

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 3002
CHICAGO UNION STATION COMPANY
REPORT IN RE ACCIDENT
AT CHICAGO, ILL., ON
JULY 11, 1946

SUMMARY

Railroad: Chicago Union Station
Date: July 11, 1946
Location: Chicago, Ill.
Kind of accident: Side collision
Trains involved: C.B. & Q. passenger : C.B. & Q. passenger equipment
Train number: 118 : Extra 2949 South
Engine numbers: 2933 : 2949
Consists: 6 cars : 7 cars
Estimated speeds: 7 m. p. h. : 3 m. p. h.
Operation: Interlocking
Tracks: Station tracks; tangent; 0.404 percent ascending grade southward
Weather: Clear
Time: 7:40 a. m.
Casualties: 15 injured
Cause: Failure to operate Extra 2949 South in accordance with interlocking signal indication

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3002

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

CHICAGO UNION STATION COMPANY

August 27, 1946.

Accident at Chicago, Ill., on July 11, 1946, caused by
failure to operate Extra 2949 South in accordance
with an interlocking signal indication.

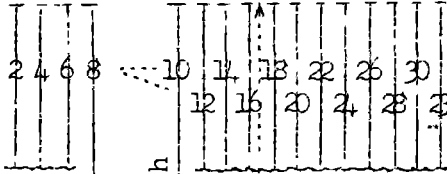
REPORT OF THE COMMISSION ¹

PATTERSON, Commissioner:

On July 11, 1946, there was a side collision between a passenger train and a passenger-equipment train of the Chicago, Burlington & Quincy Railroad on the line of the Chicago Union Station Company at Chicago, Ill., which resulted in the injury of 15 passengers. This accident was investigated in conjunction with a representative of the Illinois Commerce Commission.

¹Under 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.

Station tracks Nos.



Chicago Union Station
(train shed)

Tangent
874 ft.

977 ft. to north ends of
station tracks Nos. 8 and 10

Sig. RB-14

24 ft.

Point of accident
(Fouling point)

P.C.
2 ft.

3 ft.

103 ft.

105 ft.

113 ft.

Switch 19

2 ft.

Sig. L-14

P.T.:
90°30'
86 ft.

No. 118

625 ft.

P.C.
150 ft.

Lead track

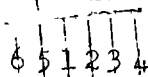
P.T.

Switch 57

258 ft.

Harrison Street Tower

Main tracks Nos.



X Chicago Union Station,
Chicago, Ill.
(Point of accident)
0.35 mi.
o Harrison Street Tower
0.41 mi.
o Roosevelt Road,
Chicago, Ill.

To Roosevelt Road

Inv. No. 3002
Chicago Union Station Company
Chicago, Ill.
July 11, 1946

Location of Accident and Method of Operation

This accident occurred on that part of the railroad extending between Roosevelt Road, Chicago, Ill., and Chicago Union Station, 0.76 mile. Between Roosevelt Road and Harrison Street Tower, 0.41 mile north of Roosevelt Road, this is a 8-track line over which trains are operated by signal indications. The main tracks are designated from west to east as tracks Nos. 5, 5, 1, 2, 3 and 4. Within interlocking limits, in the immediate vicinity of Harrison Street Tower, the main tracks converge with 16 station tracks. The station tracks are covered by a train shed, and are designated from west to east as tracks Nos. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 and 32. A lead track about 625 feet long connects the north end of main track No. 5 at switch 57 and the south ends of station tracks Nos. 8 and 10 at switch 19. Station tracks Nos. 8 and 10 are 977 feet long. Switches 57 and 19 are, respectively, 258 feet and 833 feet north of Harrison Street Tower. Trains of the Chicago, Burlington & Quincy Railroad are regularly operated over main tracks Nos. 5 and 6, the lead track and station tracks Nos. 8 and 10. The accident occurred at the fouling point of station tracks Nos. 8 and 10, about 103 feet north of switch 19. From the south on the lead track through switch 19 to station track No. 8 there are, in succession, a tangent 150 feet in length, a 9°30' curve to the right 86 feet, and a tangent 113 feet to the point of accident and 2 feet northward. Station track No. 10 is tangent throughout a distance of 374 feet immediately north of the point of accident and 3 feet southward. At the point of accident the grade is 0.404 percent ascending southward.

Interlocking signal L-14, governing north-bound movements from the lead track to station tracks Nos. 8 and 10 through switch 19, and interlocking signal RB-14, governing south-bound movements from station track No. 10 to the lead track, are, respectively, 105 feet south and 24 feet north of the point of accident. These are dwarf signals of the position-light type, and are continuously lighted. The involved aspects and corresponding indications and names of these signals are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
L-14	Two white lights in diagonal position to the right	Approach next signal prepared to stop. A train or engine exceeding a speed of 7 miles an hour must reduce at once to this speed	Approach Slow Speed Signal
RB-14	Two white lights in horizontal position	Stop	Stop Signal

The interlocking is of the electro-pneumatic type. The machine consists of 134 working levers in a 171-lever frame. Route,

time, mechanical and indication locking are provided. An illuminated track diagram which indicates track occupancy is provided. The controlling circuits are so arranged that, when the route is lined for movement from the lead track through switch 19 to station track No. 8, signal L-14 displays approach-next-signal-prepared-to-stop, and signal RB-14 displays stop.

A color-light signal system by which trains or engines are authorized to depart from the station tracks is provided. This system is so arranged that when a push-button switch, circuit-connected with a specified departure signal, is actuated to indicate that a train is ready to depart the departure signal displays a red light to the north and to the south, and a red light is displayed on the track diagram in the tower. When a red light is displayed on the track diagram the leverman may actuate the departure signal to display a lunar-white aspect. A lunar-white aspect displayed by a departure signal authorizes movement on a station track to the governing interlocking signal only. The departure signal, governing movements on station track No. 10, and the switch of this signal are located immediately east of station track No. 10 at points, respectively, 704 and 231 feet north of the point of accident.

Operating rules of the Chicago Union Station Company read in part as follows:

11. * * *

* * *

Train signals * * * are those prescribed in the rules of the Operating Department of the individual railroads.

15. Trains handling passenger * * * equipment must have air brakes properly connected in working order, and when backing must be provided with back-up air hose, ready for immediate use, in charge of a qualified employee.

16. When cars are pushed by an engine a trainman must take a conspicuous position on the front of the leading car, and by night must display a white light.

* * *

24. When a train is ready for back-up movement, a qualified employe must first identify himself to the engineman and then make air test through back-up hose, followed by back-up communicating signal. He will then give proper hand or lamp signal and give another communicating signal to the engineman. In the absence of any of these signals the engineman must not move without a thorough understanding with the employe who is to handle the back-up movement.

101. * * *

Trains or engines must not pass an interlocking stop signal without receiving instructions from the train director.

* * *

Instructions Governing the Operation of Chicago Union Station Signal System for Starting Trains and Engines read in part as follows:

* * *

For Trains or Engines Backing out of Station.

Before train or engine is started to back out of station, the person in charge of movement will press button nearest the track on which train or engine is standing. This will cause a red light to appear in trainshed and in tower. The train director will then press button, which will cause trainshed and tower lights to change to lunar white. The back-up movement may then be made providing the proper interlocking signal is received.

* * *

Trains or engines standing on station tracks must not move until a lunar white light has been received in trainshed signal. This permits movement to the interlocking signal only; movement beyond that point must be made in accordance with signal indications.

Operating rules of the C.B. & Q. governing the use of signals read in part as follows:

16. COMMUNICATING SIGNALS.

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

SOUND.	INDICATION.
--------	-------------

* * *

(b) o o When running--stop at once.

(c) o o o When standing--back.

* * *

The maximum authorized speed for all trains in the territory involved is 15 miles per hour.

Description of Accident

No. 118, a north-bound C.B. & Q. suburban passenger train, consisted of engine 2933 and six coaches, of the open-end platform type, in the order named. The second and sixth cars have wooden superstructures covered with metallic sheathing, and steel underframes. The remainder of the cars are of all-steel construction. This train, en route from main track No. 5 to the lead track and thence to station track No. 8, passed Harrison Street Tower at 7:39 a. m., entered the lead track at switch 57, passed signal L-14, which displayed approach-next-signal-prepared-to-stop, entered track No. 8 at switch 19, and while moving at an estimated speed of 7 miles per hour the engine was struck by Extra 2949 South at the fouling point of station tracks Nos. 8 and 10.

Extra 2949 South, a south-bound C.B. & Q. passenger-equipment train, consisted of seven coaches, of the open-end platform type, and engine 2949, headed north, in the order named. The first, second and sixth cars are of all-steel construction. The third to fifth cars, inclusive, have wooden superstructures covered with metallic sheathing, and steel underframes. The seventh car is of wooden superstructure and steel-underframe construction. This train, making a back-up movement on station track No. 10, passed signal RB-14, which displayed stop, and while moving at an estimated speed of 3 miles per hour it struck the engine of No. 118 at a point 24 feet south of signal RB-14.

None of the equipment of No. 118 was derailed, but the east side of the engine and the east side and the interior of the first car were badly damaged. The south truck of the first car of Extra 2949 was derailed and the south end of this car was considerably damaged.

The weather was clear at the time of the accident, which occurred about 7:40 a. m.

Discussion

About 7:35 a. m. the leverman at Harrison Street Tower lined the route for No. 118, a north-bound passenger train, to proceed from main track No. 5 through switch 57 to the lead track, then to enter station track No. 8 at switch 19. At this time Extra 2949 South, a south-bound passenger-equipment train, was standing on station track No. 10. Signal RB-14 displayed stop for Extra 2949 South, and signal L-14 displayed approach-next-signal-prepared-to-stop for No. 118. Signals RB-14 and L-14 are, respectively, 127 feet north and 2 feet south of switch 19. The stop indication displayed by signal RB-14 required Extra 2949 South 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. The indication displayed by signal L-14

permitted No. 118 to enter station track No. 8 at switch 19 at a speed not in excess of 7 miles per hour.

No. 118 passed signal L-14, entered station track No. 8 at switch 19 and was moving at a speed of about 7 miles per hour when the right side of the engine was struck by the first car of Extra 2949 South at the fouling point of station tracks Nos. 8 and 10. Extra 2949 South consisted of 7 cars, which were being pushed ahead of engine 2949. The engine was in backward motion. No authority had been issued by the leverman to the crew of Extra 2949 South authorizing this train to pass signal L-14.

As No. 118 was approaching the point where the accident occurred the enginemen were maintaining a lookout ahead. The members of the train crew were in various locations throughout the cars of the train. The engineer first saw Extra 2949 South as that train was moving southward on station track No. 10. Soon afterward he saw the first car pass signal RB-14, and he moved the brake valve to emergency position. The collision occurred immediately afterward.

The crew of Extra 2949 South consisted of an engineer, a fireman and an employee designated as a yard pilot. These employees understood that before their train proceeded southward on station track No. 10 the yard pilot was required to be stationed at the front end of the first car and in position to control the movement of the train by the use of the valve of the back-up hose, and by signalling to the engineer by hand signals and on the train air-signal system. They understood that a lunar-white aspect displayed by a station track departure signal permits movement of a train only to the first interlocking signal, and that a stop indication displayed by an interlocking signal requires a train to stop short of the signal and not to proceed until an indication permitting the train to proceed is displayed or proper authority from the leverman is received. The yard pilot of Extra 2949 South said that immediately prior to the time his train started to move southward on station track No. 10 he identified himself to the engineer, who was on the engine. Then the yard pilot proceeded to the front end of the first car and attached the hook of the back-up hose to the hand-brake wheel on the platform of the car, but did not connect the back-up hose to the brake-pipe nose. Immediately afterward he proceeded to the departure-signal switch, located 22 feet north of the south end of the first car, and actuated the departure signal-switch to inform the train director that Extra 2949 was ready to proceed. The departure signal first displayed a red aspect, then changed to display a lunar-white aspect, and the yard pilot returned to the first car to connect the back-up hose to the brake-pipe nose. However, he said that before this was accomplished, the train started and he made an unsuccessful attempt to open the

brake-pipe angle cock to stop the movement. He then boarded the first car, sounded a stop signal on the train air-signal system and applied the brakes in emergency by opening the conductor's air-valve. The speed of Extra 2949 was about 3 miles per hour when the collision occurred. After the accident examination disclosed that the wheels of the front truck of the first car had slid on the rails about 25 feet immediately north of the fouling point, and that the conductor's air-valve of the first car was open. The yard pilot said that prior to the time his train started he held a lighted flashlight in his hand, which he used in place of a lighted lantern, because of darkness in the trainshed, but did not sound any signal on the train air-signal system nor give any hand signal for the train to start. The engineer and the fireman said that they heard two distinct back-up signals sounded on the train-air signal system. The engineer said that he then looked to the south and clearly saw a back-up hand signal given with a lighted flashlight from the vicinity of the south platform of the first car. In response to these signals the back-up movement was started. The enginemen did not know of anything being wrong until the collision occurred. Because a high platform between tracks Nos. 8 and 10 obstructed their view to the south from the engine, the enginemen were unable to see signal RB-14, which is a dwarf signal.

Cause

It is found that this accident was caused by failure to operate Extra 2949 South in accordance with an interlocking signal indication.

Dated at Washington, D. C., this twenty-seventh day of August, 1946.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. EARTEL,
Secretary.