

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3741

THE NEW YORK, CHICAGO AND ST. LOUIS
RAILROAD COMPANY

AND

THE PENNSYLVANIA RAILROAD COMPANY

IN RE ACCIDENT

AT FRANKFORT, IND., ON

FEBRUARY 23, 1957

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SUMMARY

Date: February 23, 1957

Railroads: New York, Chicago and : Pennsylvania
St. Louis

Location: Frankfort, Ind.

Kind of accident: Side collision

Trains involved: Freight : Passenger

Train numbers: 57 : 93

Locomotive numbers: Diesel-electric unit : Diesel-electric
557 units 5802A
and 5798B

Consists: Caboose, 61 cars, : 16 cars
caboose

Estimated speeds: 5 m. p. h. : 5 m. p. h.

Operation: Timetable special : Timetable, train
instructions orders, and
manual block-
signal system

Tracks: Single; tangent; 0.70 : Single; 2° curve;
percent ascending 0.34 percent
grade westward ascending grade
westward

Weather: Clear

Time: 6:25 p. m.

Casualties: 52 injured

Cause: This accident was caused by the P.R.R.
train moving onto a crossing after the
signals governing movements over the
crossing had been changed to authorize
the movement of the N.Y.C. & St.L. train

Recommendation: It is recommended that the carriers
involved install interlocking protection
at this crossing

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3741

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

THE NEW YORK, CHICAGO AND ST. LOUIS RAILROAD COMPANY
AND
THE PENNSYLVANIA RAILROAD COMPANY

May 22, 1957

Accident at Frankfort, Ind., on February 23, 1957, caused
by the P.R.R. train moving onto a crossing after the
signals governing movements over the crossing had been
changed to authorize the movement of the N.Y.C. & St.L.
train.

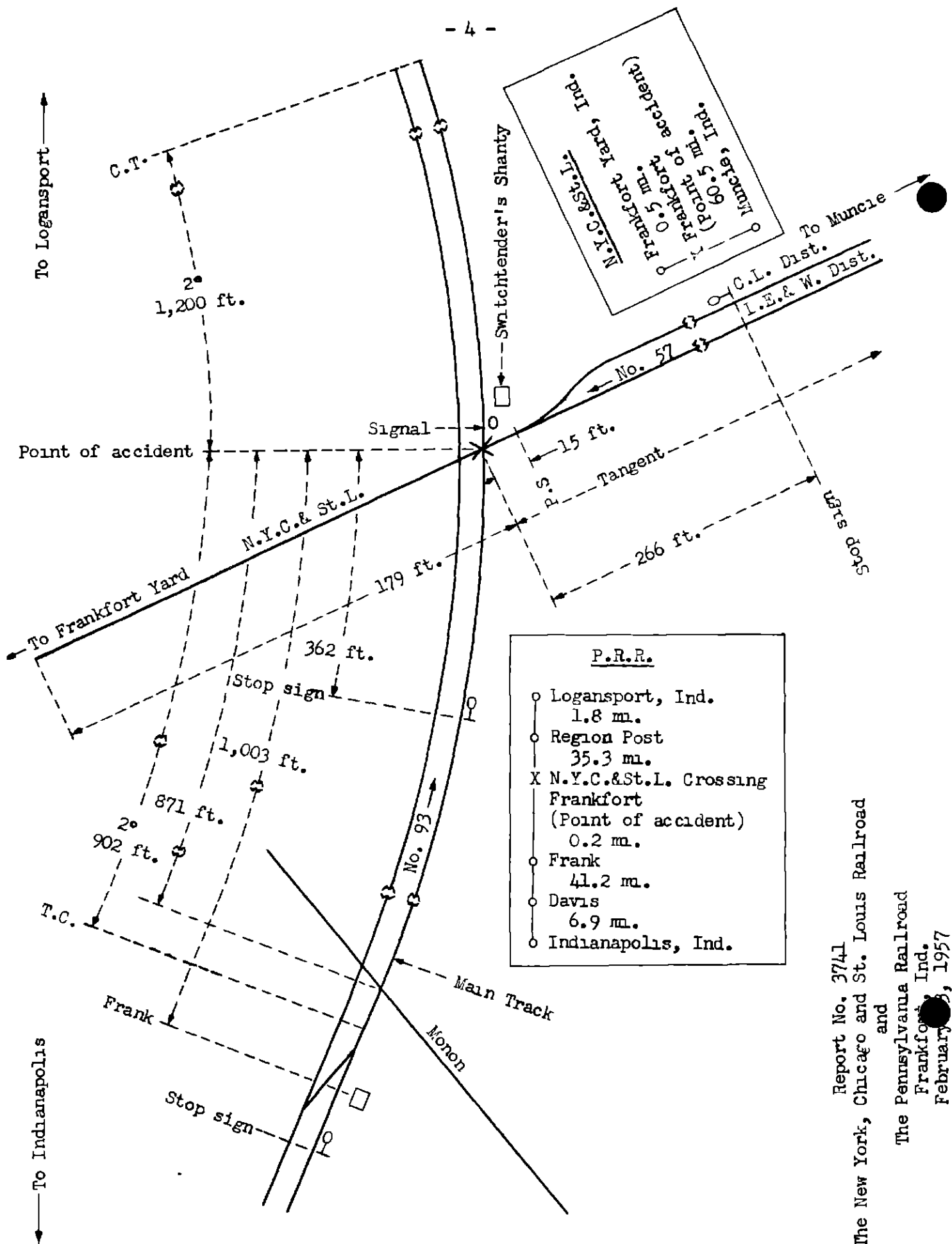
REPORT OF THE COMMISSION¹

TUGGLE, Commissioner:

On February 23, 1957, there was a side collision between
a freight train on the New York, Chicago and St. Louis Rail-
road and a passenger train on the Pennsylvania Railroad at
Frankfort, Ind., which resulted in the injury of 40 passengers,
11 dining-car employees, and 1 passenger representative. This
accident was investigated in conjunction with a representative
of the Indiana Public Service Commission.

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Under authority of section 17 (2) of the Interstate Commerce
Act the above-entitled proceeding was referred by the Commis-
sion to Commissioner Tuggle for consideration and disposition.



Report No. 3741
The New York, Chicago and St. Louis Railroad
and
The Pennsylvania Railroad
Frankfort, Ind.
February 23, 1957

Location of Accident and Method of Operation

This accident occurred at the intersection of the New York, Chicago and St. Louis Railroad and the Pennsylvania Railroad at Frankfort, Ind. In the vicinity of the point of accident the N.Y.C. & St.L. extends from east to west by compass directions. The P.R.R. extends from south to north. Timetable directions on both lines are east and west, and these directions are used in this report. A west-bound P.R.R. train by timetable direction moves from south to north by compass directions. The crossing is located on that part of the N.Y.C. & St.L. extending between Muncie, Ind., and Frankfort Yard, Ind., 61.0 miles, and on that part of the Southwestern Region of the P.R.R. extending between Davis, near Indianapolis, Ind., and Region Post, near Logansport, Ind., 76.7 miles. Frankfort is 60.5 miles west of Muncie and 41.5 miles west of Davis. In the immediate vicinity of the point of accident the N.Y.C. & St.L. is a single-track line, over which trains are operated by timetable special instructions. The Lake Erie and Western District of this line, which includes the line extending between Muncie and Frankfort, converges with the Clover Leaf District at a switch located 15 feet east of the crossing at Frankfort, and trains of both districts operate over a single track between this switch and Frankfort Yard. The main tracks are tangent throughout a considerable distance immediately east of the crossing and 179 feet westward. The grade averages 0.70 percent ascending westward throughout a distance of 2,000 feet immediately east of the crossing. In the vicinity of the point of accident the P.R.R. is a single-track line, over which trains are operated by timetable, train orders, and a manual block-signal system. From the east there is a 2° curve to the left 902 feet to the point of accident and 1,200 feet westward. The grade is 0.34 percent ascending westward at the point of accident.

Movements over the crossing are governed by a three-arm semaphore signal located in the northeast angle of the intersection. The top and bottom arms are at right angles to the N.Y.C. & St.L. track, and the middle arm is at right angles to the P.R.R. track. From top to bottom the arms govern, respectively, Clover Leaf District trains, P.R.R. trains, and Lake Erie and Western District trains. Both the day and the night aspects are displayed in both directions, and each arm governs trains moving in either direction. A stop indication is given by the horizontal position of the governing arm and a red light by night. A proceed indication is given by the vertical position of the governing arm and a green light by night. The signal is operated by a three-lever mechanical machine equipped with a locking bed which interlocks each lever against the other two in such manner that

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not more than one lever can be placed in reverse position at one time. Time locking is not provided. The machine is operated by a switchtender.

A stop sign governing west-bound movements on the N.Y.C. & St.L. is located 266 feet east of the crossing, and a stop sign governing west-bound movements on the P.R.R. is located 362 feet east of the crossing.

Timetable special instructions of the N.Y.C. & St.L. read in part as follows:

4. FRANKFORT.

(d) Movements of all trains or engines in Frankfort Yard between the clearance point of the east switch of the westward yard located 330 feet west of the P. R. R. Crossing, and the clearance point of the CL District or the L. E. & W. District main tracks east of the P. R. R. Crossing will be governed by hand signals from the switchtender located at the P. R. R. Crossing.

* * *

Westbound trains or engines will not proceed beyond the clearance point of the CL District or L. E. & W. District main tracks until they have received a proceed signal with a Green Flag by Day or Green Light by Night from the switchtender and the switches are properly lined and the route is clear and proper signal is displayed on the P. R. R. Crossing semaphore.

Timetable special instructions of the P.R.R. read in part as follows:

1098-A1. Movement of trains or engines on tracks of this region over non-interlocked railroad crossings at grade will be governed as follows:

Location	Type	Indication and Position	Requirements
Frankfort: N.Y.C. & St.L. R.R.	Stop Board. Semaphore	Stop. Vertical.	Stop before crossing

In the vicinity of the point of accident the maximum authorized speeds are 30 miles per hour for N.Y.C. & St.L. freight trains and 55 miles per hour for P.R.R. passenger trains.

Description of Accident

No. 57, a west-bound third-class N.Y.C. & St.L. freight train, consisted of Diesel-electric unit 557, a caboose, 61 cars, and a caboose, in the order named. This train departed from Muncie at 3:25 p. m. and stopped clear of the Clover Leaf District main track at Frankfort about 6:20 p. m. The locomotive stopped about 275 feet east of the P.R.R. crossing. A few minutes later, after the crew received a proceed indication on the signal governing movements over the crossing and a hand signal from the switchtender, the train proceeded westward. While it was moving over the crossing at an estimated speed of 5 miles per hour the front end of the locomotive was struck by No. 93.

No. 93, a west-bound first-class P.R.R. passenger train, consisted of Diesel-electric units 5802A and 5798B, coupled in multiple-unit control, one baggage car, four coaches, one parlor car, two dining cars, and eight sleeping cars, in the order named. The first and sixth cars were of conventional all-steel construction, and the other cars were of lightweight construction. This train departed from Indianapolis at 5:34 p. m., 2 hours 14 minutes late, and the front end passed Frank Block Station, 1,003 feet east of the N.Y.C. & St.L. crossing at Frankfort, at 6:22 p. m., 2 hours 12 minutes late. The train stopped at the stop sign 362 feet east of the crossing. It then proceeded westward, and while moving at an estimated speed of 5 miles per hour it struck the locomotive of No. 57.

The front truck of the locomotive of No. 57 and both trucks of the caboose behind the locomotive were derailed. The locomotive stopped upright with the front end on the track structure of the P.R.R. main track approximately 50 feet west of the crossing. The first Diesel-electric unit and the front wheels of the front truck of the second unit of No. 93 were derailed. There were no separations between the units of the train. The train stopped with the first Diesel-electric unit against the side of the locomotive of No. 57 and parallel to it. The front end was approximately 50 feet west of the crossing and several feet south of the P.R.R. main track. The Diesel-electric unit of No. 57 and the first Diesel-electric unit of No. 93 were considerably damaged. The caboose of No. 57 and the second Diesel-electric unit of No. 93 were slightly damaged.

The weather was clear and it was dark at the time of the accident, which occurred about 6:25 p. m.

The locomotive of No. 57 was of the road-switcher type.

During the 30-day period preceding the day of the accident the average daily movement over the intersection was 21.9 N.Y.C. & St.L. trains and 13.7 P.R.R. trains.

Discussion

The engineer of No. 57 said that when he stopped the train at Frankfort the signal governing movements over the P.R.R. crossing indicated Stop for movements on the Lake Erie and Western District and Proceed for movements on the Clover Leaf District. A short time later the indication of the signal changed to Proceed for movements on the Lake Erie and Western District, and the switchtender at the crossing gave a hand signal to proceed. The engineer then started the train forward. The estimates of the members of the crew as to the length of time No. 57 stood at Frankfort varied from 2 to 12 minutes. As the train moved toward the crossing the enginemen and the front brakeman were in the control compartment of the locomotive, the swing brakeman was in the caboose behind the locomotive, and the conductor and the flagman were in the caboose at the rear of the train. The headlight was lighted dimly. The range of vision between conflicting movements approaching the crossing from the east is materially restricted by a building in the southeast angle of the intersection. This building is 35 feet south of the N.Y.C. & St.L. track and 11 feet 7 inches east of the P.R.R. track. As the locomotive was about to enter the crossing the fireman saw No. 93 approaching at a distance which he thought was 10 or 15 feet. He called a warning, and the engineer immediately made an emergency application of the brakes. The collision occurred immediately afterward. The enginemen estimated that the train was moving at a speed of about 5 miles per hour when the collision occurred.

As No. 93 was approaching the point where the accident occurred the enginemen were in the control compartment at the front of the locomotive. The members of the train crew were in the cars of the train. The headlight was lighted brightly. The train was stopped before passing an intersection of the P.R.R. and the Monon Railroad located 871 feet east of the N.Y.C. & St. L. crossing, and again before passing the stop sign east of the N.Y.C. & St.L. crossing. The enginemen said that at the time they stopped for the

Monon crossing they saw that the signal governing movements over the N.Y.C. & St.L. crossing indicated Proceed for the movement of their train, and that the signal continued to indicate Proceed at the time they stopped at the stop sign east of the crossing. The engineer said that after stopping at the latter point he started the train forward immediately, and after the train started he did not again notice the indication of the signal. He said that when the front of the locomotive reached a point which he thought was about 20 feet east of the crossing he saw No. 57 approaching. He immediately called a warning and made an emergency application of the brakes. The fireman thought the locomotive was about 40 feet east of the crossing when the engineer warned him that there would be a collision. He said that the signal governing movements over the crossing continued to indicate Proceed at this time. The enginemen thought that their train was moving at a speed of about 5 miles per hour when the collision occurred.

The switchtender in charge of the signal governing movements over the intersection said that he was west of the intersection lining N.Y.C. & St.L. switches at the time No. 57 arrived. He said that at this time the signal at the crossing indicated Proceed for movement on the Clover Leaf District. He said that he returned to the intersection, lined the junction switch for the movement of No. 57, changed the signal to Proceed for movement on the Lake Erie and Western District, and gave a proceed signal to No. 57 with his green lantern. At this time he could see the headlight of No. 93 at a point which he thought was east of the block station at Frank. He did not again see No. 93 before the accident occurred. He could not remember the exact time that the last P.R.R. train had moved over the crossing prior to the time of the accident, but he said that the signal at the crossing had not indicated Proceed for a P.R.R. movement during a considerable period of time.

No. 92, an east-bound P.R.R. passenger train, passed over the crossing at Frankfort and entered a siding at a switch near the block station at Frank to meet No. 93. The members of the crew said that the signal at the crossing indicated Proceed for the movement of their train. The operator at Frank said that as No. 92 passed over the crossing she noticed that the signal indicated Proceed. As No. 93 was approaching Frank the operator went outside to deliver copies of a train order to the crew. She said that as the train approached she saw that the signal at the crossing indicated Proceed. After the locomotive of No. 93 passed her she was unable to see the signal. According to the station record of train movements at Frank No. 92 cleared the main track at 6:18 p. m., and No. 93 arrived at 6:22 p. m. When No. 93 stopped at the stop sign east of the crossing the locomotive was standing on a

rail-highway grade crossing. A yard brakeman employed by the N.Y.C. & St.L. stopped his automobile at this point to wait until No. 93 cleared the crossing. He said that the signal governing movements over the N.Y.C. & St.L. crossing indicated Stop at the time No. 93 started to move and that it continued to indicate Stop until the collision occurred.

The signal mast at the crossing was knocked down by derailed equipment when the accident occurred. Two of the levers controlling the signal had been struck by some object and were bent. These levers, which controlled the semaphore arms governing movements over the Clover Leaf District and the P.R.R., were in normal or stop position. The lever controlling the arm governing movements over the Lake Erie and Western District was in reverse or proceed position. The signal supervisor of the N.Y.C. & St.L. said that he had inspected the machine and locking bed several days before the accident occurred and that it had functioned properly.

The statements of the employees involved are conflicting as to the sequence of events between the time No. 92 passed the crossing and the time the collision occurred. The engine-men of No. 93 and the operator at Frank said that the signal at the crossing indicated Proceed for the movement of No. 93 as that train approached the crossing. Other employees said that the signal indicated Proceed for movements on the N.Y.C. & St.L. during a period of several minutes before the accident occurred. When the signal was displayed for the movement of No. 92 a proceed aspect was displayed for movements in either direction on the P.R.R., and it appears probable that the signal was left in this position a sufficient length of time to be seen by the enginemen of No. 93 and was then changed to display a proceed aspect for movements on the N.Y.C. & St.L.

The signals at the crossing are so arranged that proceed aspects for the intersecting lines cannot be displayed simultaneously, but the switchtender can change the signal from a proceed aspect for movement on one line to a proceed aspect for movement on the other line at any time regardless of track occupancy or time element. If the signals had been so arranged that after a proceed aspect had been displayed for movement on one line a proceed aspect could not be displayed for movement on the other line until after the expiration of a predetermined time interval or the train for which the signal was displayed had passed, it is probable that this accident would have been averted.

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Cause

This accident was caused by the P.R.R. train moving onto the crossing after the signals governing movements over the crossing had been changed to authorize the movement of the N.Y.C. & St.L. train.

Recommendation

It is recommended that the carriers involved install interlocking protection at this crossing.

Dated at Washington, D. C., this twenty-second day of May, 1957.

By the Commission, Commissioner Tuggle.

(SEAL)

HAROLD D. McCOY,

Secretary.