RAILROAD ACCIDENT INVESTIGATION

REPORT NO. 4138

ILLINOIS CENTRAL RAILROAD COMPANY

MARKS, MISS.

NOVEMBER 13, 1967

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

Washington, D. C. 20591

Summary

DATE:	November 13, 1967	
RAILROAD:	Illinois Central	
LOCATION:	Marks, Miss	
KIND OF ACCIDENT:	Rear-end collision	
EQUIPMENT INVOLVED:	Freight train	Yard movement
TRAIN NUMBER:	Third 76	
LOCOMOTIVE NUMBERS:	Diesel-electric units 9340, 9180	Diesel-electric unit 9233
CONSISTS:	114 cars, caboose	11 cars
SPEEDS:	Standing	25-30 m p h
OPERATION:	Timetable, train orders; yard limits	
TRACK:	Single; tangent; level	
WEATHER:	Partly foggy	
TIME:	5:00 a m , dark	
CASUALTIES:	1 killed; 5 injured	
CAUSE:	Failure of the crew members to control the speed of the yard movement commensurate with visibility conditions, as required by the carrier's Rule 93, when it entered a dense fog patch and their view of the track ahead became obstructed A contributing cause was failure of the carrier to establish explicit rules or instructions governing the speed of trains and yard movements within yard limits	
RECOMMENDATION:	That the Illinois Central Railroad reconcile its rules and instructions governing permissible speeds within yard limits so that yard movements and trains required to move prepared to stop will not be authorized to move at speeds which prevent stopping short of obstructions when seen ahead by crew members	

RAILROAD ACCIDENT INVESTIGATION

REPORT NO. 4138

ILLINOIS CENTRAL RAILROAD COMPANY

NOVEMBER 13, 1967

Synopsis

On November 13, 1967, a rear-end collision occurred between a freight train and a yard movement on the Illinois Central Railroad at Marks, Miss. The conductor of the freight train was killed and the flagman of that train was injured. All four crew members of the yard movement were also injured.

The accident was caused by failure of the crew members to control the speed of the yard movement commensurate with visibility conditions, as required by the carrier's Rule 93, when it entered a dense fog patch and their view of the track ahead became obstructed. A contributing cause was failure of the carrier to establish explicit rules or instructions governing the speed of trains and yard movements within yard limits.*

*The Federal Railroad Administration has no jurisdiction over the construction and maintenance of railroad roadway, track, or bridges, track clearances, or grade crossing protection, nor has it any jurisdiction over fixing the numbers or qualifications of railroad employees or prescribing operating rules.

Location and Method of Operation

The accident occurred on that part of the Memphis Division extending between Gwin and Lake Jct., Miss , 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

Lambert and Marks are, respectively, 77.7 and 81.5 miles north of Gwin Between points a short distance north of the Marks station and south of the Lambert station, the main track is within yard limits

The collision occurred on the main track, within yard limits, 1 3 miles south of the Marks station

The main track is tangent and practically level a considerable distance north and south of the collision point.

Carrier's Operating Rules

Reduced Speed - Proceed prepared to stop short of train or obstruction

93. Within yard limits the main track may be used, clearing the time of first class trains

Second and third class, extra trains and engines must move within yard limits prepared to stop unless the main track is seen or known to be clear. In case of accident, the responsibility rests with approaching train or engine.

Trains and engines occupying the main track within yard limits must be protected by flagman during fogs, *** Trainmen and yardmen will be held responsible for any failure to exercise reasonable precaution in protecting their trains and engines under such conditions

99 ***

When a train stops under circumstances in which it may be overtaken by another train, the flagman must go back immediately with flagman's signals a sufficient distance to insure full protection, placing two torpedoes, and when necessary, in addition, displaying lighted fusees ***

Carrier's Timetable Special Instructions

According to instructions in the carrier's timetable, the maximum authorized speed for yard movements within the Lambert-Marks yard limits is 45 miles per hour

The Accident

Train Third 76

Third 76, a northbound second-class freight train consisting of two diesel-electric units, 114 cars and a caboose,

left Gwin at 11:45 p.m., 7 hours 45 minutes late the day of the accident, after receiving the prescribed brake test About 4:30 a m the following day, after passing the yard-limit sign south of the Lambert station, the train stopped within yard limits on the main track at Marks The rear end stopped 1.3 miles south of the Marks station The front brakeman, the only crew member at the front of the train other than the engineer, detached the locomotive from the first car, and the locomotive proceeded to an auxiliary track to pick up several cars. About 30 minutes later, apparently while the locomotive was returning to the train with these cars, the caboose of Third 76 was struck from the rear by a yard locomotive hauling 11 cars The engineer and front brakeman of Third 76 were unaware of the collision until about fifteen minutes after it occurred

According to statements of its crew members, Third 76 moved through patches of light fog while en route from Gwin to Brazil, 11 8 miles south of Lambert, but did not encounter any fog thereafter The conductor and flagman remained in the caboose when the train stopped at Marks The weather was clear at that time, according to the engineer, front brakeman and flagman Under the existing circumstances, the flagman was not required by rules of the carrier to provide any protection against following trains A provision of the carrier's Rule 93, however, required the flagman to provide such protection if his train was stopped within the Marks-Lambert yard limits during a fog

About thirty minutes after Third 76 stopped at Marks, the conductor saw the headlight of a yard locomotive approaching on the tangent track to the rear of his train He then called to the flagman and warned him that it appeared the approaching locomotive might collide with the rear of their train The flagman said he looked southward upon hearing this and saw that the yard locomotive was rapidly approaching at a distance of about 1,500 feet He hurried to the rear platform of the caboose and jumped to the ground alongside, after warning the conductor to leave the caboose also Soon afterward, while it was moving at 30 to 35 miles per hour, as estimated by the flagman, the yard locomotive struck the rear end of Third 76 before the conductor left the caboose According to the flagman, he did not look southward from the caboose between the time his train stopped at Marks and the time that the conductor warned him of the approach of the yard movement

Yard Movement

At 6:00 p m the day before the accident, a yard crew comprised of an engineer, conductor and two brakemen reported on duty at Marks and began to perform switching operations with a road-switcher type diesel-electric unit At approximately 2:30 a m the following day, after having made a previous trip to Lambert, this locomotive again left Marks and proceeded to Lambert, where it performed further switching operations on several auxiliary tracks The conductor and engineer said these operations were performed under clear

weather conditions and their locomotive had not encountered any fog when it moved from Marks to Lambert.

About 4:20 a m., while the yard locomotive was on an auxiliary track at Lambert, the crew members saw Third 76 pass on the main track. They were unaware that it was going to stop at Marks to pick up cars Soon after Third 76 passed, the yard locomotive completed the required switching at Lambert and was coupled to a cut of 11 cars for the return trip to Marks. These cars had been assembled by switching with air, and one of the yard brakemen said he had observed that their air brakes were functioning The air brake system of the locomotive and 11 cars, however, was not tested before departure from Lambert, as required by the Power Brake Law of 1958. The Federal Railroad Administration has taken appropriate action with respect to this violation of law

The yard movement left Lambert about 4:55 a m. and proceeded northward on the main track, within yard limits, en route to Marks. The engineer was at the controls on the east side of the control compartment, which was at the south, or rear, end of the locomotive. The conductor and one brakeman were seated on the west side of the control compartment and were maintaining a lookout ahead with the engineer. The other brakeman was seated in the middle of the control compartment and was unable to see the track ahead.

Statements of the crew members maintaining a lookout ahead indicate that soon after leaving Lambert the yard movement began to encounter patches of light fog, which did not materially restrict visibility They stated that it then entered a patch of dense fog, upon reaching a point about 1,500 feet south of where the rear end of Third 76 was standing on the main track at Marks. According to the engineer, the speed of the yard movement was between 35 and 38 miles per hour at this time He said that he then reduced power and initiated a five-pound reduction of brake pipe pressure, because he did not know how far the dense fog extended along the track and did not wish to over-run a switch leading to an auxiliary track at Marks. These actions, however, did not materially reduce the speed of the yard movement as it proceeded through the dense fog Statements of the crew members maintaining a lookout ahead indicate that the dense fog patch covered the main track throughout a distance of 825 to 1,050 feet. Their statements further indicate that they felt no concern about the speed at which the yard movement proceeded through this fog patch, although their view was materially restricted and they did not know whether the main track was clear. According to the statements of the crew members maintaining a lookout ahead, when their locomotive emerged from the patch of dense fog they suddenly saw the caboose of Third 76 standing on the main track at a distance of 450 to 675 feet The engineer estimated that the speed had been reduced to between 30 and 34 miles per hour by this time, and said he promptly applied the brakes in emergency He and one of the brakemen then left the control compartment and alighted from the locomotive shortly before it collided with the rear end of Third 76 The engineer

said he glanced at the speed recorder before leaving the control compartment and saw that it was indicating a speed of 18 miles per hour According to the other crew members, however, the emergency brake application did not reduce the speed of the yard movement to below 25 or 30 miles per hour before the collision From all indications, the engineer apparently mis-read the speed recorder when he glanced at it before leaving the control compartment, and the other crew members' estimates of the speed of the yard movement at the time of the collision were relatively accurate

Damages

The caboose and last six cars of Third 76 were derailed. They stopped in various positions on or near the track structure The caboose caught on fire after the collision, apparently as result of fire spreading from its stove It was destroyed, and the six derailed cars were heavily damaged.

The yard movement stopped with its front end 262 feet north of the collision point All trucks of the locomotive and first car, and the front truck of the second car, were derailed The locomotive stopped upright in a leaning position on the east side of the main track structure, at a 45-degree angle to the track It was heavily damaged. The first car was also heavily damaged, and the second, fourth and fifth cars were somewhat damaged. The latter two cars were not derailed

The monetary damage to equipment and track was $139,284 according to the carrier's estimate

Casualties

The conductor of Third 76 was killed, and the flagman of that train was slightly injured as a result of jumping from the caboose before the collision

All four crew members of the yard movement were injured

Train Crews Hours of Service

The crew members of Third 76 had been on duty 7 hours 30 minutes at the time of the accident, after having been off duty 15 hours 30 minutes

The crew members of the yard movement had been on duty 11 hours at the time of the accident, after having been off duty in excess of 11 hours.

Application of Carrier's Operating Rules and Instructions

According to the carrier's timetable special instructions, the maximum authorized speed for yard movements within the Lambert-Marks yard limits is 45 miles per hour Under a provision of the carrier's Rule 93, however, yard movements and trains other than those of the first class must move within yard limits prepared to stop, unless the main track is seen or known to be clear. According to the carrier's

interpretation of this rule provision, yard movements and trains other than those of the first class must move within yard limits at Reduced Speed, prepared to stop short of a train or obstruction.

Under other provisions of Rule 93, the flagman of Third 76 was not required to provide protection against following movements after his train stopped within yard limits at Marks, unless it was stopped there during a fog. The carrier did not charge the flagman of Third 76 with a violation of Rule 93. Hence, the carrier apparently did not consider that the flagman was required by rule, under the existing circumstances, to provide protection against following trains after his train stopped at Marks

Analysis of Accident

Third 76 stopped within yard limits at Marks during clear weather and, under the circumstances, the flagman was not required to provide protection against following trains. Thus, he did not provide such protection and remained in the caboose with the conductor Some time within thirty minutes after the locomotive was detached from the train to pick up cars, a patch of dense fog formed or drifted over the main track to the rear of the train. It apparently covered an area between 1,500 and 675 to 450 feet south of the caboose. The flagman did not look southward from the caboose after stopping at Marks and therefore did not see or notice the dense fog patch There is some question as to whether he would have been able to see this fog patch had be looked, due to darkness and the distance between the fog and the caboose. In any event, the flagman remained in the caboose and was not providing any protection against following movements at the time of the collision The flagman apparently was not required by the carrier's rules to provide such protection, due to the 450 to 675 feet of visibility between the fog patch and the rear of his train, and the provision of Rule 93 and the carrier's interpretation thereof that require all yard movements and trains other than those of the first class to move within yard limits at Reduced Speed, prepared to stop short of a train or obstruction, unless the main track is seen or known to be clear

The yard movement was proceeding northward from Lambert at 35 to 38 miles per hour, somewhat below its maximum authorized speed, when it entered the patch of dense fog south of where the rear end of Third 76 was standing at Marks. It then gradually reduced speed to between 30 and 34 miles per hour, according to the engineer, while moving through the fog. Although the crew members' view of the main track was materially restricted at this time and they had no knowledge as to whether the main track was clear, apparently neither the engineer nor any other crew member felt any concern about the speed or the safety of the yard movement after entering the fog. It is evident that the yard movement continued through the fog at excessive speed, and that at this time it was not moving prepared to stop short of an obstruction or train, as required by the carrier's Rule 93 Thus, when it emerged from the fog and the crew members saw the caboose of Third 76 a short distance ahead,

the yard movement was moving too fast to stop short of the caboose, resulting in the collision. Had the engineer or any other crew member taken prompt action to reduce the speed of the yard movement in the fog, commensurate with visibility conditions, the accident probably would have been averted

Discussion of Carrier's Rules and Instructions

Under provisions of Rule 93, the flagman of Third 76 was not required to provide protection against following trains when his train stopped within yard limits, and under clear weather conditions, at Marks. A provision of this rule required the flagman to provide such protection, however, if his train was stopped at Marks during a fog Although a patch of dense fog apparently drifted or formed over the main track at a relatively short distance to the rear of Third 76 some time after that train stopped at Marks, the carrier apparently considered that the circumstances were such as not to require the flagman of Third 76 to provide protection against following trains Thus, it did not charge him with a violation of that rule In view of this, the question arises as to when the fog provision of Rule 93 is applicable. The wording of Rule 93 is indefinite in this respect as it permits flagmen to exercise a wide latitude of judgement when deciding whether protection against following movements should be provided under unfavorable conditions Without specific guidelines or rules to follow, flagmen may or may not provide such protection when it is desirable to do so and this is not conducive to safe railroad operations Consequently, there is an apparent need for the carrier to revise its Rule 93 to provide specific instructions concerning the circumstances under which flagmen of trains stopped within yard limits are required to provide protection against following movements

A provision of Rule 93 requires yard movements and all trains other than those of the first class to move within yard limits prepared to stop On the other hand, a timetable special instruction prescribes 45 miles per hour as the maximum authorized speed for all yard movements in the territory involved, and 49 miles per hour as the maximum authorized speed for all trains except passenger and express trains, which do not normally operate in this territory A question arises here as to whether a yard movement or train operating at its timetable maximum authorized speed within yard limits is moving prepared to stop as required by Rule 93, because the maximum authorized speed would not, in all cases, permit stopping short of improperly lined switches, slides, high water, washouts, broken rails, and the like when observed by the enginemen Consequently, the timetable special instruction and the wording of Rule 93 are conflicting and indefinite concerning speed requirements If it is the intent of the carrier to have trains or yard movements operate within yard limits prepared to stop, a slow speed, such as 10 or 15 miles per hour, should be prescribed in Rule 93 as the maximum authorized speed, so enginemen would have no doubt concerning what the rule required

Findings

1 At the time of the accident, Third 76 was stopped under conditions which did not require protection against following trains, as the sight distance between the rear of Third 76 and the dense fog patch was sufficient to permit a following train to stop short of a collision if it was moving prepared to stop, as required by the carrier's Rule 93

2. The crew members failed to control the speed of the yard movement commensurate with visibility conditions, as required by the carrier's Rule 93, when their view of the main track became restricted by the dense fog patch.

3. Because of its excessive speed, there was insufficient braking distance for the yard movement to stop short of a collision when it emerged from the dense fog patch and the crew members saw the rear end of Third 76 standing on the main track ahead

4. Although the brakes of the yard movement had not been tested as prescribed by law, they apparently functioned as intended when applied in emergency before the collision

5. The carrier's rules and instructions are indefinite with respect to permissible speeds within yard limits

While Rule 93 requires yard movements and trains other than those of the first class to move within yard limits prepared to stop, timetable instructions permit them to move at speeds which prevent stopping short of obstructions when seen ahead by crew members. If the carrier wishes trains and yard movements to operate within yard limits prepared to stop, a maximum authorized speed such as 10 or 15 miles per hour (or less for foggy weather conditions), should be specified in Rule 93 and in the timetable special instructions so that enginemen will have no misunderstanding as to what is required.

Cause

The primary cause of this accident was failure of the crew members to control the speed of the yard movement commensurate with visibility conditions, as required by the carrier's Rule 93, when it entered a dense fog patch and their view of the track ahead became obstructed A contributing cause was failure of the carrier to establish explicit rules or instructions governing the speed of trains and yard movements within yard limits

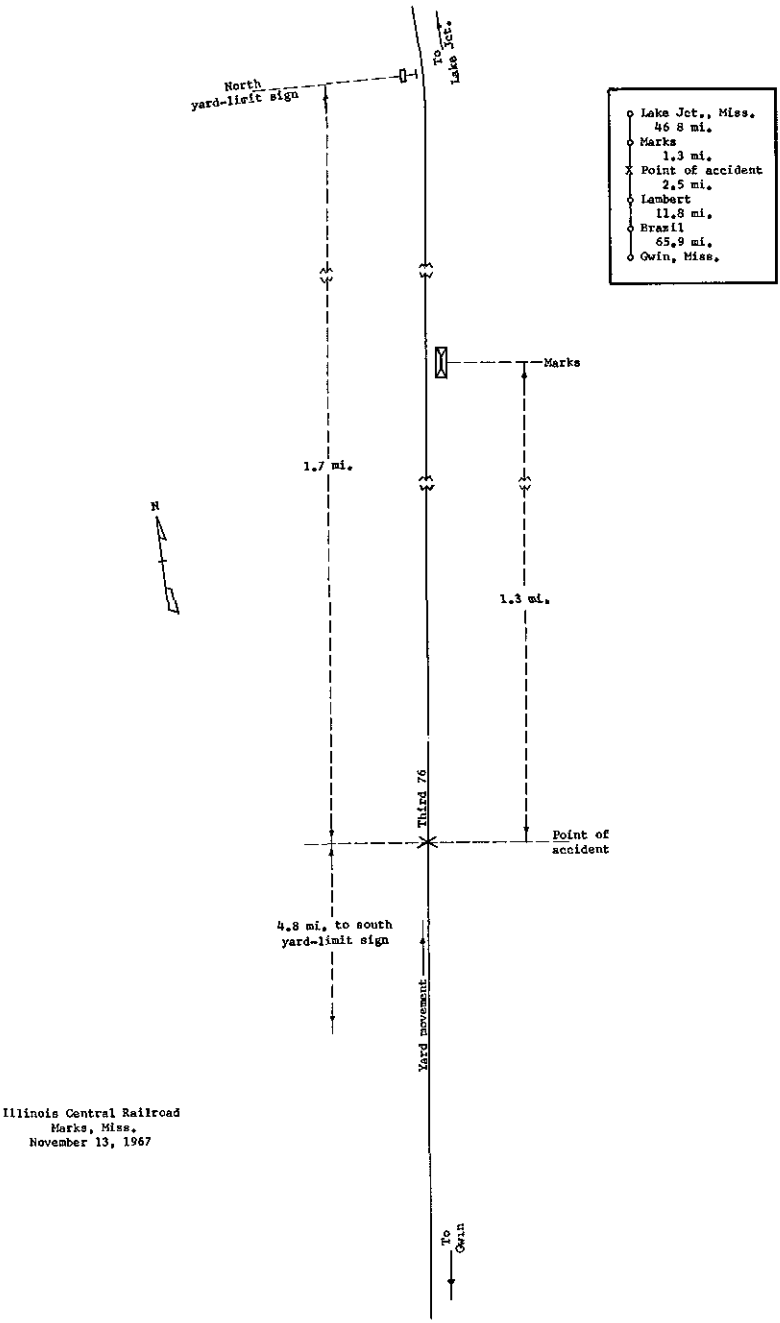
Recommendation

It is recommended that the Illinois Central Railroad reconcile its rules and instructions governing permissible speeds within yard limits so that yard movements and trains required to move prepared to stop will not be authorized to move at speeds which prevent stopping short of obstructions when seen ahead by crew members

Dated at Washington, D. C., this 10th day of October 1968
By the Federal Railroad Administration, Railroad Safety Board.

Bette E Holt
Acting Executive Secretary

(SEAL)



Illinois Central Railroad
Marks, Miss.
November 13, 1967