INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 3120

CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY
AND
ILLINOIS CENTRAL RAILROAD COMPANY

REPORT IN RE ACCIDENT

NEAR LITCHFIELD, ILL., ON

AUGUST 6, 1947

SUMMARY

Railroads:	Chicago, Burlington & Quincy	: Illinois Central
Date:	August 6, 1947	
Location:	Litchfield, Ill.	
Kind of accident:	Side collision	
Trains involved:	Freight	: Passenger
Train numbers:	Extra 6106 North	: 22
Engine numbers:	6106	: Diesel-electric units 4004-4003
Consists:	70 cars, caboose	: 7 cars
Estimated speeds:	15 m. p. h.	: 30 m. p. h.
Operation:	Interlocking	
Track:	Single; tangent; level	: Single; tangent; level
Weather:	Clear	
Time:	10:15 a. m.	
Casualties:	42 injured	
Cause:	Failure to operate the Illinois Central train in accordance with interlocking signal indications	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3120

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

CHICAGO, BURLINGTON & QUINCY RAILROAD COMPANY
AND
ILLINOIS CENTRAL RAILROAD COMPANY

October 8, 1947

Accident near Litchfield, Ill., on August 6, 1947, caused by failure to operate the Illinois Central train in accordance with interlocking signal indications.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On August 6, 1947, there was a side collision between a freight train of the Chicago, Burlington & Quincy Railroad and a passenger train of the Illinois Central Railroad near Litchfield, Ill., which resulted in the injury of 29 passengers, 1 railway-mail clerk, 8 dining-car employees, 2 coach attendants and 2 train-service employees. This accident was investigated in conjunction with representatives of the Illinois Commerce Commission.

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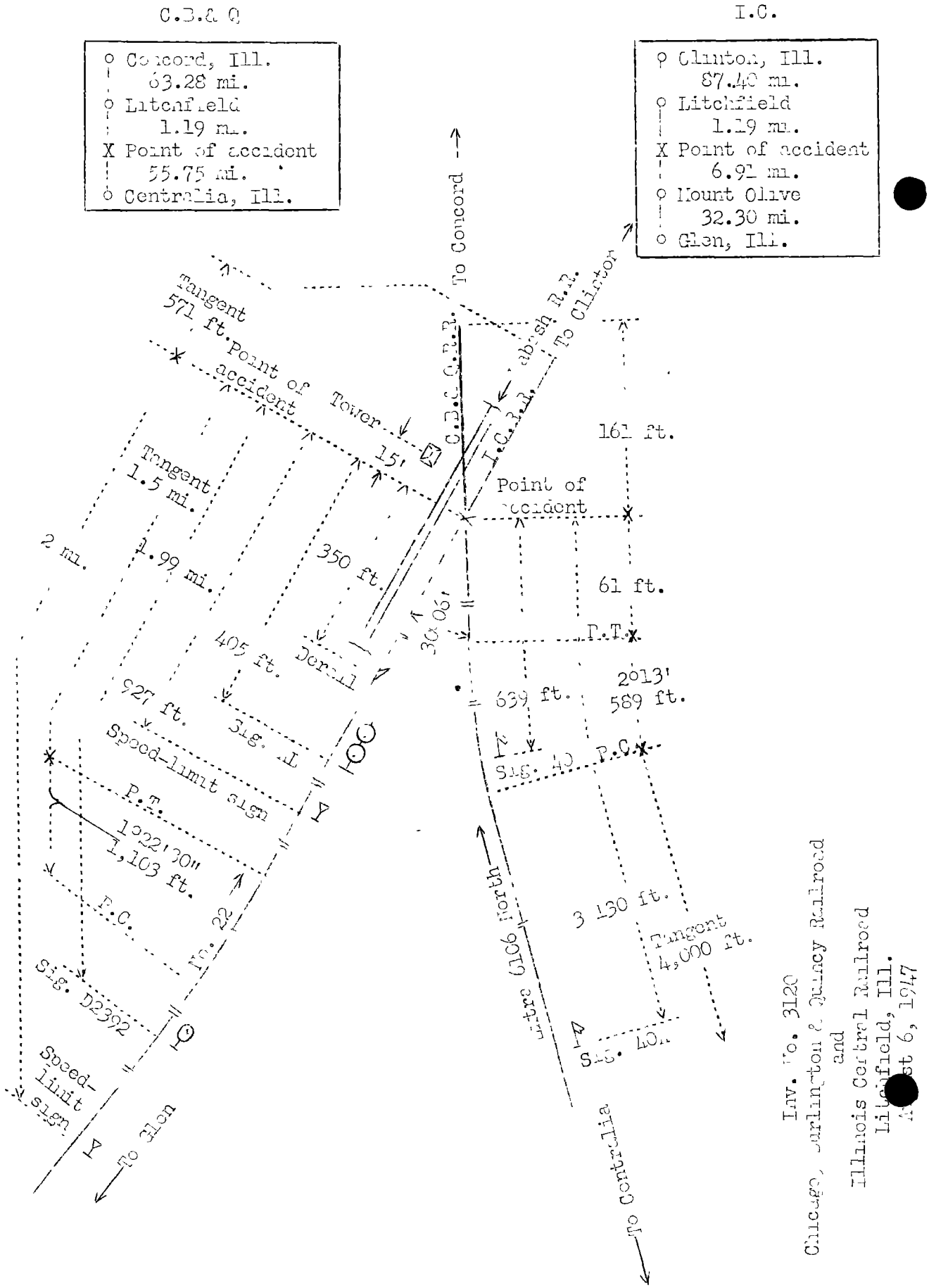
[1] Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv. No. 3120
Chicago, Burlington & Quincy Railroad
and
Illinois Central Railroad
Litchfield, Ill.
August 6, 1947

Location of Accident and Method of Operation

This accident occurred 1.19 miles south of the station at Litchfield, Ill., at the intersection of a line of the Chicago, Burlington & Quincy Railroad and a line of the Illinois Central Railroad. The crossing is located on that part of the Beardstown Division of the C.B.& Q. extending between Centralia and Concord, Ill., 120.22 miles, and on that part of the Springfield Division of the I.C. extending between Glen and Clinton, Ill., 127.8 miles, and it is 55.75 miles north of Centralia and 39.21 miles north of Glen. In the vicinity of the crossing both are single-track lines. On the C.B.& Q. trains are operated by timetable, train orders and a manual-block system. On the I.C., trains are operated by timetable, train orders and an automatic block-signal system. The crossing is protected by interlocking signals. The main tracks intersect at an angle of 30°06', at a point 15 feet south of the tower, which is located in the northwest angle of the crossing. The C.B.& Q. main track extends south and north, and the I.C. main track extends southwest and northeast. A double-track line of the Wabash Railroad parallels the I.C. main track on the west. From the south on the C.B.& Q. there are, in succession, a tangent about 4,000 feet in length, a 2°15' curve to the right 589 feet and a tangent 61 feet to the point of accident and 161 feet northward. The grade is practically level. From the south on the I.C. there is a 1°22'30" curve to the left 1,103 feet in length, and then a tangent 1.5 miles to the crossing and 571 feet northward. The grade is practically level.

On the C.B.& Q., approach signal 40A and home signal 40, governing north-bound movements, are, respectively, 3,130 feet and 639 feet south of the crossing. These signals are of the one-arm, two-position, lower quadrant, semaphore type. On the I.C., approach signal D2392 and home signal AL, governing north-bound movements, are, respectively, 1.99 miles and 405 feet south of the crossing. These signals are of the four-indication, color-light type. The signals on both lines are continuously lighted, and the involved day aspects and corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
40A	60 degrees	Proceed	Clear-Distant-Signal
40	60 degrees	Proceed	Clear-Signal

D2392	Yellow	Proceed; preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed.	Approach.
AL	Red-over-red	Stop.	Stop.

The interlocking machine is of the electro-mechanical type, and consists of 31 working levers in a 41 lever frame. Time and indication locking are provided in conjunction with the C.B.& Q. home signals, and approach and indication locking are provided in conjunction with the I.C. home signals. Time releases in connection with approach and indication locking are provided. An audible annunciator is actuated to indicate approaching movements on the C.B.& Q. when a north-bound train enters the circuit 1.22 miles south of the tower. Audible and visible annunciators are actuated to indicate approaching movements on the I.C. when a north-bound train enters the circuit 3.03 miles south of the tower.

A split switch-point derail is located on the I.C. main track at a point 350 feet south of the centerline of the crossing.

Operating rules of the I.C. read in part as follows:

DEFINITIONS.

* * *

Fixed Signal.--A signal of fixed location indicating a condition affecting the movement of a train or engine.

Note.--The definition of a "Fixed Signal" covers such signals as * * * interlocking, semaphore, * * *

* * *

Medium Speed.--A speed not exceeding thirty miles per hour.

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34. All members of engine and train crews must, when practicable, communicate to each other by its name, the indication of each signal affecting the movement of their train or engine.

* * *

98. Trains and engines must approach * * * railroad crossings at grade, * * * prepared to stop, unless the * * * signals indicate proceed, and track is clear. * * *

663. Trains or engines must stop at an interlocking signal indicating stop and not proceed until hand signals are received, * * *

The maximum authorized speed for the C.B.& Q. train was 30 miles per hour. Time-table special instructions prescribe the maximum authorized speed for the I.C. train as 100 miles per hour on tangent track, 75 miles per hour on the curve south of the crossing and 65 miles per hour over the crossing. A speed-limit sign bearing the numerals 75 and a speed-limit sign bearing the numerals 65 are located on the east side of the I.C. main track at points, respectively, 2.0 miles and 927 feet south of the crossing.

Description of Accident

Extra 6106 North, a north-bound C.B.& Q. freight train, consisting of engine 6106, 70 cars and a caboose, passed signals 40A and 40, which displayed proceed, and while moving over the crossing at an estimated speed of 15 miles per hour the first car was struck by I.C. No. 22.

No. 22, a north-bound first-class I.C. passenger train, consisted of Diesel-electric units 4004 and 4003, coupled in multiple-unit control, one mail-express car, four coaches, one cafe-lounge car and one parlor-observation car, in the order named. The second to the fifth cars, inclusive, were of lightweight steel construction, and the remainder of the cars were of conventional standard all-steel construction. This train departed from Mount Olive, the last open office, 6.91 miles south of the crossing, at 10:08 a. m., 2 minutes late, passed signal D2392, which displayed proceed-preparing-to-stop-at-next-signal, passed signal AL, which displayed stop, and while moving at an estimated speed of 65 miles per hour it was derailed at the derail. The equipment continued in line with the track and was moving at an estimated speed of 30 miles per hour when it struck the first car of Extra 6106 North.

The rear truck of the tender of the engine and the first eight cars of Extra 6106 North were derailed and badly damaged. The Diesel-electric units and the first five cars of I.C. No. 22 were derailed to the west, and were badly damaged. Separations occurred between the first and second cars, between the second and third cars, between the third and fourth cars and between the fourth and fifth cars. The front portion of the train stopped with the front end of the first Diesel-electric unit and the rear end of the first car, respectively, 490 feet and 285 feet north of the crossing. The front end of the second car stopped 45 feet south of the rear end of the first car. The front end of the third car stopped 15 feet south of the rear end of the second car. The first car stopped at an angle of about 7 degrees to the track, and leaned to the west at an angle of about 15 degrees. The second car stopped practically upright, about 16 feet west of the track and parallel to it. The third car stopped practically upright, and at an angle of about 13 degrees to the track. The fourth car stopped at an angle of 17 degrees to the track and leaned to the west at an angle of 37 degrees, with its front end against the rear end of the third car. The fifth car stopped at an angle of about 7 degrees to the track and leaned slightly to the east, with the front end leaning against the rear end of the fourth car.

The fireman and the baggageman of No. 22 were injured.

The weather was clear at the time of the accident, which occurred at 10:15 a. m.

Diesel-electric engine 4004 is provided with a speedometer and an MS-40 brake valve. The brake equipment of this engine and the second to the fourth cars, inclusive, is arranged for either automatic or electro-pneumatic operation, and the brake equipment of the remainder of the cars is arranged for automatic operation only. During the trip involved conventional automatic braking was in service. The equipment is so arranged that, during an emergency application of the brakes, power is automatically cut off from the propelling mechanism, and sand is automatically deposited upon the rails from sanders on the engine and the second to fourth cars, inclusive.

Discussion

The crossing involved is protected by an interlocking, which is so arranged that when the route is lined for the C.B.& Q. and when a north-bound C.B.& Q. train has entered the approach circuit the C.B.& Q. home signal will display

proceed, the I.C. approach signal will display approach and the I.C. home signal will display stop. In addition, after a C.B.& Q. north-bound train has entered the approach circuit the route cannot be lined for an I.C. train until the time release has operated an interval of 2 minutes 2 seconds.

The route was lined for the C.B.& Q. train at 10:05 a. m., the approximate time it entered the approach circuit. Soon after the C.B.& Q. train entered the approach circuit the speed was reduced to about 15 miles per hour in response to signals given by a maintenance-of-way flagman. The C.B.& Q. train passed its approach and home signals, which displayed proceed, and was moving over the crossing at an estimated speed of 15 miles per hour when the first car was struck by the engine of the I.C. train at 10:15 a. m. The enginemen and the front brakeman were maintaining a lookout from the engine, and the conductor and the flagman were in the caboose. These employees were not aware of anything being wrong until just before the collision occurred.

The engineer of I.C. No. 22 said that when the train was about 5.5 miles south of the crossing the speed was about 85 miles per hour, and a warning signal was displayed in the control compartment of the engine indicating an irregularity in the engine compartment. The fireman immediately proceeded to the rear of the unit to ascertain the cause. The engineer said that because of this occurrence his attention was distracted, and he did not observe the indication displayed by the approach signal, located 1.91 miles south of the home signal. When the train reached a point about 1.75 miles south of the crossing the engineer made a light brake-pipe reduction, and he thought the speed was reduced to about 75 miles per hour. He said this brake application was not released. When the engine was some distance south of the home signal he observed that this signal was displaying stop. Then he moved the brake valve to emergency position, and he estimated the speed of No. 22 as about 30 miles per hour when the collision occurred. The fireman was in the rear of the first unit when he felt the emergency application of the brakes, and was returning to the control compartment when the collision occurred. The members of the train crew were in various cars throughout the train, and were not aware of anything being wrong until the brakes were applied in emergency just before the collision occurred. The brakes of this train had been tested and had functioned properly en route.

In addition to the present accident, during the past 6 years the Commission has investigated six accidents in which the fireman was not stationed in the control compartment

of the engine at the time each of these accidents occurred. These accidents resulted in the death of 22 persons and the injury of 122 persons. The operating rules of the Illinois Central Railroad require all members of an engine crew to communicate to each other, when practicable, the indication of each signal affecting the movement of their train or engine. However, the fireman on a Diesel-electric engine is required to check the performance of the engines. During the time the fireman is performing his duties in the engine compartment he is not in position to observe the indications of the signals. In this instance the fireman was in the engine room of the first unit and did not see the indications displayed by either the approach signal nor the home signal.

Cause

It is found that this accident was caused by failure to operate the Illinois Central train in accordance with interlocking signal indications.

Dated at Washington, D. C., this eighth day of October, 1947.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,

Secretary.