

INTERSTATE COMMERCE COMMISSION

WASHINGTON

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INVESTIGATION NO. 3907

CINCINNATI UNION TERMINAL COMPANY

REPORT IN RE ACCIDENT

AT CINCINNATI, OHIO, ON

JULY 1, 1945

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SUMMARY

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Railroad: Cincinnati Union Terminal  
Date: July 1, 1945  
Location: Cincinnati, Ohio  
Kind of accident: Side collision  
Trains involved: P.R.R. passenger : P.R.R. passenger  
Train numbers: Passenger Extra : 206  
5355 South  
Engine numbers: 5355 : 5497  
Consist: 12 cars : 8 cars  
Estimated speed: 10 m. p. h. : 5 m. p. h.  
Operation: Interlocking  
Track: Double; tangent; 0.28 percent  
descending grade northward  
Weather: Clear  
Time: 8:53 a. m.  
Casualties: 15 injured  
Cause: Failure to operate No. 206 in  
accordance with interlocking  
signal indication

INTERSTATE COMMERCE COMMISSION

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INVESTIGATION NO. 2907

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

CINCINNATI UNION TERMINAL COMPANY

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August 23, 1945.

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Accident at Cincinnati, Ohio, on July 1, 1945, caused by  
failure to operate No. 206 in accordance with inter-  
locking signal indication.

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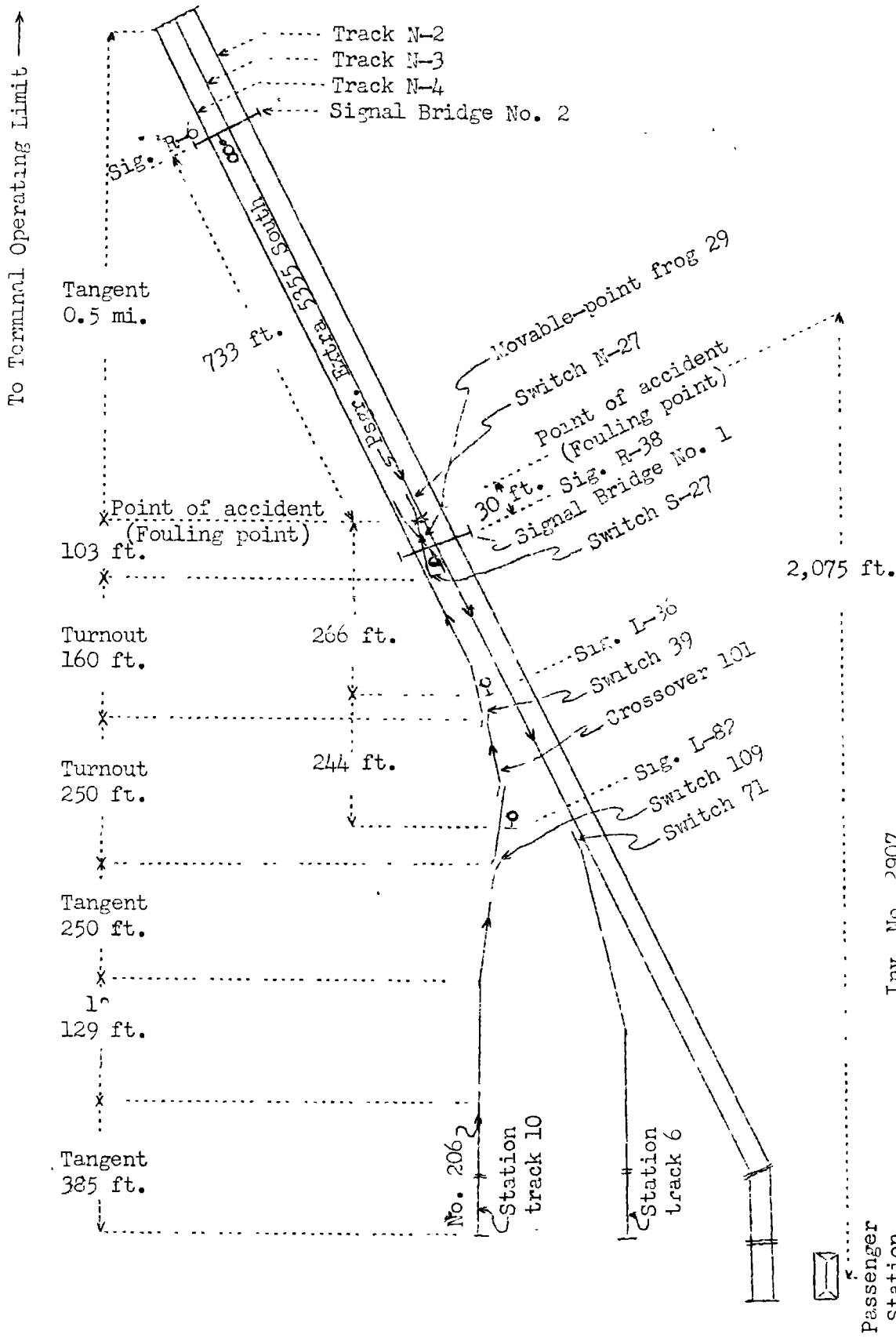
REPORT OF THE COMMISSION<sup>1</sup>

PATTERSON, Commissioner:

On July 1, 1945, there was a side collision between two Pennsylvania Railroad passenger trains on the line of the Cincinnati Union Terminal Company at Cincinnati, Ohio, which resulted in the injury of 13 passengers and 2 Pullman employees. This accident was investigated in conjunction with a representative of the Public Utilities Commission of Ohio.

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<sup>1</sup>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. 2907  
Cincinnati Union Terminal Company  
Cincinnati, Ohio  
July 1, 1945

Passenger  
Station  
(Tower A)

Location of Accident and Method of Operation

This accident occurred on that part of the railroad extending northward from the passenger station at Cincinnati to a point designated as Terminal Operating Limit, 1.1 miles, a double-track line in the vicinity of the point of accident over which trains are operated in either direction by signal indications. The main tracks from east to west are designated as track N-2, northward main track, and track N-3, southward main track. An auxiliary track designated as track N-4 extends northward from a point about 2,000 feet north of the passenger station to Terminal Operating Limit, and parallels track N-3 on the west. Within interlocking limits, in the immediate vicinity of signal bridges No. 1 and No. 2, located, respectively, 2,045 feet and 2,778 feet north of the passenger station, tracks N-2, N-3 and N-4 converge with several auxiliary tracks and 20 station tracks. The station tracks are designated from east to west as tracks Nos. 1 to 16, inclusive, and tracks Nos. 27 to 30, inclusive. Trains of the Pennsylvania Railroad are regularly operated over these tracks. South-bound movements en route from track N-3 to station track No. 6 are made over double-slip switch N-27, in normal position, and through switch 71 to track No. 6. North-bound movements en route from station track No. 10 to track N-4 and thence to track N-3 may be made, successively, through switch 109, crossover 101, switch 39, double-slip switch S-27, double-slip switch 29 and switch N-27. The accident occurred within interlocking limits 2,075 feet north of Tower A, located in the passenger station, at the fouling point of track N-3 and the turnout of switch N-27. Track N-3 is tangent throughout a distance of more than 0.5 mile immediately north of the point of accident and about 500 feet southward. From the south on track No. 10 through switch 109, crossover 101, switches 39, S-27, 29 and N-27 there are, in succession, a tangent 585 feet, a 1° curve to the right 129 feet, a tangent 250 feet, a turnout to the left 250 feet, a turnout to the left 160 feet and a turnout to the right 103 feet to the point of accident. The grade is 0.28 percent descending northward.

Interlocking signals R-6 and R-38, governing south-bound movements on track N-3, are, respectively, 733 feet north and 30 feet south of the point of accident. These signals are of the color-light type, and are mounted, respectively, on signal bridges No. 2 and No. 1. Interlocking signals L-82 and L-36, governing north-bound movements from track No. 10 through crossover 101 to switch 39, are, respectively, 510 feet and 266 feet south of the point of accident. These signals are dwarf signals of the two-unit, color-light type. The involved aspects and corresponding indications of these signals are as follows:

| <u>Signal</u>            | <u>Aspect</u>   | <u>Indication</u>               |
|--------------------------|-----------------|---------------------------------|
| R-6 )<br>and )<br>R-38 ) | Green           | PROCEED.                        |
| L-82                     | Yellow-over-red | PREPARE TO STOP AT NEXT SIGNAL. |
| L-36                     | Red             | STOP.                           |

The interlocking is of the electro-pneumatic type. The machine consists of 220 working levers. Route, approach, mechanical and indication locking are provided. An illuminated track diagram is provided and is so arranged that when signals display proceed aspects green lights are displayed, and track occupancy is indicated by red lights. The controlling circuits are so arranged that when the route is lined for movement on track N-3 to track No. 6 over switch N-27, in normal position, signals R-6 and R-38 will display proceed. When the switches of crossover 101 are lined for movement from track No. 10 through the crossover and signal L-36 is displaying stop, signal L-82 will display prepare-to-stop-at-next-signal. When switch 39 is lined in normal position for movement from track No. 10 to switch S-27 and movable-point frog 29 is lined in reverse position, signal L-36 will display stop.

Operating rules read in part as follows:

34. The engineman and fireman must, and when practicable the trainmen will, communicate to each other the indication of all signals affecting the movement of their train.

SIGNAL AND INTERLOCKING RULES

Within Terminal limits, the movement of trains and engines will be governed by signal indications, as shown by signal aspects and track diagram.

663. Trains or engines must not pass an interlocking Stop-indication without authority. \* \* \*

The maximum authorized speed for north-bound trains is 20 miles per hour, and for south-bound trains, 15 miles per hour.

Description of Accident

Passenger Extra 5355 South, a south-bound P.R.R. passenger train, consisted of engine 5355, one railway-mail car, one baggage car, two coaches and eight Pullman sleeping cars, in the order named. All cars were of steel construction. This train, moving on track N-3, passed Terminal Operating Limit about 8:51 a. m., passed signal R-6, which displayed proceed,

passed over switch N-27, which was lined in normal position, the engine had passed signal R-38, which displayed proceed, and the train was moving at an estimated speed of 10 miles per hour when the fifth car was struck by No. 206.

No. 206, a north-bound P.R.R. passenger train, consisted of engine 5497, one express car, one baggage car, one express car, two baggage cars, two coaches and one Pullman sleeping car, in the order named. All cars were of steel construction. This train departed from the passenger station on track No. 10 at 8:50 a. m., on time, passed signal L-82, which displayed prepare-to-stop-at-next-signal, entered crossover 101, passed signal L-36, which displayed stop, entered switch S-27, ran through movable-point frog 29, which was not lined for this movement, and while moving at an estimated speed of 5 miles per hour the engine struck the fifth car of Passenger Extra 5355 at the fouling point of switch N-27 and track N-3.

The west side of the fifth car of Passenger Extra 5355 was scraped a distance of 5 feet at the rear. The west side of the sixth car was torn loose throughout a distance of 30 feet at the rear of the car. The west side of the seventh car was crushed inward one-third of the width throughout a distance of 35 feet at the front of the car, and the vestibule was demolished. The front end of the engine of No. 206 was considerably damaged.

The weather was clear at the time of the accident, which occurred at 8:53 a. m.

#### Discussion

About 8:50 a. m. the leverman at Tower A lined the route for Passenger Extra 5355 South to proceed from track N-3, over switch N-27, in normal position, and through switch 71 to station track No. 6. At this time No. 206 was ready to depart from station track No. 10 and the leverman lined the route for this train to move through switch 109, then to enter crossover 101 and to proceed to switch 39. Signals R-6 and R-38 displayed proceed for Passenger Extra 5355 South. Signal L-82 displayed prepare-to-stop-at-next-signal and signal L-36 displayed stop for No. 206. Signal L-33 is located immediately south of switch 39, and the stop indication displayed by this signal required No. 206 to stop short of that signal and not to proceed until an indication permitting the train to proceed was displayed or proper authority from the leverman had been received.

No. 206 passed signal L-36, entered switch S-27, ran through movable-point frog 29, which was lined in reverse position, and struck the fifth car of Passenger Extra 5355 South 266 feet north of signal L-36, at the fouling point of switch N-27 and track N-3. As No. 206 was approaching signal L-36 the speed

was about 5 miles per hour. The enginemen were maintaining a lookout ahead. The engineer said he thought signal L-36 displayed a yellow-over-red aspect, and he called the indication to the fireman. The fireman said he did not see the indication displayed by that signal, but heard the engineer call "yellow-over-red," when the engine was in the immediate vicinity of the signal. These employees saw Passenger Extra 5355 moving on track N-3, which was immediately east of the track on which their train was moving. They were not aware of anything being wrong until their engine struck the points of movable-point frog 29 and veered to the right. Then the engineer moved the brake valve to emergency position, but the engine entered the turnout of switch N-27 and the collision occurred before the train could be stopped.

Visual tests made from an engine of the same type as engine 5497 disclosed that as the engine moved northward the indication displayed by signal L-36 could be seen from the left side of the engine between points 244 feet and 160 feet south of the signal, and from the right side of the engine the indication could be seen throughout a distance of 160 feet immediately south of the signal. The controlling circuits of the interlocking are so arranged that when the route is lined for south-bound movements on track N-3 over switch N-27, in normal position, and when signal R-6 is displaying proceed, signal L-36 will display stop. In tests after the accident the interlocking functioned properly.

Cause

It is found that this accident was caused by failure to operate No. 206 in accordance with interlocking signal indication.

Dated at Washington, D. C., this twenty-third day of August, 1945.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,  
Secretary.