

INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT OF THE DIRECTOR

BUREAU OF SAFETY

ACCIDENT ON THE
ST. LOUIS-SAN FRANCISCO RAILWAY

ROTAN, ARK.

OCTOBER 27, 1938

INVESTIGATION NO. 2304

SUMMARY

Inv-2304

Railway: St. Louis-San Francisco
Date: October 27, 1938
Location: Rotan, Ark.
Kind of accident: Rear-end collision
Trains involved: Freight : Freight
Train numbers: Extra 1409 : 846
Engine numbers: 1409 : 1108
Consist: 2 cars and caboose : 4 cars and caboose
Speed: 8-15 m.p.h. : 15-25 m.p.h.
Track: 1° left curve; grade practically level
Weather: Clear
Time: About 11:38 a.m.
Casualties: 4 injured
Cause: Failure to provide adequate flag
protection

Inv-2304

December 16, 1938.

To the Commission:

On October 27, 1938, there was a rear-end collision between two freight trains on the St. Louis-San Francisco Railway at Rotan, Ark., which resulted in the injury of four employees.

Location and Method of operation

This accident occurred on that part of the River Division designated as the Chaffee Sub-Division which extends between Chaffee, Mo., and Turrell, Ark., a distance of 139.5 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 system being in use. On the east side of and paralleling the main track at Rotan there is a spur track 510 feet in length, entrance to which is made through a facing-point switch for northbound trains; the accident occurred on the main track at a point 212 feet south of this switch. Approaching from the south the track is tangent a distance of 8,400 feet, followed by a 1° curve to the left 2,162 feet in length; the accident occurred on this curve at a point 1,510 feet from its southern end. The grade is practically level. Trees on the inside of the curve restrict the view of the point of accident from the fireman's side of a northbound train to a distance of approximately 1,615 feet.

Operating rules involved read in whole or in part as follows:

Rule 14(c). Engine Whistle Signals.

*** -----000:Flagman to protect rear of train.

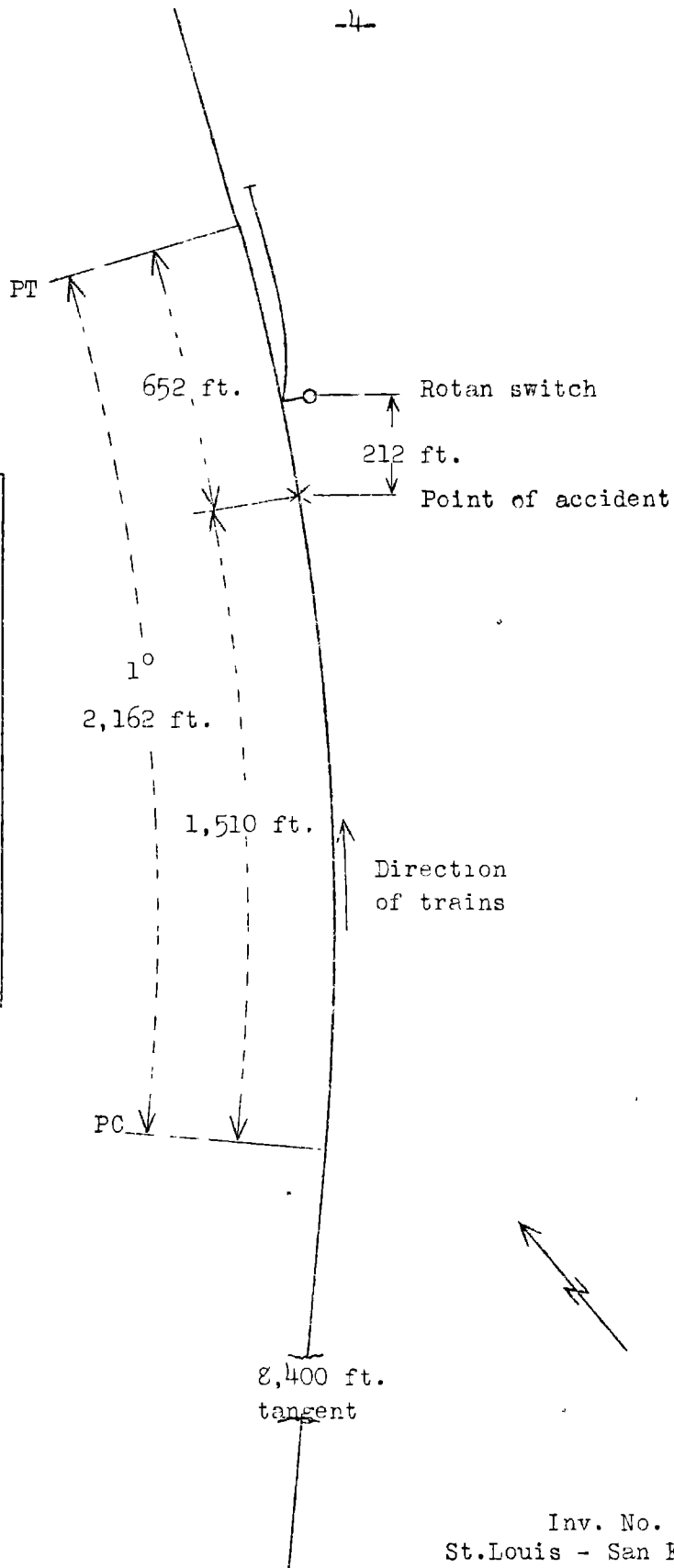
Rule 35. The following signals will be used by flagman:

Day Signals-
a red flag,
torpedoes and
fusees

Night Signals-
a red light,
a white light,
torpedoes and
fusees

Rule 85. ***extra trains may pass and run ahead of third class trains and extra trains.

o	Chaffee, Mo.
	115.8 mi.
o	Rotan, Ark. (P of A)
	1.3 mi.
o	Driver
	3.7 mi.
o	Wilson
	18.7 mi.
o	Turrell, Ark.



Inv. No. 2304
 St. Louis - San Francisco Ry.
 Rotan, Arkansas
 October 27, 1938

Rule 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 one torpedo on the rail on the engine-man's side, and when necessary, in addition, displaying lighted fuses. When recalled, if he does not hear or see an approaching train, he may return after placing a second torpedo on the rail 60 feet from the first one. By night, or by day when conditions warrant, a lighted fusee will be displayed to protect his train while returning.

*** Enginemen are required before coming to a stop at points where flag protection is required, to call for flag protection as prescribed in Rule 14(c).

*** Conductors and enginemen are responsible for the protection of their trains.

The maximum authorized speed for freight trains is 45 miles per hour.

The weather was clear at the time of the accident which occurred about 11:38 a.m.

Description

Extra 1409 North, engaged in industrial switching service, consisted of four cars and a caboose, hauled by engine 1409, and was in charge of Conductor Ford and Engineman Gettings. At Wilson, the initial station for this train, the crew received train order No. 61, Form 19, addressed to Engine 1409, No. 846 and Northward Extra Trains, reading as follows:

Engine 1409 run extra Wilson to Osceola. Northward extra trains except Extra 1409/ wait at Wilson until 2:30 p.m.

Extra 1409 left Wilson at 11:20 a.m. according to the train sheet, set out two cars at Driver, 3.7 miles north of Wilson, proceeded to Rotan, 1.3 miles north of Driver, and while traveling at a speed variously estimated to have been from 8 to 15 miles per hour it was struck by No. 846.

No. 846, a third-class local freight train, consisted of four cars and a caboose, hauled by engine 1108, and was in charge of Conductor Capshaw and Engineman Welker. This train departed from Turrell, 18.7 miles south of Wilson, at 9:20 a.m., 2 hours 20 minutes late. At Wilson the crew received train order No. 61 previously quoted and left at 11:30 a.m., according to the train sheet, three hours late; while traveling at a speed variously estimated to have been between 15 and 25 miles per hour it collided with Extra 1409 North.

The caboose of Extra 1409 was demolished and its wreckage was thrown clear of and to the east of the main track at a point about 145 feet north of the point of collision. Engine 1409 and the two cars stopped at a point about four car lengths north of the switch. Engine 1108 stopped on the switch immediately north of the demolished caboose with its pilot and coupler damaged.

The employees injured were the conductor, the engineman, and the fireman of No. 846 and the head brakeman of Extra 1409.

Summary of Evidence

Conductor Ford, of Extra 1409, stated that his crew was assigned to industrial switching service at various points north and south of the point of accident. No. 846 was at Wilson when Extra 1409 departed northward at 11:20 a.m. with four cars and a caboose. Two cars were set off at Driver, which consumed about two minutes. He did not remember whether the engineman sounded the whistle signal to protect the rear at this point; however, the flagman went back about eight car lengths with proper flagging equipment to protect against No. 846. The engineman recalled the flagman and they proceeded. They did not intend to stop at Rotan on the northward trip but they were flagged by an employee of a cotton gin at that point who desired switching service, and the train, which consisted of only two cars and a caboose at that time, stopped at 11:32 a.m. with the caboose about five car lengths north of the switch. He said the engineman did not sound the whistle signal to protect the rear end; however, as he and the brakeman left the caboose he instructed the flagman to look out for No. 846. While conversing with the cotton gin employee he told the head brakeman to back up and head into the spur and the locomotive was entering the spur when he learned that it was necessary to make a "drop" of the two cars for placement at the gin; he immediately signaled the crew to back out and make the "drop"; about two minutes elapsed between the time of the first stop and the time he gave this signal; the train was stopped with the locomotive about three car lengths beyond the switch stand. When the first back-up movement was started he saw the flagman about three or four car lengths beyond the rear of the caboose walking southward with his flagging equipment and he surmised that the flagman rode on the caboose back to its stopping point. The head brakeman had nearly finished bleeding the air from the two cars and the conductor was testing the switch preparatory to making the drop when the latter heard No. 846 whistle; crossing to the west side of the track he saw the flagman on the curve about five telegraph poles distant waving his flag and running toward No. 846, which was approaching rapidly about one-half mile distant from the flagman; the engineman did not acknowledge the stop signals and realizing a collision was imminent he immediately lined the spur-track switch for the main track and signaled his engineman ahead. The engineman re-

sponded at once and Extra 1409 had moved northward about three or four car lengths and was moving at a speed of 10 or 15 miles per hour when the collision occurred; the speed of No. 846 was about 20 or 25 miles per hour at that time. Conductor Ford said that he should have waited an interval sufficient to enable the flagman to proceed southward a greater distance before making the back-up movement but stated that the weather was clear and he could see for more than a mile across the curve and he supposed that his flagman had placed torpedoes on the rail when recalled at Driver; with this protection he assumed that the fireman of No. 846 would see the cabooses; however, he did not ascertain whether the flagman had taken such action at Driver because he knew that the flagman had torpedoes with him and that he was an experienced man. It was customary to compare time with the engineman at Wilson in the mornings and this was done on the morning of the accident; he also compared with the conductor of a passenger train which was scheduled to leave that point at 9:17 a.m. He looked at his watch immediately after the collision occurred and it was 11:34 a.m.

Flagman Crump, of Extra 1409, stated that prior to the occurrence of the accident he had made no formal watch comparison but had discussed the time with the members of his crew. No. 846 was at Wilson when they departed and he expected them to follow his train closely. At Driver he went back about five or six car lengths to flag, which was a sufficient distance at that point. He had torpedoes but neglected both to place them before he returned and to inform the conductor accordingly. As they stopped at Rotan he understood that his train would back up to drop the two cars into the spur track. He immediately proceeded southward to protect and knew nothing of the movements thereafter. He said he was proceeding back as fast as he could; he heard No. 846 whistle and when he had reached a point about three telegraph poles south of the switch he saw them approaching about one mile distant. He immediately ran toward the train, and began to wave his flag. He had reached a point about nine telegraph poles south of the switch and the approaching train was about 3 telegraph poles distant when he was observed from the fireman's side of the approaching engine and the train passed him at a speed of 40 or 45 miles per hour. About 10 or 15 seconds after the collision he looked at his watch as he started toward the scene and noted that it was 11:34 a.m. He said that in this instance to protect his train adequately he should have been stationed on the tangent at the south end of the curve, but sufficient time was not given him to reach that point. He also said that he was in good health, physically active and fully able to perform the duties of a flagman.

The statement of Head Brakeman Spencer, of Extra 1409, practically corroborated the statement of Conductor Ford.

Engineman Gettings, of Extra 1409, did not immediately ascertain the time the accident occurred, but he corroborated the testimony of Conductor Ford in all other essential details and added that he did not sound the whistle signal for flag protection at the two stops en route because he saw the flagman going back in both instances. When the train stopped after backing up to head into the spur at Rotan the flagman got off the caboose with his flag and started southward. After backing out of the spur the head brakeman had bled the air off one car and had started on the second car when he questioned his fireman as to the location of the flagman, and the fireman replied that he was going back very slowly. He said that under the rules he was equally responsible with the conductor for the first back-up movement which was made without full flag protection; however, it was his opinion that had the flagman hurried back immediately when the train first stopped he could have reached a point sufficiently distant to prevent the collision. He compared time with his fireman when going on duty but could not recall that he compared with the conductor. After the collision he walked back to the point of accident, approximately six car lengths, observed the damage and looked at his watch, at which time it indicated 11:38 a.m.

Fireman Finley, of Extra 1409, stated that he saw the flagman start back to protect within a few seconds after the train first stopped at Rotan; shortly thereafter he so informed the engineman who questioned him regarding the whereabouts of the flagman. About one or two minutes elapsed while the conductor was conversing with the gin employees before the train was backed up to enter the spur, his view was restricted by the cars in his train and he could not see the location of the flagman during the back-up movement. When they were about ready to make the drop he heard No. 846 whistle in the vicinity of Driver; he kept a lookout for that train and when it came within his view the flagman was about five or six telegraph poles south of the caboose walking toward the approaching train; he immediately informed his engineman that he doubted whether the flagman would be able to stop No. 846. The engineman took no action at that time. Shortly thereafter he called a warning of impending collision; the engineman started the train immediately and the fireman jumped off. Extra 1409 was moving about 15 miles per hour when the collision occurred.

Engineman Welker, of No. 846, stated that he compared time with Conductor Capshaw at Terrell and there was no variation. Prior to departure the automatic brakes were tested near the depot; the brake-pipe leakage was not determined. The brakes were used in stopping at Wilson and several times thereafter while doing station work and they functioned properly at all times. When they left Wilson at 11:30 a.m. he did not know that Extra 1409 had preceded him. No. 846 proceeded north without stopping and the train was on the curve approaching Rotan at a speed of about

45 miles per hour when his fireman, who had just gotten upon the seatbox, immediately called to him to stop. He made an emergency application, "cracked" the throttle, reversed the engine, crossed to the fireman's side and saw the flagman at a point about six telegraph poles south of the caboose of Extra 1409. Crossing back to the right side he got down on the gangway step and jumped off when the locomotive was within one car length of the caboose. He looked at his watch about $1\frac{1}{2}$ minutes after the collision and estimated that it occurred at 11:38 a.m. The emergency application was effective but the distance was not sufficient to stop before the accident occurred.

Fireman Duncan, of No. 846, corroborated the testimony of his engineman in all essential details and added that after keeping a lookout through Driver and the crossings in that vicinity he began firing the engine and was still thus engaged when they entered the curve approaching Rotan. Immediately after regaining his seatbox he looked ahead through the limbs of the trees on the inside of the curve and saw the corner of the caboose; he also saw the flagman waving his flag at a point about six telegraph poles south of the caboose. Because of these trees he was sure that he could not have seen the flagman any sooner had he been on the seatbox continuously. He did not note the time the accident occurred.

Conductor Capshaw, of No. 846, corroborated the testimony of his engineman in all essential details and added that No. 846 left Wilson at exactly 11:30 a.m. Approaching the point of accident he was sitting in the left side of the cupola; he did not see the flagman, but saw the caboose and immediately opened the emergency valve at the same time the engineer acted to stop the train. He jumped off while the train was moving at a speed of about 25 or 30 miles per hour. After arising from the ground he hurried to the point of collision about 450 feet distant, asked Conductor Ford the time it occurred, and the latter said it occurred at 11:38 a.m.; Conductor Capshaw noted that his own watch then indicated 11:43 a.m. The head brakeman was on the caboose at the time of the accident.

Head Brakeman Marshall, of No. 846, did not get off the caboose prior to collision. He was at the point of accident when Conductor Ford and Conductor Capshaw were discussing the time it occurred and he heard Conductor Capshaw mention 11:38 a.m.

Rear Brakeman Morgan, of No. 846, remained in the cupola of the caboose until after the collision occurred. He stated that the speed was about 45 miles per hour prior thereto and about 20 miles per hour at the time of the accident. Immediately before leaving Wilson he and the other members of the crew compared their watches with the agent who had just received standard time by wire. He looked at his watch at the time the accident occurred and it was 11:38 a.m. The emergency application of the brakes was fully effective.

Records submitted by railroad officials indicate that the telegraph poles in the immediate vicinity of the point of accident are spaced approximately 160 feet apart. In the thirty-day period preceding the day of the accident, there were 396 trains operated over this territory.

Observations of the Commission's Inspectors

Two trees situated on the inside of the curve at points 797 feet, and 1,270 feet, respectively, south of the point of accident restrict the view from the fireman's side of a north-bound train to a distance of 1,615 feet.

Discussion

Under the rules Extra 1409 North was permitted to run ahead of No. 846. The crew of the first train understood that they were required to protect against No. 846.

The members of the two crews involved were not in accord as to the time the accident occurred. The conductor and the flagman of Extra 1409 said it occurred at 11:34 a.m. while the engineman of the train said that as soon as his train stopped after the collision he walked back six car lengths, at which time it was 11:38 a.m. On the other hand the engineman and the flagman of No. 846 were definite in fixing the time as 11:38, while the conductor of that train said that shortly after the accident he asked the conductor of Extra 1409 what time the accident occurred and the latter said, "At 11:38"; the head brakeman of No. 846 heard part of this conversation. According to the statement of the conductor of Extra 1409, his train stopped at Rotan at 11:32 a.m., then about 2 minutes later, or at 11:34, he signaled his train to back up and head into the spur track, following which the train backed out of that track and the brakeman had bled the air from one car and was bleeding the air from another car when the conductor signaled his train to proceed immediately in order to avert the impending collision; it is apparent from this that the accident occurred several minutes after 11:34. The distance from Wilson to the point of accident was five miles; No. 846 left Wilson, according to the evidence, at exactly 11:30 a.m. If the time of the accident were actually 11:34, as stated by certain members of the crew of Extra 1409, then No. 846 would have been operated at an average speed of 75 miles per hour; an average speed of 37.5 miles per hour would have placed No. 846 at the point of accident about 11:38. According to the evidence the maximum authorized speed of 45 miles per hour was not exceeded between Wilson and the point of accident. It therefore appears that the accident occurred about 11:38 a.m.

The flagman of Extra 1409 had not less than five minutes to go to the rear in protecting his train. According to his statement he had reached a point about 1,440 feet south of the switch but the engineman and the fireman of No. 846 stated that the flagman was only about 900 feet to the rear of the preceding train. According to the evidence the rear end of Extra 1409 stopped about five car lengths or approximately 200 feet north of the switch and since the point of the curve was 1,510 feet south of the switch, it follows that the flagman had about 1,710 feet to traverse to the point of the curve where he could be seen a great distance by the crew of No. 846. Proceeding to the rear at a rate of four miles per hour the flagman should have reached a point at least 1,760 feet to the rear of his train within a period of five minutes. However, before the first back-up movement was made the rules required that Extra 1409 send a flagman back a sufficient distance to insure full protection. According to the evidence the engineman of Extra 1409 failed to sound the whistle signal for the flagman to protect the rear of the train and the back-up movement was made before the flagman was out far enough to provide adequate protection.

Conclusion

This accident was caused by the failure of the crew of the preceding train to provide adequate flag protection.

Respectfully submitted,

W. J. PATTERSON,

Director.