RAILROAD ACCIDENT INVESTIGATION

REPORT NO 4079

LOUISVILLE AND NASHVILLE RAILROAD COMPANY

ERIN, TENN

March 7, 1966

INTERSTATE COMMERCE COMMISSION

WASHINGTON

Summary

DATE	March 7, 1966		
RAILROAD	Louisville and Nashville		
LOCATION	Erin, Tenn.		
KIND OF ACCIDENT	Collision		
EQUIPMENT INVOLVED	Rail-defect detector car	Track motorcar	Freight train
TRAIN NUMBER			120
LOCOMOTIVE NUMBERS			Diesel-electric units 433, 552
CONSIST			21 cars, caboose
ESTIMATED SPEEDS	10-15 m.p.h.	10 m.p.h.	20 m.p.h.
OPERATION	Timetable, train orders		
TRACK	Single, 2°00' curve, 1.68 percent descending grade northward		
WEATHER	Clear		
TIME	9:40 a.m.		
CASUALTIES	1 killed, 1 injured		
CAUSE	Failure of the carrier and track car operators involved to provide adequate protection for movement of the rail-defect detector car and track motorcar.		

RECOMMENDATION

That the Louisville and Nashville Railroad Company immediately take action to insure adequate protection for movements of rail-defect detector cars, track motorcars, and similar on-track equipment.

INTERSTATE COMMERCE COMMISSION

RAILROAD SAFETY AND SERVICE BOARD

RAILROAD ACCIDENT INVESTIGATION

REPORT NO 4079

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MARCH 7, 1966

SYNOPSIS

On March 7, 1966, a Louisville and Nashville Railroad freight train struck a rail-defect detector car and a track motorcar near Erin, Tenn One maintenance-of-way employee was killed and another was injured

The accident was caused by failure of the carrier and track car operators involved to provide adequate protection for movement of the rail-defect detector car and track motorcar

LOCATION AND METHOD OF OPERATION

The accident occurred on that part of the Nashville Division extending between Paris, Tenn., and Memphis Jct , Ky., a distance of 128.3 miles. This is a single-track line over which trains operate by timetable and train orders. There is no block-signal system in use.

At Erin, 40.8 miles north of Paris, a siding 1,855 feet long parallels the main track on the east. The south siding-switch is 430 feet south of the station.

The first collision occurred on the main track 4,918 feet south of the Erin south siding-switch. The second collision occurred 441 feet north of the first collision.

Because of track curvature, vegetation along both sides of the railroad and hillsides on the east side of the track structure, the view between opposing movements approaching the accident area is restricted considerably.

Details concerning the track, carrier's maintenance-of-way rules, train, on-track maintenance-of-way equipment involved, damages and other factors are set forth in the appendix

Clarksville and Cumberland City, Tenn. are 27.5 and 5.9 miles north of Erin, respectively.

Description and Discussion

About 7 00 a.m. on the day of the accident, the chief operator and assistant operator of an L&N rail-defect detector car went on duty at Clarksville to test rails south of Cumberland City. Shortly thereafter, they left Clarksville on the detector car, which was designed to operate on highways and rails, and proceeded to Cumberland City, where they met a track force consisting of a foreman and three trackmen The track force was provided with a motortruck, which was also designed to operate on rails and highways. This motortruck is hereinafter referred to as a track motorcar. The track foreman had received instructions from an assistant track supervisor to meet the detector car and to take care of defective conditions detected by that car. According to the foreman's statements, the assistant track supervisor had also instructed him not to worry about train movements as the detector car had a radio and the chief operator would keep in radio contact with approaching trains The assistant track supervisor stated he could not recall mentioning the detector car radio to the track foreman or informing him that he need not be concerned with train movements. However, he further stated he had told the track foreman that the chief operator of the detector car would take care of the passage of trains

The detector car and track motorcar left Cumberland City about 7 45 a.m. Before leaving, the track foreman told the chief operator that the train dispatcher had informed him No. 178 was about ready to leave Paris and No. 120 would leave Paris soon afterward. According to the timetable, No. 178 and No. 120, northbound second-class freight trains, were due to leave Paris at 12 01 a.m. and 8 00 a.m., respectively. The detector car, closely followed by the track motorcar, proceeded southward on the main track at slow speed with the detector car equipment in operation to detect defects in the rails. The assistant operator made frequent unsuccessful attempts to communicate by radio with No. 178. Later, when the detector car was about one mile north of Erin, he was successful in establishing radio communication with

No. 178, and learned it was in the vicinity of Tennessee Ridge, Tenn., 4.7 miles south of Erin. The detector car immediately stopped testing the rails and proceeded with the track motorcar to Erin, where both cars entered the siding and cleared the main track for No. 178.

No. 178 passed Erin at 9 05 a.m. Shortly thereafter, the chief operator of the detector car obtained a copy of a lineup of train movements from the Erin operator. The lineup was issued by the train dispatcher at 9 06 a.m. and read in part as follows

* * *

No. 120 Eng 433 departed Paris 8 41 a.m.

* * *

The chief operator and assistant operator of the detector car read the lineup. The track foreman did not read the lineup. The chief operator stated he informed the track foreman about the contents of the lineup and they had estimated No. 120 would take about 1 hour 10 minutes, or until 9 51 a.m., to run from Paris to Erin. According to the track foreman, the chief operator did not discuss the lineup with him but said that "we could take it to the next place ahead of that train." The track foreman understood this remark referred to No. 120 but did not know the location of the place mentioned. He said that he did not request the chief operator to identify the place referred to and further said he relied on the chief operator to provide protection for the detector car and track motorcar by establishing radio communication with No. 120.

A few minutes after the chief operator obtained the lineup, the detector car and track motorcar reentered the main track at Erin and returned to the point where work had been stopped due to the approach of No. 178. The detector car, followed by the track motorcar, then proceeded slowly southward toward Erin. About 9.30 a.m., both cars stopped at a defective rail near the Erin south siding-switch. Approximately five minutes later, after it was decided the defective rail did not require immediate replacement, the detector car continued southward on the main track at 4 or 5 miles per hour with the track motorcar following at approximately 700 feet. The assistant operator was at the controls of the detector car and the chief operator was operating the rail testing

equipment. The track foreman was at the controls of the track motorcar. One of the trackmen was seated beside the track foreman and the other two trackmen were seated in the rear portion of the track motorcar.

As the detector car and track motorcar were proceeding southward from the Erin south siding-switch, they were occupying the main track on the time of No.120, which was due to leave Tennessee Ridge at 9 35 a.m., according to the timetable. The chief operator apparently thought the detector car and track motorcar could occupy the main track without protection against No. 120 because he anticipated this train would not approach Erin before approximately 9·51 a m. According to his statements, he made frequent unsuccessful attempts to communicate by radio with No. 120, and planned to have the detector car and track motorcar removed from the main track at a rail-highway grade crossing to clear No. 120. The assistant operator said he had no knowledge of the chief operator's plan for clearing the main track for No. 120. When the detector car was about one mile south of the Erin south siding-switch, the assistant operator saw the headlight of No. 120 suddenly come into view at about one-fourth mile. He immediately called a warning to the chief operator and reversed the movement of the detector car, backing it toward the track motorcar. As the detector car backed northward, the chief operator signalled the track motorcar to move in reverse also. The track foreman saw these signals, then saw the approaching train. He promptly reversed the movement of the track motorcar, and it accelerated to a speed of about 10 miles per hour as it moved northward. The assistant operator said the detector car accelerated to 10 or 15 miles per hour as it backed toward the track motorcar, and for a short period he thought it would accelerate sufficiently to avoid being struck by No. 120. However, he then saw that the detector car was about to overtake the track motorcar and that a collision was inevitable. He and the chief operator then jumped from the detector car. A few moments later, at 9 40 a.m. while the detector car was moving back on the main track at 10 to 15 miles per hour, it was struck by No. 120,4,918 feet south of the Erin south siding-switch. About this time, the track foreman realized the train was about to collide with the track motorcar, and he called a warning to the trackmen. The track foreman and apparently all three of the trackmen jumped from the track motorcar. Immediately afterward, while it was moving northward at approximately 10 miles per hour, the track motorcar was struck by

No. 120, 441 feet north of the collision between that train and the detector car.

One of the trackmen was killed and another was injured, apparently as a result of being struck by parts of the detector car or track motorcar.

No. 120, consisting of 2 diesel-electric units, 21 cars and a caboose, left Paris at 8 41 a.m., 41 minutes late and at the time shown in the lineup. None of the crew members had any knowledge of the lineup issued by the train dispatcher or of the operation of the rail-defect detector car and the track motorcar in this area. According to the engineer and fireman, No. 120 passed Tennessee Ridge at 9 35 a.m., on time. The engineer said that while the train moved on the descending grade north of Tennessee Ridge, he made three service brake applications and the speed was reduced to about 35 miles per hour nearing Erin. As the train moved on the curve located south of the accident area, the fireman and front brakeman saw the yellow beacon light on top of the rail-defect detector car come into view at a distance which they estimated to be 750 feet. At this time, however, they were unable to determine what the yellow light signified or whether it was on the main track, due to track curvature and to vegetation and hillsides alongside the track structure. The fireman crossed over the engineer's side of the control compartment and called his attention to what had been seen. By that time, the engineer saw the detector car ahead at a distance which he estimated to be 250 feet. He immediately applied the train brakes in emergency. A few moments later, when its speed was reduced to about 20 miles per hour, as estimated by the engineer, the train struck the rail-defect detector car and the track motorcar.

The investigation disclosed that the chief operator of the detector car and the track foreman left Cumberland City after obtaining a verbal lineup of train movements from the train dispatcher, instead of a written lineup as required by rule. As the rail-defect detector car and track motorcar proceeded toward Erin, the chief operator relied on the detector car radio to ascertain the location of No. 178 and to determine when the detector car and track motorcar should clear the main track for that train. While en route from Cumberland City, the assistant operator of the detector car made frequent unsuccessful attempts to establish communication with No. 178. Despite this, and the fact that No. 178 was overdue at Erin, the detector car and track motorcar continued southward on the main track without protection

against 178. When they were about one mile from Erin, the assistant operator finally established radio communication with No. 178 and learned it was closely approaching Erin. The detector car and track motorcar then proceeded rapidly to Erin and cleared the main track for No. 178 shortly before that train passed.

At Erin, the chief operator obtained a written lineup, which showed that No. 120 had left Paris at 8 41 a.m. The track foreman did not obtain a copy of the lineup as required, but relied on the chief operator of the detector car to determine when the detector car and track motorcar should clear the main track for No. 120. After reading the lineup, the chief operator estimated that No. 120 would not approach Erin before approximately 9.51 a.m. The detector car, with the track motorcar following, departed on the main track from the Erin south siding-switch at approximately 9 35 a.m., the time No. 120 was due to pass Tennessee Ridge, according to the timetable. As the detector car and track motorcar proceeded southward, the chief operator evidently relied on his estimate as to when No. 120 would approach Erin, and on the detector car radio, for protection against No. 120. He made frequent attempts to establish radio communication with that train, but was unsuccessful. Despite this, he took no action to clear the main track or provide flag protection against No. 120. That train passed Tennessee Ridge at 9 35 a.m., on time. Five minutes later, it struck the detector car and track motorcar, which were occupying the main track without protection.

Findings

It is evident that the accident resulted from the rail-defect detector car and track motorcar occupying the main track without protection on the time of No. 120, due primarily to the chief operator's reliance on use of the detector car radio for protection This accident, as in other similar accidents investigated by the Commission in the past, illustrates the hazards inherent in the reliance on the use of radio equipment for protection of train and other on-track movements.

CAUSE

This accident was caused by failure of the carrier and track car operators involved to provide adequate protection for movement of the rail-defect detector car and track motorcar.

RECOMMENDATION

It is recommended that the Louisville and Nashville Railroad Company immediately take action to insure adequate protection for movements of rail-defect detector cars, track motorcars, and similar on-track equipment.

Dated at Washington, D C , this 7th *day of* July 1966
By the Commission, Railroad Safety and Service Board

(SEAL)

H NEIL GARSON
Secretary

APPENDIX

Track

From the south on the main track there are, in succession, a tangent 1,706 feet long, a 1°00' curve to the left 2,135 feet, a tangent 215 feet, and a 2°00' curve to the right 1,322 feet to the first collision point and 76 feet northward. From the north there are, successively, a tangent 2,665 feet and the curve on which the accident occurred. The grade for northbound trains in the accident area is 1.68 percent descending.

Carrier's Maintenance of Way Rules

78(e) Protecting Moving Equipment. In protecting moving track cars or other roadway equipment, unless protection is provided by Rule 82, flagman must be kept not less than 100 rail lengths from the object protected, and at a further distance if conditions require. On approach of train flagman will place one torpedo on rail and flag train with red flag. By night, or by day when view is obstructed, lighted fusees must be used.

(Rule 82 provides for posting of Reduce Speed and Conditional Stop track signs, on authority to the Division Engineer only, or use of train order Form "W," to restrict movement of trains where track forces are working and track is unsafe for train movements.)

TRACK CARS

(Note. The term track car includes motor, truck, Hy-Rail, and all similar cars.)

126. Keeping Clear of Trains.-Track cars should be clear of main track ten minutes before trains are due, using time table and lineups to determine locations of trains. ***

Foremen and operators must use the utmost care in running their cars over the road. When possible they must have a written lineup showing movement of trains, and must read the lineup to other occupants of the car. ***

If the flagman hears or sees a train approaching, he must place a torpedo on the rail and proceed rapidly toward the approaching train, giving a stop signal.

Train

No. 120 consisted of road-switcher type diesel-electric units 433 and 552, coupled in multiple-unit control, 21 cars and a caboose. The brakes had been tested and had functioned properly when used en route. The headlight was lighted. As the train approached the accident area, the engineer, fireman and front brakeman were in the control compartment at the front of the first diesel-electric unit. The conductor and flagman were in the caboose.

On-Track Maintenance of Way Equipment Involved

The rail-defect detector car was a 1963 Ford Model motortruck owned and operated by the Louisville and Nashville Railroad Company. It had a special body (see photo appended to this report) and was equipped for movement on rails and highways. In addition to conventional tire mounted wheels, it had retractable flanged wheels at the front and rear for guides when operating on rails. The car was provided with magnetic-type equipment for detecting defective rails. It was 22 feet long between the front and rear bumpers and weighed about 16,000 pounds, with about 1,000 pounds carried on each pair of flanged wheels when operating on rails.

The track motorcar was a 1966 Ford model motortruck with a conventional cab and stake-type body. It was equipped for movement on highways or rails, the same as the detector car. It has a wheelbase of 11 feet and a maximum gross weight of 10,000 pounds.

Damages

No. 120 stopped with the front end 1,070 feet north of the first collision point. None of its equipment was derailed. The front of the first diesel-electric unit was slightly damaged.

The rail-defect detector car was derailed. It was overturned and stopped on the west side of the track structure, 171 feet north of the first collision point and about 15 feet from the main track. It was destroyed.

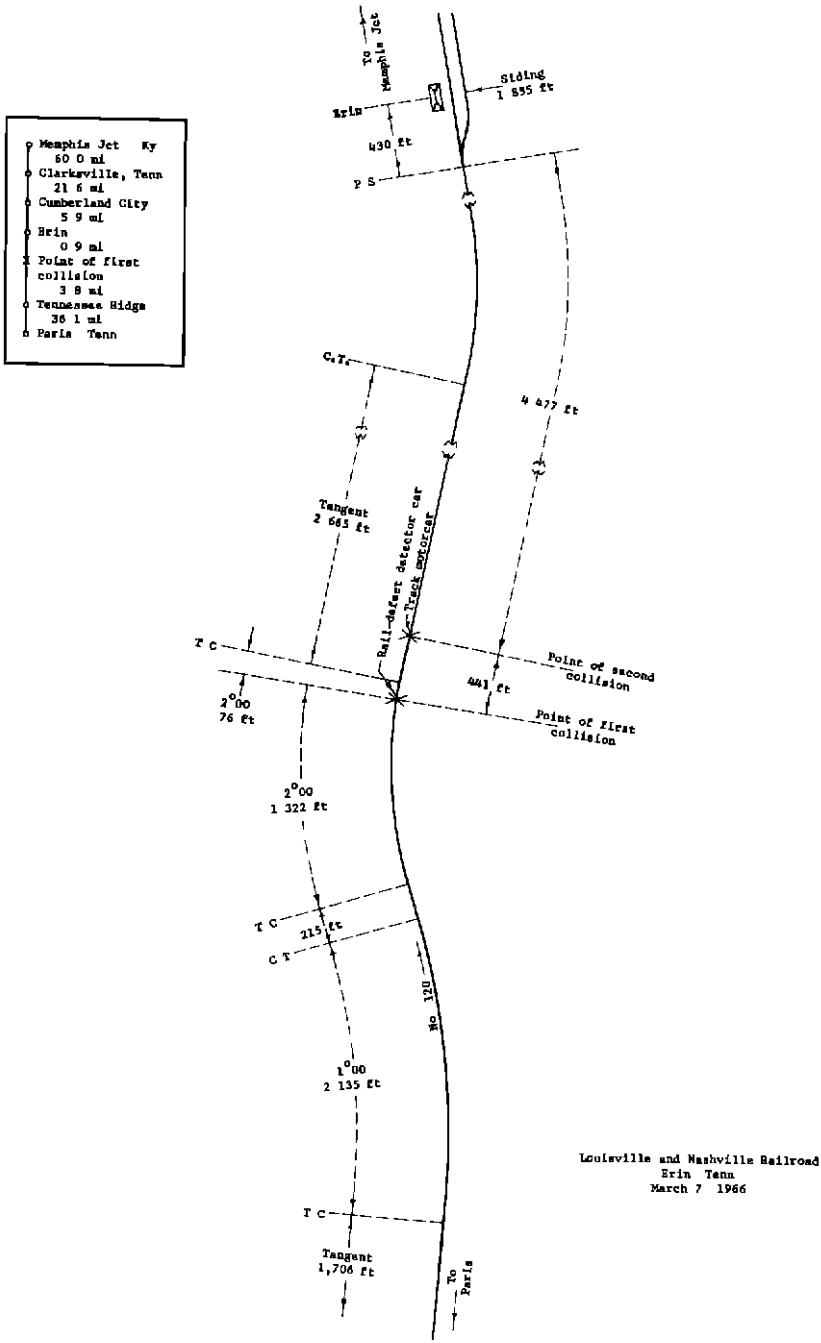
The track motorcar was derailed. It was overturned and stopped about 10 feet east of the main track, in the immediate vicinity of the second collision point. It was heavily damaged.

Other Factors

The accident occurred at 9·40 a.m., in clear weather.

The maximum authorized speed for freight trains in the accident area is 40 miles per hour.

Rail-defect detector car involved in accident



Louisville and Nashville Railroad
Erin Tenn
March 7 1966

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