

RAILROAD ACCIDENT INVESTIGATION

Report No. 4139

LOUISIANA & ARKANSAS RAILWAY COMPANY

ESSEN, LA.

DECEMBER 8, 1967

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
Washington, D. C. 20591

Summary

DATE:	December 8, 1967	
RAILROAD:	Louisiana & Arkansas	
LOCATION:	Essen, La	
KIND OF ACCIDENT:	Head-end collision	
TRAINS INVOLVED:	Freight	Passenger
TRAIN NUMBERS:	42	1
LOCOMOTIVE NUMBERS:	Diesel-electric units 109, 119, 106	Diesel- electric units 28, 76B
CONSISTS:	165 cars, caboose	11 cars
SPEEDS:	Standing	23 m p h
OPERATION:	Timetable, train orders, automatic block-signal system	
TRACK:	Single; tangent; level	
WEATHER:	Foggy	
TIME:	6:40 a m	
CASUALTIES:	21 injured	
CAUSE:	Failure of the enginemen to properly control the speed of No 1 in accor- dance with (1) restrictive signal indications, (2) applicable carrier rules governing the approach of a train to a meeting point and (3) restricted visibility conditions caused by fog, resulting in No 1 overrunning a switch where it was required to enter the meeting-point siding and colliding with the opposing train waiting on the main track at the meeting point	

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Synopsis

On December 8, 1967, a head-end collision occurred between a freight train and a passenger train on the Louisiana & Arkansas Railway at Essen, La. Twenty-one passengers and employees were injured.

The accident was caused by failure of the enginemen to properly control the speed of No. 1 in accordance with (1) restrictive signal indications, (2) applicable carrier rules governing the approach of a train to a meeting point and (3) restricted visibility conditions caused by fog, resulting in No. 1 overrunning a switch where it was required to enter the meeting-point siding and colliding with the opposing train waiting on the main track at the meeting point.

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 of Accident and Method of Operation

The accident occurred on that part of the railroad extending between West Yard, New Orleans, and Alexandria, La., a distance of 182.5 miles. In the accident area this is a single-track line over which trains operate by timetable, train orders, and an automatic block-signal system.

At Essen, 69.7 miles north of West Yard, a siding 1.3 miles long parallels the main track on the west. The north siding-switch is 2,429 feet north of the station sign.

The collision occurred on the main track, 229 feet south of the north switch of the Essen siding

Time and Weather

The collision took place at 6:40 a.m , under fog conditions which restricted visibility to a few hundred feet

Track

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

Signals

Automatic signals 7951 and 7981, governing southbound movements on the main track, are 2.3 miles and 294 feet north of the collision point, respectively These signals are of the color-light type and are continuously lighted. The applicable aspects, and corresponding indications and names, are as follows:

<u>Signal</u>	<u>Aspect</u>	<u>Indication</u>	<u>Name</u>
7951	Yellow	Proceed, immediately reducing to 30 MPH, or slower if necessary, prepared to stop before the leading wheels pass the next signal	Approach
7981	Red-over-No plate	Stop; Then Proceed at Low Speed through the entire block	Stop and Proceed

The circuits are so arranged that when the block of signal 7981 is occupied and the block of signal 7951 is unoccupied, signal 7981 displays a Stop-and-Proceed aspect and signal 7951 displays an Approach aspect

Carrier's Operating Rules and Special Instructions

Operating Rules

Restricted Speed. - Proceed prepared to stop short of train, engine, obstruction or switch not properly lined

Low Speed - A speed that will permit stopping short of train engine, obstruction *** but not exceeding 15 miles per hour

101 Precautions Account Unusual Conditions - ***

When storms, fogs or other conditions obscure track or signals, from points where they are plainly seen under normal conditions, speed must be restricted to insure seeing and

complying with indications of any and all signals, regardless of loss of time

352 Passing Stop and Proceed Signals - A train may pass without stopping a "Stop, Then Proceed at Low Speed" indication:

(1) At Low Speed to enter siding at a meeting point when track is seen to be clear from signal to the switch

Special Instructions

43 FORMS OF TRAIN ORDERS

Supplement to Form S-E ***

"No 16 engine 29 wait at Dalby until 350 AM for No 77 engine 73

No 16 take siding at Dalby for No 77"

When a superior train is directed by Train Order Form S-E (wait order) to take siding for another train, such instructions, unless annulled by a subsequent Train Order, are in effect after the time stated in the order has expired, and the superior train must approach the designated point at Restricted Speed prepared to stop, expecting to find the inferior train on the main track between the siding switches without flag protection, and must take siding if the inferior train is at the designated point

Maximum Authorized Speed

The maximum authorized speed for passenger trains in the accident area is 75 miles per hour

Circumstances Prior to Accident

Train No. 42

No 42, a northbound second-class freight train consisting of 3 diesel-electric units, 165 cars and a caboose, left West Yard, New Orleans, at 4:00 a m. the day of the accident. It passed Gramercy, 36 0 miles north of West Yard, at 5:13 a m, 1 hour 57 minutes late. As it passed Gramercy, the crew members received copies of train order No 32. Approximately one hour later, the train neared Essen, where it was going to meet No 1 under provisions of train order No 32. The engineer, fireman, and front brakeman were in the control compartment of the first diesel-electric unit. The flagman was in the control compartment of the second unit, and the conductor was in the caboose.

Train No. 1

No. 1, a southbound first-class passenger train consisting of 2 car-body type diesel-electric units, 1 express-refrigerator car, 1 box-express car, 2 baggage cars, 2 coaches, 1 dining car and 3 sleeping cars, in that order, left Alexandria at 3:30 a.m., 1 hour 45 minutes late the day of the accident, after having received a brake test. At 5:50 a.m., No. 1 passed Bridge Tower, 102.9 miles south of Alexandria, where the crew members received copies of train order No. 32. Five minutes later, the train stopped at North Baton Rouge, 3.3 miles south of Bridge Tower, where a mail car was placed in the train immediately behind the locomotive units. After receiving another brake test, No. 1 left North Baton Rouge at 6:27 a.m. and proceeded southward toward Essen, a distance of 6.6 miles, to meet No. 42 under the provisions of train order No. 32. The engineer and fireman were in the control compartment at the front of the first diesel-electric unit. The conductor, front brakeman, and flagman were at various locations in the cars.

Train Order No. 32

This order read in part as follows:

"No. 1 eng 28 wait at Essen until 6:25 AM for
No. 42 eng 109 No. 1 take siding at Essen for No. 42"

Under provisions of the order and the carrier's operating rules, if No. 42, the inferior train by class, proceeded to Essen to meet No. 1 it was required to reach that point at least 10 minutes before the time shown in the order and to stop on the main track short and clear of the Essen north siding-switch, unless No. 1 had entered the siding and cleared the main track.

The order required No. 1, the superior train, to approach Essen at Restricted Speed prepared to stop, expecting to find No. 42 occupying the main track between the switches of the Essen siding without protection. If it approached Essen after 6:25 a.m. and No. 42 was seen to be occupying the main track at that point, No. 1 was required to enter the Essen siding at the north switch and to clear the main track for the opposing train.

The crew members of No. 42 and No. 1 read and understood the requirements of the train order.

The AccidentTrain No. 42

About 15 minutes before the time showed in train order No. 32, northbound No. 42 neared Essen under heavy fog conditions. The engineer said he radio-telephoned the engineer of No. 1 at this time and learned that No. 1 was stopped at North Baton Rouge. He then told the engineer of No. 1 that No. 42 was at Essen and requested to be informed when No. 1 left North Baton Rouge. Soon afterward, No. 42 stopped on

the main track with the front end near the south switch of the Essen siding, to avoid blocking rail-highway grade crossings north of that switch while waiting for No 1 to enter the siding at the north switch

About 6:27 a m , the engineer of No 42 received a radio-telephone call from the engineer of No 1 and was informed that No 1 was leaving North Baton Rouge No 42 then started to move slowly northward, toward the north switch of the Essen siding A few minutes later, it stopped on the main track with the front end 229 feet south of the north siding-switch and waited for No 1 to enter the siding at that switch When the train stopped, the front brakeman alighted from the locomotive, and walked toward the switch with the intention of lining it for movement of No 1 from the main track to the siding The engineer said he radio-telephoned the engineer of No 1 at this time and told him "We are stopped at the north end The brakeman is going after the switch, but it isn't lined yet "

While proceeding toward the north siding-switch, the front brakeman heard No 1 approaching and started to run to the switch Moments later, he saw the headlight of No 1 appear through the heavy fog in the vicinity of the switch, and he gave the approaching train stop signals with his lantern He then realized it was moving too fast to stop short of the switch or his train, and he ran to safety

The engineer of No 42 saw the headlight of No 1 come into view through the fog about the same time as the front brakeman, and immediately realized the approaching train was moving too fast to stop short of the north switch of the Essen siding and a collision with his train He called a warning to his fireman, who promptly left the control compartment and alighted from the locomotive Moments later, at 6:40 a m , 15 minutes after the time shown in train order No 32, southbound No 1 struck No 42 on the main track, 229 feet south of the north switch of the Essen siding

The collision occurred before the engineer of No 42 was able to alight from his locomotive The flagman of that train jumped from a side window of the control compartment of the second diesel-electric unit immediately before the collision

Train No. 1

While No 1 was stopped at North Baton Rouge, the engineer received a radio-telephone call from the engineer of No 42 and was advised that No 42 was at Essen He then agreed to radio-telephone the engineer of No 42 when No 1 left North Baton Rouge and advise him of the train's departure At 6:27 a m., two minutes after the time shown in train order No 32, the engineer of No 1 radio-telephoned the other engineer as agreed, and informed him that No 1 was then leaving the North Baton Rouge station After leaving the North Baton Rouge station, No 1 proceeded about one mile southward at speeds varying between 10 and 17 miles per hour, as indicated by the speed-recording tape It then gradually increased speed in the blocks of two consecutive signals displaying Clear aspects According to the engineer, when the train reached a point about four miles from the north switch of the Essen siding, the engineer of No 42 radio-telephoned him again and advised that No 42

was stopped on the main track clear of the aforesaid switch, and that a brakeman had gone to line the switch for movement of No 1 to the siding. He said this was the last communication he had with the engineer of No 42.

Soon afterward, as No 1 was moving at approximately 50 miles per hour and at increasing speed, the conductor radio-telephoned the engineer and asked whether he had heard anything from No 42. In reply, the engineer informed the conductor that No 42 was at Essen and that their train would therefore enter the Essen siding at the north switch. He said he also informed the conductor that a brakeman of No 42 had gone to line the switch for movement of No 1 to the siding. Shortly after the conductor and engineer concluded their radio-telephone conversation, No 1 neared signal 7951 while moving at 60 miles per hour. Both the engineer and fireman said that the signal was displaying an Approach aspect when they saw it come into view through the heavy fog, and they called this aspect to each other. The engineer said that he made two service applications of the brakes as the train proceeded in the block of signal 7951, and that he released the brakes when the speed was decreased to 10 miles per hour. According to his statements, the engineer did not know exactly where his train was with respect to signal 7981 or the north switch of the Essen siding when he released the brakes, due to his view being obstructed by the fog. The engineer stated that signal 7981 came into view through the fog about the same time he released the brakes and he saw it was displaying a Stop-and-Proceed aspect. He stated that at this time he also saw the headlight of No 42 come into view, saw the front brakeman of No 42 giving stop signals with a lantern, and saw that the north switch of the Essen siding was not lined for his train to enter the siding. He further stated that he then applied the brakes in emergency and that his train struck No 42 shortly thereafter while it was moving at a speed he was unable to determine.

In essence, statements of the fireman of No 1 agreed with those of the engineer. According to his statements, the fireman apparently became aware of the danger of a collision at the same time as the engineer. He stated that he was about to operate the fireman's emergency brake valve when the engineer applied the brakes in emergency from the automatic brake valve.

Casualties

The conductor, flagman, 2 dining-car employees, 1 Pullman Company employee and 16 passengers of No 1 were injured.

Damages

The front of No 42 was moved 3 feet backward by the impact. None of the equipment of this train was derailed. The first diesel-electric unit was heavily damaged, the second unit was considerably damaged, and the third unit and the first and third cars were slightly damaged. The second car was destroyed as a result of its center sill and sides being buckled by the impact.

No 1 stopped with the front of its locomotive against the locomotive of the opposing train, and with both trucks of the third car derailed. The underframe of the front portion of the first diesel-electric unit buckled downward, and the middle of the third car buckled laterally westward, as a result of the impact. The third car was destroyed; first diesel-electric unit heavily damaged; second and fourth cars considerably damaged, and the first car slightly damaged.

According to the carrier's estimate, the cost of damages to the equipment of both trains was \$364,900.

Post-Accident Examination

The speed recording device of No 1 was calibrated after the accident and was found to be accurate.

Analysis of the tape of this device revealed that No 1 maintained a speed of 60 miles per hour throughout a distance of about one mile after passing signal 7951 and that its speed then decreased rapidly, to 30 miles per hour nearing signal 7981. The speed-recording tape indicates that the train was moving at the latter speed when the engineer applied the brakes in emergency shortly before the collision, and that the emergency brake application reduced the speed of 23 miles per hour at the time of the collision.

Train Crews' Hours of Service

The crew members of No 42 had been on duty 3 hours 25 minutes at the time of the accident, after having been off duty over 30 hours.

The engineer and fireman of No 1 had been on duty 4 hours 20 minutes at the time of the accident, after having been off duty 23 hours 30 minutes. The conductor, front brakeman and flagman had been on duty 8 hours 5 minutes, after having been off duty over 23 hours.

Analysis of Accident

At the time of the accident, No 42 was stopped on the main track at Essen and was waiting to meet No 1 in accordance with the provisions of train order No 32 and the carrier's rules, except that it was stopped with the front end 229 feet south of the north switch of the siding instead of at least 300 feet south of the clearance point of that turnout and the main track, as required by a rule of the carrier. This rule violation, however, had no significant bearing on the accident.

The investigation revealed that after No 1 passed signal 7951 the engineer did not immediately reduce speed as required, but permitted his train to continue about one mile southward at 60 miles per hour. He then initiated a service application of the brakes, at a point approximately 1 3 miles from signal 7981 and the north switch of the Essen siding. However, apparently due to not being able to see signal 7981 and to misjudging his exact location because of

heavy fog conditions, the engineer did not apply the brakes sufficiently to control the speed as required in approach to the aforesaid signal and switch. As a result, No 1 neared the signal and switch at 30 miles per hour, which was too fast to insure the enginemen seeing the signal soon enough through the fog, as required by the carrier's Rule 101, to comply with the Stop-and-Proceed aspect that it was displaying or to reduce speed to Low Speed, as required, before passing the signal without stopping and proceeding to the switch. Because of their view being obstructed by the fog, the enginemen were unaware of the proximity of their train to signal 7981 and the north switch of the Essen siding, until they saw the signal come into view a short distance ahead, at which time they also saw the headlight of No 42 appear through the fog, the front brakeman of No 42 giving stop signals, and that the north switch of the Essen siding was not lined for entry of their train to the siding. The engineer then applied the train brakes in emergency. However, due to its excessive speed at that time and to insufficient braking distance, No 1 could not stop short of signal 7981, the north switch of the Essen siding, or No 42, resulting in it colliding with No 42 after its speed had been reduced to 23 miles per hour by the emergency brake application.

The investigation revealed nothing which would indicate that the engineer of No 1 was ever advised through his radio-telephone conversations with the engineer of No 42 that the north switch of the Essen siding had been lined for his train to enter the siding. Hence, the radio-telephone communications between these enginemen had no significant bearing on the accident.

It is evident that the accident occurred as a result of failure of the enginemen of No 1 to control the speed of their train in accordance with the restrictive aspects displayed by signals 7951 and 7981, and with the carrier's rules and instructions governing the approach of a train to a point where it is required to enter a siding to meet an opposing train. It is further evident that the prevailing heavy fog was an important contributing factor in the accident. Had the enginemen of No 1 controlled the speed of their train as required in approach to signal 7981 and to a meeting point, and exercised the caution and care necessary when approaching a meeting point under fog conditions, the accident probably would have been averted.

Findings

- 1 No 42 proceeded to Essen in accordance with provisions of train order No 32 and applicable rules of the carrier. At the time of the accident it was standing on the main track, as authorized, with the front end 229 feet south of the north switch of the Essen siding, instead of at least 300 feet south of the clearance point of that switch, as required by a carrier rule. This, however, was not a significant factor in the accident.

- 2 Under the existing circumstances, train order No 32 required No. 1 to enter the Essen siding at the north switch to meet No 42
- 3 No 1 did not immediately reduce speed as required when it entered the block of signal 7951, which displayed an Approach aspect
- 4 Due to not knowing his exact location because of dense fog, the engineer did not apply the brakes of No 1 heavily enough while moving in the block of signal 7951 to reduce speed as required before approaching signal 7981 and the north switch of the Essen siding, which it was required to enter to meet No 42
- 5 Because of fog conditions, the enginemmen of No 1 did not realize their train was in proximity to signal 7981 and the north siding-switch until they saw signal 7981 and the headlight of No 42 come into view a short distance ahead
- 6 The engineer promptly applied the brakes of No 1 in emergency when he saw signal 7981 and the headlight of No 42. However, because of its excessive speed at that time, No 1 was unable to stop short of signal 7981 or the north siding-switch, resulting in the collision

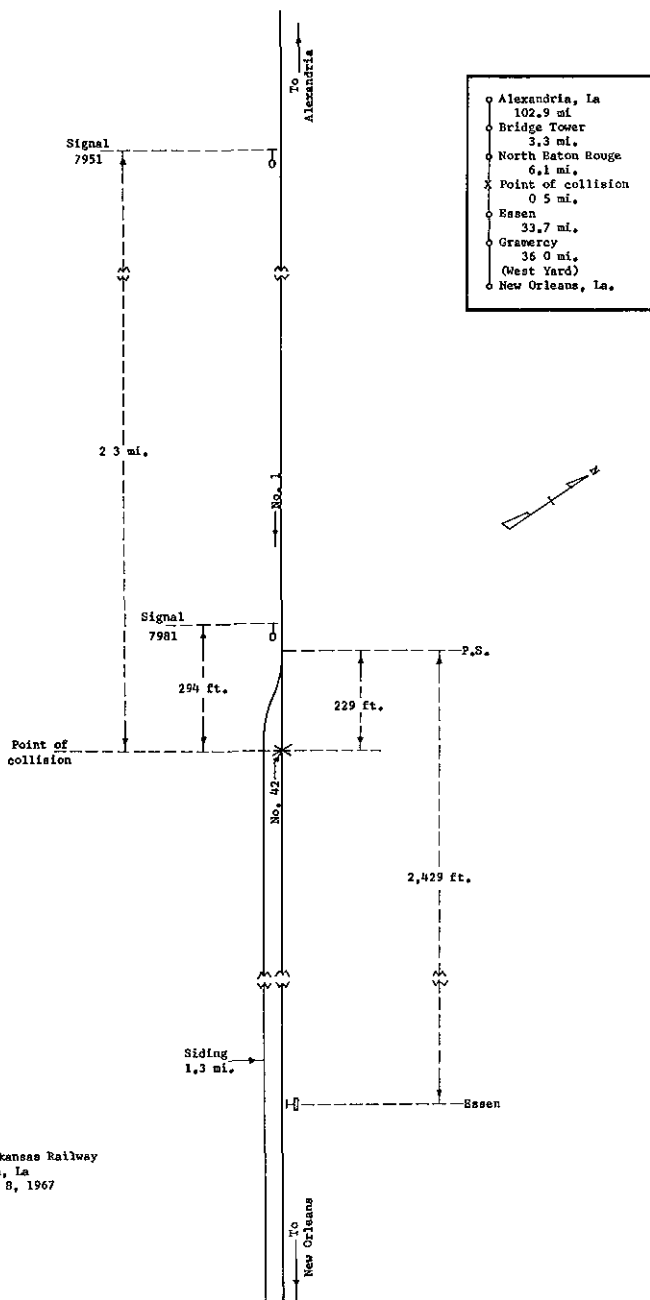
Cause

This accident was caused by failure of the enginemmen to properly control the speed of No 1 in accordance with (1) restrictive signal indications, (2) applicable carrier rules governing the approach of a train to a meeting point and (3) restricted visibility conditions caused by fog, resulting in No 1 overrunning a switch where it was required to enter the meeting-point siding and colliding with the opposing train waiting on the main track at the meeting point

Dated at Washington, D C , this 18th
day of October 1968
By the Federal Railroad Administration,
Railroad Safety Board

Bette E. Holt
Acting Executive Secretary

(SEAL)



Louisiana & Arkansas Railway
Esson, La.
December 8, 1967