INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2486

THE ILLINOIS CENTRAL RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR DELAWARE, IOWA, ON

MARCH 10, 1941

SUMMARY

Railroad:	Illinois Central	
Date:	March 10, 1941	
Location:	Delaware, Iowa	
Kind of accident:	Head-end collision	
Trains involved:	Freight	: Freight
Train numbers:	73	: Third 72
Engine numbers:	2982	: 2929
Consist:	42 cars, 2 cabooses	: 38 cars, caboose
Speed:	Standing	: 20 m. p. h.
Operation:	Timetable and train orders	
Track:	Single; tangent; 0.33 percent ascending grade eastward	
Weather:	Snowing	
Time:	9:46 p. m.	
Casualties:	3 injured	
Cause:	Accident caused by failure to obey meet order	
Recommendation:	That consideration be given to installation of a suitable block signal system	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2486

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

THE ILLINOIS CENTRAL RAILROAD COMPANY

April 22, 1941

Accident near Delaware, Iowa, on March 10, 1941, caused by failure to obey a meet order.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On March 10, 1941, there was a head-end collision between two freight trains on the Illinois Central Railroad near Delaware, Iowa, which resulted in the injury of three employees. The investigation of this accident was made in conjunction with a representative of the Iowa State Commerce Commission.

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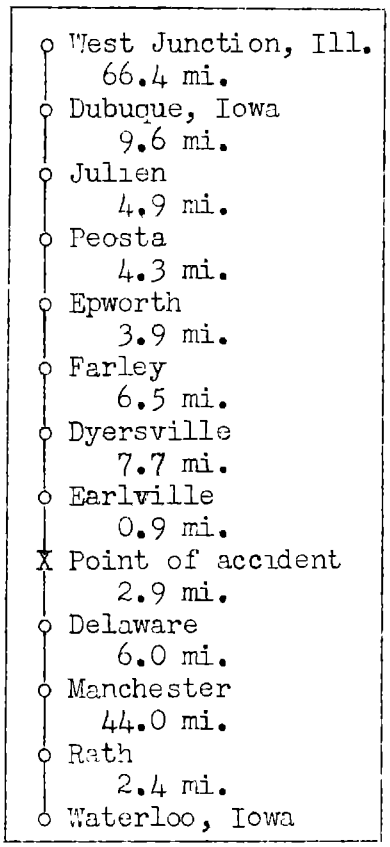
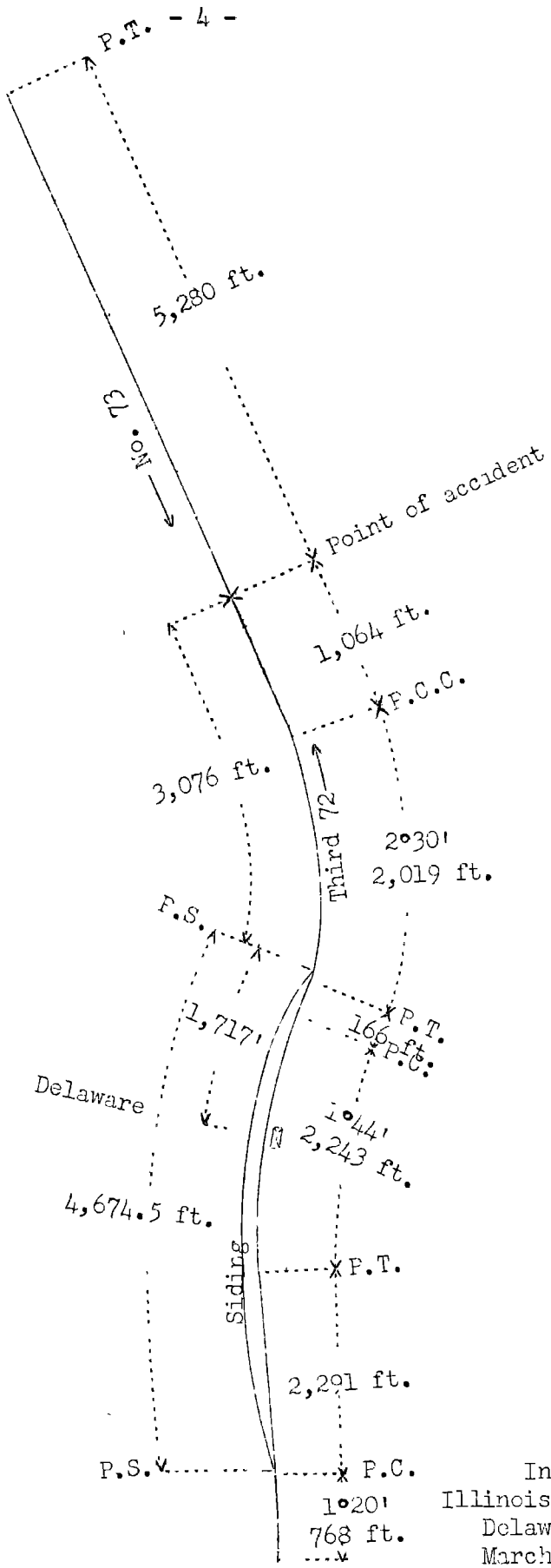
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.





Inv-2486
Illinois Central R.R.
Delaware, Iowa
March 10, 1941

Location and Method of Operation

This accident occurred on that part of the Iowa Division designated as the Dubuque District which extends between West Junction, Ill., and Waterloo, Iowa, a distance of 159.5 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 Delaware a siding 4,674.5 feet in length parallels the main track on the north; the east siding-switch is 1,717 feet east of the station. The accident occurred on the main track at a point 5,076 feet east of the east siding-switch. As the point of accident is approached from the east the track is tangent more than 1 mile. As the point of accident is approached from the west there are, in succession, a 1°20' curve to the left 768 feet in length, a tangent 2,291 feet, a 1°44' curve to the right 2,243 feet, a tangent 166 feet, a compound curve to the left 2,010 feet in length having a maximum curvature of 2°30', and a tangent 1,064 feet to the point where the accident occurred. The grade for west-bound trains varies between 0.20 and 1.40 percent ascending a distance of 5,500 feet, then varies between 0.25 and 1.20 percent descending 1,541 feet to the point of accident and is 0.33 percent descending at the point of accident. The grade for east-bound trains varies between 0.25 and 1.00 percent descending a distance of 4,000 feet, is level 200 feet, and then varies between 0.33 and 1.17 percent ascending a distance of 1,659 feet to the point of accident.

Transportation Rules read in whole or in part as follows:

14. ENGINE WHISTLE SIGNALS

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

* * *

(n) ___ ___ o Approaching meeting or waiting points. See Rule S-90.

S-90. * * *

Trains must stop clear of the switch used by the train to be met in going on the siding.

* * *

The engineman of each train will give signal 14(n) at least one mile before reaching a meeting or waiting point. Should the engineman fail to give signal 14(n) as herein prescribed the conductor must take immediate action to stop the train.

730. * * * Trainmen and firemen must remind conductors and enginemen of the contents of train orders should there be occasion to do so.

Special time-table instructions read as follows:

S-72. Eastward trains are superior to trains of the same class in the opposite direction.

The maximum authorized speed for the trains involved is 40 miles per hour.

There was a blizzard at the time of the accident, which occurred about 9:46 p. m.

Description

No. 73, a west-bound second-class freight train, with Conductor Benham and Engineman Toomey in charge, consisted of engine 2982, 28 loaded and 14 empty cars, and 2 cabooses. At South Jct., Dubuque, 40.7 miles east of Delaware, the crew received copies of a clearance card and train order No. 288, Form 19, which read as follows:

Third 72 Eng 2929 wait
at Earlville until 955 pm
Dyersville 1005 pm
Farley 1015 pm
Epworth 1020 pm
Peosta 1030 pm
Julien 1040 pm for
No 73 Eng 2982 and No 75
Eng 2964

This train departed from South Jct. at 7:43 p. m., according to the train sheet, 7 hours 13 minutes late. At Dyersville, 11.5 miles east of Delaware, the crew received copies of a clearance card and train order No. 289, Form 19, which read as follows:

Third 72 Eng 2929 meet
No 73 Eng 2982 at
Delaware.

This train departed from Dyersville at 9:27 p. m., 7 hours 37 minutes late, stopped at a point 3,076 feet east of the east siding-switch at Delaware, and immediately afterward it was struck by Third 72.

Third 72, an east-bound second-class freight train, with Conductor Lanafear and Engineman Lovell in charge, consisted of engine 2929, 16 loaded and 22 empty cars and a caboose. This train departed from Rath, 50 miles west of Delaware, at 7:20 p. m., according to the train sheet, 2 hours 30 minutes late. At Manchester, 6 miles west of Delaware and the last open office, the crew received copies of a clearance card and train orders Nos. 283 and 289, Form 19, previously quoted. This train departed from Manchester at 9:31 p. m., 3 hours 23 minutes late, passed the clearance point of the east siding-switch at Delaware, where it was required to wait until No. 73 was into clear on the siding, and, while moving at a speed estimated to have been about 20 miles per hour, collided with No. 73.

Both engines stopped upright and in line with the track. The front end of engine 2938 was supported on the front end-frame of engine 2982. The Nos. 1, 2, 3, and 4 pairs of driving wheels of engine 2929 were suspended above the rails; the right trailer-truck wheel of engine 2938 was derailed. The pilots, air compressors and front deck castings of both engines were demolished. The main frame of engine 2982 was broken in five places and the cylinder saddle was broken. The tender of engine 2938 was derailed but remained upright and in line with the track. The tender of engine 2929 was badly damaged. The first car of Third 72 was derailed to the right and stopped at an angle of about 45 degrees to the track with one end against the tender; this car was demolished. The second car was derailed but remained upright and in line with the track; it was crushed between the tender and the third car. The third car was derailed but remained upright and in line with the track; the front end of this car was slightly damaged. The rear truck of the first car of No. 73 was derailed. The third and the fourth cars were telescoped a distance of about 10 feet but neither car was derailed; the rear end of the third car was badly damaged; the fourth car was slightly damaged.

The employees injured were the engineman, the fireman and the front brakeman of Third 72.

Summary of Evidence

Engineman Toomey, of No. 73, stated that at West Junction, 107.1 miles east of Delaware, a terminal air-brake test was made. At Dyersville he received a copy of train order No. 289 and understood that No. 73 was to enter the siding at Delaware to meet Third 72. When his train was approaching the point where the accident occurred the throttle was open, he was maintaining a lookout ahead, and the speed was about 30 miles per hour. His train had not reached a point where it was necessary to prepare

to stop at the east siding-switch at Delaware when he observed the headlight of an approaching east-bound train about 1/2 mile distant. He immediately applied the air brakes in emergency and his train stopped in a distance of 20 or 25 car lengths. Immediately afterward the collision occurred. He said that because of snow being blown visibility was considerably restricted.

Fireman Knipschild, of No. 75, stated he understood that order No. 289 established a meeting point at Delaware between No. 73 and Third 72, and that No. 73 was required to enter the siding. When his train was approaching Delaware the speed was 25 or 30 miles per hour and he was on the left seatbox. As the windows were covered with snow, visibility was materially restricted. Because the track curvature was to the right he was unable to see the headlight of the opposing train. The first he knew of anything being wrong was when the engineman moved the brake valve to emergency position and called a warning. The fireman jumped from the left side of the engine just before the collision occurred. At the time of the collision his train was standing.

Front Brakeman Kilgore, of No. 73, stated that he understood the requirements of order No. 289. When his train was approaching Delaware he was seated on the left side of the engine. Blowing snow materially restricted visibility. The first he knew of anything being wrong was when the engineman applied the brakes in emergency. At that time the brakeman saw the reflection from the headlight of an opposing train but was unable, because of track curvature, to see the headlight itself. His train was standing when the collision occurred.

Conductor Benham, of No. 73, stated that an air-brake test was made before his train departed from West Junction. At Dyersville he received a copy of train order No. 289 and understood that No. 73 was required to enter the siding at Delaware to meet Third 72. His train was approaching Delaware at a speed of about 30 miles per hour when an emergency application of the air brakes stopped the train. He was unaware that an accident had occurred until he arrived at the front end of his train. He said that it was snowing and there was a northwest wind; these conditions restricted visibility to about 5 car lengths. The accident occurred about 9:46 p. m.

The statement of Flagman Walsh, of No. 73, added nothing of importance.

Engineman Lovell, of Third 72, stated that at Waterloo, 52.4 miles west of Delaware, an air-brake test was made and the brakes functioned properly en route. Brake-pipe pressure of 70 pounds was being maintained. At Manchester some cars were set out and others were added to the train. While the cars were being

coupled to the train the operator delivered, among others, copies of train orders Nos. 283 and 289 to the fireman. As the engineman was occupied in assembling the train, the fireman read the orders aloud. The fireman read order No. 289 as, "Third 72 engine 2929 meet No. 73 engine 2982 at Dyersville." Before the train departed from Manchester, the engineman read the orders, which were clear and legible, and the fireman remarked that the meeting point between Third 72 and No. 73 was Dyersville. The engineman read order No. 289 but failed to observe that the meeting point was Delaware and not Dyersville. His reason for failing to read the order properly was that Dyersville was foremost in his mind because the fireman read that name from the order and later repeated it; therefore, when he saw that the name of the meeting point began with D he hurriedly read it as Dyersville. He also was concentrating on the memorizing of the waiting points prescribed in order No. 283. After his train departed from Manchester he again read order No. 283 and discussed its contents with the fireman but did not reread order No. 289. When the train was departing from Manchester the front brakeman read the train orders but made no comment about their contents. Since the engineman was under the impression that the meeting point was at Dyersville, he did not sound the meeting-point whistle signal when his train was approaching Delaware. At this time neither the front brakeman nor the fireman questioned him concerning the meeting of No. 73 and Third 72 at Delaware. The train passed the east siding-switch at Delaware where it was required to wait west of the fouling point until No. 73 was in the clear on the siding. The engine was 40 or 42 car lengths east of the east siding-switch, moving on the curve to the left at a speed of 35 miles per hour, when the fireman, who was maintaining a lookout ahead, called a warning. The engineman immediately placed the brake valve in emergency position. At that time the engine entered the tangent track on which the accident occurred and he observed the headlight of the opposing train about 25 car lengths distant. He jumped from the engine when it was about 3 car lengths from the other engine. The speed was about 20 miles per hour at the time of the collision. In his opinion, since the exhaust from the emergency application was of good volume and of duration proportionate to the length of the train, there was no reduction in brake-pipe pressure made from the rear of his train prior to the emergency application made by himself. The brakes were fully effective as a result of the emergency application. It was snowing and the cab windows were covered with snow, which restricted visibility somewhat. The accident occurred about 9:46 p. m.

Fireman Herr, of Third 72, stated that at Manchester train orders Nos. 283 and 289 were received and he read them aloud so that the engineman could hear him, then informed the engineman that Third 72 and No. 73 were to meet at Dyersville. The orders were clear and legible but for some unknown reason he misread the meeting point with No. 73 as Dyersville instead of Delaware. The front brakeman read both orders but made no comment concerning the meeting point with No. 73. After the train departed from Manchester the fireman and the engineman discussed the times specified for Third 72 to wait at designated points as prescribed by order No. 283. The fireman did not again read order No. 289; therefore, he failed to discover that he had misread the name of the meeting point. When the train was approaching Delaware the engineman did not sound the meeting-point whistle signal and the front brakeman made no comment about it. When the train was near the east siding-switch at Delaware, snow was blowing but the fireman was aware of the location of his train. When the engine was in the vicinity of the east siding-switch the speed was about 35 miles per hour and he observed an approaching headlight. He immediately called a warning to his engineman who closed the throttle and placed the brake valve in emergency position. At this time the opposing train appeared to be about 25 or 30 car lengths distant. The fireman said that speed had been reduced to about 20 miles per hour at the time of the collision, which occurred about 9:46 p. m. In his opinion because of the volume of the emergency exhaust, no brake-pipe reduction was made prior to the emergency application. After the accident occurred, he observed that his train was parted between the eighteenth and the nineteenth cars a distance of about 20 feet. He said that his eyesight was normal and he was not required to wear glasses.

Front Brakeman Kirkland, of Third 72, stated that after his train departed from Manchester he read order No. 289 aloud and understood that the meeting point between Third 72 and No. 73 was Delaware. Because of the noise made by the stoker he was not certain that either the fireman or the engineman heard him. He discussed with the fireman the places designated for his train to wait as prescribed by order No. 283, and understood the fireman to say that Third 72 and No. 73 were to meet at Delaware. The front brakeman was seated in front of the fireman; however, since snow was blowing he closed the front window, which became covered with snow, and he was unable to determine the location of his train. When the train was approaching Delaware the engineman did not sound the meeting-point whistle signal. Because he was lost as to location, he did not call the engineman's attention to this omission. The front brakeman observed the headlight of an opposing train and remarked about it to the fireman. The first he knew of anything being wrong was when the fireman called a warning to the engineman. His reason for failing to make an effort to ascertain the location of his train was that since order No. 289 was clear and legible he thought it was clearly understood by the engine crew.

Conductor Landfear, of Third 72, stated that at Manchester he received, among others, copies of train orders Nos. 283 and 289. Both he and the flagman read the orders, which were legible, and understood that Third 72 and No. 73 were to meet at Delaware and that Third 72 was required to wait on the main track west of the fouling point at the east siding-switch unless No. 73 was in the clear on the siding. After the conductor read the orders he became occupied with preparation of reports and he had not completed them when the flagman remarked that their train was approaching Delaware. The conductor did not hear a meeting-point whistle signal; however, because of wind it would have been impossible at the rear end to hear the sound of the whistle. The conductor instructed the flagman to identify No. 73 and to observe if it were in the clear on the siding. Soon afterward the flagman returned from the rear platform and informed the conductor that No. 73 was not on the siding. The conductor opened the conductor's emergency valve, but the brake-pipe exhaust was of short duration and the brake application did not seem to be effective. As indicated by the caboose gauge, brake-pipe pressure of 70 pounds had been maintained en route. When the caboose passed the east siding-switch the speed was about 20 miles per hour and it was not materially reduced at the time the accident occurred. Although snow was blowing he had no difficulty in determining the location of his train. After the accident occurred he observed that the train was separated a distance of about 20 feet between the eighteenth and nineteenth cars. The couplers were undamaged and both knuckles were closed. In his opinion the separation indicated that the train became parted as a result of an emergency application made from the rear of the train. He examined the train and found that all angle cocks were in proper position. Since the flagman was competent, the conductor depended on him to identify No. 73 and to observe whether that train was in the clear. He said that if he himself had gone to the caboose platform to identify No. 73, he would not have been able to determine if that train was clear in time to stop his train before the engine passed the clearance point at the east end of the siding; furthermore, since it is required that the headlight be extinguished when a train is clear of the main track and since he did not know the length of the train to be met, the major portion of his train could be beyond the switch where the inferior train was required to enter the siding before he could determine whether the opposing train was in the clear. The accident occurred about 9:46 p. m.

Flagman Treanor, of Third 72, stated that he read train orders Nos. 283 and 289 and understood that Third 72 and No. 73 were to meet at Delaware and that No. 73 was required to enter the siding. When his train was approaching Delaware the speed was 35 or 45 miles per hour and the conductor instructed him to observe if No. 73 was in the clear at Delaware. From the rear

platform of the caboose the flagman maintained a lookout for No. 73. Blowing snow restricted visibility to a distance of 10 or 15 car lengths. When the caboose was passing the station at Delaware he entered the caboose and warned the conductor that No. 73 was not on the siding. The conductor immediately opened the emergency valve. The flagman said that the air brakes were applied before the caboose passed the east siding-switch. The speed was reduced to about 20 miles per hour at the time of the collision. He said that because of the snowstorm it was impossible to hear at the caboose any whistle signal sounded at the front end.

During the 30-day period prior to the occurrence of the accident, the average daily movement in the vicinity of the point of accident was 23.06 trains.

Discussion

According to the evidence, the crew of No. 73 understood that their train was required to enter the east switch of the siding at Delaware for Third 72. When No. 73 was about 4,000 feet east of this switch and while it was moving about 30 miles per hour, the engineman observed an east-bound train approaching at a point east of the east siding-switch. The engineman applied the brakes in emergency and the train stopped at a point 3,076 feet east of the switch, and immediately afterward it was struck by Third 72.

The crews of both trains held copies of a train order which provided that these trains would meet at Delaware and that No.73 would enter the siding. According to the statements of the engineman and the fireman of Third 72, the order was clear and legible; however, the fireman, who read the order first, because the engineman was occupied with the operation of the engine when they received the orders, read the meeting point aloud as Dyersville instead of Delaware, and then repeated the meeting point as Dyersville. The fireman could not explain the reason for his failure to read the order correctly. Later, when the engineman was reading the meet order, he observed that "D" was the first letter in the name of the meeting point and assumed that the word was Dyersville, because that name had been impressed upon his mind when the fireman read the order aloud. The engineman did not give the name of the meeting point much thought as he was concentrating on the memorizing of the contents of a wait order effective at several stations east of Delaware. The engineman and the fireman discussed the wait order but they neither read nor discussed the meet order a second time. The front brakeman understood that the meeting point was Delaware but, because of blowing snow, he could not determine his location; however, although visibility was considerably restricted, he was the only member of the crew who was lost as to location.

If the brakeman had ascertained the actual location of his train and had reminded the enginemen that the latter had not sounded the meeting-point whistle signal, it is probable that the engineman would have read the meet order again and might have taken action in time to avert the accident. The conductor and the flagman of Third 72 understood that the meeting point was Delaware. When Third 72 was approaching Delaware, the conductor instructed the flagman to station himself so that he could identify No. 73 and observe whether that train was in the clear on the siding. When the flagman determined that No. 73 was not on the siding, he warned the conductor, who immediately took action to stop the train; however, the brakes had already been applied from the front end. According to the statement of the conductor, had he himself maintained a lookout to identify and to observe whether No. 73 was in the clear, he would not have been able to see any more quickly than the flagman that No. 73 had not arrived; furthermore, since the rules required that the headlight be extinguished when a train was clear and since he did not know the length of the train to be met, he could not have determined that No. 73 was not in the clear until his caboose was near the clearance point of the east end of the siding. Had he then taken action to stop his train, which consisted of 38 cars, the front end would have been near the point at which the engineman applied the brakes. Had the meeting-point whistle signal been sounded, it is doubtful, because of the wind that prevailed, if it could have been heard at the rear of the train.

If some form of block system had been in use on this line, it is probable that this accident would have been averted. The average daily movement over this line during the 30-day period preceding the day of the accident was more than 23 trains. This volume of traffic warrants additional protection.

Cause

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

Recommendation

It is recommended that the Illinois Central Railroad Company give consideration to installation of a suitable block signal system on the Dubuque District.

Dated at Washington, D. C., this twenty-second day of April, 1941.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.