

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR
BUREAU OF SAFETY

ACCIDENT ON THE
ST. LOUIS SOUTHWESTERN RAILWAY

ROE, ARK.

FEBRUARY 17, 1938

INVESTIGATION NO. 2253

SUMMARY

Inv-2253

Railway: St. Louis Southwestern
Date: February 17, 1938
Location: Roe, Ark.
Kind of accident: Side Collision
Trains involved: Passenger ; Freight
Train numbers: No. 2 : No. 15
Engine numbers: 665 : 814
Consist: 6 cars : 84 cars, caboose
Speed: 15-35 m.p.h. : 2-8 m.p.h.
Track: 1^o curve to left for northward trains;
grade level
Weather: Light rain
Time: 4:38 a.m.; dark
Casualties: 1 killed; 4 injured
Cause: Failure of superior train to stop clear
of switch used by train to be met in
entering siding at a train order meeting
point.

April 11, 1938.

To the Commission:

On February 17, 1938, there was a side collision between a passenger train and a freight train on the St. Louis Southwestern Railway at Roe, Ark., which resulted in the death of one employee and the injury of one passenger and three employees.

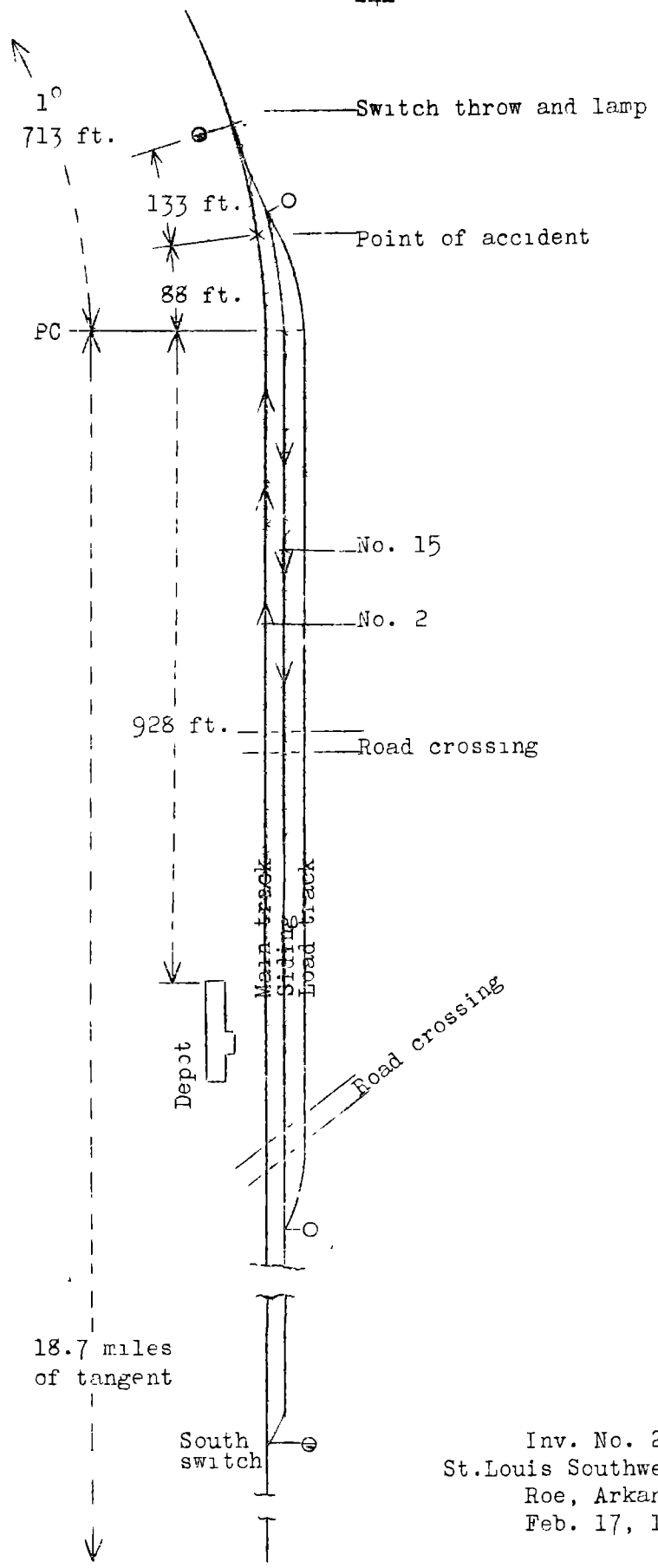
Location and method of operation

This accident occurred on the Jonesboro Subdivision, Northern Division, which extends between Pine Bluff Shops and Jonesboro, Ark., a distance of 141.89 miles; in the vicinity of the point of accident this is a single-track line over which trains are operated by timetable and train orders, no block-signal system being in use. The accident occurred at the north switch of the siding at Roe. Approaching from the south the track is tangent for 18.7 miles, then there is a 1° curve to the left, 713 feet in length, on which the accident occurred at a point 88 feet from its southern end. The switch involved is located 220 feet north of the south end of the curve, and the accident occurred 133 feet south of the switch, at the fouling point of the siding with the main track. The grade is level at the point of collision.

The siding at Roe is 4,859 feet in length and parallels the main track on the east. Roe Station is located 1,150 feet south of the north switch of the siding. The target mast of the north switch of the siding is located on the west side of the track, 7 feet $\frac{1}{2}$ inch from the gauge side of the west rail, while the switch-throw device is on the east side of the track; the target is 18 inches in diameter. A Handlan standard type switch lamp is mounted on top of the mast; the center of the lens is 7 feet $2\frac{1}{8}$ inches above the ties.

Rules 17, S-19, 34, S-90 and 104 (e) of the book of operating rules read in whole or in part as follows:

o Jonesboro, Ark.	
	74.17 mi.
o Brinkley	
	21.62 mi.
x Roe (P of A)	
	12.69 mi.
o Stuttgart	
	33.41 mi.
o Pine Bluff Shops, Ark.	



Inv. No. 2253
 St. Louis Southwestern Ry.
 Roe, Arkansas
 Feb. 17, 1938

17. The headlight will be displayed to the front of every train by night, but must be concealed when a train turns out to meet another and has stopped clear of main track, ***.
- S-19. The following signals will be displayed, one on each side of the rear of every train, as markers, to indicate the rear of the train: ***by night, green lights to the front and side and red lights to the rear; except when the train is clear of the main track, when green lights must be displayed to the front, side and rear.
34. The engineman and fireman must, when practicable, communicate to each other by its name the indication of all signals affecting the movement of their train.
- S-90. ***.Trains must stop clear of the switch used by the train to be met in going on the siding. ***.
- 104.(c) A switch must not be closed for main track while a train, engine or car is outside of clearance point of the siding. ***. A train entering a siding *** must not stop to pick up man at switch while any part of train is between switch and clearance point of siding.***.

Under the heading "General Instructions", of Special Instructions No. 3, now in effect, general instruction 18 reads as follows:

Cupola light will be used on standard cabooses, in addition to markers prescribed by Rule 19, and will show: When train is on main track, Red to rear; when in clear on siding, Red will be turned away from main track.

Bulletin No. 17, issued at Pine Bluff, February 3, 1938, supplements rule 17 and contains the following provisions:

- 17 (A) When a train takes siding to clear main track for an opposing train, and headlight of engine cannot be seen from opposite train, or when using an impaired headlight, a flagman must protect front of such train until main track is clear.
- 17 (B) Engineman of a train taking siding will not extinguish headlight until he knows rear of his train is in the clear. Until the headlight of a train turned out to meet another is extinguished, it is an indication that main track is obstructed. The opposing train must approach with caution, and, when the head end of train is clear of main track, it may proceed with caution to the point where the main track may be obstructed.
- (C) When the rules require headlights to be displayed headlights on road engine will be dimmed as follows:
- (b) At both front and rear of trains in siding being met or passed.

The maximum authorized speed for passenger trains in this territory is 60 miles per hour on straight track, and 55 miles per hour on curves.

The weather was cloudy, it was dark and there was a light rain at the time of the accident, which occurred about 4:38 a.m.

Description

No. 15, a south-bound freight train, consisted of 84 cars and a caboose, hauled by engine 814, and was in charge of Conductor Leach and Engineman Flynn. This train left Jonesboro at 1:54 a.m., according to the train sheet, 6 hours 54 minutes late. At Brinkley, 74.17 miles distant, the crew received copy of train order No. 10, Form 19, reading as follows:

No 2 Eng 665 meet
No 15 Eng 814 at Roe

No. 15 left Brinkley at 3:52 a.m., 5 hours 52 minutes late, and while entering the north switch of the siding at Roe, 21.62 miles beyond, at a speed estimated to have been between 2 and 8 miles per hour, it was sideswiped by No. 2.

No. 2, a north-bound passenger train, consisted of one baggage car, one mail-express car, one baggage car, one chair car, one Pullman combination sleepingchair car, and one Pullman combination sleeping-observation car, in the order named, hauled by engine 665, and was in charge of Conductor Newbegin and Engineman Roma. The cars were of all-steel construction with the exception of the first car, which was a steel-underframe car with wood superstructure. This train left Pine Bluff Shops at 3:35 a.m., according to the train sheet, 8 minutes late. At Stuttgart, 33.41 miles distant, the crew received copy of train order No. 10, Form 19, previously quoted. No. 2 left Stuttgart at 4:23 a.m., 14 minutes late, and on arrival at Roe, the meeting point, 12.69 miles beyond, it passed the engine and first 83 cars of No. 15 pulling in on the siding through the north switch, and while traveling at a speed estimated to have been between 15 and 35 miles per hour it sideswiped the 84th car and caboose.

The right or west sides of the 84th car and caboose of No. 15 were badly raked, and these cars were torn from their train and derailed to the east.

None of the equipment in No. 2 was derailed; the pilot of engine 665 was demolished and the right or east side of this engine was scraped and damaged. Some of the cars were slightly damaged and wheels on all of the cars were slid flat. The employee killed was the flagman of No. 15, and the employees injured were the conductor and the swing brakeman of No. 15, and the engineman of No. 2.

Summary of evidence

Engineman Flynn, of No. 15, stated that approaching Roe he looked back and saw the caboose cupola light burning red, but he did not see the green caboose-marker light. The switch light of the north switch was burning properly and the head brakeman ran ahead, opened the switch, and gave a signal in sufficient time to make it unnecessary to stop the train. The head brakeman then boarded the pilot step where he remained while the train was pulling into the siding. When his engine, moving at a speed of between 5 and 8 miles per hour, reached a point about twenty car lengths from the south switch the engine of No. 2 passed him at a speed not in excess of 30 miles per hour. At that time the rear of his train was not into clear on the siding, and after his engine had moved an additional distance of about four car lengths the accident occurred and his train was stopped by the brake application which resulted. The headlight of No. 2's

engine was dimmed just before that engine reached the south switch and it continued to burn with the dimmer on until it passed his engine; fire flying from the wheels at that time indicated that the brakes were applied on the passenger train. Engineman Flynn said that shortly before the headlight of the opposing engine was dimmed, he dimmed, but did not extinguish, the headlight of his engine, and after the rear car of the passenger train had passed he restored the headlight switch to the bright position. He stated that this was the usual procedure, as dimming is necessary to insure that proper identification will be made. He stated that an extinguished headlight indicates that a train is into clear, while a headlight burning brightly or with the dimmer on indicates that the train is not into clear. No trouble was experienced with the headlight or with the headlight switch during the trip. Engineman Flynn understood paragraph 5 of rule S-90 to apply to both scheduled and train order meeting points, hence No. 2 should have approached the north switch of the siding at Roe under full control until it was definitely determined that the main track was not fouled.

The statement of Fireman Nichols, of No. 15, agreed with that of Engineman Flynn in essential details except that he was not certain whether the headlight of his engine was merely dimmed or whether it was extinguished when the engineman operated the switch at the time the engine of No. 2 was about to pass his engine. He thought that even though the headlight on his engine had been extinguished it would not have had the effect of nullifying the requirements of rule S-90; the crew of the superior train is required to know whether the inferior train is entirely in the clear. However, he thought it was the general understanding among employees that extinguishing the headlight of a train on a siding was an indication that the entire train was in the clear.

Head Brakeman Koen, of No. 15, stated that the lamp on the north switch at Roe siding was burning properly both before and after he lined the switch for his train to head in, and although a misty rain was falling it was visible for about $\frac{1}{2}$ mile. He boarded the pilot step on the right side of his engine and remained there until the accident occurred. The speed of his train was about 6 or 7 miles per hour, and that of the passenger train about 35 to 40 miles per hour when they passed. Although he did not look at the headlight of his engine he was positive that it was burning with the dimmer on, and not extinguished, when No. 2 passed.

Conductor Leach of No. 15, stated that in company with Swing Brakeman Thompson and Flagman Parker he was on the caboose as their train approached Roe siding. After about 30 cars of their train had entered the siding he went out on the rear platform with the flagman. At the switch the flagman got off the right side of the caboose and started across the track to the switch. Conductor Leach then went over to the right side of the rear platform in order to identify No. 2, and did not observe any later actions of the flagman. The conductor saw the reflection of the headlight of the passenger train on the freight cars, and immediately afterwards the accident occurred. He did not know where the flagman was located when the accident occurred, and was unable to say whether he had thrown the switch before the collision. The cupola light was showing red to the front and rear, and the caboose markers were burning properly. After the accident he did not take notice of any lights. Regardless of whether the freight engine headlight was burning or extinguished it was the duty of the crew of the passenger train to determine definitely whether or not the freight train was in the clear on the siding and the north switch properly closed.

Engineman Roma, of No. 2, stated that the air brakes were tested as usual by the car inspectors at Pine Bluff Shops and worked properly, and this was also the case during a running test departing from that point and in making the stop at Stuttgart. At that point he received copy of train order No. 10, establishing the meet with No. 15 at Roe. Engineman Roma was thoroughly familiar with the physical characteristics in this locality and fully understood the rules and instructions. The track was straight for miles but the atmosphere was hazy. He observed the reflection from the headlight of the opposing engine as it headed in at Roe. About $1\frac{1}{2}$ miles south of Roe, the speed of his train was about 30 miles per hour, but this had been reduced to about 30 miles per hour when the station one-mile board was reached where he dimmed the headlight of his engine. When his engine was about at the south switch the headlight of the freight train went out, and it was still extinguished when the two engines passed each other. After passing the freight engine, Engineman Roma turned his headlight on bright, and continued northward on the main track at a speed of about 30 miles per hour, working a drifting throttle; there was ample time for the air brake system to become fully recharged before the north end of the siding was reached. When about 25 or 30 car lengths from the caboose of No. 15 he observed its green marker

light, which led him to believe that the freight train was in the clear; he did not see the caboose cupola light at any time. When about 8 or 10 car lengths from the clearance point he looked over to the left side of the track and saw the switch lamp displaying a green indication, and also observed that the caboose was not in the clear; at that time the speed of his train was still about 30 miles per hour. He immediately applied the air brakes in emergency, but it was then too late to avert the accident. He had not noticed the north switch light showing red at any time, and after the accident the switch light was displaying a green indication. Engineman Roma said that the extinguished headlight on the freight engine led him to believe that the freight train was in the clear since it was customary to accept an extinguished headlight at a meeting point as an indication that the opposing train was in the clear. He realized, however, that there was no rule which authorized him to accept an extinguished headlight as a positive indication that a train is in the clear. Rule S-90 required him to know that the freight train was entirely in the clear and the switch properly lined before passing the clearance point of the switch where the opposing train took siding.

Fireman O'Neal, of No. 2, stated that approaching the meeting point the speed of his train was about 50 miles per hour. The headlight of the freight train on Roe siding was extinguished, and Engineman Roma dimmed the passenger engine headlight when in the vicinity of the opposing engine. Identification was made by the engineman, and the passenger train continued on the main track at unrestricted speed. When near the depot the fireman saw the caboose cupola light of No. 15 showing red and called to the engineman that the freight train was not in the clear. The engineman immediately applied the air brakes in emergency and the speed was reduced to about 35 miles per hour when the freight train was sideswiped. He did not see the north switch light at Roe siding at any time, probably because it was raining and the clear vision window was only partly open. He thought it was the general understanding among enginemen that an extinguished headlight on the engine of a train in a siding was an indication that the train was in the clear, and that their own train could proceed past it at normal speed.

Conductor Newbegin and Flagnan Pipes of No. 2 were in the rear car of their train as it approached Roe. Their statements were in agreement that the headlight of the freight engine was extinguished at the time the engines passed each other. Their estimates of the speed of their train at that time ranged from 18 to 35 miles per hour, and each thought that No. 15 was in the

clear on the siding since it was their understanding that an extinguished headlight on the engine of a train on a siding indicated that the train was in the clear. After the accident they observed the north switch light burning and displaying a green indication.

Train Porter Durgan, of No. 2, stated that he was in the fourth car as the train approached Roe. They passed the engine in the siding at a speed of between 40 and 45 miles per hour, and he did not notice any lights on that engine.

Section Foreman Bremer stated that he lived close by and was at the scene of the accident immediately after its occurrence. He found the switch-throw device of the north switch torn out and the connecting rod broken off. The switch lamp was burning, but was out of alignment owing to the broken connecting rod. He was present when the switch lock and broken parts of the switch-throw device were found the day after the accident, at the point where the derailed caboose stopped, and by matching the broken pieces he determined that the switch was lined and locked for the main track when the accident occurred.

Track Apprentice Munger stated that he found the standard St. L. S. W. Ry. switch lock at a point about 30 feet north of the north switch at Roe siding and about 10 or 12 feet east of the center line of the track, partly covered with mud. The lock was closed in locked position and the shackle still secured two pieces of lugs that had been broken from the latch. Other broken parts of the switch stand apparatus were found nearby. The broken pieces matched in such manner as to indicate that the switch was locked at the time of the accident.

General Mechanical Foreman Gandy, in company with others, made tests of the headlight and headlight switch of engine 814 several hours after the accident. Placing the lever in bright, dim and off positions brought about the desired results in each of several trials; the switch did not bind and the headlight could be distinctly observed in bright and dim positions. The cover plate and housings were not removed at the time of these tests. Subsequently this engine was dispatched to East St. Louis, and on the return trip on February 19th, the engineman who handled the engine to Jonesboro reported headlight trouble. Upon arrival at Pine Bluff the cover plate was removed, and

Mr. Gandy again tested the switch and found its operation different than in the previous tests. Apparently the switch did not make good contact when in dim position, which caused the contacts to heat, and the switch to hang. A new switch was installed.

Inspector of Operations and Train Rules Examiner Hoffman stated that under the requirements of the third paragraph of rule S-90 the superior train must approach the siding, where required by train order to meet an opposing train, at restricted speed and be prepared to stop clear of fouling point unless it can be clearly and distinctly observed that the inferior train is in the clear in the siding. Rule 17 as printed in the book of rules does not annul the full and complete application of the third paragraph of rule S-90. Regardless of whether the headlight is displayed on engine in the siding the superior train must positively determine that the entire train has arrived and is in the clear at the siding prescribed by the train order as the meeting point. It was his opinion that there was no general understanding among trainmen and enginemen that where a train order meet is involved an extinguished headlight can be considered as definitely showing that the inferior train is in the clear; no general practice in accordance with such an understanding is in effect and no such instructions have ever been issued.

Observations of the Commission's Inspectors

A series of vision tests were made at the scene of the accident on the night of February 22nd, under conditions somewhat similar to those that prevailed when the accident occurred and with equipment of similar character to that involved in the accident. At a point approximately 1,085 feet south of the north switch of Roe siding an engineman could definitely determine that a train was not in the clear at the north end of the siding; the fireman was able to determine this fact at a point approximately 1,285 feet from the switch. The red cupola light on the caboose was visible for a maximum distance of approximately 2,478 feet, and a minimum distance of approximately 1,843 feet. Using a new switch lamp on the north siding-switch, the red indication became visible to the engineman and fireman at points approximately 1,280 feet and 1,371 feet respectively, from the switch. The green indication of this switch could be seen by the engineman and fireman at points approximately 3,184 feet and 2,458 feet respectively, from the switch. Another test showed that regardless of the intensity of the light from the headlight of the engine on the main track it could be definitely determined by the crew of the engine on the

siding that the headlight on their engine was lighted.

Discussion

According to the statements of those members of the crew of south-bound freight train No. 15 who were stationed at the head end of that train the headlight of their engine was burning brightly as it headed in at the north switch of Roe siding, and it continued to burn brightly until north-bound passenger train No. 2 was in the vicinity of the south switch of Roe siding, at which time the freight engineman moved the headlight switch to dim position. Members of the crew of No. 2 stated that the freight engine headlight was extinguished at that time. Although tests made after the accident showed that it was possible for the members of the crew on the engine moving on the siding to determine that the headlight of their engine was lighted even with the switch in dim position and in the face of the light radiated by the dimmed headlight of the train on the main track, it appears that the members of the crew of the opposing train were in the most advantageous position to observe the headlight on the freight engine. The passenger train crew was practically unanimous in declaring that the headlight on the engine of No. 15 was extinguished, and the manner in which the engine of No. 2 was handled indicates that the passenger engineman considered the extinguished headlight as an indication that No. 15 was in the clear. No. 2 moved over that portion of the main track lying between the siding switches at a speed estimated as high as 50 miles per hour, and the indication of the north switch was not noted by either member of the engine crew until just prior to the collision. The fireman first became aware that the rear end of No. 15 was still fouling the main track when he saw the cupola light of that train showing red to the front; at that time the passenger train was less than 1,150 feet from the north switch, and he immediately called a warning to the engineman. Although the engineman applied the brakes in emergency without delay the speed of the passenger train was still about 35 miles per hour at the time of the collision.

When No. 2 was about 25 car lengths from the caboose of No. 15 the passenger engineman saw the green marker light and assumed that No. 15 was in the clear. About 8 or 10 car lengths farther north he looked across ahead of the engine and saw the switch displaying a green indication but at the same time he noticed that No. 15 was not in the clear. Just about that time the fireman called a warning. The engineman's estimate of the speed of No. 2 at that time was 30 miles per hour.

The switch at the north end of the siding was lined for the main track before the rear end of No. 15 was in the clear, which was in violation of the rules.

The evidence is conclusive that it was the generally accepted understanding among the members of both crews involved that an extinguished headlight of a train on a siding indicated that such train was in the clear, and several stated that under such circumstances it was all right for the opposing train to proceed expecting to find the main track clear. The engineman of No. 2 was apparently proceeding in accordance with such an understanding.

Train order No. 10, however, established a positive meet between No. 2 and No. 15 at Roe siding. Therefore, in order to comply with the train rules examiner's interpretation of the third paragraph of rule S-90 No. 2 was required to approach the north switch under full control prepared to stop, until it was definitely determined that the freight train was in the clear.

Although paragraphs (A) and (B) of Bulletin No. 17, issued February 3, 1938, to supplement rule 17, are couched in language which permits of an interpretation that an extinguished headlight on the engine of a train on a siding may be taken as an indication that the train is in the clear, this bulletin does not nullify the third paragraph of rule S-90, hence it was the duty of the engine crew of No. 2 to know that No. 15 was in the clear before passing the clearance point.

The statements of the various employees indicates that there is not a clear understanding of the terms of Bulletin No. 17.

Conclusion

This accident was caused by failure of the superior train to stop clear of the switch used by the train being met in entering the siding at a train order meeting point.

Respectfully submitted,

W. J. PATTERSON,

Director.