INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2986

ERIE RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT MARION, OHIO, ON

APRIL 22, 1946

SUMMARY

Railroad:	Erie	
Date:	April 22, 1946	
Location:	Marion, Ohio	
Kind of accident:	Side collision	
Equipment involved:	Engine	: Passenger train
Train number:		: Third 8
Engine numbers:	7714	: 3302
Consist:		: 12 cars
Estimated speed:	Standing	: 20 m. p. h.
Operation:	Signal indications; yard limits	
Track:	Double; 1°51' curve; 0.55 percent ascending grade eastward	
Weather:	Clear	
Time:	11:49 a. m.	
Casualties:	1 killed; 19 injured	
Cause:	Failure of railroad to provide adequate safeguards for movements involved	
Recommendation:	That the Erie Railroad Company install electric switch-locking at main-track switches on lines on which trains are operated by signal indication, except at locations where authorized speed is not in excess of 20 miles per hour	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2986

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

ERIE RAILROAD COMPANY

June 14, 1946.

Accident at Marion, Ohio, on April 22, 1946, caused by failure of the railroad to provide adequate safeguards for the movements involved.

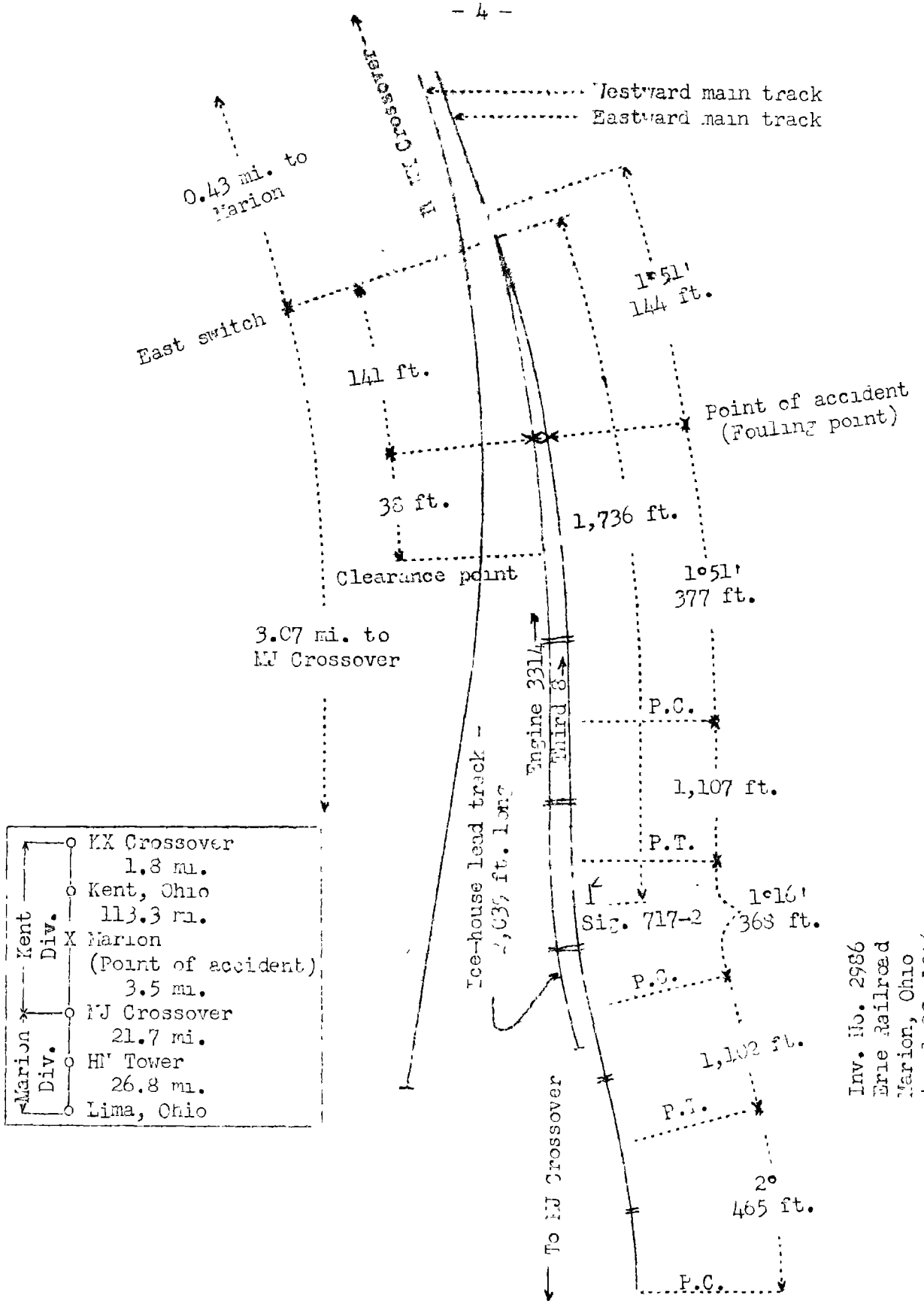
REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On April 22, 1946, there was a side collision between a passenger train and an engine on the Erie Railroad at Marion, Ohio, which resulted in the death of 1 train-service employee, and the injury of 13 passengers, 2 Pullman employees and 4 train-service employees. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Ohio.

---

[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. No. 2986
Erie Railroad
Marion, Ohio
April 22, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the Kent Division extending between MJ Crossover, Marion, and KX Crossover, Kent, Ohio, 118.6 miles, a double-track line in the vicinity of the point of accident, over which trains moving with the current of traffic are operated by an automatic block-signal system, the indications of which supersede the superiority of trains within yard limits at Marion, an ice-house yard is located between the eastward and the westward main tracks. The eastern ice-house lead track, which connects the ice-house yard and the eastward main track, is 2,039 feet in length and parallels the eastward main track on the north. The east switch of the ice-house lead track is 3.07 miles east of MJ Crossover and 0.43 mile west of the station. The accident occurred at the fouling point of the turnout of this switch and the eastward main track, at a point 141 feet west of the switch and 38 feet east of the clearance point. From the west on the eastward main track there are, in succession, a 2° curve to the left 465 feet in length, a tangent 1,102 feet, a 1°13' curve to the right 368 feet, a tangent 1,107 feet, and a 1°51' curve to the left 377 feet to the point of accident and 144 feet eastward. The grade for east-bound trains is 0.55 percent ascending.

The switch-stand of the lead-track switch was destroyed in the accident. It was of the hand-throw intermediate-stand type, and was provided with two targets. The centers of the targets were 6 feet 4 inches above the tops of the ties and about 7 feet south of the gage side of the south rail of the eastward main track. When the switch was lined normally, a circular white target 15 inches in diameter was displayed. When the switch was lined for movement from the ice-house lead track, a red arrow-shaped target 15 inches wide was displayed.

Automatic signal 717-2, governing east-bound movements on the eastward main track, is located 1,736 feet west of the ice-house lead-track switch. This signal is of the one-arm, two-indication, upper-quadrant, semaphore type. The day aspects and corresponding indications and names of this signal are as follows:

Aspect	Indication	Name
Horizontal	STOP THEN PROCEED * * *.	STOP AND PROCEED.
45° above horizontal	PREPARE TO STOP AT NEXT SIGNAL. TRAIN EXCEEDING MEDIUM SPEED MUST AT ONCE REDUCE TO THAT SPEED.	APPROACH.

The track circuit of the fouling section of the turnout of the lead-track switch extends 179 feet west of the switch. The controlling circuits are so arranged that when the block

immediately east of signal 717-2 and the fouling section of the turnout of the lead-track switch are unoccupied and the switch is lined in normal position, signal 717-2 displays proceed-prepared-to-stop-at-next-signal. When either the block immediately east of signal 717-2 or the fouling section of the switch is occupied, or the lead-track switch is lined for movement to the eastward main track, signal 717-2 displays stop-then-proceed.

Operating rules read in part as follows:

DEFINITIONS

* * *

Medium Speed.--One-half maximum authorized speed at point involved, but not to exceed thirty miles per hour unless otherwise provided.

* * *

14. ENGINE WHISTLE SIGNALS.

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

* * *

SOUND.	INDICATION.
* * *	
(j) o o o o	Call for signals.

* * *

86. Unless otherwise provided, an inferior train must clear the time of a superior train, in the same direction, not less than five minutes; but must be clear at the time a first-class train, in the same direction, is due to leave the next station in the rear where time is shown.

93. Within yard limits the main track may be used, protecting against first class trains.

All other class and extra trains and engines must move within yard limits prepared to stop unless the main track is seen or known to be clear.

* * *

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. When recalled and safety to the train will permit, he may return.

* * *

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

* * *

D-152. When a train crosses over to, or obstructs another track, unless otherwise provided, it must first be protected as prescribed by Rule 99 in both directions on that track.

Time-table special instructions read in part as follows:

SUPERIORITY OF TRAINS

* * *

Trains operating in Automatic Block Signal Districts governed by Telephone Train Order Signals may run with the current of traffic, upon signal indication, which signal indication supersedes Time-Table Superiority.

CROSSOVER MOVEMENTS

When necessary to enter upon main tracks or cross over from one main track to another, permission will first be obtained, except in Marion Yard and at KX crossover and Crane Ave., Kent yard.

This does not relieve enginemen and trainmen from protecting the movements as per Rule 99.

* * *

The maximum authorized speed in the vicinity of the point of accident is 35 miles per hour.

Description of Accident

Engine 3314, headed east, moved eastward on the ice-house lead track and stopped short of the clearance point at the east switch about 11:47 a. m. About 2 minutes later, after the switch had been lined for movement to the eastward main track, this engine proceeded eastward on the turnout. Then the fireman saw an east-bound train approaching closely, the engine was stopped and an attempt was made to back into clear. Before this engine could be moved westward it was struck by Third 8.

Third 8, an east-bound first-class passenger train, consisted of engine 3302, four coaches, two kitchen cars, five coaches and one tourist sleeping car, in the order named. All cars were of steel construction. This train departed from Lima, Ohio, 52 miles west of Marion, at 10:45 a. m., 8 hours 32 minutes late, passed HN Tower, the last open office, 25.2 miles west of Marion, at 11:22 a. m., 8 hours 38 minutes late, passed signal 717-2, which displayed proceed-prepared-to-stop-at-next-signal, and while moving on the eastward main track at an estimated speed of 20 miles per hour it struck engine 3314 at the fouling point of the turnout of the lead-track switch.

Engine 3314 was derailed and stopped on its left side, parallel to the turnout, with its front end 43.5 feet west of the switch. The cab was demolished, and the engine was otherwise badly damaged. The left side of the engine of Third 8 was badly damaged. None of the equipment of Third 8 was derailed.

The weather was clear at the time of the accident, which occurred about 11:49 a. m.

The fireman of engine 3314 was killed. The engineer of engine 3314, and the engineer, the fireman and the front brakeman of Third 8, were injured.

In tests after the accident signal 717-2 functioned properly.

Discussion

The investigation disclosed that engine 3314 had proceeded eastward on the ice-house lead track and stopped short of the clearance point and the fouling section of the automatic block-signal circuits. Immediately afterward the front brakeman proceeded to the switch and lined it for movement from the lead track to the eastward main track. This engine then entered the turnout, and the front end was about 45 feet from the switch points when the fireman warned the engineer that Third 8 was closely approaching on the eastward main track. The engineer immediately applied the brake, stopped the engine and placed

the reverse gear in position for backward movement. However, the collision occurred before the engine could be moved backward. The fireman was killed in the accident.

As Third 8 was approaching the lead-track switch the speed was about 40 miles per hour and both enginemen were maintaining a lookout ahead. No train order restricting the authority of this train to proceed at maximum authorized speed had been issued. Signal 717-2 displayed proceed-prepared-to-stop-at-next-signal, and the enginemen called the indication. The engineer made a brake-pipe reduction, and the speed was reduced to about 30 miles per hour as the engine passed the signal, then he released the brakes. When the engine was about 1,000 feet west of the point of accident the enginemen of Third 8 observed that engine 3314 was on the lead track, but was standing into clear. Soon afterward, the engineer of Third 8 made a service brake-pipe reduction to reduce the speed further, then placed the brake valve in lap position. At that time the fireman warned him that an engine was fouling the eastward main track and the engineer moved the brake valve to emergency position. The speed was about 20 miles per hour at the time of the collision. The brakes of this train had been tested and had functioned properly en route. The members of the train crew were stationed in various cars throughout the train and were not aware of anything being wrong until the accident occurred.

Under the rules applicable to yard limits of this railroad, trains and engines may use the main tracks, but must protect against first-class trains after they are due to leave the last station in the rear where time is shown. Timetable special instructions provide that within yard limits at Marion trains and engines may occupy the main tracks or cross from one main track to another without permission. However, flag protection must be provided in both directions a distance sufficient to insure full protection against first-class trains.

The lead-track switch involved, among others, is in the charge of a switchtender, who lines switches for the movements of trains and engines in that vicinity under the direction of a yardmaster stationed in an office about 625 feet east of the lead-track switch. The switchtender has no authority to direct any movement in this territory, and crews of engines moving in this vicinity may line the switches for intended movements without consulting the switchtender. The engineer of engine 3314 said that when his engine stopped at the clearance point of the turnout, he sounded four blasts on the engine whistle to obtain authority from the switchtender for his engine to occupy the eastward main track. Then the front brakeman proceeded to the lead-track switch, lined it for movement to the eastward main track, and gave a hand signal for engine 3314 to proceed eastward. The engineer said he assumed that the front brakeman had received a proceed signal from the switchtender

and was relaying this authority, therefore, the engineer operated his engine eastward on the turnout to the point of accident. The front brakeman said he lined the lead-track switch for movement to the eastward main track after the whistle signal was sounded, but had received no hand signal from the switchtender. He said he did not relay any hand signal to the engineer of engine 3314. The switchtender said he was engaged in handling other switches located a considerable distance east of the lead-track switch and was not aware that the lead-track switch was lined for movement to the eastward main track or that engine 3314 was fouling the turnout until Third 8 was a short distance west of the point where the accident occurred. These employees understood that protection was required against overdue first-class trains, but thought Third 8 would not arrive at the lead-track switch until the intended movement had been completed. This assumption was based on information received from the train dispatcher by telephone, about 2 hours prior to the accident, that Third 8 would not depart from Lima, 52 miles west of Marion, until 10:15 a. m. The engineer of engine 3314 said that by adding the average running time of a passenger train, hauled by the same class of engine as engine 3302, to the leaving time of 10:15 a. m. at Lima, he thought sufficient time remained at Marion to complete the intended movement on the eastward main track before Third 8 would arrive at the lead-track switch. However, since no train order restricting the authority of Third 8 to proceed had been issued, this train was due, according to its schedule, at MJ Crossover, 3.07 miles west of the lead-track switch, at 3:10 a. m., and flag protection was required after this time.

The investigation disclosed that officials and employees do not have a common understanding with regard to requirements for trains and engines crossing over main tracks and occupying them within the yard limits involved, and that proper safeguards are not provided for such movements. In this territory, all trains moving with the current of traffic on either the eastward or the westward main track are authorized to proceed in accordance with automatic signal indications, and trains or engines may foul or occupy a main track without receiving permission to do so. Under this method of operation no train or engine can occupy a main track safely, unless full flag protection is provided. When a crossover movement is made at a hand-operated switch, full protection must be provided in both directions on all main tracks. The three employees on engine 3314 were not sufficient in number to furnish full protection in both directions, handle the switches and operate the engine. Supervisory officials indicated that the movement of engine 3314 should have been made with respect to the schedule time of No. 8 at the last place in the rear where time is shown. However, No. 8 was due at the last station at 3:10 a. m. and Third 8 was running about 8 hours 35 minutes late on its schedule, but no run-late order had been issued to any train or engine in that territory. Nevertheless, between 3:10 a. m. and the time of the accident many other crossover movements were made, without flag protection, within the yard limits involved, on authority

of oral line-ups received from the train dispatcher by the yardmaster in charge of the yard, then orally given by the yardmaster to the crew of engines intending to make crossover movements. In this case, the last line-up given the switchtender indicated that Third 8 would arrive at Marion at 11:55 a. m. Under the rules, this line-up of time was applicable at a point 3.07 miles west of the point of accident, and this train would be due at Marion as soon as it was due to pass MJ Crossover. Actually, Third 8 arrived at the point of accident at 11:49 a. m. It was disclosed that on numerous occasions first-class trains have arrived within the yard limits at Marion a considerable period in advance of the times estimated in oral line-ups. Furthermore, all the employees questioned said that main tracks have been occupied by engines on oral authority of the yardmaster or by signals from the switchtender without providing flag protection, unless they knew positively that a first-class train was overdue. In instances where an oral line up indicated that a first-class train was running late on its schedule, crossover movements were made without flag protection unless the line-up indicated that a first-class train was closely approaching. In such instances, the crews of first-class trains had no knowledge that such information had been given to the crews of other movements.

On the line where this accident occurred trains are operated by signal indication, and train orders are not issued to apprise crews of other trains which may be affected when a train is late on its schedule. If correct information is not furnished by means of the system of oral line-ups in use, the main track may be fouled, as in this case, when an overdue train is closely approaching. If the switch involved had been provided with electric switch-locking the front brakeman of engine 3314 would have been unable to operate the lead-track switch after Third 8 had entered the circuit, in which case there is no reason to believe that the engine would have fouled the turnout and that this accident would have occurred.

Cause

It is found that this accident was caused by failure of the railroad to provide adequate safeguards for the movements involved.

Recommendation

It is recommended that the Erie Railroad Company install electric switch-locking at main-track switches on lines on which trains are operated by signal indication, except at locations where authorized speed is not in excess of 20 miles per hour.

Dated at Washington, D. C., this fourteenth day of June, 1946.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.