

INTERSTATE COMMERCE COMMISSION
WASHINGTON

INVESTIGATION NO. 3112
THE NEW YORK CENTRAL RAILROAD COMPANY
REPORT IN RE ACCIDENT
AT SHILOH, OHIO, CN
JUNE 25, 1947

SUMMARY

Railroad: New York Central
Date: June 25, 1947
Location: Shiloh, Ohio
Kind of accident: Derailment
Train involved: Passenger
Train number: 431
Engine numbers: 4940-4911
Consist: 6 cars
Estimated speed: 70 m. p. h.
Operation: Movements with current of traffic
by signal indications; movements
against current of traffic by
train orders and manual-block
system
Tracks: Double; tangent; level
Weather: Clear
Time: 7:43 p. m.
Casualties: 6 killed; 7 injured
Cause: Train entering crossover at high
rate of speed

INTERSTATE COMMERCE COMMISSION

INVESTIGATION NO. 3112

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

THE NEW YORK CENTRAL RAILROAD COMPANY

July 29, 1947

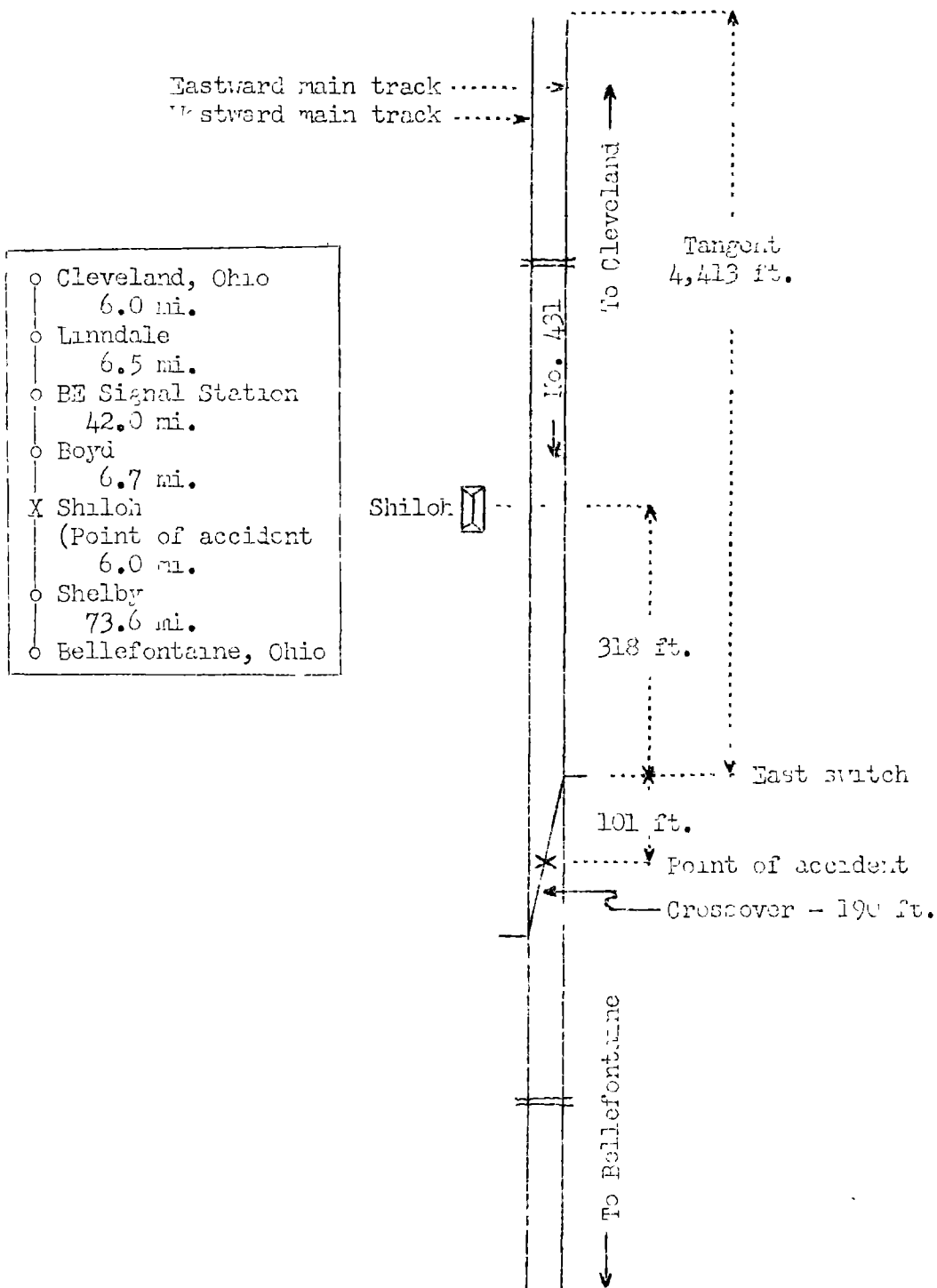
Accident at Shiloh, Ohio, on June 25, 1947, caused by
a train entering a crossover at a high rate of
speed.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On June 25, 1947, there was a derailment of a passenger train on the New York Central Railroad at Shiloh, Ohio, which resulted in the death of four train-service employees and two trespassers, and the injury of one passenger, five railway mail clerks and one train-service employee. This accident was investigated in conjunction with representatives of the Public Utilities Commission of Ohio.

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. 35112
New York Central Railroad
Shiloh, Ohio
June 25, 1947

Location of Accident and Method of Operation

This accident occurred on that part of the Ohio Division extending between BE Signal Station, near Cleveland, and Bellefontaine, Ohio, 128.3 miles, a double-track line in the vicinity of the point of accident, over which trains moving with the current of traffic are operated by signal indications, and trains moving against the current of traffic are operated by train orders and a manual-block system. At Shiloh, 48.7 miles west of BE Signal Station, a trailing-point crossover 190 feet long connects the two main tracks. The east switch of this crossover is 318 feet west of the train-order station. At the time the accident occurred trains moving in either direction were being operated on the eastward main track between Boyd, 6.7 miles east of Shiloh, and Shiloh. The derailment occurred on the turnout of the east crossover-switch at Shiloh, at a point 101 feet west of the switch. The main tracks are tangent throughout a distance of 4,413 feet immediately east of the east crossover-switch and a considerable distance westward. The grade is level.

The structure of the crossover consists of No. 10 turnouts, spring-type frogs 18 feet 6 inches in length, 127-pound switch points and rail sections, and 15-foot guard rails. The curvature of each turnout is $7^{\circ}25'10''$, and the angle of each frog is $5^{\circ}45'29''$. The crossover is laid on about 115 switch ties. No superelevation is provided. The distance between the centerlines of the main tracks is 13 feet. In this vicinity the track is laid on a 13-foot fill, and is ballasted with crushed rock to a depth of about 24 inches. The switches of the crossover are hand-operated, and at the time of the accident were in the charge of the operator. The switchstands are of the intermediate-stand type, and are provided with switch lamps and double-vane targets. When the switches are lined normally a green light and a green rectangular-shape target are displayed. When the switches are lined for movement through the crossover a red light and a red oval-shape target are displayed.

Operating rules read in part as follows:

DEFINITIONS

* * *

Fixed Signals.--A signal of fixed location indicating a condition affecting the movement of a train.

Note * * *.--The definition of a "Fixed Signal" covers such signals as switch, train order, * * *

* * *

* * *

10. Color Signals.

| Color. | Indication. |
|------------|----------------|
| (a) Red. | Stop. |
| * * * | |
| (c) Green. | Proceed, * * * |

* * *

204. Train orders must be addressed to those who are to execute them, * * *. A copy for each employe addressed must be supplied by the operator.

* * *

206a. When trains have two or more engines coupled, and a designation is made by engine numbers, the number of the leading engine only, will be used.

221(A). Unless otherwise provided, a fixed signal must be used at each train-order office, * * *

* * *

* * * Trains moving against the current of traffic must receive Clearance Form * * * at each open train-order station.

* * *

FORMS OF TRAIN ORDERS

* * *

* * *

D-R.

Providing for a Movement Against the Current of Traffic.

- (1) No 1 has right over opposing trains on No 2, or eastward, track C to F.

The designated train must use the track specified between the points named * * *

* * *

936. When a train has more than one engine, the rules apply alike to the engineman of each engine, but the use of * * * the air brake, except in emergency, must be limited to the leading engine.

There is no train-order signal at Shiloh.

The maximum authorized speed for the train involved was 80 miles per hour. The maximum authorized speed for all trains through the crossover involved was 15 miles per hour.

Description of Accident

Train order No. 10, addressed to all trains west at Cleveland, 61.2 miles east of Shiloh, and to all trains east at other points, was made complete at 12:37 a. m., June 25, and read in part as follows:

After 501 a.m today Operator on Duty in
Temporary Office at Cross-Over at Shiloh.
Westward trains will use Eastward track
Between Boyd and Cross-over Shiloh.

* * *

Train order No. 40, addressed to all trains east at Shiloh and to Nos. 445 and 451 at Boyd, was made complete at 6:59 p. m., June 25, and read as follows:

No 445 Engine 5392 and No 451 Engine 4940 have
right over opposing trains on Eastward track
Boyd to Crossover Shiloh.

No. 451, a west-bound first-class passenger train, consisted of engines 4940 and 4911, of the 4-3-2 type, one express car, one mail car, one passenger-baggage car, one coach and two sleeping cars, in the order named. All cars were of steel construction. The conductor of this train received copies of train order No. 10 at Cleveland, and at Linndale, 6 miles west of Cleveland, the conductor delivered a copy of this order to

the engineer of each engine. At Boyd the conductor and the engineer of the first engine received copies of train order No. 40 and manual-block authority for their train to proceed on the eastward main track from Boyd to the crossover at Shiloh. A copy of order No. 40 was not delivered to the engineer of the second engine. No. 431 entered the eastward main track at Boyd and departed from that station, the last open office east of Shiloh, at 7:34 p. m., 10 minutes late, passed the train-order station at Shiloh and while moving at an estimated speed of 70 miles per hour it entered the crossover at Shiloh, which was lined for movement from the eastward main track to the westward main track, and the engines, the first five cars and the front truck of the sixth car were derailed.

The first engine and tender, remaining coupled, stopped practically upright, down the embankment and almost entirely buried in the ground, with the front end of the engine 650 feet west of the east crossover-switch and 49 feet north of the westward main track. The second engine stopped on its left side, with the front end against the left side of the tender of the first engine and at right angles to it. The tender of the second engine stopped practically upright and in line with the track, with its front end against the trailer truck of the second engine. Both engines were badly damaged. The first car stopped on its right side, north of the track and at an angle of 45 degrees to it. The second to sixth cars, inclusive, stopped practically upright and in line with the track. The first to fourth cars, inclusive, were considerably damaged.

The engineer and the fireman of each engine were killed. The baggageman was injured.

The weather was clear and it was daylight at the time of the accident, which occurred about 7.43 p. m.

Discussion

The investigation disclosed that at the time of the accident track forces were engaged in resurfacing the westward main track immediately east of Shiloh. In order to avoid delay to trains and to expedite the work of the track forces, train-order instructions were issued to all trains that westbound trains would be operated against the current of traffic on the eastward main track throughout a distance of 6.7 miles between the interlocking at Boyd and the crossover at Shiloh. During this period an operator was provided at Shiloh, and he was assigned the duty of operating the crossover switches

for west-bound movements through the crossover. The automatic block-signal system in this territory provides protection only for movements with the current of traffic, and movements against the current of traffic are authorized by train order and are made under manual-block system rules.

Train-order instructions covering the use of the eastward main track were delivered to the crew of No. 431 about 1 hour 10 minutes before the accident occurred, and train-order and manual-block authority for No. 431 to proceed on the eastward main track from Boyd to the crossover at Shiloh was received by the conductor and by the engineer of the first engine at Boyd about 10 minutes before the accident occurred. The train dispatcher who issued the latter-mentioned train order said he forgot that two engines were being used to haul No. 431, and he did not instruct the operator at Boyd to make sufficient copies of the order for a copy to be delivered to the engineer of the second engine.

As No. 431 was approaching Shiloh the speed was about 70 miles per hour. The brakes of this train were in the charge of the engineer of the first engine. The brakes had been tested and had functioned properly en route. The crossover switches were lined for No. 431 to proceed from the eastward to the westward main track. The operator was in the vicinity of the train-order office, located about 320 feet east of the east crossover-switch. Soon after the engine whistle was sounded as No. 431 was approaching, the operator and a track supervisor observed that the train was moving at an excessive rate of speed, and they gave stop signals by hand from a point near the train-order office. These signals were not acknowledged, and the operator and the track supervisor said that the speed of No. 431 was not reduced and both engines were working steam when the train entered the crossover. The maximum authorized speed for movement through this crossover is 15 miles per hour.

The engineers and the firemen of both engines were killed, therefore, it could not be determined why proper action to control the speed of No. 431 through the crossover was not taken. The members of the train crew had read the train orders involved, and they understood that the train was required to be operated at a speed not exceeding 15 miles per hour through the crossover. These employees said that they were not aware that their train was closely approaching the crossover until the brakes became applied in emergency as a result of the derailment. During 8 days prior to 2:50 p. m., June 24, the westward main track between Boyd and Shelby points, respectively, 6.7 miles east and 6 miles west of Shiloh, was

being resurfaced, and west-bound trains were being operated on the eastward main track from Boyd to Shelby. After 2:50 p. m., June 24, west-bound trains were being operated on the eastward main track only from Boyd to Shiloh. During the 8-day period prior to the date of the accident the two engineers and one of the firemen made two west-bound trips and the other fireman made three west-bound trips in the territory involved. However, other than the trip on which the accident occurred, none of these employees had made a west-bound trip after the western limits of the territory in which trains were being operated against the current of traffic had been changed from Shelby to Shiloh.

Cause

It is found that this accident was caused by a train entering a crossover at a high rate of speed.

Dated at Washington, D. C., this twenty-ninth day of July, 1947.

By the Commission, Commissioner Patterson.

(SEAL)

W. P. BARTEL,
Secretary.