

RAILROAD ACCIDENT INVESTIGATION

Report No. 4127

LOUISVILLE AND NASHVILLE RAILROAD COMPANY

GADSDEN, TENN.

AUGUST 17, 1967

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

WASHINGTON

Summary

DATE: August 17, 1967

RAILROAD: Louisville and Nashville

LOCATION: Gadsden, Tenn.

KIND OF ACCIDENT: Derailment

TRAIN INVOLVED: Freight

TRAIN NUMBER: 125

LOCOMOTIVE NUMBER: Diesel-electric unit 501

CONSIST: 8 cars, caboose

ESTIMATED SPEED: 45 m.p.h.

OPERATION: Timetable, train orders

TRACK: Single; tangent; level

WEATHER: Clear

TIME: 1:30 p.m.

CASUALTIES: 1 killed

CAUSE: Inadequately maintained track.

RECOMMENDATION: That the Louisville and Nashville Railroad Company immediately correct the poor track conditions in the vicinity of the south turnout of the Gadsden, Tenn. siding to the extent necessary for this portion of the track structure to meet prescribed standards of the carrier's Maintenance of Way Department.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
RAILROAD SAFETY BOARD

RAILROAD ACCIDENT INVESTIGATION
REPORT NO. 4128

THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY
SEPTEMBER 16, 1967

Synopsis

On September 16, 1967, a head-end collision occurred between a freight train and a track motorcar on the Denver and Rio Grande Western Railroad near Shoshone, Colo , resulting in death to one maintenance-of-way employee

The accident was caused by error of a train dispatcher in authorizing a track motorcar to proceed westward on a track occupied by an opposing train

Location and Method of Operation

The accident occurred on that part of the Colorado Division extending between Grand Jct. and Minturn, Colo , a distance of 147.6 miles. In the accident area this is a single-track line over which trains operate by signal indications of a traffic control system, and over which track motorcars operate between specific points and within designated time limits as authorized by the train dispatcher. At Shoshone, 99.1 miles east of Grand Jct , a siding parallels the main track on the south

The collision occurred on the main track, 1,514 feet west of the west switch of the Shoshone siding

Details concerning the track, rules and instructions of the carrier's maintenance of way department, train involved, damages, and other factors are set forth in the appendix.

Description and Discussion

No 125, a southbound second-class freight train, left McKenzie at 10:20 a.m., 2 hours 30 minutes late, on the day of the accident. At 12:25 p.m., it stopped at Humboldt, 5.0 miles north of Gadsden, to set out cars. The train, consisting of a diesel-electric unit, 8 cars and a caboose, left Humboldt at 1:20 p.m., 3 hours 29 minutes late. About 10 minutes later, it passed the north switch of the siding at Gadsden. Moments later, while it was moving southward on the main track at 45 miles per hour, as estimated by the engineer, the front wheels of the front truck of the 4th car derailed to the west 415 feet south of the Gadsden station and 55 feet north of the south siding-switch. Immediately thereafter, both trucks of the 4th to 8th cars and the caboose, inclusive, also derailed.

The flagman was killed.

According to the surviving crew members, they were unaware of anything being wrong before the train brakes applied in emergency as a result of the derailment.

Examination of the train equipment disclosed no condition which could have contributed to the cause of the derailment.

Examination of the main track throughout a considerable distance north of the derailment point disclosed no evidence of dragging equipment or of an obstruction having been on the track.

The first mark of derailment was a flange mark on top the head of the west rail of the main track. It appeared at the toe of the frog of the south turnout of the siding. About 17 feet farther southward, wheel marks appeared on the base of rails, on the gage side of the east rail and on the field side of the west rail, indicating that a pair of wheels, apparently the front wheels of the front truck of the fourth car, had derailed to the west at this point. The derailed pair of wheels then struck and overturned the bent stock rail of the south turnout of the siding, causing the general derailment. Southward from the bent stock rail, the structure of the main track was destroyed or heavily damaged for a distance of about 400 feet.

Examination of the main track disclosed that within a distance of about 210 feet north of the initial derailment point, the track gage varied between 56-1/8 inches and 56-5/8 inches with a maximum lateral movement of the east and west rails of 3/8 inch and 1 inch, respectively. The cross levels in this area varied up to 1 inch. At a joint of the west rail 148 feet north of the initial derailment point, two rail-holding spikes on the field side and one rail-holding spike on the gage side were missing. The remaining spike on the gage side of the rail joint was protruding about 3 inches above the top of the tie plate, and the top of the tie plate was 1 inch below the base of rail.

Findings

The structure of the main track within a distance of 210 feet north of the initial derailment point was inadequately maintained and was below standards prescribed by the carrier's rules and instructions of the Maintenance of Way Department. As No. 125 moved over this portion of the track, excessive variations in cross levels apparently caused the fourth car to develop a harmonic lateral rocking action to the extent that the right front wheel of the front truck was lifted sufficiently above the top of the rail to derail to the west, resulting in derailment of the mate wheel also. Soon afterward, the derailed pair of wheels struck the bent stock rail of the south siding-turnout, causing the general derailment.

Cause

This accident was caused by inadequately maintained track.

Recommendation

It is recommended that the Louisville and Nashville Railroad Company immediately correct the poor track conditions in the vicinity of the south turnout of the Gadsden, Tenn. siding to the extent necessary for this portion of the track structure to meet prescribed standards of the carrier's Maintenance of Way Department.

Dated at Washington, D C. this 3rd
day of March 1968
By the Federal Railroad Administration,
Railroad Safety Board.

Bette E. Holt
Acting Executive Secretary

(SEAL)

Appendix

Track

The main track is tangent a considerable distance north and south of the derailment point. From the north, the grade is 1.0 percent descending 3,000 feet, then level 800 feet to the derailment point and 800 feet beyond.

The track structure in the derailment area consists of 100-pound rail, 39 feet in length, laid new in 1927 on an average of 22 treated ties per rail length. It is fully tieplated with single-shoulder tieplates, spiked with 2 rail-holding spikes per tieplate and is provided with 4-hole, 24-inch joint bars and an average of 2 rail anchors per rail length. It is ballasted with crushed slag and stone to a depth of 18 inches below the ties.

The track in the derailment area was resurfaced, lined and gaged on April 12, 1967. It was last inspected by a roadmaster on August 15, 1967, and no exceptions were taken.

Rules and Instructions of the Carrier's Maintenance of Way Department

155. *** The standard gage of track is 4 feet 8½ inches. Straight track must be put to standard gage.

159. Surface. - Tops of rails shall be level on tangents, except where elevated approaching curves. ***

172. Sags - Short sags in the track should be taken out.

197. Standard Spiking (Line). - Rails shall be spiked with four spikes to each tie, ***

217. *** Tie plates shall be applied carefully, shoulders having full bearing against base of rail.

Train Involved

No. 125 consisted of road-switcher type diesel-electric unit 501, 8 cars and a caboose. As the train approached the derailment point, the engineer and front brakeman, the only crew members on the locomotive, were in the control compartment of the diesel-electric unit. The conductor and flagman were in the caboose. The brakes of the train had been tested and had functioned properly when used en route.

Damages

No. 125 stopped with the front end about 3,030 feet south of the derailment point. The 4th to 8th cars, inclusive, and the caboose, were derailed. They stopped in various positions on or near the track structure. The 5th car and the caboose were destroyed. The 4th, 6th, 7th and 8th cars were heavily damaged.

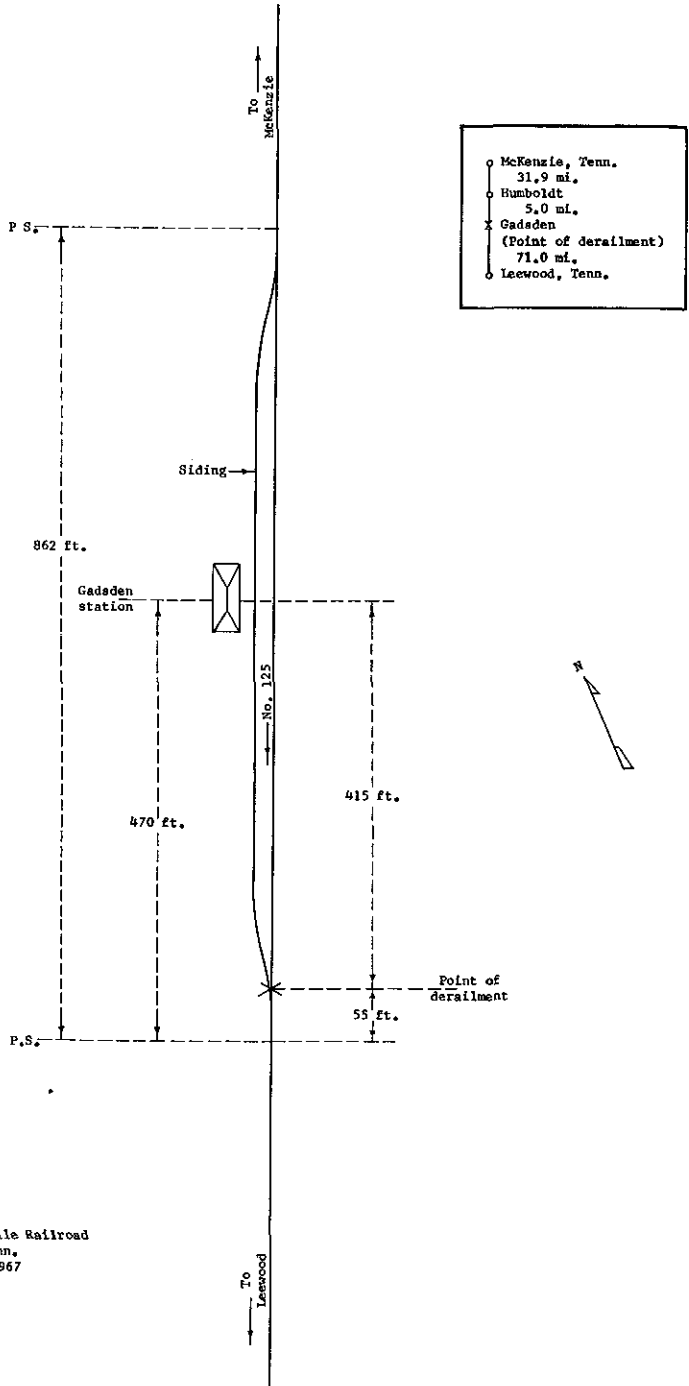
Other Factors

The accident occurred at 1:30 p.m., in clear weather.

The maximum authorized speed for freight trains in the area involved is 49 miles per hour.

The average daily movement in the accident area during the 30-day period immediately preceding the day of the accident was 9.7 trains.

According to their daily time returns, all the crew members of No. 125 had been on duty 6 hours 30 minutes at the time of the accident. Prior to the accident trip, the engineer had been off duty 11 hours 10 minutes. The conductor, front brakeman and flagman had been off duty 10 hours 55 minutes.



Louisville and Nashville Railroad
Gadsden, Tenn.
August 17, 1967