RAILROAD ACCIDENT INVESTIGATION

REPORT NO 4134

ERIE LACKAWANNA RAILROAD COMPANY

PASSAIC, N. J.

AUGUST 29, 1967

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

Washington

Summary

DATE:	August 29, 1967	
RAILROAD:	Erie Lackawanna	
LOCATION:	Passaic, N. J.	
KIND OF ACCIDENT:	Collision	
EQUIPMENT INVOLVED:	Locomotive without cars	Locomotive with 4 cars
TRAIN NUMBERS:	X-150	Extra 448 East
LOCOMOTIVE NUMBERS:	Diesel-electric unit 919	Diesel-electric unit 448
ESTIMATED SPEEDS:	30 m.p.h	3 m p h.
OPERATION:	Signal indications	
TRACKS:	Double; 2°53' curve; 0.48 percent descending grade eastward	
WEATHER:	Clear	
TIME:	5:45 p m	
CASUALTIES:	3 killed; 4 injured	
CAUSE:	Locomotive with four cars occupying a main track without authority and proceeding against the current of traffic without flag protection, due to failure of the crew members to reach a common understanding concerning the protection to be provided	

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Synopsis

On August 29, 1967, a collision occurred between a locomotive without cars and a locomotive with four cars on the Erie Lackawanna Railroad at Passaic, N J , resulting in death to three, and injury to four, train-service employees

The accident was caused by the locomotive with four cars occupying a main track without authority and proceeding against the current of traffic without flag protection, due to failure of the crew members to reach a common understanding concerning the protection to be provided

Location and Method of Operation

The accident occurred on that part of the New York Division extending between Port Jervis, N Y , and Hoboken, N J , a distance of 87 2 miles In the accident area this is a double-track line over which trains moving with the current of traffic operate by signal indications of an automatic block-signal system Trains moving against the current of traffic operate by train order, or under flag protection as prescribed by Rule 99 From the north, the main tracks are designated as No 1 westward and No 2 eastward

At Passaic, N J , 10 6 miles west of Hoboken, a siding 1.0 mile in length parallels track No 2 on the south The east siding-switch is trailing point for eastbound movements on track No 2 and is 2,934 feet west of the station. A spur track, hereinafter referred to as the Continental Can spur track, is on the south side of track No. 2 at Passaic as indicated in the sketch appended to this report. A crossover connects these tracks The east crossover-switch is trailing point for eastbound movements on track No 2 and is 2,357 feet east of the station

The collision occurred on track No 2, 275 feet west of the station at Passaic

Automatic signals 126, 120, 112 and 102, governing eastbound movements on track No. 2, are 1 9 miles west, 1.3 miles west, 2,913 feet west, and 2,107 feet east of the collision point, respectively

Because of track curvature and vegetation on the south side of the track structure, the view between opposing movements nearing the collision point is considerably restricted

A wayside telephone is on the south side of the track structure about 285 feet west of the east switch of the Passaic siding

Details concerning the tracks, signals, carrier's operating rules, damages, and other factors are set forth in the appendix.

Description and Discussion

Ridgewood Jct, and Bergen Jct , N J. are located, respectively, 20.2 and 3 0 miles west of Hoboken A second line of the carrier, designated as the Bergen County line, extends between Ridgewood Jct and Bergen Jct. According to the timetable, No X-150, an eastbound first-class train, is scheduled to depart from WC Tower, 3 3 miles west of Ridgewood Jct , at 5:25 p m , to pass Ridgewood Jct at 5:29 p m , and to arrive at Hoboken at 5:59 p m. No time is shown for this train at other points No X-150 is a first-class equipment train consisting of a locomotive with or without cars, and is operated without scheduled intermediate stops between WC Tower and Hoboken It is normally routed from WC Tower to Hoboken via the Bergen County line,

but may be operated via the Port Jervis - Hoboken main line route when necessary, depending upon traffic conditions On the day of the accident, the operator at Ridgewood Jct arranged with the train dispatcher to route X-150 from WC Tower to Hoboken via the Port Jervis - Hoboken line

No X-150 consisted of road-switcher type diesel-electric unit 919 without cars, operating in reverse It left WC Tower at 5:22 p m the day of the accident with the engineer, fireman, conductor and brakeman in the control compartment The fireman, a qualified engineer, was at the controls on the north side of the control compartment This locomotive passed Ridgewood Jct at 5:28 p m and continued eastward on the Port Jervis - Hoboken line, instead of via the Bergen County line Soon afterward, while moving on track No 2, it successively passed eastward signals 126, 120 and 112 The brakeman, the only surviving crew member, said that because of the short hood adjacent to the control compartment in the direction of movement and his position in the center of this compartment, he could not see the wayside signals However, he heard the other crew members call to each other the aspects displayed by the signals He could not remember what aspects were called while approaching signal 126 and 120 but remembered that shortly before the accident, apparently as the locomotive was passing the Passaic siding and was approaching signal 112, the engineer and fireman called an Approach aspect to each other Shortly thereafter, the locomotive passed signal 112 and the Passaic siding, which was occupied by the rear portion of Extra 448 East, a local freight train The brakeman said the other crew members made no unusual comments as the locomotive moved in the vicinity of the siding Soon after passing the east siding-switch and while moving eastward on track No 2 in the block of signal 112 at a speed of about 30 miles per hour, as estimated by the brakeman, the locomotive entered the curve on which the accident occurred Shortly thereafter, the brakeman saw or heard the fireman apply the locomotive brakes in emergency Moving to the south side of the control compartment, he looked ahead, and saw a locomotive with cars approaching on track No 2 a short distance ahead Immediately afterward, about 5:45 p m., before its speed was materially reduced, No X-150 collided with the locomotive of Extra 448 East, 275 feet west of the station ot Passaic

The engineer, fireman and conductor of No X-150 were killed The brakeman of this train, and the engineer, front brakeman and flagman of Extra 448 East were injured

Extra 448 East, an eastbound local freight train, had entered the Passaic siding at approximately 5:15 p m to clear track No 2 and to perform switching operations at Passaic Soon afterward, the locomotive left the train on the siding, reentered track No 2 at the east siding-switch and proceeded eastward to the Continental Can spur track ahead of No 1172, an eastbound first-class passenger train due to leave Clifton, N J , 1 6 miles west of Passaic, at 5:29 p m The conductor and front brakeman had previously discussed the switching operations required at Passaic and had agreed that after the locomotive entered the Continental Can spur track, it would remain clear of track No 2 until

No 1172 passed They had further agreed that after completi of the switching operations on the spur track, the locomotive would promptly return to the Passaic siding against the current of traffic on track No. 2, if sufficient time remained for it to reenter the siding and clear track No 2 before No 1122, another eastbound first-class passenger train, was due leave Clifton at 6:18 p.m. When discussing the work to be performed with the front brakeman, the conductor decided that, due to the flagman's inexperience, he would remain at the Passaic siding, instead of the flagman, to provide flag protection until the locomotive returned to the siding against the current of traffic on track No 2 About the same time, the front brakeman reminded the conductor to telephone the train dispatcher and obtain authority for the locomotive to occupy track No 2 for its movement to the Continental Can spur track and for the return to the Passaic siding. Neither the conductor nor the front brakeman was aware at the time that No X-150 would be routed from WC Tower to Hoboken via the Port Jervis - Hoboken main line

The locomotive of Extra 448 East departed from the east switch of Passaic siding about 5:30 p.m and proceeded eastward on track No. 2 approximately one mile and then entered a crossover connecting to an industrial spur track at the Continental Can Plant About 5:35 p.m. after No 1172 passed, crew members with the locomotive completed switching operations on the spur track and crossover connection to track No 2 during which they assembled a cut of outbound cars and then returned other cars to designated locations in the plant The locomotive with one car then proceeded to track No 2 and stopped on that track about 550 feet east of signal 102 and a short distance east of the crossover The locomotive was coupled to a cut totalling four cars and about 5:40 p m after the air hose were coupled the locomotive and cars proceeded westward against the current of traffic enroute to Passaic siding. Soon afterward it passed signal 102 and entered the adjacent block governed by eastward signal 112. The engineer, front brakeman and flagman were in the control compartment at the east or rear end of the locomotive The fireman had not accompanied the locomotive. With the permission of the engineer he had previously alighte from the locomotive and proceeded to the restroom of an adjacent industrial plant before the locomotive departed from the siding The fireman stated that when he returned to the vicinity of the siding the conductor emerged from the caboose and proceeded toward the telephone near the east siding switch The crew members on the locomotive assumed that the conductor had obtained authority from the train dispatcher for the return movement against the current of traffic and that he was providing flag protection for this movement There was no railroad telephone in the vicinity of the crossover near the Continental Can spur track and none of the crew members with the locomotive considered, under the circumstances, that it was necessary to use the commercial telephone in the plant to communicate with the train dispatcher and obtain authority for the return movement to the siding or information as to other trains Hence, they had no knowledge of the operation of No X-150 on track No. 2 in this vicinity

After passing signal 102 and entering the adjacent block, the locomotive with four cars entered the east end of the curve involved while moving at 15 to 20 miles per hour, as estimated by the engineer As it proceeded on the curve, the front brakeman saw the locomotive of No X-150 come into view at a distance which he estimated as several hundred feet He immediately called a warning and the engineer, who was unable to see the opposing movement due to track curvature, the engine hood, and his position on the north side of the control compartment, promptly applied the automatic brake in emergency A few moments later, as it was moving westward against the current of traffic on track No 2, the locomotive with four cars collided with the opposing locomotive According to the crew members, the speed of the locomotive with four cars was reduced to about 3 miles per hour at the time of the collision

The engineer of Extra 448 East said that before his train entered the Passaic siding on the day of the accident he saw the conductor and front brakeman talking in the locomotive control compartment but was unaware of the topics of their conversation After the locomotive was detached from the train on the siding, it proceeded eastward on track No 2 to the Continental Can spur track without the engineer having been specifically informed of the agreement reached by the conductor and front brakeman regarding the switching to be performed at the spur track and the return of the locomotive to the siding According to the engineer's statements, he did not make any inquiries concerning the return of the locomotive to the siding, because it was the usual practice on this local freight run for the locomotive to return from the spur track to the siding under flag protection after No 1172 or No 1122 passed Passaic, depending upon the time that the switching operations were completed on the spur track

The conductor of Extra 448 East said that after the locomotive left the train on the Passaic siding and proceeded eastward on track No 2 toward the Continental Can spur track, he telephoned the train dispatcher and informed him of the movement being made by the locomotive He further informed the dispatcher that the locomotive would return against the current of traffic on track No. 2 to the siding after No 1172 passed Passaic In reply, the dispatcher told the conductor that No X-150 was following No 1172 on track No 2 at about a 10-minute interval In addition, the dispatcher, who had assumed the conductor intended to accompany the locomotive to the Continental Can spur track, instructed him that the locomotive should not return to the siding from the spur track until after No X-150 passed Passaic The conductor did not inform the dispatcher that locomotive 448 already had departed The conductor stated that after completing his conversation with the train dispatcher, he stationed himself on track No 2 at a point a few feet east of signal 112 to provide flag protection for the return movement of the locomotive to the siding He stated that he assumed one of the crew members with the locomotive at the Continental Can spur track would telephone the train dispatcher and thus learn of the movement of No X-150 via track No 2 and would

not return to the siding until after that train passed Hence, he further assumed that it was unnecessary to provide flag protection for his locomotive against No X-150. He said that he was standing a short distance east of signal 112 when No X-150 approached, and that at this time he signalled the engineer to reduce speed and watch out for crew members adjacent to the track. He said that he did not see or hear any acknowledgement of these signals He further said that No X-150 then passed signal 112 and the location where he was standing at unreduced speed, and continued eastward to the curve where the collision occurred According to the conductor, it was customary for one of the crew members performing switching operations at the Continental Can spur track to call the train dispatcher from a private telephone at the Continental Can Plant and obtain information concerning eastbound movements on track No 2 before the locomotive reentered that track for the return trip to Passaic siding. He further said he had instructed the front brakeman to call the dispatcher from the private telephone at the Continental Can Plant However, the front brakeman said he had not received such instructions The train dispatcher said he had received calls from crew members on the private telephone at the plant on previous occasions only when they had not received authority to return or when requesting him to transmit instructions to the flagman left to protect their return movement

The investigation disclosed that signals 120 and 112 apparently displayed Approach-Medium and Approach aspects, respectively, for No X-150 and this train was proceeding eastward in the block of signal 112 in accordance with its governing indication at the time of the collision. It further revealed that because of the lack of a common understanding between crew members the locomotive of Extra 448 East reentered track No 2 at the Continental Can spur track and proceeded westward against the current of traffic without authority from the train dispatcher, as required, or without members of the crew being aware of the operation of No. X-150 on that track It is evident that the conductor did not at any time provide proper flag protection for the return movement When he learned of the operation of No X-150, he did not advise the dispatcher of the location of his locomotive but erroneously assumed that one of the crew members with the locomotive would telephone the train dispatcher from the Continental Can Plant and thus learn of the operation of No X-150 on this line, which varied from the usual traffic pattern He further erroneously assumed that the locomotive would remain clear of track No. 2 until No X-150 had passed and made no effort to provide flag protection while the locomotive with four cars returned to the siding against the current of traffic, resulting in the collision It is probable that had the conductor previously reached a proper understanding with his engineer and other crew members as to the procedure to be followed for protection of the locomotive when it returned to the Passaic siding, the accident would have been averted

Findings

1 No X-150 was being operated with the current of traffic in accordance with applicable rules and regulations

2 The opposing locomotive with four cars was proceeding against the current of traffic without authority from the train dispatcher and without flag protection, as required

3 The locomotive with four cars was moving without the required authority and flag protection due to failure of the crew members involved to reach a common understanding concerning the protection to be provided for the movement against the current of traffic

Cause

The accident was caused by the locomotive with four cars occupying a main track without authority and proceeding against the current of traffic without flag protection, due to failure of the crew members to reach a common understanding concerning the protection to be provided

Dated at Washington, D C , this 28th day of June 1968
By the Federal Railroad Administration
Railroad Safety Board

Bette E Holt
Acting Executive Secretary

(SEAL)

Appendix

Track

From the west on track No 2 there are, in succession, a tangent 1 3 miles in length and a 2°53' curve to the right 1,188 feet to the accident point and 544 feet eastward From the east on track No 2 there are, in succession, a tangent of considerable length, a 1°00' curve to the right 683 feet, a tangent 797 feet, and the curve on which the accident occurred The average grade in this area is 0 47 percent descending eastward

Signals

Automatic signals 126, 120, 112 and 102 are of the color-light type and are approach lighted The aspects applicable to this investigation and the corresponding indications and names are as follows:

Signal	Aspect	Indication	Name
126	Green	Proceed	Clear
120 126	Yellow-over green	Approach next signal at not exceeding medium speed	Approach-Medium
112 120	Yellow	Prepare to stop at next signal. Train exceeding medium speed must at once reduce to that speed	Approach
102 112	Red-over-No. Plate	Stop: then proceed at restricted speed	Stop-and-Proceed

The signal circuits are so arranged that when the block of signal 102 is occupied and the blocks of signals 120 and 112 are unoccupied, signals 120, 112 and 102 display Approach-Medium, Approach, and Stop-and-Proceed aspects, respectively, to an approaching eastbound train When the block of signal 112 is occupied and the blocks of signals 126 and 120 are unoccupied, signals 126, 120 and 112 display Approach-Medium, Approach, and Stop-and-Proceed aspects, respectively

Carrier's Operating Rules

Definitions

Medium Speed - One half maximum authorized speed at point involved, but not to exceed thirty miles per hour. ***

Restricted Speed - Proceed prepared to stop short of train, obstruction or anything that may require the speed of a train to be reduced

Markers

35 The following signals will be used to protect the rear of trains:

Day Signals ***
Red Flag
Torpedoes
Fusees

Movement of Trains

99 When a train stops under circumstances in which it may be overtaken by another train, a member of the crew must go back immediately with proper signals a sufficient distance to insure full protection When conditions require he will display lighted fusees and when necessary, in addition, place two torpedoes ***

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Rules for Movements Against Current of Traffic

D-231 Train movements against the current of traffic will be made as follows:

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(b) Under flag protection

***

D-232 Movement made under flag protection may be authorized by a train dispatcher when in his judgement the situation warrants Fully qualified employees must be utilized to execute the movements and provide all necessary protection

Damages

No X-150 stopped with the front end about 27 feet west of the accident point The east truck of the locomotive was derailed The locomotive was heavily damaged

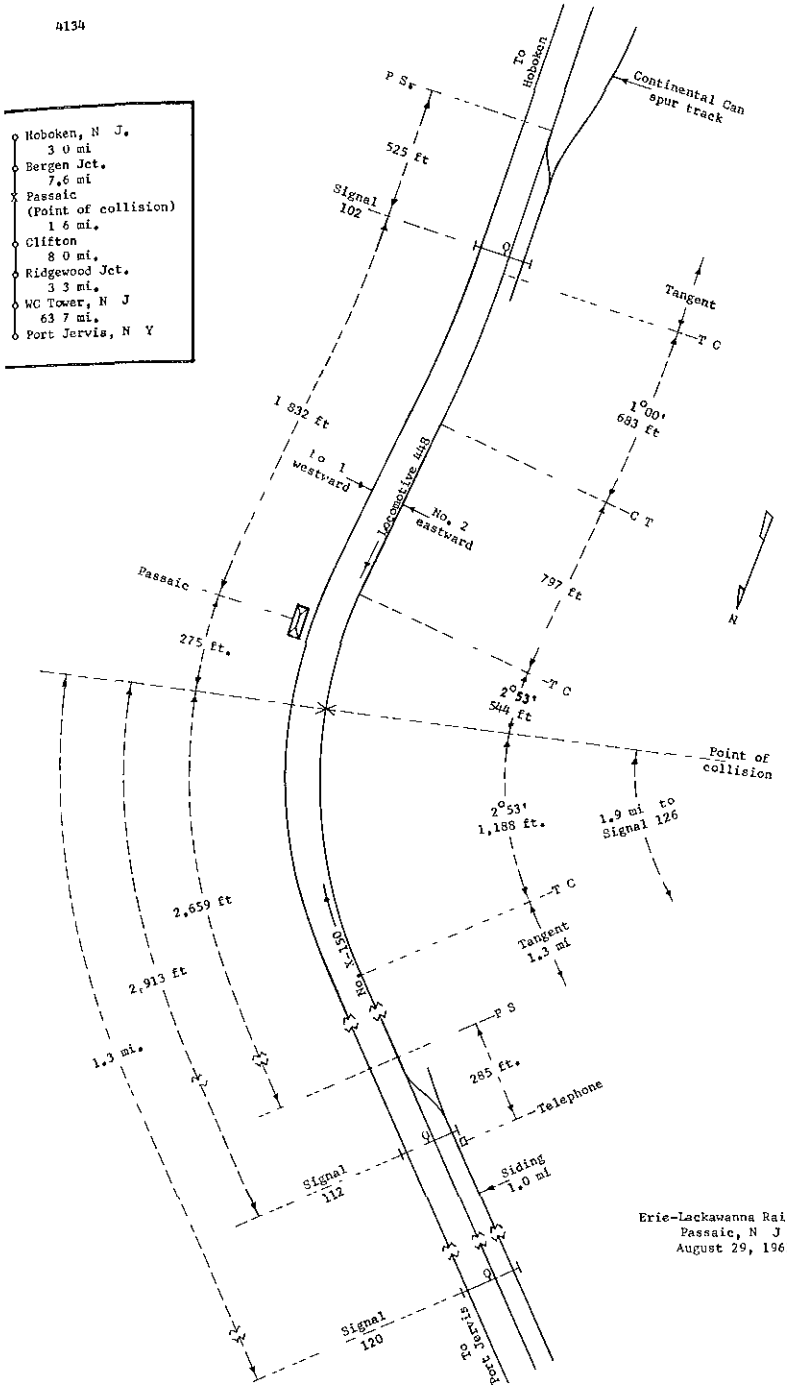
Locomotive 448 with four cars stopped with the front end about 18 feet west of the accident point, and none of this equipment was derailed. The locomotive and first car were heavily damaged, and the fourth car was slightly damaged

Other Factors

The accident occurred 5:45 p m , in clear weather

The maximum authorized speed for No. X-150 in the territory involved was 35 miles per hour. The maximum authorized speed for the locomotive and 4 cars in the accident area was 40 miles per hour

According to their daily time returns, the engineer and fireman of No X-150 had been on duty 4 hours 27 minutes in the aggregate at the time of the accident, after having been off duty 10 hours 15 minutes and in excess of 24 hours, respectively The conductor and brakeman of that train had been on duty 3 hours 10 minutes in the aggregate after having been off duty 12 hours 23 minutes and 11 hours 25 minutes, respectively The engineer and fireman of Extra 448 East had been continuously on duty 2 hours 15 minutes, after having been off duty 12 hours 35 minutes; the conductor and front brakeman had been continuously on duty 2 hours after having been off duty 12 hours 50 minutes, and the flagman had been continuously on duty 1 hour 45 minutes after having been off duty 15 hours 15 minutes



Erie-Lackawanna Railroad
Passaic, N J
August 29, 1967