INTERSTATE COMMERCE COMMISSION

WASHINGTON

INVESTIGATION NO. 2615

THE MISSOURI-ILLINOIS RAILROAD COMPANY

REPORT IN RE ACCIDENT

AT BRANCH JUNCTION, ILL., ON

AUGUST 18, 1942

SUMMARY

Railroad:	Missouri-Illinois	
Date:	August 16, 1942	
Location:	Branch Junction, Ill.	
Kind of accident:	Head-end collision	
Trains involved:	Freight	: Freight
Train numbers:	M.-I. Extra 502 South	: I. C. Extra 2545 North
Engine numbers:	502	: 2545
Consist:	39 cars, caboose	: Auxiliary water car, 56 cars, caboose
Speed:	Practically stopped	: 6 m. p. h.
Operation:	Timetable and train orders on M.-I. Timetable, train orders, automatic block-signal, automatic train-stop and cab-signal system on I. C. Accident occurred within yard limits	
Track:	M.-I.: Single; 9° compound curve to left; 0.3 percent descending grade southward I. C.: Double; 1°16' curve to right to junction switch; grade level	
Weather:	Cloudy	
Time:	10:55 a. m.	
Casualties:	2 killed; 4 injured	
Cause:	Accident caused by failure properly to control speed of I. C. train moving within yard limits and approaching a junction	

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 2615

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

THE MISSOURI-ILLINOIS RAILROAD COMPANY

October 2, 1942.

Accident at Branch Junction, Ill., on August 16, 1942, caused by failure properly to control speed of I. C. train moving within yard limits and approaching a junction.

REPORT OF THE COMMISSION[1]

PATTERSON, Commissioner:

On August 16, 1942, there was a head-end collision between a Missouri-Illinois Railroad freight train and an Illinois Central Railroad freight train on the line of the first-mentioned carrier at Branch Junction, Ill., which resulted in the death of two employees, and the injury of four employees. This accident was investigated in conjunction with a representative of the Illinois Commerce Commission.

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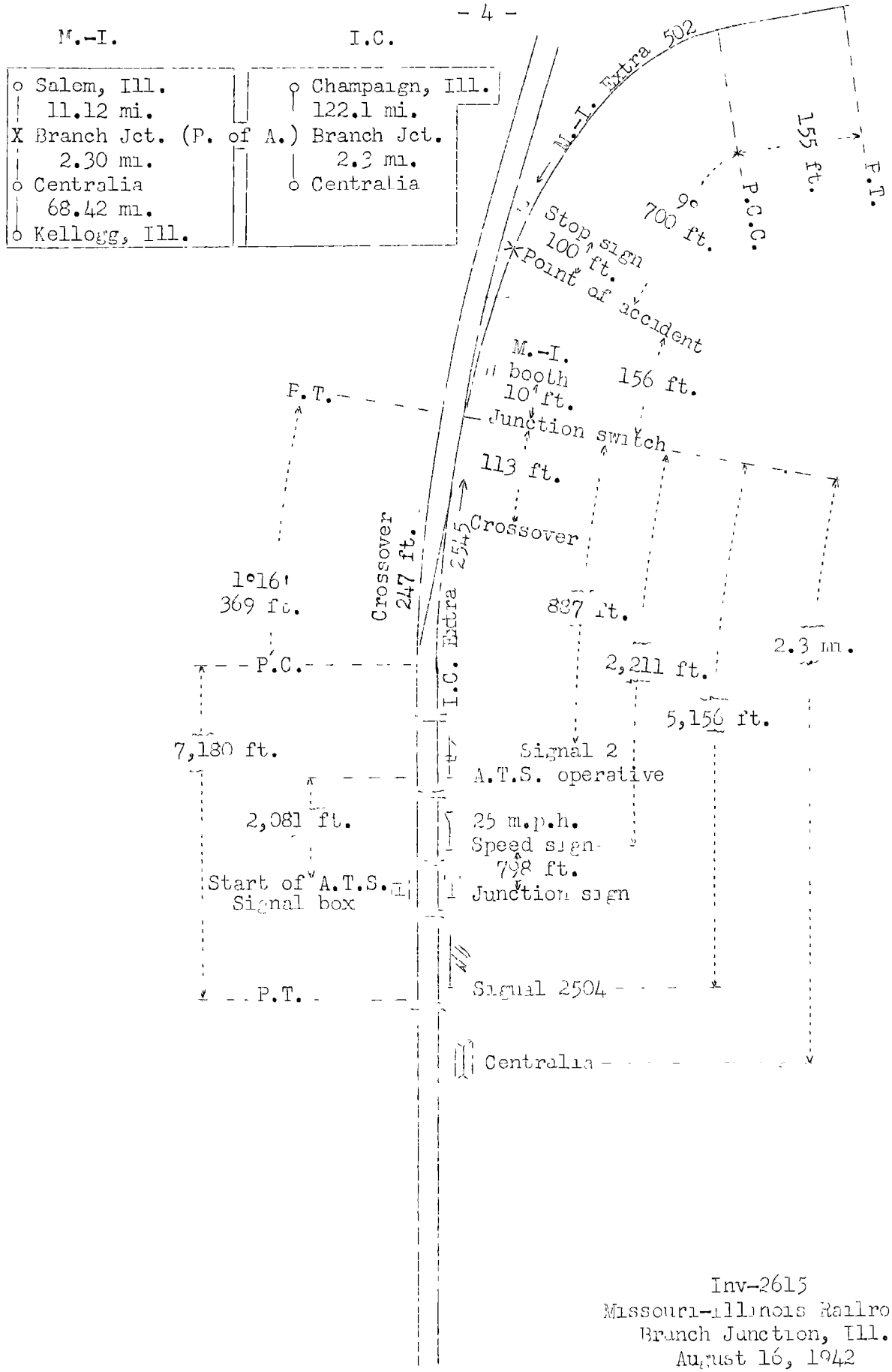
[1]Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Patterson for consideration and disposition.



Inv-2615
Missouri-Illinois Railroad
Branch Junction, Ill.
August 16, 1942

Location of Accident and Method of Operation

This accident occurred on that part of the Missouri-Illinois Railroad designated as the Sparta Subdivision and extending between Salem and Kellogg, Ill., a distance of 81.84 miles. In the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders. There is no block system in use. At Branch Junction, 11.2 miles south of Salem, the Missouri-Illinois Railroad, hereinafter referred to as the M.-I., connects with the Illinois Central Railroad, hereinafter referred to as the I. C. Trains of the M.-I. are operated over that part of the Champaign District of the I. C. which extends between Branch Junction and Centralia, a distance of 2.3 miles. In the vicinity of the point of accident the I. C. is a double-track line over which trains are operated by timetable, train orders and an automatic block-signal, automatic train-stop and cab-signal system. Yard limits extend between Salem and Branch Junction on the M.-I., and between Centralia and Branch Junction on the I. C. The accident occurred within yard limits at a point 156 feet north of the junction switch of the M.-I. main track and the I. C. northward main track. The north switch of a trailing-point crossover, which is 247 feet in length and which connects the main tracks of the I. C., is located 113 feet south of the junction switch. The junction switch and the crossover switches are hand-operated. As the point of accident is approached from the north on the M.-I., there are, in succession, a tangent 155 feet in length, a compound curve to the left 300 feet having a maximum curvature of 9°, and a tangent 56 feet to the junction switch. As the point of accident is approached from the south on the I. C., there are, in succession, a tangent 7,180 feet in length and a 1°16' curve to the right 369 feet to the junction switch. The grade for south-bound trains on the M.-I. is 0.3 percent descending, and for north-bound trains on the I. C. it is level.

Automatic signal 2504 and home signal 2, which govern northbound movements on the I. C. northward main track, are located, respectively, 5,156 feet and 687 feet south of the junction switch. Automatic signal 2504 is of the 2-position, 2-arm, lower-quadrant, semaphore type. Home signal 2 is of the 2-position, 1-arm, lower-quadrant, semaphore type.

The circuits are so arranged that when the junction switch is lined for the M.-I., or when either switch of the crossover is lined for movement through the crossover, signal 2 displays stop and signal 2504 displays approach. The involved day aspects and corresponding indications and names of these signals are as follows:

Signal 2504

Aspect	Indication	Name
Both arms inclined 60° from horizontal	Proceed	Clear

Top arm inclined 60° from horizontal; bottom arm, horizontal	Proceed; preparing to stop at next signal. Train exceeding medium speed must at once reduce to that speed	Approach

Home signal 2

Arm inclined 60° from horizontal	Proceed	Clear
Arm horizontal	Stop	Stop

On the I. C. the automatic cab-signal and train-stop system is of the continuous-inductive type. Engines are equipped with two-indication color-light cab signals which display either a green or a red aspect. The automatic train-stop becomes operative on the northward main track at home signal 2. The track circuit controlling the cab-signal system extends to a point 2,081 feet south of home signal 2. A warning whistle in the cab sounds when the cab signal changes from a green to a red aspect. If a red aspect is not acknowledged within 6 seconds by operation of the acknowledging lever, an automatic brake application sufficient to stop the train will occur. When a brake application is forestalled, the train may proceed in accordance with operating rules. The aspects and corresponding indications and names of the cab signals are as follows:

Aspect	Indication	Name
Green	Proceed	Clear
Red	Proceed at restricted speed	Restricting

South-bound M.-I. trains are required to stop at a stop sign located 256 feet north of the junction switch, and to obtain permission from the train dispatcher at Champaign to occupy the I. C. main tracks and to proceed southward to Centralia in accordance with the provisions of the yard-limit rule. A junction sign is located on the east side of the I. C. northward main track and 3,009 feet south of the junction switch. A speed-limit sign bearing the numerals "25" is located east of the I. C. northward main track and 2,211 feet south of the junction switch.

M.-I. operating rules read in part as follows:

DEFINITIONS

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or anything that may require the speed of a train or engine to be reduced.

93. * * *

Within yard limits the main track may be used without protecting against second and inferior class, extra trains and engines.

Second and inferior class, extra trains and engines must move within yard limits at restricted speed.

98. Trains and engines must approach * * *, junctions, * * *, prepared to stop, unless the switches are properly lined, signals indicate proceed, and track is clear. * * *

* * *

M.-I. time-table special instructions read as follows:

22. OPERATION OVER FORFIGN LINES:

Use of Illinois Central R. R. tracks between Branch Junction and I. C. Junction.

Train and Enginemen will be governed by Illinois Central R. R. Time-tables, Rules and Special Instructions, provide themselves with copies thereof and be conversant therewith.

I. C. operating rules 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 switch, * * *, yard limit signs, * * *.

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

Restricted Speed.--Proceed prepared to stop short of train, obstruction, or switch not properly lined and to look out for broken rail.

93. Within yard limits the main track may be used, clearing the time of first class trains.

Second and third class, extra trains and engines must move within yard limits prepared to stop unless the main track is seen or known to be clear. In case of accident, the responsibility rests with the approaching train or engine.

* * *

98. Trains and engines must approach * * *, junctions, * * *, prepared to stop, unless the switches are properly lined, signals indicate proceed, and track is clear. * * *

505. Block signals, cab signals, or both, govern the use of the blocks, but, unless otherwise provided, do not supersede the authority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

I. C. time-table special instructions read as follows:

93. Yards:

Branch Jct.
Centralia, (Centralia yard limits extend to Branch Jct. * * * .)
* * *

98. Trains must stop at junctions, * * *, as follows: Branch Jct., * * * and M.-I. R. R. trains.....Jct.

* * *

Missouri-Illinois Railroad trains will not enter Illinois Central Railroad main track Branch Jct., until they receive permission from train dispatcher, Champaign, through operator at Centralia passenger station.

In the vicinity of the point of accident the maximum authorized speed for freight trains on the M.-I. is 20 miles per hour, and for all trains on the I. C., 25 miles per hour.

Description of Accident

Extra 502 South, a south-bound M.-I. freight train, consisted of engine 502, 18 loaded and 21 empty cars and a caboose. This train departed from Salem, the last open office, at 10:20 a. m., according to the dispatcher's record of movement of trains, and stopped with the engine approximately 275 feet north of the stop sign at Branch Junction about 10:50 a. m. About 5 minutes later Extra 502 proceeded, and had nearly stopped when it was struck by I. C. Extra 2545 North at a point 156 feet north of the junction switch.

Extra 2545 North, a north-bound I. C. freight train, consisted of engine 2545, 1 auxiliary water car, 54 loaded and 2 empty cars and a caboose. This train departed from Centralia, the last open office, at 10:35 a. m., according to the dispatcher's record of movement of trains, passed signal 2504, which displayed proceed, passed signal 2, which displayed stop, passed the north switch of the crossover, entered the M.-I. main track at the junction switch and while moving at a speed of about 6 miles per hour it collided with Extra 502 South.

The brakes of both trains had been tested and they functioned properly at all points where used. There was no condition of either engine that obscured the vision or distracted the attention of the employees who were on the engines.

From an engine moving in either direction in the vicinity of the point of accident, the view of a train approaching from the opposite direction is restricted to a distance of about 570 feet, because of vegetation adjacent to the track and track curvature.

Engine 502 was moved backward about 20 feet by the force of the impact, and stopped, badly damaged, upright on the tender frame. The tender was demolished. The first and second cars of Extra 502 South were derailed and stopped, slightly damaged, in line with the track. Engine 2545 stopped, considerably damaged, with its front end north of the point of collision. The engine truck and the No. 1 pair of driving wheels were derailed. The first 6 cars in Extra 2545 were derailed and stopped in various positions across the track and on each side of it. Of these cars 4 contained crude oil, which became ignited, and the 6 derailed cars were destroyed by fire. The seventh car was slightly damaged.

It was cloudy at the time of the accident, which occurred about 10:55 a. m.

The employees killed were the engineer and the fireman of Extra 502 South. The employees injured were the conductor and the flagman of Extra 502 South, and the engineer and the fireman of Extra 2545 North.

Data

A telephone for communication between members of train crews and the train dispatcher at Champaign or the operator at Centralia is located near the junction switch at Branch Junction.

Discussion

The rules governing operation on the lines involved provide that within yard limits trains and engines may use the main tracks without protecting against second-class, inferior class and extra trains, and all except first-class trains must be operated prepared to stop unless the way is seen or known to be clear. All trains must approach junctions prepared to stop unless the switches are properly lined and the track is clear. The surviving employees involved understood these requirements.

Extra 502 South stopped on the M.-I. main track approximately 550 feet north of the junction switch at Branch Junction about 10:50 a. m. About 5 minutes later this train proceeded slowly and had practically stopped at a point 156 feet north of the junction switch when it was struck by Extra 2545 North.

Extra 502 was required to obtain permission by telephone to proceed on the I. C. tracks from Branch Junction to Centralia, and was then required to proceed in accordance with the yard-limit rule. The front brakeman obtained permission for his train to proceed, lined the junction switch and the crossover switches for his train to proceed from the M.-I. main track through the crossover to the I. C. southward main track and then signaled to the engineer to make the movement. As the front brakeman was lining these switches he saw a train approaching on the northward main

track about 3/4 mile south of the junction switch, but he was not alarmed because no first-class train was due and he expected other trains to be operated prepared to stop in accordance with the yard-limit rule. When Extra 2545 passed home signal 2, the front brakeman of Extra 502 gave signals for both trains to stop.

As Extra 2545 North was approaching Branch Junction, the speed was about 20 miles per hour. The enginemen and the front brakeman were maintaining a lookout ahead. According to the statements of the engineer and the front brakeman, signal 2504 displayed proceed and they called the indication. When the engine reached a point about 170 feet south of home signal 2, the warning whistle signal in the engine cab sounded, and the engineer observed simultaneously that the cab-signal and home signal 2 changed from proceed to stop, that the junction switch was lined for movement to the M.-I. main track and that a member of the crew of Extra 502 was giving stop signals near the junction switch. The engineer of Extra 2545 immediately moved the brake valve to emergency position, but he was unable to stop his train short of the crossover switch, the junction switch or Extra 502. The speed of Extra 2545 was about 6 miles per hour when the collision occurred. Since home signal 2 would display stop immediately after the M.-I. brakeman opened the first switch in the vicinity of the junction and since he handled three switches, apparently Extra 2545 North was considerably farther south of this signal when the indication changed to stop than 170 feet, as stated by the engineman and the front brakeman of the I. C. train.

Extra 502 South and Extra 2545 North were moving within yard limits and were approaching a junction. The route was lined for Extra 502 to proceed from the M.-I. main track through the crossover to the southward I. C. main track. Under the rules, the speed of both trains was required to be so controlled that each train could be stopped short of a train, obstruction or switch not properly lined. The M.-I. train did not reach the fouling point at the junction switch, and it was being operated in accordance with the yard-limit rule. The signals involved were within yard limits, and under the yard-limit rule Extra 2545 was not authorized to be operated in accordance with the proceed indications displayed by these signals. If the speed of the I. C. train had been controlled properly in accordance with the rules, this accident would not have occurred.

Cause

It is found that this accident was caused by failure properly to control the speed of the I. C. train moving within yard limits and approaching a junction.

Dated at Washington, D. C., this second day of October, 1942.

By the Commission, Commissioner Patterson.

W. P. BARTEL

(SEAL)

Secretary.