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Railroad accident investigation report

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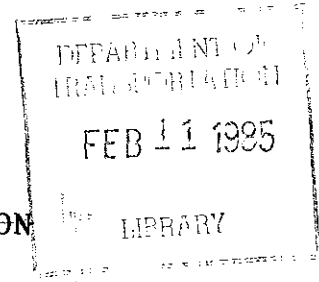
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REPORT NO. 80-8
CONSOLIDATED RAIL CORPORATION
MIAMISBURG, OHIO
SEPTEMBER 10, 1978



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
Office of Safety

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FEDERAL RAILROAD ADMINISTRATION
OFFICE OF SAFETY.

✓ RAILROAD ACCIDENT INVESTIGATION
ACCIDENT REPORT NO. 80-8.

CONSOLIDATED RAIL CORPORATION
MIAMISBURG, OHIO
SEPTEMBER 10, 1978

Synopsis

On September 10, 1978, at approximately 5:25 p.m., a westbound Consolidated Rail Corporation (Conrail) freight train derailed 20 cars in Miamisburg, Ohio. Two of the derailed cars struck an occupied duplex dwelling located north of the track. The accident occurred during daylight hours and the weather was clear.

Casualties

There were no injuries to crew members of the train. There were eleven persons in the duplex dwelling at the time of the derailment. Three were fatally injured, and five received minor injuries.

Cause

The derailment was caused by a plain bearing journal failure on a gondola car due to excessive weight resulting from improper loading.

Location and Method of Operation

The accident occurred on that part of Conrail's Cincinnati Division extending from Dayton to Cincinnati, Ohio, a distance of 39 miles. In the accident area the railroad is a double track main line over which trains operate by signal indications of a traffic control system. Miamisburg, Ohio, is about 10 miles west of Dayton, Ohio.

Although geographical directions in the accident area are north and south, east and west timetable directions will be used in this report unless otherwise designated.

The two main tracks in the accident area are numbered one and two respectively from the south. The accident occurred on the No. 2 main track.

Track

Approaching the accident area on No. 2 main track from the east there is a 1° curve to the left 2,017 feet, and a tangent 3,020 feet to the point of accident and a considerable distance beyond.

Authorized Speed

The maximum authorized speed for trains in the accident area is 35 m.p.h.

Hot Bearing Detectors

From Buffalo, New York to Miamisburg, Ohio, a distance of about 399 miles, there are 15 hot bearing detectors located at specific points for westbound trains. The nearest hot bearing detector east of the point of accident is located at Turner, Ohio about 68.5 miles.

Applicable Rules

77. The following action must be taken by employes in the observance of trains for defects.

- (a) Observe engines and cars in their train moving or standing to detect any unsafe condition as frequently as opportunity permits.

. . .

(Conrail Rules for Conducting Transportation)

General Rule 1 - Inspection and Compliance.

. . .

Originating carriers must inspect shipments after they are loaded to see that they are properly and safely secured, and that all applicable details in Rules 1 and 21, inclusive, as well as all applicable figures where figures are involved, have been complied with in all cases.

. . .

General Rule 5 - Location of Load - All Cars - The weight of load on one truck must not exceed one-half of the load weight limit stenciled on car. In case of doubt this must be verified by weighing.

. . .

(Association of American Railroads (A.A.R.) Rules Governing Loading of Commodities On Open Top Cars)

Circumstances Prior to the Accident

Conrail's westbound freight train, BUCI-9, originated at Frontier Yard in Buffalo, New York and was to terminate at Sharon Yard in Cincinnati, Ohio. The train consisted of three diesel-electric locomotive units, 40 cars and a caboose. After an initial terminal train air brake test, the train departed Frontier Yard at 7:06 p.m., September 9, 1978.

At Seneca Yard, about five miles west of Frontier Yard, 43 cars were added to the head end of the train. Yard carmen had inspected and tested the air brakes on these cars prior to the arrival of BUCI-9. After the cars were added to the train, the train crew made an application and release test of the air brakes before continuing westward.

The crew in charge of the train at the time of the accident went on duty at Bellefontaine, Ohio, about 63.2 miles east of Miamisburg, at 2:30 p.m., September 10, 1978. This crew, consisting of an engineer, conductor, flagman, and brakeman, was scheduled to operate the train from Bellefontaine to Cincinnati, Ohio. The train departed Bellefontaine, Ohio, at 3:30 p.m., on the day of the accident. Nearing the point of accident the engineer was seated at the controls of the leading locomotive unit and the brakeman was seated at the left side of the control compartment. The conductor and flagman were in the caboose. According to crew members in the lead locomotive unit the speed of the train was approximately 35 m.p.h.

The Accident

As BUCI-9 proceeded through Miamisburg the trailing journal of the trailing truck on the north side of the 26th head car (PC 532865) broke. The train continued westward approximately 2,400 feet where the trailing truck of the 26th head car and the following 19 cars derailed. The train separated between the 26th and 27th head cars during the general derailment. The separation caused the train brakes to be applied in emergency. The locomotive units and the first 26 cars of the train continued westward after the separation and stopped about 1,000 feet west of the general derailment.

In the derailment, the 30th and 31st head cars moved 56 feet north of No. 2 main track where they struck and entered the south side of an occupied duplex home.

Damages

The three locomotive units and the first 25 cars did not derail. The trailing truck of the 26th car derailed, but the car remained coupled to the front portion of the train. The following 19 cars were derailed and came to rest in various positions along the track structure. The remainder of the train was not derailed.

Seven of the twenty derailed cars were destroyed, ten were heavily damaged and three were slightly damaged.

The carrier's estimate of damage to equipment, track and signals was \$136,000.

Post-Accident Examinations and Tests

The first car to derail, PC 532865, was a fixed end gondola car built in December 1951. The car was equipped with two four-wheel trucks of which the wheel base was five feet eight inches. The trucks of the car were equipped with 6" x 11" plain bearing journals and 33 inch wrought steel wheels. The car was reconditioned and inspected at Conrail's Samuel Rea Shops in November 1975.

The following stenciled information was taken from the car body:

Capacity	154,000
Light Weight	59,600
Load Limit	160,000
COT&S	8-75
IDT	01/20/78
Repack	3-78

The carrier's record of movement for this car indicated that the car was loaded with steel ingots and moved out of the Republic Steel Corporation plant in Buffalo, New York on September 2, 1978. The car was moved to Conrail's Seneca Yard where it was inspected and the air brakes tested. The car was picked up from the classification yard along with 42 other cars by the train crew of BUCI-9 on September 9, 1978. The "B" end of the car was leading after the car was placed in the westbound train.

The car passed 15 hot bearing detectors between Seneca Yard and Miamisburg, Ohio, where the L4 journal failed. None of the detectors indicated abnormal readings for the journals of this car. The journal failed about 13.7 miles prior to reaching the next hot bearing detector. In addition to the hot bearing detectors, BUCI-9 was observed by crew members of the train, crew members of other trains, station operators, and by private citizens who were stopped at crossings.

At Dayton, Ohio an employee of the Frigidaire plant observed fire on one of the wheel plates of PC 532865 as the train passed a public crossing. He attempted to get the attention of crew members in the caboose as the caboose passed the crossing. The employee then drove to the Dayton Station and also was unsuccessful in reporting the incident because he could not attract the operator's attention. He then proceeded to the station at Moraine, three miles west of Dayton. He reported the observance to a track man who informed him he did not have a radio. Later that evening while listening to the radio at his home he heard of the derailment at Miamisburg. He returned to Moraine and reported his observance to the trainmaster.

The carrier's report on laboratory examination and testing of the failed journal classified the failure as a quick burn-off resulting from overloading the L4 side of the car.

When PC 532865 was placed at Republic Steel Corporation, in Buffalo, New York, it was loaded with seven steel ingots. Each ingot was approximately 24 inches high, 40 inches wide and 86 inches long with an average weight of 21,400 pounds. The car was loaded with three ingots at the B end and four ingots at the A end. After this car was loaded the carrier placed it in train BUCI-9 without inspecting the load for compliance with applicable AAR loading rules. Examination of the load placement after the derailment revealed that the A end of the car was overloaded approximately 5,600 pounds.

Findings

1. BUCI-9 was operated in accordance with the carrier's rules and instructions as it approached the accident area.

2. When PC 532865 was loaded, the shipper failed to properly distribute the weight of the load equally over the trucks of the car. The carrier accepted the loaded car from the shipper without inspecting it to see that the load was proper and safely secured.

3. The derailment was caused by the failure of the L4 plain bearing journal on PC 532865, the 26th head car in the consist of westbound train, BUCI-9. The journal failure was classified by the carrier's report of laboratory examination as a quick burn-off caused by overload.

Dated at Washington, D. C., this 6th
day of August 1980
By the Federal Railroad Administration

J. W. Walsh
Chairman
Railroad Safety Board