

INTERSTATE COMMERCE COMMISSION

WASHINGTON

REPORT NO. 3498

THE NEW YORK CENTRAL RAILROAD COMPANY

IN RE ACCIDENT

AT MORaine, OHIO, ON

DECEMBER 11, 1952

SUMMARY

Date: December 11, 1952

Railroad: New York Central

Location: Moraine, Ohio

Kind of accident: Derailment and collision

Equipment involved: Freight train : Locomotive
with car

Train number: Extra 3030 East

Engine numbers: 3030 : Diesel-
electric
unit 8773

Consists: 40 cars, caboose : 1 car

Estimated speeds: 47 m. p. h. : 5 m. p. h.

Operation: Signal indications

Tracks: Double; tangent; 0.31 percent
ascending grade eastward

Weather: Cloudy

Time: 9:25 a. m.

Casualties: 1 killed; 2 injured

Cause: Broken truck side-frame, and derailed
cars colliding with switching
movement on adjacent auxiliary
track

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3498

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

THE NEW YORK CENTRAL RAILROAD COMPANY

February 19, 1953

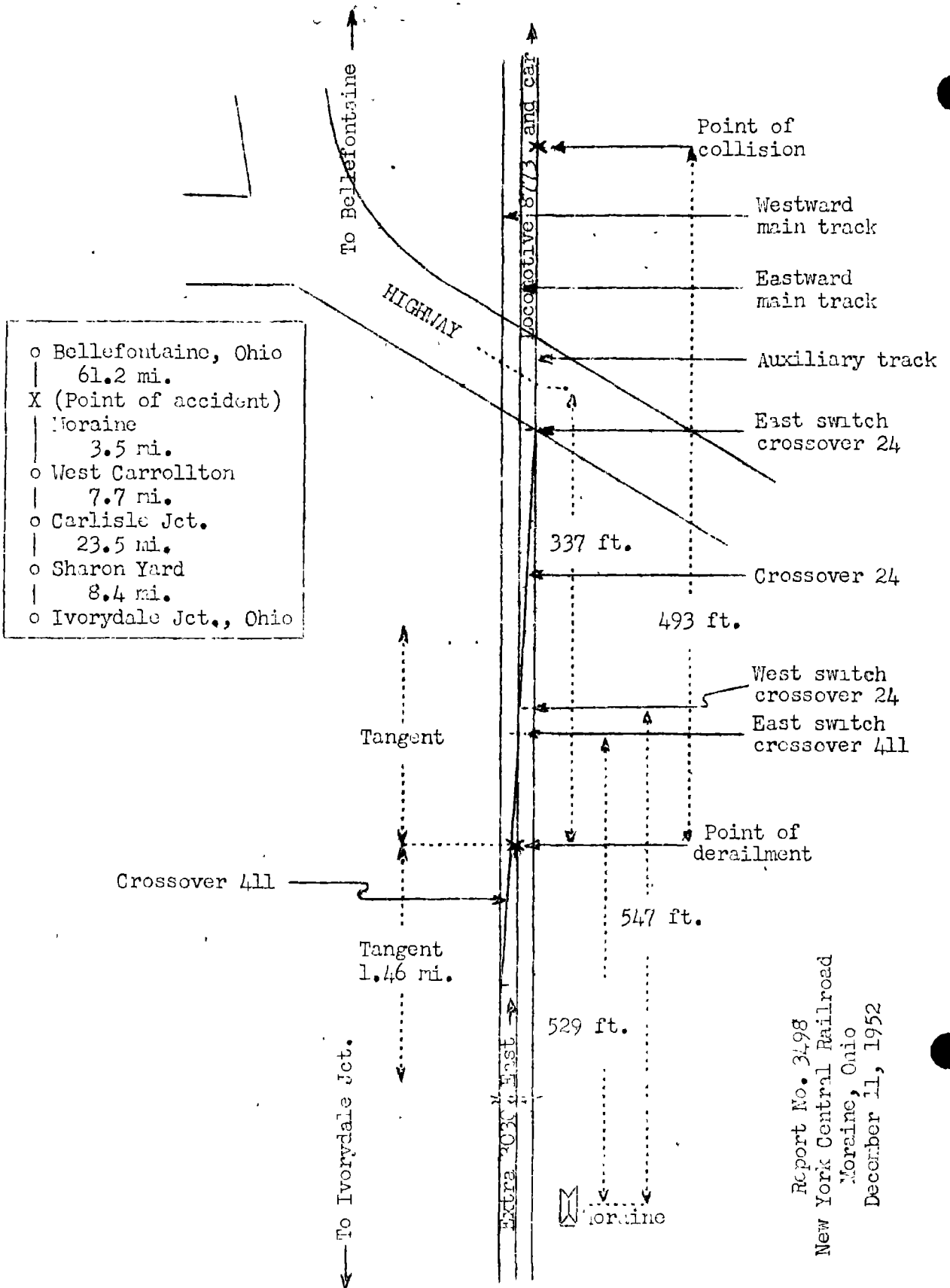
Accident at Moraine, Ohio, on December 11, 1952, caused
by a broken truck side-frame, and by derailed cars
colliding with a switching movement on an adjacent
auxiliary track.

REPORT OF THE COMMISSION¹

PATTERSON, Commissioner:

On December 11, 1952, there was a derailment of a freight train on the New York Central Railroad at Moraine, Ohio, and a collision between derailed cars of this train and a switching movement on an adjacent auxiliary track, which resulted in the death of one employee, and the injury of two employees. This accident was investigated in conjunction with a representative 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.



- o Bellefontaine, Ohio
- | 61.2 mi.
- X (Point of accident)
- | Moraine
- | 3.5 mi.
- o West Carrollton
- | 7.7 mi.
- o Carlisle Jct.
- | 23.5 mi.
- o Sharon Yard
- | 8.4 mi.
- o Ivorydale Jct., Ohio

Report No. 3498
 New York Central Railroad
 Moraine, Ohio
 December 11, 1952

Location of Accident and Method of Operation

This accident occurred on that part of the Ohio Division extending between Ivorydale Jct. and Bellefontaine, Ohio, 104.3 miles. In the vicinity of the point of accident this is a double-track line, over which trains moving with the current of traffic are operated by signal indications. The main tracks from south to north are designated as eastward main track and westward main track. Within yard limits at Moraine, 43.1 miles east of Ivorydale Jct., an auxiliary track parallels the eastward main track on the south. A trailing-point crossover designated as crossover 411 connects the two main tracks, and a facing-point crossover designated as crossover 24 connects the eastward main track and the auxiliary track. The east switch of crossover 411 and the west switch of crossover 24 are located in the eastward main track, respectively, 529 feet and 547 feet east of the freight station. The derailment occurred on the eastward main track at the frog of the east turnout of crossover 411, and the collision occurred 493 feet eastward. From the west there is a tangent 1.46 miles in length to the point of derailment and a considerable distance eastward. The grade is 0.31 percent ascending eastward.

The structure of the eastward main track consists of 127-pound rail, 39 feet in length, laid new in 1930 on an average of 24 treated ties per rail length. It is fully tieplated, spiked with 4 spikes per tieplate, provided with 6-hole 36-inch joint bars and an average of 14 rail anchors per rail length. It is ballasted with crushed stone to a depth of 15 inches. The frog of the east turnout of crossover 411 is of the spring-rail type. A guard rail 15 feet long is provided. The distance between the center-lines of the eastward main track and the auxiliary track is 20 feet 6 inches.

This carrier's operating rules read in part as follows:

701. * * *

The forward trainmen of freight trains; and enginemen, and firemen when practicable, must be on the lookout for signals from the rear after meeting or passing trains, also when approaching and passing stations, * * * and trackmen, and frequently at other points.

When trains are passing, signalmen and operators must observe the general condition of trains. Trackmen, * * * and other employes must make similar observations.

If any indication of conditions endangering a train is observed, "Stop" signal must be given. If there are no apparent defects, employes, * * * must give "Proceed" signal.

* * *

The maximum authorized speed for freight trains was 50 miles per hour.

Description of Accident

Extra 3030 East, an east-bound freight train, consisted of engine 3030, 40 cars and a caboose. This train departed from Sharon Yard, 34.7 miles west of Moraine, at 8:20 a. m., and passed Carlisle Jct., 11.2 miles west of the point of accident and the last open office, at 9:10 a. m. While it was moving on the eastward main track at a speed of about 47 miles per hour, the rear truck of the second car, the third to the twenty-seventh cars, inclusive, and the front truck of the twenty-eighth car were derailed at the frog of the east switch of crossover 411. The derailed equipment struck a switching movement on a parallel track at a point 493 feet eastward.

Diesel-electric unit 8773, assigned to yard service at Moraine, was engaged in switching operations in the vicinity of the point of accident. The Diesel-electric unit was headed west, pulling one car, and was moving eastward in backward motion on the auxiliary track at an estimated speed of 5 miles per hour when the movement was struck by derailed equipment of Extra 3030 East. The car was overturned.

A separation occurred between the second and third cars of Extra 3030 East. The first two cars remained coupled to the engine. The engine stopped with the front end about 867 feet east of the point of derailment. The other derailed cars stopped in various positions on or near both main tracks and the auxiliary track. Eleven of the derailed cars were destroyed, eight cars were badly damaged and the other derailed cars of this train were slightly damaged.

A separation occurred between Diesel-electric unit 8775 and the car of the switching movement. The car stopped on its side and south of the auxiliary track, and the Diesel-electric unit stopped about 50 feet eastward. It was not derailed. The Diesel-electric unit was somewhat damaged and the car was badly damaged. An electric transmission line which spanned the tracks in the vicinity of the point of accident was torn down by the derailed equipment, and inflammable material from a derailed car was ignited by sparks from the broken wires. Cars damaged in the derailment and collision were further damaged by fire.

One yard brakeman was killed, and the yard conductor and one yard brakeman of Diesel-electric unit 8773 were injured.

The weather was cloudy at the time of the accident, which occurred about 9:25 a. m.

The second car of Extra 3030 East was NX 2429, a refrigerator car, built in November, 1917, and owned by the National Car Company, Washington, D. C. It was 41 feet 2 inches long over the end sills, 9 feet 6 inches wide and 14 feet 3/4 inch high. Its light weight and load limit were, respectively, 55,800 pounds and 47,200 pounds. At the time of the accident the lading consisted of meat, and the total weight of the car and lading was 86,516 pounds. The trucks were of the 4-wheel type, and they had 4-1/4-inch by 8-inch journals, 33-inch cast-steel wheels and Bettendorf type U cast-steel side frames.

Discussion

Extra 3030 East was moving on the eastward main track at a speed of 47 miles per hour, as indicated by the tape of the speed-recording device, in territory where the maximum authorized speed for this train was 50 miles per hour, when the derailment occurred. The engineer, the fireman and the front brakeman were maintaining a lookout ahead from their respective positions in the cab of the engine. The conductor and the flagman were in the caboose. The members of the crew on the engine said that they were unaware that anything was wrong with their train before the derailment occurred. The engineer said that he was sounding the engine-whistle signal for a highway grade-crossing when the accident occurred. The brakes were applied as a result of the derailment. The

engineer released the brakes of the engine by means of the independent brake valve to prevent the engine from being overtaken and struck by derailed equipment. The engine stopped about 867 feet east of the point of derailment.

A short time before the accident occurred Diesel-electric unit 8773, engaged in switching operations, was coupled to a box car on the auxiliary track; the car was to be moved to another auxiliary track. The Diesel-electric unit was headed west, the front end of the unit was coupled to the east end of the car and the switching movement proceeded eastward. The enginemen and the yard conductor were maintaining a lookout in the direction of movement from the cab of the Diesel-electric unit. One yard brakeman was on the rear of the unit on the south side. The other yard brakeman was on the front end of the unit. The speed was about 5 miles per hour. The engineer said that when the Diesel-electric unit entered the highway grade-crossing, 337 feet east of the point of derailment, he looked westward and observed that cars of Extra 3030 East, which was closely approaching on the eastward main track, were derailed. He called a warning and opened the throttle of the Diesel-electric unit but the collision occurred before the speed could be increased. The surviving yard brakeman said that he heard a warning called by the members of the crew in the cab of the Diesel-electric unit. Both yard brakemen alighted from the unit before the collision occurred. The surviving members of the crew said that there was an explosion immediately after the collision occurred when sparks from broken electric wires ignited the inflammable contents of a derailed car.

Examination of the track after the accident occurred disclosed that throughout a distance of 5.16 miles immediately west of the point of accident scraping marks appeared on the planking of highway grade-crossings and track motor-car set-offs on the north side of the north rail of the eastward main track. These marks were about 2 inches in width and varied in distance from 3 to 4 inches from the rail. Throughout a distance of 1.19 miles immediately west of the point of accident bond wires were sheared from the north side of the north rail and joint bars and bolt heads on that side of the rail were marked at irregular intervals. The heel riser of the frog of the east turnout of crossover 411 was heavily marked. The general derailment occurred at the frog of this turnout, and from this point eastward the main track was destroyed throughout a distance of 524 feet. The westward main track and the auxiliary track were destroyed throughout distances, respectively, of 448 feet and 310 feet eastward from the point of derailment.

Examination of the equipment of Extra 3030 East after the accident occurred disclosed that the left truck side of the rear truck of the second car, NX 2429, was broken and the truck side had dropped sufficiently to be in contact with the planking of highway grade-crossings, track motor-car set-offs and parts of the track structure on the north side of the north rail of the eastward main track. The truck side was broken through both the tension and the compression members. No other defective condition which could have caused the derailment was found.

The truck side-frame was broken in two places. The primary fracture occurred near the center of the tension member between the vertical portion of the side frame and the journal box at location L-1. The secondary fracture occurred in the compression member almost directly above the primary fracture. About 75 percent of the primary fracture was an old break and the remainder of the fracture was new. The old break extended through the bottom and most of the inner side of the U-section of the side frame. The surface of the side frame was badly corroded and the break apparently could not be detected by visual inspection. The secondary fracture was a new break. Apparently after the primary fracture occurred, deflection of the compression member lowered the truck side sufficiently to be in contact with the track structure. After the secondary fracture occurred apparently the bottom of the truck side-frame struck the heel riser of the frog of the east turnout of crossover 411 and the rear truck of the car disintegrated. The general derailment then occurred. The truck side-frame involved was manufactured by the Pittsburgh Steel Foundries for the Fruit Growers Express Company in September, 1937. It bore pattern No. S-153. There was no available record to indicate when this truck side-frame was applied to the car. NX 2429 received classified repairs at the Plattsmouth Shop of the Fruit Growers Express Company at Plattsmouth, Nebr., during the period between September 18, 1951, and October 8, 1951.

Car NX 2429 was loaded and billed from Louisville, Ky., on December 10, 1952. It was destined to Worcester, Mass., via the Louisville and Nashville Railroad, the New York Central Railroad and the Boston and Albany Railroad. The lading consisted of meat and it was refrigerated with ice. This car arrived at DeCoursey, Ky., on the Louisville and Nashville Railroad, at 3 a. m. on the day of the accident. It was inspected by members of the mechanical force of that carrier and no defective condition was found before it departed in an interchange movement at 4:40 a. m. This car was accepted

in interchange by the New York Central Railroad at Sharonville Yard, Ohio, about 6:40 a. m. It was assembled in the train of Extra 3030 East and inspected by a member of the mechanical force of the carrier about 7:30 a. m., and no defective condition was found. Extra 3030 East departed from Sharon Yard at 8:20 a. m.

The members of the crew of Extra 3030 East said that they made frequent observations of the equipment of their train throughout the trip and observed no defective condition. The foreman of a maintenance force, which was engaged in track work at West Carrollton, 3.5 miles west of the point of accident, said that he gave stop signals when he observed sparks from dragging equipment as Extra 3030 East passed. The station agent at West Carrollton observed sparks from dragging equipment as the train passed his station, and he gave stop signals from inside the building but they were not observed by the members of the crew at the rear of the train. He said that he then attempted to communicate by telephone with the station agent at Moraine to instruct him to stop the train for inspection but the telephone at that point was in use and he could not establish a connection. Members of a maintenance force which was engaged in maintenance work on an auxiliary track at a point about 1,000 feet west of the station at Moraine observed that equipment was dragging as Extra 3030 East passed. They gave stop signals but the accident occurred a few seconds later.

Cause

It is found that this accident was caused by a broken truck side-frame, and by derailed cars colliding with a switching movement on an adjacent auxiliary track.

Dated at Washington, D. C., this nineteenth day of February, 1953.

By the Commission, Commissioner Patterson.

(SEAL)

GEORGE W. LAIRD,
Acting Secretary.