display a red aspect when the engine passes block-indication point W2913, then the cab signal momentarily changes from red to green and back to red at block-indication point W2923.

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

DEFINITIONS.

* * *

Pilot.--An employe assigned to a train when the engineman or conductor, or both, are not fully acquainted with the physical characteristics or rules of the railroad, or portion of the railroad, over which the train is to be moved.

* * *

Cab Signal.--A signal located in engineman's compartment or cab, indicating a condition affecting the movement of a train or engine and used in conjunction with interlocking signals and in conjunction with or in lieu of block signals.

* * *

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or switch not properly lined and to look out for broken rail.

17. The headlight must be displayed to the front of trains by night * * *. It must be extinguished when a train turns out to meet another train and has stopped clear of the main track, * * *

* * *

S-17. * * *

An opposing train finding an engine on siding with headlight burning, must stop before passing the headlight, ascertain the cause, be governed by conditions, * * *

34. All members of engine and train crews must, when practicable, communicate to each other by its name, the indication of each signal affecting the movement of their train or engine.

* * *

S-71. A train is superior to another train by right, class or direction.

Right is conferred by train orders; class and direction by time-table.

Right is superior to class or direction.

S-72. * * *

Trains in the direction specified by the time-table are superior to trains of the same class in the opposite direction.

S-89. At meeting points, the inferior train must take siding * * *

* * * The inferior train must pull into the siding when practicable. If necessary to back in, unless otherwise provided, it must first 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 fuses. * * *

* * *

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

* * *

204. * * *

* * *

Enginemen must show their train orders to firemen, and when practicable, to forward trainmen. Conductors must show their orders, when practicable, to trainmen.

Trainmen and firemen must read and be familiar with the contents of train orders and, should there be occasion to do so, remind conductors or enginemen of the contents thereof, and the time of superior trains which must be cleared.

FORMS OF TRAIN ORDERS.

S-A.

Fixing Meeting Points For Opposing Trains.

(1) No 1 meet No 2 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.

S-C.

Giving Right Over An Opposing Train.

(1) No 1 has right over No 2 G to X.

* * *

These orders give right to the train first named over the other train between the points named. * * *

Time-table special instructions provide that east-bound trains are superior to trains of the same class in the opposite direction.

The maximum authorized speed for the trains involved was 50 miles per hour.

Description of Accident

At West Tower, 15 miles east of New Hartford, the crew of First 73, a west-bound second-class freight train, received copies of train order No. 77 reading in part as follows:

Eng 1254 display signals and run as First 73
West Tower to Ft Dodge meet No 66 Eng 1324
at New Hartford has right over No 70 Eng 1291
West Tower to Parkersburg * * *

First 73, consisting of I.C. engine 1254, Chicago, Burlington & Quincy three-unit Diesel-electric engine 158, 69 cars and a caboose, departed from West Tower at 11 p. m., 37 minutes late, passed Cedar Falls, the last open office, 10.1 miles east of New Hartford, at 11:07 p. m., 33 minutes late, passed block-indication points W2913 and W2923, where the cab-signal of engine 1254 changed to display proceed-at-restricted-speed, passed the east siding-switch at New Hartford, where it was required to enter the siding to meet No. 66, and stopped on the main track with the front end of the first engine standing 3,509 feet west of the east siding-switch. Immediately afterward this train was struck by No. 66.

At Parkersburg, 8.6 miles west of New Hartford, the crew of No. 66, an east-bound second-class freight train, received copies of train order No. 77. This train, consisting of engine 1324, 50 cars and a caboose, departed from Parkersburg, the last open office, at 11:15 p. m., 7 hours 10 minutes late, passed block-indication points W2944 and W2932, where the cab signal of the engine changed to display proceed-at-restricted-speed, and while moving at an estimated speed of 10 miles per hour it collided with First 73 at a point 1,389 feet east of block-indication point W2932.

The front ends of the first engine of First 73 and the engine of No. 66 were considerably damaged. The tender of the engine of No. 66 telescoped the cab of its engine, and the cab was demolished. The first car of No. 66 stopped with its front end on the rear end-sill of the tender of the engine, and the tender and the car were badly damaged. The second car was derailed and damaged.

The fireman of No. 66 was killed.

The weather was clear at the time of the accident, which occurred about 11:30 p. m.

Discussion

Because of flood conditions, the Chicago, Burlington & Quincy train involved was being operated westward on the line of the Illinois Central. The C.B.& Q. engine was not equipped with an automatic cab-signal and train-stop system, and this train was being hauled by an I.C. engine manned by an I.C. engine crew. The train was in the charge of the I.C. engineer and an I.C. conductor-pilot. The crew of each train held copies of a train order which gave First 73 right over No. 70 from West Tower to Parkersburg, and established New Hartford as the meeting point between First 73 and No. 66. First 73 was inferior to No. 66 by direction and, under the rules, First 73 was required to enter the siding at New Hartford at the east switch, and to remain clear of the main track until No. 66 had been met. First 73 and No. 66 collided on the main track between the siding switches at New Hartford, at a point 3,509 feet west of the east siding-switch.

As First 73 was approaching New Hartford the I.C. engine-men were on the first engine, the C.B.& Q. enginemen and the C.B.& Q. front brakeman were in the control compartment of the first Diesel-electric unit, the conductor and the flagman of the C.B.& Q. and the I.C. conductor-pilot were in the caboose. The brakes of this train, which were in the charge of the I.C. engineer, had been tested and had functioned properly en route. The headlight of the I.C. engine was lighted. Copies of the train order involved were received by the crew of this train at West Tower, 15 miles east of New Hartford, about 30 minutes prior to the time the accident occurred. At that time each member of the crew, including the C.B.& Q. employees, read the order. The C.B.& Q. employees were not familiar with the territory, and they were not aware that the train was in the vicinity of the meeting point until the accident occurred. The I.C. engineer said he misread the order and thought that his train had right over both the opposing trains mentioned in the order, and that, under the provisions of the order, No. 66 was required to enter the siding at New Hartford to meet First 73. For this reason, he operated his train beyond the east siding-switch, and he was not aware of his error until the fireman called a warning when he saw No. 66 approaching about 1,000 feet distant. Then the engineer moved the brake valve to emergency position, and his train had just stopped when the collision occurred. The conductor-pilot understood that his train was required to enter the siding at the east switch to meet No. 66. Until the caboose was a short distance east of the switch he thought that a member of the crew of No. 66 had operated the east siding-switch and that his train was entering the siding. Then he attempted to open the conductor's air valve, but the brakes were applied in emergency before this was accomplished.

As No. 66 was approaching New Hartford the speed was about 40 miles per hour. The headlight was lighted, and the enginemen and the front brakeman were maintaining a lookout ahead. The conductor, the middle brakeman and the flagman were in the caboose. These employees had read the train order and they understood that their train was required to stop clear of the east siding-switch at New Hartford unless First 73 was into clear on the siding. When the engine passed block-indication point W2944, located 2 miles west of the east siding-switch, the aspect of the cab signal changed from green to red, and the engineer operated the acknowledging lever and made a 12-pound brake-pipe reduction. When the speed was reduced to about 10 miles per hour he released the brakes. When the engine passed block-indication point W2932, located 4,898 feet west of the east siding-switch, the aspect of the cab signal changed from red to green to red, and the engineer operated the acknowledging lever. When the engineer first saw the reflection of the headlight of the opposing train, he thought that train was entering the siding and had not cleared the east switch. He was not aware that First 73 was occupying the main track until his engine was about 200 feet west of the point where the collision occurred, then he moved the brake valve to emergency position. The speed of No. 66 was about 10 miles per hour when the collision occurred. The brakes of this train had been tested and had functioned properly en route. Under the rules, the proceed-at-restricted-speed indication displayed by the cab signal of No. 66 required that train to be so operated that it could be stopped short of a train or an obstruction.

Cause

It is found that this accident was caused by failure of the inferior train to obey a meet order, and by failure to operate the superior train in accordance with cab-signal indication.

Dated at Washington, D. C., this thirteenth day of August, 1947.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.